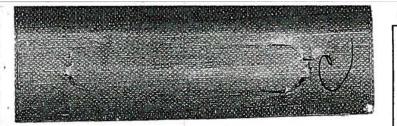
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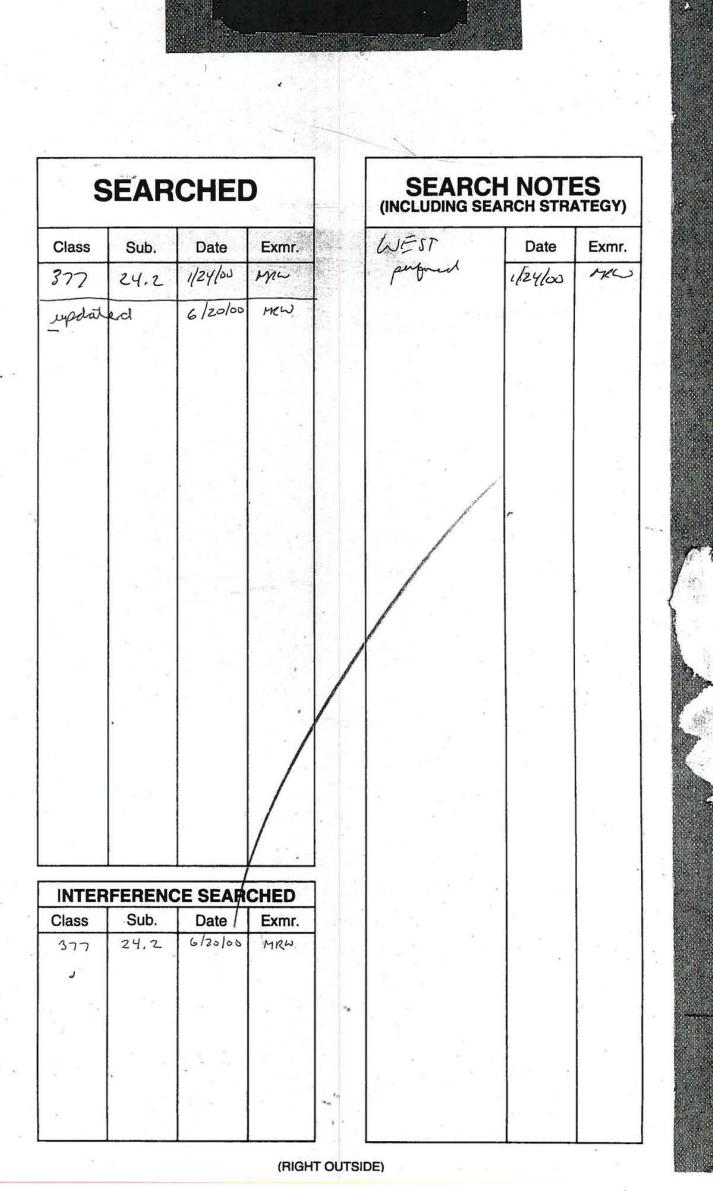
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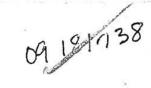
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ABSTRACT OF THE DISCLOSURE

The pedometer having improved accuracy by calculating actual stride lengths of a user based on relative stride rates. The pedometer includes a waist or leg mounted stride counter, a transmitter for transmitting data to a wrist-mounted display unit, and a data processor for calculating necessary base units and actual stride rates and lengths. The pedometer can also interact with a heart monitoring device.

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PEDOMETER

Nathan Pyles Joel M. Macht Chen Shui-Jung

FIELD AND BACKGROUND OF THE INVENTION

The present invention relates generally to pedometers having a waist mounted stride-counting device and transmitter, and a wrist-mounted receiver and display. The invention also relates to a distance calculation device that calculates a distance walked or run based on an algorithm that converts a base stride length and a base stride rate to an actual stride length for use in calculating the distance traveled.

Pedometers are known which include devices or algorithms for determining the distance a person travels on foot. For example, U.S. Patent 4,371,945 discloses an electronic pedometer that calculates distance by electronically measuring the length of each stride taken by a user. Stride length is measured by ultrasonic waves generated by an ultrasonic module strapped to one leg and an ultrasonic detector worn on the other leg. A program compensates for a variety of measurement errors and the results are displayed on a wrist-mounted display after being transmitted by VHF waves from the leg to the wrist.

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U.S. Patent 4,771,394 discloses a computer shoe with a heel-mounted electronic device with an inertia footstrike counter, a timer, a sound generating device, a battery, and a gate array for counting time and footstrikes to calculate distance and running time as a function of stride time. Although recognizing the important relationship of stride length and foot speed, the shoe in this patent requires data from at least 15 test runs or walks and the data must be user-entered in pairs of footstrikes and elapsed time to cover a pre-determined distance. Further, user adjustments of time must be performed to accommodate start and stop times, and the number of counted footstrikes is increased one percent to overcome inherent errors in the inertia step counter. The shoe-mounted device is subject to damage from impact, dirt, and water, and requires a stay-at-home computer with which to interface. There is no means disclosed to transmit data to a wrist-mounted display device or an "on-board" computing device that provides "real time" data to a runner.

U.S. Patent 4,855,942 discloses a pedometer and calorie measuring device that includes a wrist-mounted step counter and a fixed stride length to calculate distance traveled. Wrist-mounted step counters are known to be inaccurate because they assume a step for every arm movement. Even with error correction, such a device will provide less accurate step counts than a leg or waist-mounted counter. Further, fixed stride lengths do not take into account the fact that stride length varies with rate of movement.

U.S. Patent 5,117,444 discloses a pedometer and calibration method with two calibration modes. First, a user travels a predetermined "half-distance" for the device to count and store the number of strides in that distance. Next, the user travels a second distance with the step counter comparing actual steps to the steps in memory and a current trip memory are incremented by a tenth of a "whole unit" distance. There is no correlation between stride length and stride rate which requires the user to re-calibrate the device when walking as opposed to running.

U.S. Patent 5,475,725 discloses a pulse meter with pedometer function to determine pace and pulse rate of a user. The meter uses pulse wave base data compared to actual pulse wave data rates.

U.S. Patent 5,476,427 discloses a pace display device utilizing a base rate for

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traveling pre-set distances in successive trails. The device calculates step counts and rates, and compares actual step count rates to display data to a user for comparison of present running rates to previous rates.

Thus, there is a need for a simple, but highly accurate, pedometer that displays distance traveled, pace, speed, heart rate, and other important information on an easily read wrist-mounted device.

SUMMARY OF THE INVENTION

The present invention overcomes problems and shortcomings in the prior art by providing a device that includes a waist, chest, or leg-mounted stride counting device, a transmitter, and a wrist-mounted receiver/display device that provides highly accurate travel distances and other information. The device includes a computer that stores base stride length and rate data from traveling a pre-determined distance and compares that to actual stride rate data to calculate actual distance traveled, speed, and pace. The invention recognizes the interdependency of stride length and stride rate and uses that relationship to provide superior distance-calculating accuracy.

The invention also provides for improved display of relevant data on a wristmounted display that receives digital signals from devices worn on other body parts such as legs, waist, and chest. Transmitters that can send coded signals are desirable because they will not interfere with similar devices worn by other users in the vicinity.

The accuracy of the device is enhanced by the use of an algorithm that adjusts a base stride length based on actual stride rates. The algorithm is defined as: Actual Stride Length = Base Stride Length + Base Stride Length *(((Actual Stride Rate - Base Stride Rate) N)/Base Stride Rate); where N is either an average value or a derived value from a plurality of samples.

The invention also includes a method for calculating an actual stride length including steps of: timing a first user run of a predetermined distance; counting the total number of strides in the user first run; dividing the first run distance by the stride count to obtain a base stride length; dividing the stride count by the first run time to obtain a base stride rate; counting strides during a user's second run to obtain an actual stride rate; calculating the actual stride length using the formula: Actual Stride

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Length = Base Stride Length + Base Stride Length
*(((Actual Stride Rate - Base Stride Rate)N)/Base Stride Rate); wherein N is an
average value or a derived value.

The average value method can be refined by comparing Base Stride Rate to Actual Stride Rate to determine a percentage difference; and using N=1 when the Actual Stride Rate ≤ Base Stride Rate * 1.02 and using N=3 when Actual Stride Rate > Base Stride Rate * 1.02. A preferred embodiment uses a plurality of sample runs over known distances to derive an accurate N value for each individual.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic diagram of a pedometer in accordance with the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

As illustrated in Fig. 1, the present invention is directed to an improved pedometer 20 including: a waist, chest, or leg mounted stride counter 24, and a wrist or waist mounted display unit 26. An optional chest-mounted heart monitor 28 can be included. All of the device components are mounted in suitable housings. The pedometer 20 includes a data processor 30 that is mounted in the same housing as either the step counter 24 or the display unit 26.

The step counter 24 is an inertia device that counts the number of steps a user takes. The number of steps is transmitted to a data archive 32 either directly or via a transmitter 34. The data archive 32 is mounted in the housing with the step counter 24 or the display 26.

The transmitter 34 is mounted in the step counter housing and is preferably an Rf telemetric signal transmitter with a 30 inches to 36 inches transmission range. Alternately, the transmitter is a wireless or wired digital transmitter with a coding function to limit or eliminate interference with other similar devices. The wireless transmission range is set between 30 inches and 36 inches to provide adequate range to transmit signals from a user's waist to wrist, but not so far as to cause interference with other Rf or digital devices in the vicinity.

The transmitter 34 transmits either raw data or calculated distances, pace, etc. to a wrist-mounted display unit receiver 40. The receiver 40 relays a raw data signal

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to the data processor 30 or a calculated data signal directly to the display panel 42, such as an LCD or LED.

Similarly, the heart rate monitor 28 includes a transmitter 44 that transmits heart rate data to the display unit 26. The heart monitor transmitter 44 can transmit at the same or a different frequency as the stride counter 24, and to the same or a different receiver in the display unit 26. The heart rate transmitter 44 is preferably Rf, but can be digital for the reasons stated above. The range of the heart rate transmitter 44 should also be between 30 inches and 36 inches to ensure effective communication with the receiver while limiting outside interference.

The data processor 30 can also include a programmable logic controller, a personal computer, a programmable read-only memory, or other suitable processor. The data processor 30 includes a data archive 32 to store historic data on stride length and pace to be used in an algorithm for calculating actual distances, speed, and rate for real-time conversion of data to useful information for a user.

The data processor 30 can also include closed loop or fuzzy logic programming to continually or periodically replace the base stride rate and length with recently calculated stride rates and lengths so that long term conditioning trends are accommodated in the base stride archive. Incorporating trend capabilities may further enhance accuracy of the distance and pace calculations.

The display unit 26 also includes an operator interface 46 such as a key pad, button, knob, etc. that enables the user to start and stop a clock 48 (or stop watch) and activate various use modes within the pedometer, such as a sampling mode and operation mode.

One option for using the pedometer 20, requires the user to operate a "sampling mode" and begin walking or running a pre-determined distance such as a mile or 1600 meters, preferably on a running track of a known size. Upon completion of the distance, a stop button on the operator interface 46 is pushed. The data processor 30 is programmed to then divide the distance by the number of strides counted to calculate an average stride length. This value is stored in the data archive 32 as the "Base Stride Length."

Also, the data processor 30 is programmed to divide the number of strides by

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the time of the run or walk as measured by the clock 48 to arrive at a "Base Stride Rate."

The data processor 30 preferably includes programming that queries the user about the distance to be run during the sampling mode. By providing options or enabling the use of any distance during the sampling mode, the pedometer 20 provides maximum flexibility for use by people of various physical conditions, or having access to courses of different known distances. Thus, a user may be queried to input a distance to be used in the sampling mode and then be given a list of options such as 400 meters, 440 yards, 1600 meters, or one mile, or be asked to simply input any distance known to the user that will be traveled during the sampling mode.

The present invention makes full use of the relationship between a faster rate of travel and longer stride lengths. In other words, the faster a user is moving, the longer will be the stride length. Over the course of the run or walk, the user's step rate and, therefore, stride length will change and the user will cover more ground when moving fast and less ground when moving slow.

Clearly, using a fixed average stride length in calculating distance traveled will result in errors using prior pedometers. This is particularly true if a user changes pace, or improves conditioning and speed to the point where the average stride length over a given run increases dramatically. The error compensators in prior devices do not adjust for changes in pace. With the old devices, a user needed to re-calibrate periodically to be close to getting an accurate reading, and could not change pace during a workout without decreasing accuracy.

To make the correction, the user activates a "Use Mode" in which the data processor 30 calculates an Actual Stride Rate based on data from the stride counter 24 and the clock 48. For example, an Actual Stride Rate can be calculated every five seconds without the user doing more than activating the "Use Mode" button, while all the calculations are performed by the data processor automatically. The percentage change between the Actual Stride Rate and the Base Stride Rate is then computed by the data processor 30 to determine an Actual Stride Length. Again, if the Actual Stride Rate is greater than the Base Stride Rate, the Actual Stride Length is longer than the Base Stride Length. If the Actual Steps Per Second is lower than

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the Base Steps Per Second, the Actual Stride Length is shorter than the Base Stride Length. The algorithm below provides a means for comparing the Actual and Base Stride rates to arrive at an accurate Actual Stride Length.

First, a comparison between the Actual Stride Rate and the Base Stride Rate is made to determine whether Actual Stride Rate is less than or equal to Base Stride Rate multiplied by 1.02. Stride Length is calculated by:

Actual Stride Length = Base Stride Length +

Base Stride Length *(((Actual Stride Rate - Base Stride Rate)N)/Base Stride Rate)

Where: N=1 when Actual Stride Rate is less than or equal to Base Stride Rate multiplied by 1.02, and N=3 when Actual Stride Rate is greater than Base Stride Rate multiplied by 1.02, although other N values in the range of one to three can be used.

The above algorithm is accurate for heel to toe activities such as walking or jogging, but is less accurate for sprinting (toe only).

A third method of calculating actual stride length uses three separate run or walk samples at three different paces. This is the most accurate option. With this method, the N values are unique for each individual. By deriving an N value for each individual, this value more accurately reflects the actual change in stride length with a change in pace. After a proper warmup, the user completes a sample run or walk on the track at a normal pace. This first sample S1, will establish the Base Stride and the Base Steps Per Second.

S1 SAMPLE:

- S1 Stride = Base Stride = Distance / Number of Steps
- S1 Steps Per Second or S1 Steps Per Second = Base Steps Per Second =
 Number of Steps Per Second

Following completion of the first run or walk at normal pace, the user runs or walks the same course and the same distance at a faster run or walking pace, but not a sprinting pace. The user should not run on his toes, but maintain the normal heel to toe jogging style. This is the S2 sample. The purpose of the S2 sample is to calculate an N2 value for each individual which reflects the effect an increase in Steps Per Second has on this individual's stride length. Some individual's steps will lengthen

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more than others as Steps Per Second increases, and by finding the value for N2, this relative increase can be quantified for a more accurate and customized algorithm for each individual.

S2 SAMPLE:

To find the N2 value, which will be used by the algorithm when Actual Steps Per Second > Base Steps Per Second

N2 = ((S2 Stride * S1 Steps Per Second) - (S1 Stride * S1 Steps Per Second)) / (S1 Stride (S2 Steps Per Second - S1 Steps Per Second))

This value can be calculated since the distance is known, and both a Fast Stride Length (S2 Stride) and a Fast Steps Per Second (S2 Steps Per Second) can be calculated from the second sample.

Following completion of the fast run or walk, the user runs the same course and the same distance at a slower than normal run or walking pace. This pace cannot exceed the first sample pace. This is the S3 sample. The purpose of the S3 sample is to calculate an N3 value for each individual which reflects the effect a decrease in Steps Per Second has on this individual's stride length. Some individual's steps will shorten more than others as Steps Per Second decreases, and by finding the value for N3, this relative decrease can be quantified for a more accurate and customized algorithm for each individual.

S3 SAMPLE:

To find the N3 value, which will be used by the algorithm when Actual Steps Per Second < Base Steps Per Second.

N3=((S3 Stride * S1 Steps Per Second) - (S1 Stride * S1 Steps Per Second))
/ (S1 Stride (S2 Steps Per Second - S1 Steps Per Second))

This value can be calculated since the distance is known and both a "Slow" Stride Length (S3 Stride) and a "Slow" Steps Per Second (S3 Steps Per Second) can be calculated from the third sample.

Once these three samples are completed and the information automatically calculated and stored in the data processor 30, then the following formula can be used for the most accurate measurements of speed and distance.

If: Actual Steps Per Second is less than or equal to Base Steps Per

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Second

Then:

Stride Length = Base Stride + Base Stride*(((Actual Steps Per Second - Base Steps Per Second)N)/Base Steps Per Second)

And N = N3 (Stored Value)

If: Actual Steps Per Second > Base Steps Per Second

Then:

Stride Length = Base Stride + Base Stride*(((Actual Steps Per Second - Base Steps Per Second)N)/Base Steps Per Second)

And N = N2 (Stored Value)

This third option for calculating stride length, and subsequently distance, speed, and pace, is a far more accurate method than a fixed stride length pedometer. This device and method are also practical, convenient, and has a relatively low manufacturing cost. If an individual's running or walking style is progressing with training and practice (as seen by significantly improved times), then it may be beneficial for them to recalibrate their device by repeating the three samples every 3 to 6 months. If there are no significant improvements in time, then recalibration is not necessary.

It is noted that any single stride length or pace discussed above can in fact be an average of a plurality of stride lengths or rates from test runs to further refine accuracy in the calculations of actual stride data.

Other variations on this device could also incorporate an altimeter which measures changes in elevation. The stride length could then be adjusted (shortened) when elevation is increasing, and lengthened when elevation is decreasing. This adjustment could be done with an average value, as we used in setting option 2, or with a derived value by running or walking over a known distance on a hilly course. This device can use two batteries so that the calibration data is not lost when the batteries are replaced one at a time.

Once the actual stride length is calculated for a given period of time, the value can be multiplied by the number of strides in that period to obtain a total distance for that period to be stored in a data archive file for that particular walk or run and added

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to other actual stride lengths or distances for other periods in which stride length was calculated. When the run or walk is completed, the user engages the operator interface 46 to indicate that a total distance is to be displayed on the display unit.

Preferably, there is continual display of the distance traveled.

As a result of accurately calculating distance traveled, the pedometer 20 also has the capability of calculating speed in miles per hour, for example or pace in minutes per mile, including average speed and pace over the course of that particular walk or run. Further, the pedometer 20 can include a port for coupling to a separate personal computer or computing device to create larger training histories, trends, etc.

Additional features can include stop watches, day, date and time displays, as well as, heart rate displays as discussed above. Also, it will be understood that all distances and time periods used above can be varied in length and units of measure (English, metric, seconds, minutes, hours, etc.).

The foregoing detailed description is provided for clearness of understanding only and no unnecessary limitations therefrom should be read into the following claims.

a step counter mountable on a user first body portion;

a transmitter in communication with the step counter to generate a signal

corresponding to each step and transmit the signal; and

a receiver mountable on a user second body portion to receive the signal transmitted from the transmitter and calculate a distance measured by the step counter.

- 2. The pedometer of claim 1, wherein the transmitter and the receiver communicate via wireless transmission.
- 3. The pedometer of claim 1, wherein the transmitter and the receiver communicate via a wire.
- 4. The pedometer of claim 1, wherein the transmission signal is digitally coded.

5. The pedometer of claim 1, where in the transmitter transmits the signal a wireless distance in the range of tharty to thirty-six inches.

6. The pedometer of claim, wherein the receiver is mountable on a user's wrist.

7. The pedometer of claim 1, wherein the receiver processes the step count signal and displays the distance traveled on a viewing screen.

8. The pedometer of claim 1, wherein the step counter is mountable on a user's leg.

9. The pedometer of claim 1/and further comprising:

a heart rate monitor; and

a second transmitter in communication with the heart rate monitor to transmit a signal corresponding to a heart rate calculated by the heart rate monitor to the receiver and display the calculated heart rate.

10. The pedometer of claim 9, wherein the heart rate signal is at a different frequency than the pedometer signal.

11. The pedometer of claim 9, wherein the heart rate monitor is mountable to a user's third body portion.

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The pedometer of claim 9, wherein the heart rate, and the step counter transmitter are mounted in a single chest-mount housing. The pedometer of claim 1 wherein the pedometer includes a data 13. rocessor programmed to calculate a distance traveled by multiplying the number of des taken by a stride length that varies according to the rate at which strides are 14. The pedometer of claim 13, wherein the data processor is programmed to calculate an actual stride length of a user by performing the steps of: timing a user first run of a predetermined distance; counting the total number of strides in the user first run; 10 dividing the first run distance by the stride count to obtain a base stride length; dividing the stride count by the first run time to obtain a base stride rate; counting strides in a period of time during a user second run to obtain an actual stride rate 15 calculating the actual stride length using the formula: Actual Stride Length = Base Stride Length + Base Stride Length *(((Actual Stride Rate - Base Stride Rate)N)/Base Stride Rate); where N is in the range of between 1 and 3. The pedometer of claim 13, wherein the pedometer is further 20 programmed to perform the steps of: comparing the actual stride rate to the base stride rate; and calculating the actual stride length using N=1 when the actual stride rate is less than or equal to the base stride rate multiplied by 1.02. 4 The pedometer of claim 18, wherein the pedometer is further 16. 25 programmed to perform the steps of:

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comparing the actual stride rate to the base stride rate; and

calculating the actual stride length using N=3 when the actual stride rate is

greater than the base stride rate multiplied by 1.02.

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17. A pedometer comprising:

a step counter;

a transmitter in communication with the step counter to generate a signal corresponding to each step and transmit the signal; and

a receiver mountable on a user body portion to receive the signal transmitted from the transmitter and calculate a distance measured by the step counter, and

a data processor programmed to calculate a distance traveled by multiplying the number of strides taken by a stride length that varies according to the rate at which strides are taken.

No. The pedometer of claim N, wherein the transmitter and the receiver communicate via wireless transmission.

19. The pedometer of claim 17, wherein the transmitter and the receiver

communicate via a wire.

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20. The pedometer of claim 17, wherein the transmission signal is digitally coded.

21. The pedometer of claim 17, where in the transmitter transmits the signal a wireless distance in the range of thirty to thirty-six inches.

The pedometer of claim K, wherein the receiver is mountable on a user's wrist.

The pedometer of claim 17, wherein the receiver processes the step count signal and displays the distance traveled on a viewing screen.

The pedometer of claim N, wherein the step counter is mountable on

a user's leg

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25. The pedometer of claim 17, and further comprising:

a heart rate monitor; and

a second transmitter in communication with the heart rate monitor to transmit
a signal corresponding to a heart rate calculated by the heart rate
monitor to the receiver and display the calculated heart rate.

26. The pedometer of claim 25, wherein the heart rate signal is at a different frequency than the pedometer signal.

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mountable to a user's third body portion.

28. The pedometer of claim 25, wherein the heart rate and the step counter are mounted in a single chest-mount housing.

The pedometer of claim 17, wherein the data processor is programmed to calculate an the distance traveled actual stride length of a user by performing the steps of:

timing a user first run of a predetermined distance;
counting the total number of strides in the user first run;
dividing the first run distance by the stride count to obtain a base stride
length;

The pedometer of claim 25, wherein the heart rate monitor is

dividing the stride count by the first run time to obtain a base stride rate; counting strides in a period of time during a user second run to obtain an actual stride rate;

calculating the actual stride length using the formula:

Actual Stride Length = Base Stride Length + Base Stride Length *(((Actual Stride Rate - Base Stride Rate)N)/Base Stride Rate);

where N is in the range of between 1 and 3.

The pedometer of claim N, wherein the pedometer is further programmed to perform the steps of:

comparing the actual stride rate to the base stride rate; and calculating the actual stride length using N=1 when the actual stride rate is

- less than or equal to the base stride rate multiplied by 1.02.
- M. The pedometer of claim N, wherein the pedometer is further programmed to perform the steps of:

comparing the actual stride rate to the base stride rate; and calculating the actual stride length using N=3 when the actual stride rate is greater than the base stride rate multiplied by 1.02.

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32. A pedometer programmed to calculate an actual stride length of a user by performing the steps of:

timing a user first run of a predetermined distance; counting the total number of strides in the user first run;

dividing the first run distance by the stride count to obtain a base stride length;

dividing the stride count by the first run time to obtain a base stride rate; counting strides in a period of time during a user second run to obtain an actual stride rate;

calculating the actual stride length using the formula:

Actual Stride Length = Base Stride Length + Base Stride Length *(((Actual Stride Rate - Base Stride Rate)N)/Base Stride Rate); where N is in the range of between 1 and 3.

The pedometer of claim 32, wherein the pedometer is further programmed to perform the steps of:

comparing the actual stride rate to the base stride rate; and calculating the actual stride length using N=1 when the actual stride rate is

less than or equal to the base stride rate multiplied by 1.02.

The pedometer of claim 32, wherein the pedometer is further programmed to perform the steps of:

comparing the actual stride rate to the base stride rate; and calculating the actual stride length using N=3 when the actual stride rate is greater than the base stride rate multiplied by 1.02.

35. The pedometer of claim 32, wherein the receiver processes the step count signal and displays the distance traveled on a viewing screen.

36. The pedometer of claim 32, and further comprising a heart rate monitor mounted in a chest-mount housing.

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37. A pedometer programmed to calculate an actual stride length of a user by performing the steps of:

timing a user first run of a predetermined distance;

counting the total number of strides in the user first run;

dividing the first run distance by the stride count to obtain a first run base stride length;

dividing the first run stride count by the first run time to obtain a first run base stride rate;

timing a user second run of a predetermined distance;

counting the total number of strides in the user second run;

dividing the second run distance by the second run stride count to obtain a second base stride length;

dividing the second run stride count by the second run time to obtain a second base stride rate;

timing a user third run of a predetermined distance;

counting the total number of strides in the user third run;

dividing the third run distance by the third run stride count to obtain a third base stride length;

dividing the third run stride count by the third run time to obtain a third run base stride rate;

counting strides in a period of time during a user fourth run to obtain an actual stride rate;

calculating the actual stride length using the formula:

Actual Stride Length = Base Stride Length + Base Stride Length
*(((Actual Stride Rate - Base Stride Rate)N)/Base Stride Rate);
where N is calculated by the formula ((Second Run Stride Length
multiplied by First Run Stride Rate) - (First Run Stride Length
multiplied by First Run Stride Rate)) / (First Run Stride Length
multiplied by (Second Run Stride Rate - First Run Stride Rate)) when
the Actual Stride Rate is greater than the First Run Stride Rate, and
where N is calculated by the formula ((Third Run Stride Length

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multiplied by First Run Stride Rate) - (First Run Stride Length multiplied by First Run Stride Rate)) / (First Run Stride Length multiplied by (Third Run Stride Rate - First Run Stride Rate)) when the Actual Stride Rate is less than or equal to the First Run Stride

Rate.

38. The pedometer of claim 37, wherein:

the first run base stride length is an average stride length calculated from a plurality of test runs; and

the first run base stride rate is an average base stride rate calculated from the

plurality of test runs.

39. The pedometer of claim 37, wherein:

the second run base stride length is an average stride length calculated from a plurality of test runs; and

the second run base stride rate is an average base stride rate calculated from

the plurality of test runs.

40. The pedometer of claim 37, wherein:

the third run base stride-length is an average stride length calculated from a plurality of test runs; and

the third run base stride rate is an average base stride rate calculated from the plurality of test runs.

The pedometer of claim \$7, wherein the second run is at a faster pace than the first walk or run and the third run is at a slower pace than the first walk or run.

42. The pedometer of claim 37, and further comprising:

a data processor mountable on a user body portion to calculate the actual stride length; and

a run data display device in communication with the data processor and

mountable on a user body portion.

The pedometer of claim N, and further comprising a heart rate monitor mounted in a chest-mount housing.

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A method for calculating an actual stride length comprising the steps

timing a first user run of a predetermined distance; counting a total number of strides in the user first run; dividing the first run time by the strue count to obtain a Base Stride Length; dividing the stride count by the first run time to obtain a Base Stride Rate; counting strides in a pre-determined period during a user second run to obtain an Actual Stride Rate;

calculating the actual stride length using the formula:

Actual Stride/Length= Base Stride Length + Base Stride Length *(((Actual/Stride Rate - Base Stride Rate)N)/Base Stride Rate); wherein N is between one and three.

The method of claim A and further comprising the steps of comparing Base Stride Rate to Actual Stride Rate to determine a percentage difference; and using N=1 when the difference is less than two percent and using N=3 when the difference is greater than or equal to two percent.

CONTRACTOR

Docket No.: EPIXINC-4

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: PEDOMETER, the specification of which

[X]	is attached hereto.		
[]	was filed on	as Application No.	and was amended
	on (if app	licable).	

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I do not know and do not believe that the same was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months prior to this application, that I acknowledge my duty to disclose information of which I am aware which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a), and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows: None.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also

identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign App	olication(s)			Clair	
None. (Number)	(Country)	(Day/Month/Year Filed)	[]	[] Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	[]	[] Yes	No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

None.		
(Application Serial Number)	(filing date)	(Statuspatented, pending, abandoned)
(Application Serial Number)	(filing date)	(Statuspatented, pending, abandoned)

And I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to that Customer Number:

Customer Number: 020,455

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole Inventor	Nathan Pyles
Inventor's Signature	
Date	
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Full name of sole Inventor	Chen Shui-Jung
Inventor's Signature	
Date	***************************************
Residence	Taipei, Taiwan
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	Taiwan

PTO/SB/17 (12-97) Approved for use through 09/30/00. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. Complete if Known **FEE TRANSMITTAL** Application Number Filing Date First Named Inventor Pyles, et al. Group Art Unit Note: Effective October 1, 1997, Patent fees are subject to annual revision Examiner Name TOTAL AMOUNT OF PAYMENT Attorney Docket Number \$752.00 EPIXINC-4 METHOD OF PAYMENT (check one) FEE CALCULATION (Continued) The Commissioner is hereby authorized to charge indicated fees and credit any over payments to: 3. ADDITIONAL FEES Large Entity Small Entity 15-0660 Fee (\$) Fee Code Fee Code Fee (\$) Fee Paid Fee Description 105 205 Deposit Account Name 130 65 Surcharge - late filing fee or oath Lathrop & Clark 127 50 227 25 Surcharge - late provisional filing fee or cover sheet Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17 Charge the Issue Fee Set in 37 CFR 1.18 at the Mailing of the Notice of Allowance 139 130 139 130 Non-English specification 2.520 147 147 2.520 For filing a request for reexamination Requesting publication of SIR prior to Examiner action 920* 920* 112 112 2. Payment Enclosed: ⊠^{Check} Requesting publication of SIR after Examiner action Money Order Other 113 1,840* 113 1,840 FEE CALCULATION 110 215 55 115 Extension for reply within first month I. FILING FEE 116 400 216 200 Extension for reply within second I Extension for reply within third Small Entity 217 475 Extension for reply within fourth Fee Description 118 1,510 218 755 Fee month 2,060 1,030 128 228 Extension for reply within fifth month I 101 790 201 395 Utility filing fee 310 219 155 Notice of Appeal 119 106 206 165 Design fliing fee 120 310 220 155 Filing a brief in support of an appeal 107 540 207 270 Plant filing fee 121 270 221 135 Request for oral hearing Petition to institute a public use proceeding 108 208 1,510 H 150 Provisional filing fee 110 240 55 Petition to revive - unavoidable SUBTOTAL (1) 141 1,320 241 660 Petition to revive - unintentional 2. CLAIMS Fee from below Extra Fee Paid 142 1,320 242 660 Utility issue fee (or reissue) = [\$275.00 Total Claims -20= X 11 143 450 243 225 Design Issue fee independent Claims X 41 -3= \$82.00 144 670 244 335 Plant issue fee 122 130 122 130 Petitions to the Commissioner Petitions related to provisional applications 135 Multiple Dependent Claims \$0.00 123 50 123 50 Submission of Information Disclosure Statement 126 240 126 240 Large Entity Small Entity Recording each patent assignment per property (times number of properties) Fee (\$) 581 581 Fee Description 40 40 Fee Code Filing a submission after final rejection (37 CFR 1.129(a)) 103 22 203 Claims in excess of 20 790 395 11 146 246 For each additional invention to be examined (37 CFR 1.129(b)) 102 82 202 41 independent Claims in excess of 3 149 790 395 249 104 270 204 135 Multiple dependent claims Reissue independent claims over 109 82 209 41 Other fee (specify) Reissue claims in excess of 20 and over original patent 210 110 22 11 Other fee (specify) SUBTOTAL (2) \$357,00 *Reduced by Basic Filing Fee Pald SUBTOTAL (3) SUBMITTED BY Complete (if applicable) Jeffry W. 33455 Smith Typed or Printed Name Reg. Number Date Oct. 19, 1998 Signature Deposit Account User ID

PATENT APPLICATION IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Pyles, et al.

Filed:

Simultaneously herewith

For:

Pedometer

Docket No.:

EPIXINC-4

BOX PATENT APPLICATION Assistant Commissioner for Patents Washington, D.C. 20231

> "Express Mail" Mailing Label No.: EM164411845US Date of Deposit: October 28,1998

I hereby certify that these attached documents

- Response postcard
- * Check in the amount of \$752.00
- * PTO/SB/17 (1p) and 1 copy
- * Specification and Claims (19 pages) and informal drawing (1 sheet) and unexecuted Declaration and Power of Attorney (4 pp)
- * PTO/SB/05 (1p)

are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 35 C.F.R. §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

ff W. Smith, Reg. No. 33455)

Enclosed for filing please find the above-referenced new patent application. Please indicate receipt of this application by returning the attached postcard with the official Patent and Trademark Office receipt and serial number stamped thereon.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant

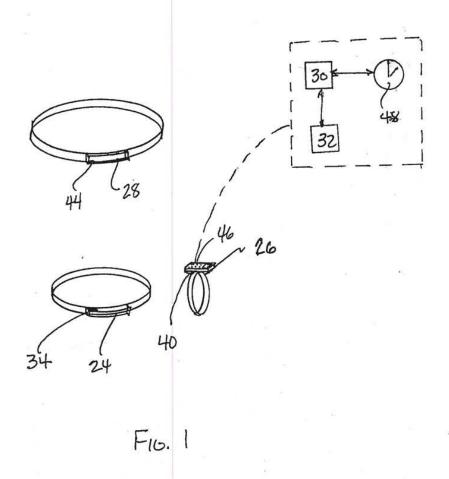
Lathrop & Clark

P.O. Box 1507

Madison, Wisconsin 53701-1507

(608) 257-7766

exprmail.app



1/40



ashington, D.C. 20231 APPLICATION NUMBER

FILING/RECEIPT DATE

ST NAMED APPLICANT

ATTORNEY DOCKET NO./TITLE

09/181.738

10/28/498

020455 LATHROP **GLARK** 122 W WASHINGTON AVENUE P 0 BOX 1507

MADISON WI 53701-1507

2818

DATE MAILED:

11/17/98

NOTICE TO FILE MISSING PARTS OF APPLICATION Filing Date Granted

0242/1117

An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given TWO MONTHS FROM THE DATE OF THIS NOTICE within which to file all required Items and pay fees required below to avoid abancomment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the SURCHARGE set forth in 37 CFR 1.16(e) of \$65.00 for a small entity in compliance with 37 CFR 1.27, or \$130.00 for a non-small entity, must also be timely submitted in reply to this NOTICE to avoid abandonment.

sn	nall entity (statement filed) Inon-small entity is \$ / 40
	. The statutory basic filing fee is: ☐ missing. ☐ 4nsufficient.
	Applicant must submit \$to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).
□ 2.	. Additional claim fees of \$, including any multiple dependent claim fees, are required.
1	\$ for independent claims over 3.
	\$for dependent claims over 20.
	\$for multiple dependent claim surcharge. Applicant must-either submit the additional claim fees or cancel additional claims for which fees are due.
3.	The eath or declaration:
7	is missing or unexecuted.
1	does not cover the newly submitted items.
18	 does not identify the application to which if applies. does not include the city and state or foreign country of applicant's residence.
	An oath or declaration in compliance with 37 CFR 1. 63, including residence information and identifying the application by
	the above Application Number and Filing Date is required.
□ 4.	
	1.43 or 1.47. A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
□ 5.	. The signature of the following joint inventor(s) is missing from the oath or declaration:
2.7	
	An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the orbited inventor(s), identifying this application by the above Application Number and Filing Date, is required.
	. A \$50.00 processing fee is required since your check-was returned without payment (37 CFR 1.21(m)).
	. Your filing receipt was mailed in error because your check was returned without payment,
	. The application does not comply with the Sequence Rules.
	See attached *Notice to Comply with Sequence Rules 37 CFR 1.821-1.825."
⊔ 9.	. OTHER:
Direc	t the reply and any questions about this notice to "Attention, Box Missing Parts."
The state of the s	A copy of this notice MUST be returned with the reply.
1	A copy of this house moon be retained with the reply.

PART 3 - OFFICE COPY

Customer Service Center

Initial Patent Examination Division (703) 308-1202



Patent Application IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Pyles et al.

Date:

May 4, 1999

Date Filed:

October 28, 1998

Docket No.:

EPIXINC-4

Application Number: 09/181,738

Art Unit:

2816

For:

PEDOMETER

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Attention: Box Missing Parts

Assistant Commissioner for Patents,

Washington, D.C. 20231

on May 4, 1999

Date

Signature

Jeffry W. Smith, Reg. No. 33455

Name of applicant, assignee or Registered Representative

TRANSMITTAL OF MISSING PARTS OF APPLICATION UNDER 37 C.F.R. §1.53

Attention: Box Missing Parts
Assistant Commissioner for Patents

Washington, D.C. 20231

Dear Sir:

In response to the Notice of Missing Parts mailed November 17,1998, enclosed are the following items for filing in the above-referenced U.S. Patent application:

1. A Declaration and Power of Attorney, executed by the applicant on March 21,

Applicant: Nathan Pyles Application No.: 09/181,738

Art Unit: 2816

1999; May 3, 1999; and May 3, 1999.

2. Form PTO-1533 Notice to File Missing Parts.

- 3. A check in the amount of \$500.00 to cover the filing fee (37 C.F.R. §1.16(a) et seq.), the surcharge set forth in 37 C.F.R. §1.16(e), and extension of time under 37 CFR 1.136(a).
- 4. Verified Statement Claiming Small Entity Status--Small Business Concern, executed on March 21, 1999.
 - 5. Petition for Extension of Time Under 37 CFR 1.136(a).

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 15-0660. A duplicate copy of this document is enclosed.

Having now complied with all of the requirements of 37 C.F.R. §1.53, applicant respectfully requests that this application be placed upon the files for examination.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant Lathrop & Clark LLP

740 Regent Street, Suite 400

P.O. Box 1507

Madison, Wisconsin 53701-1507

(608) 257-7766

files.htp

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Docket No.: EPIXINC-4

DECLARATION AND POWER OF ATTORNEY

s a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: PEDOMETER, the specification of which

.]	is attached hereto.	
[X]	was filed on October	28, 1998 as Application No. 09/181,738 and
	was amended on	(if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I do not know and do not believe that the same was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months prior to this application, that I acknowledge my duty to disclose information of which I am aware which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a), and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows: None.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also

identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign App	olication(s)	*		Clair	-
None. (Number)	(Country)	(Day/Month/Year Filed)	[]	[] Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	[]	[] Yes	No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

None.		
(Application Serial Number)	(filing date)	(Statuspatented, pending, abandoned)
(Application Serial Number)	(filing date)	(Statuspatented, pending, abandoned)

And I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to that Customer Number:

Customer Number: 020,455

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole Inventor Inventor's Signature Date Residence · Lake Mills, Wisconsin Citizenship United States of America Post Office Address 529 College Street, Lake Mills, Wisconsin 53551 Full name of sole Inventor Joel M. Macht ford M. Mas Inventor's Signature Date Residence Reegeville, Wisconsin Citizenship United States of America Post Office Address 106 North Avenue, Reeceville, Wisconsin 53579 1Full name of sole Inventor

Chen Shui-Jung

Inventor's Signature

Date

Archivery Control Control

Date

Archivery Control

Date

Taiwan

Citizenship

Post Office Address

2 F No. 349, Wu Shin Street, Taipei,

Taiwan

PTO/SB/10 (12-97)
Approved for use through 9/30/00. OMB 0651-0031
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of Information unless it displays a valid OMB control number.

1		
STATEMENT CLAIMING SMALL ENTITY STAT 1.27(c))—SMALL BUSINESS CONCERN	Docket Number (Optional EPIXINC-4	1)
Applicant, Patentee, or Identifier: Nathan Pyles	/	
Application or Patent No.: 09/181,738	MAY 1 0 1999 ©	
Filed or Issued: October 28, 1998 -Title: Pedometer		
Title, Pedometer	Che	_
I hereby state that I am	TRADEMINE SE	
the owner of the small business concern identified be		
an official of the small business concern empowered	to act on benair of the concern identified below.	
NAME OF SMALL BUSINESS CONCERN Epix, Inc.		
ADDRESS OF SMALL BUSINESS CONCERN 621 D East	Lake Street, Lake Mills, Wisconsin 53551	
13 CFR Part 121 for purposes of paying reduced fees to the number of employees of the concern, including those of its statement, (1) the number of employees of the business contents.	affiliates, does not exceed 500 persons. For purposes of this oncern is the average over the previous fiscal year of the or temporary basis during each of the pay periods of the fischer, directly or indirectly, one concern controls or has the	is
I hereby state that rights under contract or law have identified above with regard to the invention described in:	been conveyed to and remain with the small business conce	rn
the specification filed herewith with title as listed above	ve.	
the application identified above.		
☐ the patent identified above.		
organization having rights in the invention must file separat to the invention are held by any person, other than the inve	ess concern are not exclusive, each individual, concern, or te statements as to their status as small entities, and no right entor, who would not qualify as an independent inventor under concern which would not qualify as a small business concern CFR 1.9(e).	er
Each person, concern, or organization having any rig	ghts in the invention is listed below:	
no such person, concern, or organization exists.		
ach such person, concern, or organization is listed b	pelow.	
The second secon		
Separate statements are required from each named stating their status as small entities (37 CFR 1.27).	person, concern or organization having rights to the invention	n
	patent, notification of any change in status resulting in loss of ime of paying, the earliest of the issue fee or any maintenanc o longer appropriate (37 CFR 1.28(b)).	
NAME OF PERSON SIGNING Nathan Pyles		
TITLE OF PERSON IF OTHER THAN OWNER President		_
ADDRESS OF PERSON SIGNING 529 College Street, Lak	te Mills, Wisconsin 53551-1412	_
SIGNATURE CHANT	DATE 3/2/99	
, , , , , ,		

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

PTO/SB/22 (12-97)

Approved for use through 9/30/00. OMB 0651-0031
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of

Information unless it displays a valid OMB control number. Docket Number (Optional) EPIXINC-4 PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) In re Application of Nathan Pyles Application Number 09/181,738 October 28, 1998 For PEDOMETER Group Art Unit 2816 Examiner This is a request under the provisions of 37 CFR 1.136(a) to extend the period of filing a response in the above identified application. The requested extension and appropriate non-small-entity fee are as follows (check time period One month (37 CFR 1.17(a)(1)) Two months (37 CFR 1.17 (a)(2)) Three months (37 CFR 1.17(a)(3)) Four months (37 CFR 1.17(a)(4)) Five months (37 CFR 1.17(a)(5)) Applicant is a small entity under 37 CFR 1.9 and 1.27, therefore the fee amount shown above is reduced by one-half, and the resulting fee is: \$435.00. A small entity statement is enclosed. has already been filed in this application. \boxtimes A check in the amount of the fee is enclosed. The Commissioner has already been authorized to charge fees in this application to a Deposit Account. X The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number <u>15-0660</u>. I have enclosed a duplicate copy of this sheet. I am the assignee of record of the entire interest. applicant. attorney or agent of record. attorney or agent under 37 CFR 1.34(a). Registration number if acting under 37 CFR 1.34(a) Smith, Reg. No Typed or printed name Jeffry W.

PTO/SB/22 (12-97)

Approved for use through 9/30/00. OMB 0651-0031

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 1995

PETITI	ON FOR EXTENSION OF	TIME UNDER 37 CFR 1.136(a)	Docket Number (Optional) EPIXINC-4
1.0	SIPE	In re Application of Nathan Pyles	
	AY 1 0 1999 G	Application Number 09/181,738	Filed October 28, 1998
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		Group Art Unit 2816	Examiner
The red	bove identified application. uested extension and appro):	opriate non-small-entity fee are a	
Ħ	One month (37 CFR 1.17 Two months (37 CFR 1.1		\$
	Three months (37 CFR 1.1	- 1000 March 1000 Marc	\$ <u></u> \$ <u>870.00</u>
	Four months (37 CFR 1.1	200.00.00	\$
	Five months (37 CFR 1.1		\$
Ø		under 37 CFR 1.9 and 1.27, the	refore the fee amount shown
		half, and the resulting fee ls: \$43	
	is enclosed.		
M	has already been file	d In this application.	
	A check in the amount of		
		Iready been authorized to charge	fees in this application to a
	Deposit Account.	2	
×	The Commissioner is here credit any overpayment, to duplicate copy of this she	eby authorized to charge any fees o Deposit Account Number <u>15-0</u> et.	s which may be required, or 0660 . I have enclosed a
I am the	assignee of reco	rd of the entire interest.	
	applicant.		
	attorney or agent	t of record.	
Dell .		t under 37 CFR 1.34(a).	~
	Registra	atlon number if acting under 37 C	FR 1.34(a)
May	, 4, 1999 (Juff W. S. H.	
	<u>Jeff</u> :	ry W. Smith, Req. N Typed or printed name	10. 33455

number.	*****	1	of information unless it displays a valid OMB co
TRANSMITT	ΔΙ	Application Number Filing Date	09/181,738
FORM	~ -	First Named Inventor	October 28, 1998
5		Group Art Unit	Nathan Pyles 2816
9 (To be used for all correspondence a	fter initial filing)	Examiner Name	2010
otal Number of Pages in This Submission	on .	Attorney Docket Number	EPIXINC-4
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Fee Transmittal Form	Assignment (For an App	[1] - [1] -	After Allowance Communication To
Fee Attached	Drawing(s)		Appeal Communication to Board C
Amendment / Response	Licensing-	related Papers	Appeal Communication to Group
After Final		uting Silp (PTO/SB/69) npanylng Petitlon	(Appeal Notice, Brief, Reply Brief) Proprietary Information
Affidavlts/declaration(s)	☐ _{To Convert}	a Provisional Application	Status Letter
Extension of Time Request		ttorney, Revocation	Additional Enclosure(s)
Express Abandonment Request	Terminal D		(Please identify below):
П	Small Entity Statement		
information Disclosure Statement	Request fo	r Refund	
Certified Copy of Priority Document(s)		*	
Response to Missing Parts/ Incomplete Application	Remarks		
Response to Missing Parts Under 37 CFR 1.52 or 1.53		ž	•
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Individual name Signature	Fyw. S	~H	S .
Date Mu	74,1999		
		ICATE OF MAILING with the United States Postal	

PTO/SB/17 (12-97)

Approved for use through 09/30/00. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. Complete if Known Application Number **FEE TRANSMITTAL** 09/181,738 Filing Date October 28, 1998 First Named Inventor Nathan Pyles MAY 1 0 1999 Payent fees are subject to annual revision

AMOUNT OF PAYMENT \$500.00 Group Art Unit 2816 Examiner Name Attorney Docket Number EPIXINC-4 METHOD OF PAYMENT (check one) FEE CALCULATION (Continued) The Commissioner is hereby authorized to charge indicated fees and credit any over payments to: 3. ADDITIONAL FEES Large Entity Small Entity Deposit Account Number 15-0660 Fee Code Fee Paid (\$) Code (\$) 105 130 205 Surcharge - late filing fee or oath \$65.00 Lathrop & Clark Surcharge - late provisional filing fee or cover sheet 127 50 227 25 Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17 Charge the Issue Fee Set In 37 CFR 1.18 at the Mailing of the Notice of Allowance 139 130 139 130 Non-English specification For filing a request for reexamination 147 2,520 147 2,520 Requesting publication of SIR prior to Examiner action 112 920* 112 920* Payment Enclosed: ⊠^{Check} Requesting publication of SIR after Examiner action ☐ Money Order 113 1,840* 113 1,840* FEE CALCULATION 115 110 215 55 Extension for reply within first 1. FILING FEE 380 216 190 Extension for reply within second 116 month \$435.00 Large Entity Small Entity 117 870 217 435 Extension for reply within third Extension for reply within fourth month Fee Description Fee Paid 118 1,360 218 680 Extension for reply within fifth month 128 1850 228 925 101 760 201 380 Utility filing fee 119 300 219 150 Notice of Appeal Filing a brief in support of an appeal 310 206 155 Design filing fee 120 300 220 150 107 480 207 121 260 221 130 240 Plant filing fee Request for oral hearing Petition to institute a public use proceeding Reissue filing fee 208 380 138 1,510 1,510 Provisional filing fee 110 55 Petition to revive - unavoidable SUBTOTAL (1) \$0.00 1,210 605 141 Petition to revive - unintentional 2. CLAIMS Fee from below Fee Paid 1,210 142 242 605 Utility issue fee (or reissue) \$0.00 TO 215 **Total Claims** -20= 11 143 430 243 Design issue fee X 41 \$0.00 Independent Claims -3= 0 144 580 244 290 Plant Issue fee 122 130 122 130 Petitions to the Commissioner Multiple Dependent Claims 135 \$0.00 Petitions related to provisional 123 50 123 50 applications Submission of Information Disclosure Statement 126 240 126 240 Large Entity Small Entity Recording each patent assignment per property (times number of properties) Fee Description 581 40 581 40 Flling a submission after fina rejection (37 CFR 1:129(a)) 103 18 203 Claims in excess of 20 146 760 246 380 For each additional invention to be examined (37 CFR 1.129(b)) 102 78 202 39 independent Claims in excess of 3 149 760 249 380 104 260 204 130 Multiple dependent claims Reissue independent claims over 109 78 209 39 Other fee (specify) Relssue claims in excess of 20 and over original patent SUBTOTAL (2) \$0.00 110 18 210 Other fee (specify) \$500.00 *Reduced by Basic Filing Fee Paid SUBTOTAL (3) SUBMITTED BY Complete (if applicable) Typed or Printed Name Jeffry W. Smith 33455 Reg. Number Signature May 4, 1999 Deposit Account User ID

UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Weshington, D.C. 20231 FIRST NAMED APPLICANT ATTORNEY DOCKET NO TITLE 10/28/98 09/181.738 - Illissing Parts Due 020455 LATHROP CLARK NOT ASSIGNED 122 W WASHINGTON AVENUE P O BOX 1507 MADISON WI 53701-1507 DATE MAILED: 11/17/98 NOTICE TO FILE MISSING PARTS OF APPLICATION Filing Date Granted An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given TWO MONTHS FROM THE DATE OF THIS NOTICE within which to file all required items and pay fees required below to avoid bandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the SURCHARGE set forth in 37 CFR 1.16(e) of ☐ \$65.00 for a small entity in compliance with 37 CFR 1.27, or ☐ \$130.00 for a non-small entity, must also be timely submitted in reply to this NOTICE to avoid abandonment. If all required items on this form are filed within the period set above, the total amount owed by applicant as a
□ small entity (statement filed) ☑ non-small entity is \$ / ☐ 1. The statutory basic filing fee is: ☐ missing.
☐ insufficient. Applicant must submit \$___such status (37 CFR 1.27). to complete the basic filing fee and/or file a small entity statement claiming □ 2. Additional claim fees of \$. , including any multiple dependent claim fees, are required. independent claims over 3. dependent claims over 20. for multiple dependent claim surcharge.

Applicant must either submit the additional claim fees or cancel additional claims for which fees are due. The oath or declaration: The cath or preciaration:

is missing or unexecuted.

does not icover the newly submitted items.

does not identify the application to which it applies.

does not include the city and state or foreign country of applicant's residence.

An oath or declaration in compliance with 37 CFR 1. 63, including residence information and identifying the application by the above Application-Number and Filling Date is required. 4. The signature(s) to the path or declaration is/are by a person other than inventor or person qualified under 37 CFR 1.42, 1.43 br 1.47. A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required. ☐ 5. The signature of the following joint inventor(s) is missing from the oath or declaration: An oath of declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.

6. A \$50.00 processing fee is required since your check was returned without payment (37 CFR 1.21(m)). 7. Your filing receipt was mailed in error because your check was returned without payment.
 8. The application does not comply with the Sequence Rules. See attached "Notice to Comply with Sequence Rules 37 CFR 1,821-1.825." Direct the reply and any questions about this notice to "Attention: Box Missing Parts A copy of this notice MUST be returned with the reply. Customer Service Center Initial Patent Examination Division (703) 308-1202 FC:205 PART 2 - COPY TO BE RETURNED WITH RESPONSE FORM PTO-1533 (REV.9 97)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Pyles, et al.

Date:

February 16, 1999

Filed:

October 28, 1998

Docket No.: EPIXINC-4

Application No.: 09/181,738

Art Unit:

2816

For:

PEDOMETER

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231

Signature

Smith, Reg. No. 33455

Name of applicant, assignee or Registered Representative

INFORMATION DISCLOSURE STATEMENT

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GROUP 2100

Dear Sir:

Assistant Commissioner for Patents

Washington, D.C. 20231

In accordance with 37 C.F.R. §1.56, applicant wishes to call the attention of the Examiner to the following documents:

United States Patents

	and the second second	
U.S. Patent No.	Issue Date	<u>Patentee</u>
4,053,755	10-11-1977	Sherrill
4,223,211	09-16-1980	Allsen et al.
4,334,190	06-08-1982	Sochaczevski
4,337,529	06-29-1982	Morokawa
4,371,945	02-01-1983	Karr et al.
4,510,704	04-16-1985	Johnson
4,651,446	03-24-1987	Yukawa et al.
4,741,001	04-26-1988	Ma
4,771,394	09-13-1988	Cavanagh
4,855,942	08-08-1989	Bianco
5,117,444	05-26-1992	Sutton et al.
5,475,725	12-12-1995	Nakamura
5,476,427	12-19-1995	Fujima
5,490,816	02-13-1996	Sakumoto
5,516,334	05-14-1996	Easton
5,526,290	06-11-1996	Kanzaki

Copies of these documents are submitted herewith along with Form PTO-SB/08A.

Applicant respectfully requests that these documents be expressly considered during the prosecution of this application and made of record herein and appear among the "documents cited" on any patent to issue herefrom.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant Lathrop & Clark LLP

740 Regent Street, Suite 400

P. O. Box 1507

Madison, Wisconsin 53701 (608) 257-7766

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FEB 2 2 1999

GROUP 2100

ids.app

PTO/SB/08A (10-96) oved for use through 10/31/99. OMB 0651-0031

oved for use through 10/31/99. OMB 0651-0031 Please type a plus sign (+) inside this box \rightarrow \hbar Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control plumb Application Number Substitute for form 1449A/PTO 09/181.738 October 28, 1998 INFORMATION DISCLOSURE First Named Inventor Nathan Pyles STATEMENT BY APPLICANT Group Art Unit (Use as many sheets as necessary) **Examiner Name** Wambach Sheet Of Attorney Docket Number **EPIXINC-4** U.S. PATENT DOCUMENTS Cite No.1 Name of Patentee or Applicant of Cited Pages, Columns, Lines, Where Relevant Passages or Relevant Examiner U.S. Patent Document Date of Publication of Cited Document Document MM-DD-YYYY Figures Appear (If known) MRW 10-11-1977 4,053,755 Sherrill 4,223,211 Alisen et al. 09-16-1980 06-08-1982 4,337,529 Morokawa 06-29-1982 4,371,945 Karr et al. 02-01-1983 4,510,704 Johnson 04-16-1985 4,651,446 Yukawa et al 03-24-1987 4,741,001 Ma 04-26-1988 Cavanagh 4,771,394 09-13-1988 Bianco 4,855,942 08-08-1989 5,117,444 Sutton et al 05-26-1992 ساجات Nakamura mu 5,476,427 Fujima 12-19-1995 02-13-1996 m 5,490,816 Sakumoto 05-14-1996 5,516,334 Easton ML FOREIGN PATENT DOCUMENTS Foreign Patent Document Name of Pate Date of Publication of Pages, Columns, Lines, Cite No.1 Where Relevant Passages Examiner Office³ Number⁴ Kind Code5 Applicant of C Cited Document initials* Document MM-DD-YYYY T⁶ (If known) FEB 2.2 1999 1/24/68011P 2100 Mar Considered Signature EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not

¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WiPO Standard St.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WiPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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¥ ,	number.		Application Number		09/181,738
100	TRANSMITT	AL	Filing Date		October 28, 1998
LOILE	FORM		First Named Inventor	r	Nathan Pyles
FEB 1 8 1999	(To be used for all correspondence	after initial filing)	Group Art Unit		2816
3			Examiner Name		1.1
TRADEMARK	Total Number of Pages in This Submissi	on	Attorney Docket Number		EPIXINC-4
	Fee Transmittal Form Fee Attached Amendment / Response After Final Affidavits/declaration(s) Extension of Time Request Express Abandonment Request Information Disciosure Statement	Petition Ro And Accord To Convert Power of A Change of C	related Papers related Papers ruting Silp (PTO/SB/69) npanying Petition ta Provisional Application ttorney, Revocation Correspondence Address riscialmer y Statement		After Allowance Communication To Group Appeal Communication to Board Of Appeals and Interferences Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) Proprietary Information Status Letter Additional Enciosure(s) (Please Identify below):
			fees that may be recorded any overpayment of the control of the co	quired w ent, to D	y authorized to charge any additional ith respect to this communication, or Deposit Account No. 15-0660. RECEIVED FEB 2 2 1999 55 GROUP 2109
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	I hereby certify that this correspondence i class mail in an envelope addressed to: A this date:	s being deposited v ssistant Commission	with the United States Postal oner for Patents, Washingtor	Service n, D.C. 2	as first 20231 on
	Typed or printed name	Jeffrv	W. Smith, Reg	. No	. 33455
×	Signature CHT	703	~	Dat	
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PTO/SB/21 (12-97) proved for use through 9/30/00, OMB 0651-0031 k Office: U.S. DEPARTMENT OF COMMERCE aformation unless it displays a valid OMB control 09/181,738 **Application Number** TRANSMITTAL Filing Date October 28, 1998 FEB 1 8 1999 **FORM** First Named Inventor Nathan Pyles Group Art Unit 2816 o be used for all correspondence after initial filing) Examiner Name Total Number of Pages in This Submission **Attorney Docket Number** EPIXINC-4 Fee Transmittal Form Assignment Papers After Allowance Communication To (For an Application) Group Drawing(s) Appeal Communication to Board Of Appeals and Interferences Amendment / Response Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) Petition Routing Silp (PTO/SB/69) And Accompanying Petition Proprietary Information Affidavits/declaration(s) To Convert a Provisional Application Extension of Time Request Power of Attorney, Revocation Additional Enclosure(s) Change of Correspondence Address (Please identify below): Terminal Disclaimer Express Abandonment Request Small Entity Statement PTO-SB08A with 16 references information Disclosure Statement Certified Copy of Priority Document(s) Remarks The Commissioner is hereby authorized to charge any additional fees that may be required with respect to this communication, or credit any overpayment, to Deposit Account No. 15-0660. Response to Missing Parts/ incomplete Application Response to Missing Parts Under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT CITY Jeffry W. Smith, Reg. No. 33455 or Individual name FEB 2 2 1999 Signature POUP 2100 Date CERTIFICATE OF MAILING I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mall in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on Typed or printed name Jeffry W. Smith, Reg. No. 33455 Signature Date



PATENT APPLICATION

#55/ 1-9-00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Pyles, et al.

Date:

December 17, 1999

Filed:

October 28, 1998

Docket No.:

EPIXINC-4

Application No.:

09/181,738

Art Unit:

2816

For:

PEDOMETER

Examiner:

Certificate of Mailing

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Dat

Date

ionature

Jeffry W. Smith, Reg. No. 33455

Name of applicant, assignee or Registered Representative

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DEC 23 1999

ECHNOLOGY CENTER 2800

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Washington, D.C. 20231

Assistant Commissioner for Patents

Dear Sir:

In accordance with 37 C.F.R. §1.56, Applicants wish to call the attention of the Examiner to the following document:



U.S. Patent No.

Issue Date

5,583,776

12-10-1996

Patentee

Levi et al.

A copy of this document is submitted herewith along with Form PTO/SB08A.

It is believed that no fee is owed for this disclosure under 37 C.F.R. 1.97(b)(3), because Applicants have not received and are not aware of a mailed office action on the merits.

If an action was mailed prior to the filing date hereof, the information disclosed herein is submitted after the mailing of a first office action and before the mailing of a final action. Thus, Applicants note, under 37 C.F.R. §1.97(e)(2), that no item of information disclosed herein was cited by a foreign patent office in a counterpart application, and to the knowledge of the undersigned after making a reasonable inquiry, no item of information contained herein was known to any individual designated in §1.56(c) more than three months prior to the filing of this information disclosure statement. Thus, it is believed no fee is owed for this filing. Nonetheless, if a fee is owed, the Office is hereby authorized to charge Account No. 15-0660. A duplicate copy of this document is enclosed.

Applicants respectfully request that this document be expressly considered during the prosecution of this application and made of record herein and appear among the "documents cited" on any patent to issue herefrom.

Respectfully submitted,

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DEC 23 1999

TECHNOLOGY CENTER 2800

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant Lathrop & Clark LLP

740 Regent Street, Suite 400

P. O. Box 1507

Madison, Wisconsin 53701

(608) 257-7766

ids2.app



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Pyles, et al.

Date:

December 17, 1999

Filed:

October 28, 1998

Docket No.:

EPIXINC-4

Application No.:

09/181,738

Art Unit:

2816

For:

PEDOMETER

Examiner:

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231

December 1

Date

Signature

Jeffry W. Smith, Reg. No. 33455

Name of applicant, assignee or Registered Representative

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

RECEIVED

DEC 23 1999

TECHNOLOGY CENTER 2800

Dear Sir:

Assistant Commissioner for Patents

Washington, D.C. 20231

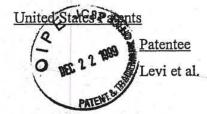
In accordance with 37 C.F.R. §1.56, Applicants wish to call the attention of the Examiner to the following document:

U.S. Patent No.

Issue Date

5,583,776

12-10-1996



A copy of this document is submitted herewith along with Form PTO/SB08A.

It is believed that no fee is owed for this disclosure under 37 C.F.R. 1.97(b)(3), because Applicants have not received and are not aware of a mailed office action on the merits.

If an action was mailed prior to the filing date hereof, the information disclosed herein is submitted after the mailing of a first office action and before the mailing of a final action. Thus, Applicants note, under 37 C.F.R. §1.97(e)(2), that no item of information disclosed herein was cited by a foreign patent office in a counterpart application, and to the knowledge of the undersigned after making a reasonable inquiry, no item of information contained herein was known to any individual designated in §1.56(c) more than three months prior to the filing of this information disclosure statement. Thus, it is believed no fee is owed for this filing. Nonetheless, if a fee is owed, the Office is hereby authorized to charge Account No. 15-0660. A duplicate copy of this document is enclosed.

Applicants respectfully request that this document be expressly considered during the prosecution of this application and made of record herein and appear among the "documents cited" on any patent to issue herefrom.

Respectfully submitted,

RECEIVED

DEC 23 1999

TECHNOLOGY CENTER 2800

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant Lathrop & Clark LLP

740 Regent Street, Suite 400

P. O. Box 1507

Madison, Wisconsin 53701

(608) 257-7766

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use through 10/31/99. OMB 0651-0031 Approv. Please type a plus sign (+) inside this box ightarrow ightharpoonupPatent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are re spond to a collection of information unless it displays a valid OMB control Substitute for form 1449A/PTO Filing Date October 28, 1998 INFORMATION DISCLOSURE First Named Inventor Nathan Pyles STATEMENT BY APPLICANT 2816 Group Art Unit (Use as many sheets as necessary) Sheet Of Attorney Docket Number U.S. PATENT DOCUMENTS Name of Patentee or Date of Publication Examiner Initials* Pages, Columns, Lines. Cite U.S. Patent Document

Kind Code²

(If known)

Applicant of Cited

Document

No.1

5,583,776

Man

14		FORE	EIGN PATENT DOCUMEN	NT,S ^{rr}	3.00	
Examiner Initials*	Cite No.1	Foreign Patent Document Office ³ Number ⁴ Kind Code ⁵ (If known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that Issued the document, by the two-letter code (WIPO Standard St.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. ¹⁶ if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

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of Cited Document MM-DD-YYYY

Where Relevant Passages or

Relevant Figures Appear

PTO/SB/21 (12-97)
for use through 9/30/00. OMB 0651-0031
altroffice: U.S. DEPARTMENT OF COMMERCE Please type a plus sign (+) inside this Dear # # Under the Paperwork Reduction Act of 1995, no persons are re Application Number 09/181,738 TRANSMITTAL Filing Date October 28, **FORM** First Named Inventor Nathan Pyles Group Art Unit (To be used for all correspondence after initial filing) 2816 Examiner Name Total Number of Pages in This Submission Attorney Docket Number EPIXINC-4 Fee Transmittal Form Assignment Papers After Allowance Communication (For an Application) Drawing(s) Appeal Communication to Board Licensing-related Papers Appeals and Interferences Petition Routing Slip (PTO/SB/69) Appeal Communication to Group After Final (Appeal Notice, Brief, Reply Brief) And Accompanying Petition Proprietary Information To Convert a Provisional Application Affidavits/declaration(s) Status Letter Power of Attorney, Revocation Extension of Time Request Change of Correspondence Address Additional Enclosure(s) Terminal Disclaimer (Please identify below): Express Abandonment Request Small Entity Statement PTO/SB08A with 1 document information Disclosure Request for Refund RECEIVED DEC 2 3 1999 Certified Copy of Priority TECHNOLOGY CENTER 2800 Document(s) The Commissioner is hereby authorized to charge any additional fees that may be required with respect to this communication, or credit any overpayment, to Deposit Account No. 15-0660. Remarks Response to Missing Parts/ Incomplete Application Response to Missing Parts Under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Jeffry W. Smith, Reg. No. 33455 or Individual name Signature CERTIFICATE OF MAILING I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date: Smith, Reg. Typed or printed name Jeffry W. No. Signature



UNITED ES DEPARTMENT OF COMMERCE Patent and Trademark Office

Idress: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMI	ED INVENTOR		ATTORNEY DOCKET NO.
09/181,738	10/28/98	PYLES		N	EPIXINC-4
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)

U.S. G.P.O. 1999 480-893

1- File Copy

	Application No. 09/181,738	Applicant(Pyles	
Office Action Summary	Examiner Margaret Wa	mbach	Group Art Unit 2816	
Responsive to communication(s) filed on		-		•
☐ This action is FINAL.				
Since this application is in condition for allowance in accordance with the practice under Ex parte Que				rits is closed
A shortened statutory period for response to this actions longer, from the mailing date of this communication application to become abandoned. (35 U.S.C. § 133) 37 CFR 1.136(a).	. Failure to respond wit	hin the perio	od for response v	will cause the
Disposition of Claims				
		is/are	pending in the a	application.
Of the above, claim(s)		is/are v	withdrawn from (consideration.
☐ Claim(s)			is/are allowed.	
			is/are rejected.	
Claim(s)				o.
☐ Claims	are subje	ect to restric	tion or election r	equirement.
Application Papers See the attached Notice of Draftsperson's Pater The drawing(s) filed on is/ The proposed drawing correction, filed on	are objected to by the E	xaminer.	⊏disapproved.	2.
 ☑ See the attached Notice of Draftsperson's Pater ☐ The drawing(s) filed on is/ ☐ The proposed drawing correction, filed on ☐ The specification is objected to by the Examiner 	are objected to by the E	xaminer.	⊏disapproved.	
 ✓ See the attached Notice of Draftsperson's Pater ☐ The drawing(s) filed on is/ ☐ The proposed drawing correction, filed on ☐ The specification is objected to by the Examiner ☐ The oath or declaration is objected to by the Exercipity under 35 U.S.C. § 119 	are objected to by the E is is .	xaminer.		
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Application/Control Number: 09/181738 Page 2

Art Unit: 2816

DETAILED ACTION

Claim Rejections - 35 USC § 112

- 1. The following is a quotation of the second paragraph of 35 U.S.C. 112:
 - The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 2. Claims 1-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with terms which lack a clear antecedent basis. Numerous instances of this problem will be specifically pointed out; however, applicant is required to proofread and correct all instances.

In claims 4, 20"the transmission signal", in claim 7, 23 "the step count signal", in claims 10, 26, "the heart rate signal" and "the pedometer signal", in claims 12, 28, "the heart rate" and "the step counter", in claim 17, "the number of strides" and "the rate", claim 32, "the total number of strides", "the stride count" and "the first run time", claim 35, "the receiver", "the step count signal" and "the distance", claim 37, "the total number of strides", "the first run distance", "the stride count" "the first run stride count", "the first run time" and "the First Run Stride Rate" (all of the problems of claim 37 are repeated with regard to the second - fourth run), and claim 44, "the user first run", "the first run time" and "the stride count" lack a clear antecedent basis.

TomTom Exhibit 1010, Page 61 of 128

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Page 3

Art Unit: 2816

Also in claim 12, applicant's intended meaning cannot be discerned from the references of "the heart rate" which is located in a housing.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- 4. Claims 1, 3, 4, 6, 7, 9, 10 and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by Sham et al..

Sham teaches a pedometer including a step counter (32), a transmitter (the wiring between 32 and 34) which transmits a digitally coded step signal, and a receiver (30), referring to Figure 3. It is inherent that the receiver is "mountable" to a second body portion insofar as the term itself only means that it is possible to mount the receiver elsewhere. Secondly, the term "body portion" is so broad that the limitation is met merely by having the receiver and transmitter at different locations within the same housing (therefor affixed to different body portions.)

Moreover, Sham discloses a wrist watch arrangement on column 3, lines 43-45 as recited in claim 6. Sham discloses a processor and viewing screen (34 and 18) as recited in claim 7. As recited in claim 9, a heart rate monitor and a second transmitter (10 and 31) are also taught.

Insofar as the heart rate signal is a wireless signal and the pedometer signal, assuming applicant

Page 4

Application/Control Number: 09/181738

Art Unit: 2816

means the signal from the step counter, is from a wire, these signals would inherently be of different frequencies, as recited in claim 10. The heart rate monitor is mounted to the user's chest and thus, claim 11 is also met.

Claim Rejections - 35 USC § 103

- 5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 6. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sham et al..

The difference between Sham and claims 2 and 8 lies in the substitution of a wireless transmitter for a wire and a leg band for an arm or waist band. The first difference is not of patentable merit because the use of wireless transmitters is widespread in the art. Insofar as Sham does in fact employ a wireless transmitter for the heart monitor, and Sham would have the motivation of reducing the weight of box 14 by locating the step counter at a remote location, the motivation exists to employ that a wireless transmitter for the step counter. In terms of the leg band, it is merely commonsensical that anything which could be strapped to an arm or waist could also be strapped to a leg. In fact, Sham clearly wishes to leave the designer the latitude to make

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Page 5

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such decisions because of the statement on column 3, line 44 that the device could be secured "in other ways."

Allowable Subject Matter

- 7. Claims 5, 12-16, 18-31, 33-36, 38-43 and 45 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
- 8. Claims 17, 32, 37 and 44 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Wambach whose telephone number is (703) 308-4875. The examiner can normally be reached on Monday-Thursday from 6:30 to 5p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (703) 308-4876. The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Mayarthan

Margaret R. Warnbach Primary Examiner

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Form PTO 948 (Rev. 8-98)

U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office

Application No. 9 481238

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

	B. objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reas submission of new, corrected drawings when necessary. Corrected drawing must	t be sumitted according to the instructions on the back of this notice.
1.	DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: 411-11.83 - 8. Black ink. Color. Color drawings are not acceptable until petiton is granted.	ARRANGEMENT OF VIEWS. 37 CFR 1.84(i) Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top
2.	Fig(s) Pencil and non black ink not permitted. Fig(s) 9. PHOTOGRAPHS. 37 CFR 1.84 (b) 1 full-tone set is required. Fig(s)	becomes the right side, except for graphs. Fig(s) SCALE. 37 CFR 1.84(k) Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in
	Photographs not properly mounted (must use brystol board or photographic double-weight paper). Fig(s)	reproduction. Fig(s) CHARACTER OF LINES, NUMBERS, & LETTERS.
3.	TYPE OF PAPER. 37 CFR 1.84(e) Paper not flexible, strong, white, and durable. Fig(s)	27 CPR 1.84(i) Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (poor line quality).
	Erasures, alterations, overwritings, interlineations, folds, copy machine marks not accepted. Fig(s) Mylar, velum paper is not acceptable (too thin). Fig(s)	Fig(s) SHADING. 37 CFR 1.84(m) Solid black areas pale. Fig(s) Solid black shading not permitted. Fig(s)
1.	SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes: 21.0 cm by 29.7 cm (DIN size A4) 21.6 cm by 27.9 cm (8 1/2 x 11 inches)	NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)
	All drawing sheets not the same size. Sheet(s) Drawings sheets not an acceptable size. Fig(s) MARGINS. 37 CFR 1.84(g): Acceptable margins:	Numbers and reference characters not plain and legible. Fig(s) Figure legends are poor. Fig(s) Numbers and reference characters not oriented in the
*	Top 2.5 cm Left 2.5cm Right 1.5 cm Bottom 1.0 cm SIZE: A4 Size	same direction as the view. 37 CFR 1.84(p)(1) Fig(s) English alphabet not used. 37 CFR 1.84(p)(2)
	Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: 8 1/2 x 11 Margins not acceptable. Fig(s) Top (T) Left (L)	FigsNumbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3)
	lop(1)Len(L)	LEAD LINES. 37 CFR 1.84(q) Lead lines cross each other. Fig(s) Lead lines missing. Fig(s)
	Partial views. 37 CFR 1.84(h)(2) Brackets needed to show figure as one entity.	NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t) Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Sheet(s)
	Views not labeled separately or properly. Fig(s)	i. NUMBERING OF VIEWS. 37 CFR 1.84(u) Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) CORRECTIONS. 37 CFR 1.84(w)
	Fig(s) SECTIONAL VIEWS. 37 CFR 1.84 (h)(3)	Corrections not made from prior PTO-948 dated DESIGN DRAWINGS. 37 CFR 1.152
	Fig(s) Sectional designation should be noted with Arabic or Roman numbers. Fig(s)	Surface shading shown not appropriate. Fig(s) Solid black shading not used for color contrast. Fig(s)
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Pyles et a

Filed:

Application No.:

PEDOMETER

For:

Date:

March 15, 2000

Docket No.:

EPIXINC-4

Art Unit:

2816

Examiner:

M. Wambach

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231

Date

Signature Jeffry W. Smith, Reg. No. 33455

Name of applicant, assignee or Registered Representative

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sir:

In accordance with 37 C.F.R. §1.56, applicant wishes to call the attention of the Examiner to the following documents:

Other Documents

SPORTSLINE PRODUCTS, "Fitness Pedometer 360", web page, 1pg. SPORTSLINE PRODUCTS, Fitness Pedometer 360 packaging labels, 5 pgs.

Copies of these documents are submitted herewith along with Form PTO/SB08B.

Applicant respectfully requests that these documents be expressly considered during the prosecution of this application and made of record herein and appear among the "documents cited" on any patent to issue herefrom.

This disclosure is being made pursuant to 37 C.F.R. §1.97(c)(2) and is accompanied by the fee set forth in 37 C.F.R. §1.17(p). If this fee is deficient in any manner, please charge Account No. 15-0660. A duplicate of this paper is filed herewith.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant Lathrop & Clark LLP

740 Regent Street, Suite 400

P. O. Box 1507

Madison, Wisconsin 53701

(608) 257-7766

ids3.app

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Pyles et al.

JC3-Date:

March 15, 2000

Filed:

October 28, 19

Decket No.:

EPIXINC-4

Application No.:

09/181,738

Art Unit:

2816

For:

PEDOMETER

Examiner:

M. Wambach

Certificate of Mailing

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mach 15,20

Date

V Signature

Jeffry W. Smith, Reg. No. 33455

Name of applicant, assignee or Registered Representative

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Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant

Lathrop & Clark LLP 740 Regent Street, Suite 400

P. O. Box 1507

Madison, Wisconsin 53701

(608) 257-7766

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Substitute for form 1449B/PTO INFORMATION DISCLOSURE				Application Number	09/181,738
				Filing Date	October 28, 1998
	Francisco de la Carte de Carte			First Named Inventor	Nathan Pyles
SIA	AIEMEN	IBYAF	PLICANT	Group Art Unit	2816
	(Use as many sheets as necessary)			Examiner Name	M. Wambach
Sheet	1	Of	1	Attorney Docket Number	EPIXINC-4

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				
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Examiner Signature		Wambach Date Considered 6/20/00				

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FORM		Group Art Unit	2816
		Examiner Name	M. Wambach
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Fee Transmittal Form	Assignment (For an Appl		After Allowance Communication To
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Extension of Time Request		torney, Revocation	Additional Enclosure(s)
Express Abandonment Request	Terminal Di	sclaimer	(Please identify below):
Information Disclosure Statement	Small Entity		PTO/SB 08b with 2 documents
Certified Copy of Priority Document(s)			7
Response to Missing Parts/ Incomplete Application	Remarks		
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Firm or Individual name	y W. Smith, Re	g. No. 33455	V_100000000
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PTO/SB/17 (12-97) Approved for use through 09/30/00. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE respond to a collection of information unless it displays a valid OMB control Under the Paperwork Reduction Act of 1995, no persons are required hiber. Complete if Known MAR 21 2000 FEE TRANSMITTAL 09/181,738 Application Number Forg Date October 28, 1998 st Named Inventor Nathan Pyles Note: Effective October 1, 1997,
Patent fees are subject to annual reason
TOTAL AMOUNT OF PAYMENT \$240.00 Group Art Unit 2816 M. Wambach Examiner Name EPIXINC-4 Attorney Docket Number METHOD OF PAYMENT (check one) FEE CALCULATION (Continued) The Commissioner is hereby authorized to charge indicated fees and credit any over payments to: 3. ADDITIONAL FEES Large Entity Small Entity Deposit Account Number 15-0660 Fee Description Fee Paid (\$) 105 130 205 65 Surcharge - late filing fee or oath Deposit Account Name Lathrop & Clark Surcharge - late provisional filing fee or cover sheet 127 50 227 25 Charge Any Additional Fee Required Under 37 CFR 1.16 and Charge the Issue Fee Set in 37 CFR 1.18 at the Mailing of the 139 130 Non-English specification 2,520 147 2,520 For filing a request for reexamination Requesting publication of SIR prior to Examiner action 112 920* 112 920* Payment Enclosed: ⊠^{Check} 1,840* FEE CALCULATION 110 215 115 55 Extension for reply within first month 1. FILING FEE Extension for reply within second 190 116 380 216 month Large Entity Small Entity 117 870 217 435 Extension for reply within third month 1,360 Fee Paid Fee Fee Description 118 218 680 Extension for reply within fourth 128 1850 228 925 Extension for reply within fifth month 101 690 201 345 Utility filing fee 119 300 219 150 Notice of Appeal 106 310 206 155 Design filing fee 120 300 220 150 Filing a brief in support of an appeal 107 480 207 240 Plant filing fee 121 260 221 130 Request for oral hearing Petition to Institute a public use proceeding 108 760 208 380 Reissue filing fee 138 1,510 138 1,510 150 140 110 55 SUBTOTAL (1) 1,210 605 241 Petition to revive - unintentional Fee from below 2. CLAIMS Extra Fee Paid 142 1,210 242 605 Utility issue fee (or reissue) Total Claims -20= X 11 \$0.00 143 430 243 215 Design issue fee Independent Claims -3= 0 41 \$0.00 144 580 244 290 122 130 122 130 Petitions to the Commissioner Petitions related to provisional applications Multiple Dependent Claims 135 \$0.00 123 50 50 123 \$240.00 Large Entity Small Entity Fee Description 40 40 Fee Code 581 581 Recording each patent assignment per property (times number of properties) 103 18 203 9 Claims in excess of 20 146 760 246 380 Filing a submission after final rejection (37 CFR 1.129(a)) For each additional invention to be examined (37 CFR 1.129(b)) 102 78 202 39 149 760 Independent Claims in excess of 3 249 104 204 260 130 Multiple dependent claims 109 Reissue Independent claims over Other fee (specify) original patent Reissue claims in excess of 20 and over original patent 18 Other fee (specify) SUBTOTAL (2) \$0.00 *Reduced by Basic Filing Fee Paid SUBTOTAL (3) \$240.00 SUBMITTED BY Complete (if-applicable) Typed or Printed Name Jeffry W. Smith 33455 Reg. Number Vardy 15 2000 Deposit Account User ID

March 15, 2000 Pyles et al. Date: October 28, 1998 Docket No.: 2816 09/181,738 Art Unit: Examiner: M. Wambach PEDOMETER. Certificate of Mailing I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box Non-Fee Amendment, 'Assistant Commissioner for Patents, Washington, D.C. 20231

In The United States Patent And Trademark Office

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Applicant:

Date Filed:

App. No.:

For:

09181738

Jeffry W. Smith, Reg. No. 33455

Name of applicant, assignee or Registered Representative

Amendment

BOX NON-FEE AMENDMENT Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sir:

This is in response to a January 28, 2000 Official Action. In view of the following amendments and remarks reconsideration and allowance of the application are requested.

In the Claims

Please cancel claims 1, 2, 3, 4, 7, 8, 9, 10, and 11 without prejudice.

Please amend the following claims as indicated.

5. (Amended.) A pedometer comprisin

dy portion; a step counter mountable on a user fi

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Application No.: 09/181,738

Art Unit: 2816

a transmitter in communication with the step counter to generate a signal corresponding to each step and transmit the signal; and

a receiver mountable on a user second body portion to receive the signal transmitted from the transmitter and use the signal to calculate a distance traveled [The pedometer of claim 1], wherein the transmitter transmits the signal a wireless

distance in the range of [thirty] zero to thirty-fix inches.

6. (Amended.) A pedometer comprisi

a step counter mountable on a user first body portion;

a transmitter in communication with the step counter to generate a signal

corresponding to each step and transmit the signal; and

a receiver mountable on a user sedond body portion to receive the signal transmitted

from the transmitter and use the signal to calculate a distance traveled

[The pedometer of claim 1], wherein the receiver is mountable on a user's wrist.

2. (Amended.) A pedometer comprising:

a step counter mountable on a user first body portion;

a transmitter in communication with the step counter to generate a signal corresponding to each step and transmit the signal;

a receiver mountable on a user second body portion to receive the signal transmitted from the transmitter and use the signal to calculate a distance traveled;

a heart rate monitor; and

a second transmitter in communication with the heart rate monitor to transmit a signal corresponding to/a heart rate monitored by the heart rate monitor to the receiver and display the calculated heart rate

[The pedometer of claim 9], wherein the heart rate monitor and the [step counter]

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transmitter are mounted in a single chest-mount housing.

13. (Amended.) A pedometer comprising:

a step counter mountable on a user first body portion:

a transmitter in communication with the step counter to generate a signal

corresponding to each step and transmit the signal; and

a receiver mountable on a user second body portion to receive the signal transmitted

from the transmitter and use the signal to calculate a distance traveled

[The pedometer of claim 1], wherein the pedometer includes a data processor programmed to calculate [a] the distance traveled by multiplying the number of strides taken by a stride length that varies according to [the] a rate at which strides are taken.

a3 12

17. (Amended.) A pedometer comprising:

a step counter;

a transmitter in communication with the step counter to generate a <u>step count</u> signal corresponding to each step and transmit the <u>step count</u> signal; and

a receiver mountable on a user ody portion to receive the step count signal

transmitted from the rensmitter and calculate a distance from a number of strides measured by the step counter; and

measured by the sep counter; and

a data processor programmed to calculate a distance traveled by multiplying the number of strides taken by a stride length that varies according to [the] a rate at which

strides are taken.

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(Amended.) The pedometer of claim 17, wherein the [transmission] step count signal is digitally coded.

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(Amended.) The pedometer of claim 77, [where in] wherein the transmitter transmits the signal a wireless distance in the range of [thirty] zero to thirty-six inches.

(Amended.) The pedometer of claim N, and further comprising:

a heart rate monitor; and

rate;

a second transmitter in communication with the heart rate monitor to transmit a heart rate signal corresponding to a heart rate [calculated] monitored by the heart rate monitor to the receiver and display the calculated heart rate.

(Amended.) The pedometer of claim 25, wherein the heart rate signal is at a different frequency than the [pedometer] step count signal.

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\$8. (Amended.) The pedometer of claim \$5, wherein the heart rate monitor and the step counter are mounted in a single chest-mount housing.

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32. (Amended.) A pedometer programmed to calculate an actual stride length of a user by performing the steps of:

timing a user first run of a predetermined distance to obtain a user first run time;

counting [the] a total number of strides in the user first run;

dividing the first run distance by the [stride count] total number of strides to obtain a base stride length;

dividing the stride count by the first run time to obtain a base stride rate; counting strides in a period of time during a user second run to obtain an actual stride

calculating the actual stride length using the formula:

Actual Stride Length = Base Stride Length + Base Stride Length *(((Actual Stride

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(Second

Rate - Base Stride Rate)N)/Base Stride Rate);

where N is in the range of between 1 and 3;

calculates the actual stride length [distance] using a formula that correlates a specific stride length to a specific stride rate.

g R 5. (Amended.) The pedometer of claim 32, wherein the [receiver processes the step count signal and displays] pedometer is further programmed to calculate and display [the] a distance traveled on a viewing screen.

7. (Amended.) A pedometer programmed to calculate an actual stride length of a user by performing the steps of:

a a

timing a user first run of a predetermined <u>first run</u> distance <u>to obtain a first run time</u>; counting [the] <u>a</u> total number of strides in the user first run;

dividing the first run distance by the [stride count] total number of strides in the user first run to obtain a first run [base] stride length and a base stride length;

dividing the first run stride count by the first run time to obtain a first run [base] stride rate and a base stride rate;

timing a user second run of a predetermined second run distance to obtain a second run time;

counting [the] a total number of strides in the user second run;

dividing the second run distance by the <u>total number of strides in the user</u> second run [stride count] to obtain a second [base] <u>run</u> stride length;

dividing the total number of strides in the second run [stride count] by the second run time to obtain a second [base] run stride rate;

timing a user third run of a predetermined third run distance to obtain a third run time; counting [the] a total number of strides in the user third run;

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dividing the third run distance by the total number of strides in the user third run [stride count] to obtain a third [base] run stride length;

dividing the total number of strides in the third run [stride count] by the third run time to obtain a third run [base] stride rate;

counting strides in a period of time during a user fourth run to obtain an actual stride rate; calculating the actual stride length using the formula:

Actual Stride Length = Base Stride Length + Base Stride Length *(((Actual Stride Rate - Base Stride Rate)N)/Base Stride Rate);

where N is calculated by the formula ((Second Run Stride Length multiplied by First Run Stride Rate) - (First Run Stride Length multiplied by First Run Stride Rate)) / (First Run Stride Length multiplied by (Second Run Stride Rate - First Run Stride Rate)) when the Actual Stride Rate is greater than the First Run Stride Rate, and where N is calculated by the formula ((Third Run Stride Length multiplied by First Run Stride Rate) - (First Run Stride Length multiplied by First Run Stride Rate)) / (First Run Stride Length multiplied by (Third Run Stride Rate - First Run Stride Rate)) when the Actual Stride Rate is less than or equal to the First Run Stride Rate.

(Amended.) A method for calculating an actual stride length comprising the steps

of:

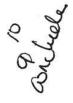
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timing a first user run of a predetermined distance to obtain a first run time; counting a total number of strides in the [user] first user run to obtain a stride count; dividing the first run time by the stride count to obtain a Base Stride Length; dividing the stride count by the first run time to obtain a Base Stride Rate; counting strides in a pre-determined period during a user second run to obtain an Actual Stride Rate;

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calculating the actual stride length using the formula:

Actual Stride Length= Base Stride Length + Base Stride Length *(((Actual Stride Rate - Base Stride Rate)N)/Base Stride Rate); wherein N is between one and three.

Remarks

Claims 1, 2, 3, 4, 7, 8, 9, 10, and 11 were all rejected under 35 U.S.C. §102 or §103. Applicants believe these claims are allowable over the cited art, but have canceled these claims to expedite prosecution of the application. The remaining claims were rejected under 35 U.S.C. §112, for the specific reasons cited on page 2 of the action.

Applicants have amended either the specific claims listed in the §112 rejection or the independent claims from which the rejected claims depend. It is believed that all of the §112 issues were addressed, but if the examiner disagrees, the undersigned counsel for Applicants is available for a telephone interview to expedite prosecution of this application.

Claims 5, 6, 9, and 13 all depended directly or indirectly from independent claim 1, now canceled. In claim 1 as originally filed, the last line included the phrase "calculate a distance measured by the step counter" to describe the function of the receiver after receiving a signal from the transmitter. In fact, the step counter does not "measure" anything. Step counters only count steps. In the invention as claimed herein, the receiver does the calculating based on the signal received from the step counter. Thus, in claims 5, 6, 9, and 13, the language of base claim 1 has been amended to make clear that the receiver calculates a distance traveled based, at least in part, on the signal received from the step counter.

Similarly, claim 12 depended from intervening base claim 9, which included the phrase "a heart rate calculated by the heart rate monitor." The heart rate monitor does not "calculate" a heart rate. Rather, the heart rate monitor recited in claim 9 simply "monitors" or counts heart beats. The receiver then calculates and displays the heart rate. Thus, the claim 9 language added to claim 12 has been amended to clarify this point. Claim 25 includes a similar amendment.

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In addition, claims 5 and 21 were amended to make the transmission range from zero to thirty-six inches. This reflects the broadest range supported by the specification at page 4, lines 23-29. So long as the signal is transmitted no more than the thirty to thirty-six inch range, it avoids interference with other Rf or digital devices. Given this, the two portions of the device can be mounted on different body parts without interference from external signals. Thus, zero inches is the smallest distance and thirty-six inches is the largest distance of transmission for this preferred embodiment as recited in claims 5 and 21.

Next, claim 37 was amended to accommodate the examiner's proposed changes to this claim. In addition, the "first run stride length" was given the dual name of "base stride length", and "first stride rate" was given the dual name "base stride rate". These terms are necessary to provide the necessary antecedent basis for the formula recited at the end of the claim.

The claims that were allowable if rewritten to overcome the §112 rejection and put into independent claim format have been amended to include all of the limitations of their respective base claims. Thus, all remaining claims are in condition for allowance. No new matter is believed to be added by this amendment.

Further, submitted herewith is a Supplemental Information Disclosure Statement citing a web page and instructions for a pedometer that is now commercially available. Applicants have no information indicating that this is prior art to the present application, but in the interest of full disclosure bring it to the examiner's attention. It is noteworthy that the instructions describe the pedometer as able to distinguish a walking stride length from a running stride length, and to calculate a "steps per minute". (Page 4, "Speed Function".) Significantly, however, this pedometer can only measure distance based on a uniform stride length. These instructions specifically state, "It is important to walk or run or hike consistently. If you vary your walking pace, your stride length will vary and your distance traveled will be [different]." (Page 3, "Your Stride Length".) Further, the user's stride length must be measured and then input into this pedometer's "memory". It does not measure stride length automatically. (Page 3, "How to

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Measure Your Stride".) Thus, even if this pedometer were prior art, it has no bearing on the allowability of the claims, particularly those relating to variable stride lengths.

Conclusion

For the foregoing reasons, Applicants submit that this case is in condition for allowance and respectfully request that the application be passed to issue.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455 Attorney for Applicant

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Madison, Wisconsin 53701-1507

(608) 257-7766

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PATENT APPLICATION

In the United States Patent and Trademark Office

Applicant:

Pyles et al.

Docket No.:

EPIXINC-4

Date:

March 21, 2000

Application No.:

09/181,738

Filed:

October 28, 1998

Art Unit:

2816

Examiner:

M. Wambach

TECHNOLOGY CENTER 2800

For:

PEDOMETER

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On March 21, 2000

Jeffry W. Smith, Reg. No. 33455
Name of Applicant, assignee or
Registered Representative

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sirs:

In accordance with 37 C.F.R. §1.56, Applicants wish to call the attention of the Examiner to the following documents:

United States Patents

<u>U.S. Patent No.</u> 5,033,013

<u>Issue Date</u> 07-16-1991

Patentee Kato et al.

Foreign Patent Documents

Patent No. EP 0 119 009 A1 <u>Issue Date</u> 09-02-1983

Patentee Frederick

Other Documents

PCT/ISA/210 - International Search Report received March 20, 2000, 4 pgs.

Copies of these documents are submitted herewith along with Form PTO/SB 08A and PTO/SB 08B.

Applicants respectfully request that these documents be expressly considered during the prosecution of this application and made of record herein and appear among the "documents cited" on any patent to issue herefrom.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant

LATHROP & CLARK LLP

740 Regent Street, Suite 400

P.O. Box 1507

Madison, Wisconsin 53701-1507

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				First Named Inventor	Nathan Pyles	
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Sheet	2	Of	2	Attorney Docket Number	EPIXINC-4	

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PATENT COOPERATION TREA.

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or s EPIXINC—9	gent's file reference		n of Transmittal of International Search Report V220) as well as, where applicable, item 5 below.
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		Mary Carlotte W	, A.
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page 1 of 2

INTERNATIONAL SEARCH REPORT

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PCT/US 99/25314

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	1	Relevant to claim No.
X	EP 0 119 009 A (NIKE INTERNATIONAL LTD) 19 September 1984 (1984-09-19)		1,2,5-7, 13
A	page 6		14,17, 18, 21–23, 27,49
	page 10 page 11		
x	US 4 371 945 A (KARR LAWRENCE J ET AL) 1 February 1983 (1983-02-01) cited in the application column 4, line 33 -column 5, line 26		1,2,6-8, 17
X A	US 5 583 776 A (LEVI ROBERT W ET AL) 10 December 1996 (1996-12-10) column 6, line 6 - line 42; claim 14; figures 5,7 abstract		49,53,54 32,35, 44,50
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page 2 of 2

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US	4371945	A	01-02-1983	NONE		to the state of th
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		AL .	Filing Date		October 28, 1998
DEMARK	FORM	*	First Named Inventor		Nathan Pyles
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40		Application Number	09/181,738
TRANSMITT	AL .	Filing Date	October 28, 1998
FORM		First Named Inventor	Nathan Pyles
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Typed or printed name	Jeffry N	W. Smith, Reg.	No. 33455

PATENT APPLICATION

In the United States Patent and Trademark Office

Applicant:

Pyles et al.

Docket No.:

EPIXINC-4

Date:

April 4, 2000

Application No.:

09/181,738

Filed:

October 28, 1998

Art Unit:

2816

Examiner:

M. Wambach

For:

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On Apr:1 4,2000

Jeffry W. Smith, Reg. No. 33455 Name of Applicant, assignee or Registered Representative

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sirs:

In accordance with 37 C.F.R. §1.56, Applicants wish to call the attention of the Examiner to the following documents:

United States Patents

RECEIVED

U.S. Patent No.	Issue Date	Patentee
4,144,568	03-13-1979	Hiller et al.
4,220,996	09-02-1980	Searcy
4,387,437	06-07-1983	Lowrey et al.
4,460,823	07-17-1984	Ruehlemann
4,466,204	08-21-1984	Wu
4,560,861	12-24-1985	Kato et al.
4,566,461	01-28-1986	Lubell et al.
4,578,769	03-25-1986	Frederick
4,703,445	10-27-1987	Dassler
4,763,287	08-09-1988	Gerhaeuser et al.
4,703,207	00-07-1700	Gernaeuser et a

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4,830,021	05-16-1989	Thornton
4,962,469	10-09-1990	Ono et al.
5,065,414	11-12-1991	Endou et al.
5,164,967	11-17-1992	Endo et al.
5,485,402	01-16-1996	Smith et al.
5,720,200	02-24-1998	Anderson et al.
5,724,265	03-03-1998	Hutchings
5,899,963	05-04-1999	Hutchings
5,976,083	11-02-1999	Richardson et al.
6,018,705	01-25-2000	Gaudet et al.

Copies of these documents are submitted herewith along with Form PTO/SB 08A.

This supplemental information disclosure statement shall be considered under 37 C.F.R. §1.97(c)(1) because no final action is believed to have been mailed before the mailing of this statement. Further, to the knowledge of the undersigned after making reasonable inquiry, no fee is believed to be owed because no item contained herein was known to any individual designated in §1.56(c) more than three months prior to the filing of this supplemental information disclosure statement.

Applicants respectfully request that these documents be expressly considered during the prosecution of this application and made of record herein and appear among the "documents cited" on any patent to issue herefrom.

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Respectfully submitted,

TECHNOLOGY CENTER 2800

Jeffty W. Smith, Reg. No. 33455

Attorney for Applicant LATHROP & CLARK LLP

740 Regent Street, Suite 400

P.O. Box 1507

Madison, Wisconsin 53701-1507

(608) 257-7766

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¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard St.3). ⁴For Japanese patent documents, the Indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵KInd of document by the appropriate symbols as Indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

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TRANSMITTALL P	E F	iling Date		October 28, 1998		
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TRANSMITTAL	Filing Date	October 28, 1998
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PAGE 3/6

PATENT APPLICATION

In the United States Patent and Trademark Office

Applicant:

Pyles et al.

Docket No.:

EPIXINC-4

Date:

June 19, 2000

Application No.:

09/181,738

Filed:

October 28, 1998

Art Unit:

2816

Examiner:

M. Wambach

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Office, at (703) 308-7722

Signature

Jeffry W. Smith. Reg. No. 33455 Name of Applicant, assignee or Registered Representative

AMENDMENT

Attn: Examiner M. Wambach Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sir:

In response to the telephone interviews on June 12 and 15, 2000 with Examiner

Wambach, Applicant submits the following amendments and remarks.

In the Claims

Please cancel claims 5, 6, and 14

Please amend claims 13 and 17 as follows:

ID:

2/3. (Twice Amended.) A pedometer comprising:

a step counter mountable on a user first body portion;

a transmitter in communication with the step counter to generate a signal corresponding to each step and transmit the signal; and

a receiver mountable on a user second body portion to receive the signal transmitted
from the transmitter and use the signal to calculate a distance traveled,
wherein the pedometer includes a data processor programmed to calculate the
distance traveled by multiplying the number of strides taken by a stride length that
varies according to a rate at which strides are taken by:

timing a user first run of a predetermined distance;

counting the total number of strides in the user first run;

dividing the first run distance by the stride count to obtain a base stride length;

dividing the stride count by the first run time to obtain a base stride rate;

counting strides in a period of time during a user second run to obtain an actual

stride rate;

calculating the actual stride length using the formula:

Actual Stride Length = Base Stride Length + Base Stride Length *(((Actual Stride

Rate - Base Stride Rate)N)/Base Stride Rate);

where N is in the range of between 1 and 3.

1. (Twice Amended.) A pedometer comprising:

a step counter;

a transmitter in communication with the step counter to generate a step count signal corresponding to each step and transmit the step count signal; and a receiver mountable on a user body portion to receive the step count signal transmitted from the transmitter [and calculate a distance from a number of strides measured by the step counter]; and

B

a data processor programmed to [calculate a distance traveled by multiplying the number of strides taken by a stride length that varies according to a rate at which strides are taken] use the step count signal to: calculate a stride rate and a stride length from a plurality of walks or runs each over a known distance to generate a range of corresponding stride rates and stride lengths.

and in subsequent walks or runs, calculate an actual stride rate from the number of strides counted by the step counter over a unit of time, compare the actual stride rate with the range of corresponding generated stride rates and stride lengths, and therefrom, calculate an actual stride length to be used in calculating an actual distance traveled.

Remarks

The undersigned counsel for Applicant wishes to thank Examiner Wambach for the courteous and productive telephone interviews of June 12 and 15, 2000. In the June 12, 2000 interview, Examiner Wambach indicated that *Kato*, U.S. Patent No. 5,033,013 and *Hutchings*, U.S. Patent Nos. 5,724,265 and 5,899,963 disclosed a correspondence between stride rate and stride length. Consequently, any claims based on this broad concept were not allowable, but

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ID:

PAGE 6/6

claim, reciting a specific algorithm for deriving a range of stride lengths or a pedometer in combination with a heart rate monitor are allowable.

On June 15, 2000, the undersigned counsel for Applicant telephone Examiner Wambach indicating that a distinction between the art of record and the present pedometer invention is the use of data input from runs or walks over known distances to establish a range of stride rate versus stride length data that can be used in subsequent runs or walks to derive actual stride lengths from actual stride rates. Therefore, claim 17 has been amended to include language addressing this novel and non-obvious concept. This is not new matter, rather it simply describes the broad concept discussed throughout the application of using trial runs/walks to obtain a range of data to be used for use in subsequent runs or walks.

Claims 5, 6, and 14 have been canceled.

Claim 13 was combined with what is believed to be its allowable dependent claim 14. Thus, amended claim 13, and its respective dependent claims are allowable.

Conclusion

Applicant submits that the present application with its remaining claims is in allowable form and in condition for allowance. Applicant respectfully requests that this application be passed to issue.

Respectfully submitted,

W. Smith, Reg. No. 33455

Attorney for Applicant LATHROP & CLARK LLP

740 Regent Street, Suite 400

P.O. Box 1507

Madison, Wisconsin 53701-1507

(608) 257-7766

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		Application Number	09/181,738		
TRANSMITTA	L	Filing Date	October 28, 1998		
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(To be used for all correspondence after	er initial filing)	Group Art Unit			
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From:

Jeffry W. Smith

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June 19, 2000

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g 700 ag	Application No. 09/181,738	Applicant(s)	cant(s) Pyles		
Interview Summary	Examiner Margaret W		up Art Unit 2816		
All participants (applicant, applicant's representati	ive, PTO personnel):	****			
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(2) Jeffry Smith			XV		
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Paper No. 16



UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO. FILING DATE FIRST NAMED INVENTOR ATTORNEY DOCKET NO. 09/181.738 10/28/98 **PYLES** EPIXINC-4 020455 MMC1/0621 LATHROP & CLARK LLP HANGACH-M PAPER NUMBER 740 REGENT STREET SUITE 400 P.O. BOX 1507 MADISON WI 53701-1507 DATE MAILED: 06/21/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95) U.S. G.P.O. 2000 ; 465-188/25266 1- File Copy



UNITED STATES DEPARTMENT OF COMMERCE |
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

020455 MMC1/0621 LATHROP & CLARK LLP 740 REGENT STREET SUITE 400 P.O. BGX 1507 MADISON WI 53701-1507

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	CLASS-SUBCLASS BA			

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

- I. Review the SMALL ENTITY status shown above.
 If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:
 - A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
 - B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.
- II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.
- III. All communications regarding this application must give application number and batch number.
 Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY

PTOL-85 (REV. 10-96) Approved for use through 06/30/99. (0651-0033)

¥	09/181,738		Applicant(s) Pyles		
Notice of Allowability			Group Art Unit 2816		
All claims being allowable, PROSECUTION ON THE M herewith (or previously mailed), a Notice of Allowance mailed in due course.					
X This communication is responsive to Amdt B (6/19)	0/00) and tele. interviews	(6/12 & 6/	15/00)		
X The allowed claim(s) is/are 12, 13, and 15-45					
The drawings filed on are ac	cceptable.				
Acknowledgement is made of a claim for foreign p		119(a)-(d).	945		
☐ All ☐ Some* ☐ None of the CERTIFIED co	THE RESIDENCE OF THE PARTY OF T				
☐ received.					
received in Application No. (Series Code/Series	al Number)				
received in this national stage application fro			e 17.2(a)).		
*Certified copies not received:		1		380	
Acknowledgement is made of a claim for domestic	priority under 35 U.S.C.	§ 119(e).			
A SHORTENED STATUTORY PERIOD FOR RESPONSE THREE MONTHS FROM THE "DATE MAILED" of this ABANDONMENT of this application. Extensions of times.	Office action. Failure to	timely com	ply will result in		
Note the attached EXAMINER'S AMENDMENT or Note that the oath or declaration is deficient. A SUBSTITUTE OF THE ORDER OF				ich discloses	
Applicant MUST submit NEW FORMAL DRAWINGS	3	8			
Decause the originally filed drawings were decla	red by applicant to be in	formal.	4		
including changes required by the Notice of Drate to Paper No. 6 .	ftsperson's Patent Drawi	ng Review,	PTO-948, attacl	ned hereto or	
 including changes required by the proposed draw approved by the examiner. 	wing correction filed on _		, whic	ch has been	
\square including changes required by the attached Example 1.	miner's Amendment/Com	ment.			
Identifying indicia such as the application number (strawings. The drawings should be filed as a separa Draftsperson.					
Note the attached Examiner's comment regarding F	REQUIREMENT FOR THE	DEPOSIT O	F BIOLOGICAL I	MATERIAL.	
Any response to this letter should include, in the upper CODE/SERIAL NUMBER). If applicant has received a N and DATE of the NOTICE OF ALLOWANCE should also	otice of Allowance and I				
Attachment(s)		m	+ P	1.1. 0	
□ Notice of References Cited, PTO-892		112	regaret Rose	dimeric	
☑ Information Disclosure Statement(s), PTO-1449,					
☐ Notice of Draftsperson's Patent Drawing Review	, PTO-948				
☐ Notice of Informal Patent Application, PTO-152			Margaret R.V		
			Primary Ex	aminer	
☐ Examiner's Comment Regarding Requirement for	Denosit of Biological M	atorial			
☐ Examiner's Statement of Reasons for Allowance		atelial			
Adminior of ottatement of riedsoris for Allowance					

In the United States Patent and Trademark Office

Applicant:

Pyles et al.

Docket No.:

KNOWMO-2

Date:

August 11, 2000

Application No.:

09/181,738

Filed:

October 28, 1998

Art Unit:

2816

Examiner:

M. Wambach

For: PEDOMETER

Certificate of Mailing

I hereby certify that this corresponder is being deposited with the United States Postal Service as first class mail in an envelope addressed to: sistant Commissioner for Patents Washington, D.C. 20231

Jeffry W. Smith, Reg. No. 33455 Name of Applicant, assignee or Registered Representative

INFORMATION DISCLOSURE STATEMENT

RECLIVED Assistant Commissioner for Patents ALIG 2 3 2000

Washington, D.C. 20231

TECHNOLOGY CENTER 2800

Dear Sir:

In accordance with 37 C.F.R. §1.56, Applicants wish to call the attention of the Examiner to the following document:

PCT/IPEA/408, Written Opinion received August 7, 2000, 5 pgs. The references cited in the PCT's Written Opinion are already of record.

A copy of this document is being submitted herewith along with Form PTO/SB 08b.

This Information Disclosure Statement is accompanied by a Transmittal of Information Disclosure Statement under 37 C.F.R. §1.97(d); a Statement under 37 C.F.R. §1.97(e); and the appropriate \$130.00 Petition fee.

Applicants respectfully request that these documents be expressly considered during the prosecution of this application and made of record herein and appear among the "documents cited" on any patent to issue herefrom.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant

LATHROP & CLARK LLP

740 Regent Street, Suite 400

P.O. Box 1507

Madison, Wisconsin 53701-1507

(608) 257-7766

PATENT APPLICATION

In the United States Patent and Trademark Office

Applicant:

Pyles et al.

Docket No .:

KNOWMO-2

Date:

August 11, 2000

Application No.:

09/181,738

Filed:

October 28, 1998

Art Unit:

2816

Examiner:

M. Wambach

For: PEDOMETER



Certificate of Mailing I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231

Jeffry W. Smith, Reg. No. 33455 Name of Applicant, assignee or Registered Representative

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT AFTER MAILING DATE OF FINAL ACTION OR NOTICE OF ALLOWANCE BUT BEFORE PAYMENT OF ISSUE FEE (37 C.F.R. §1.97(d))

Attn: Group Director

Assistant Commissioner for Patents

Washington, D.C. 20231

RECEIVED

VIIE 5 2 5000

TECHNOLOGY CENTER 2800

Dear Sir:

The Information Disclosure Statement submitted herewith is being filed after a Notice of Allowance under §1.311, but before the payment of the issue fee.

In accordance with the requirements of 37 C.F.R. §1.97(d):

- Accompanying this transmittal is a Statement, as specified in 37 C.F.R. §1.97(e). A.
- Applicants hereby petition for the consideration of the accompanying Information B. Disclosure Statement. 37 C.P.R. §1.97(d)(2).

08/16/2000 JADDO1

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130.00 OP

C. Applicants submit the Petition fee set forth in §1.17(i) in the amount of \$130.00.

If any additional fees are due, please charge Account No. 15-0660. A duplicate copy of this document is enclosed.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant LATHROP & CLARK LLP

740 Regent Street, Suite 400 P.O. Box 1507

Madison, Wisconsin 53701-1507

(608) 257-7766

PTO/SB/08B (10-96) Approved for use through 10/31/99. OMB 0651-0031

Please type a plus sign (+) Inside this box $\rightarrow \mathbb{H}$

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitut	te for form 1449	9B/PTO		Application Number	09/181,738	6.00
INFORMATION DISCLOSURE				Filing Date	October 28, 1998 O / 8	
INFORMATION DISCLOSURE				First Named inventor	Nathan Pyles	L AUG MI
SIA	(Use as many sheets as necessary)		Group Art Unit	2816	1 20an 5	
			Examiner Name	M. Wambach	Ex 23/	
Sheet 1 Of 1		Attorney Docket Number	KNOWMO-2	SMARK OFFI		

	-	OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. ¹	include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, cataiog, etc.), date, page(s), voiume-issue number(s), publisher, city and/or country where published.		
MW		PCT/IPEA/408, Written Opinion received August 7, 2000, 5 pgs.		
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		1,10		
		*	(a) (b)	

Examiner Signature	Wanbach	Date Considered	10/2/00

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ²Applicant is to place a check mark here if English language translation is attached

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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To.		RITY 10/1/00	AUG - 7 2000
LATHROP & CLARK TANDERS TO BE THE TREET P.O.BOX 1507	, SUITE 400	Resp. to Written Opinion Due KETED	WRIT EATHROP N& CLARK I
MADISON WI 53701-1	BY:_ _{by} T <u>ICK</u>	UL DATI	E:
# 1 m	BY:_	Date of Mailing	
		(day/month/year)	@ I AUG2000
Applicant's or agent's file refe EPIXINC-9	етепсе		vithin TWO months rom the above date of mailing
International application No.	International fi	iling date (day/month/year)	Priority date (day/month/year) 28 OCTOBER 1998
International Patent Classifica	12 (2) WOLLD 12 (4) 4 (4) 4 (4) 4 (4)	A react the contract of the contract of the	25 GOTOBER 1776
IPC(7): GO1C 21/00 and U			
Applicant			
Epix, Inc.		25 11-00-00, 184	
1. This written opinion is th	ne first (fii	rst, etc.) drawn by this Interne	ational Preliminary Examining Authority.
2. This opinion contains ind	lications relating to the foll	owing items:	
I X Basis of the	ne opinion	***	
			The state of the s
II Priority			the line of well and the second
	lishment of opinion with re	egard to novelty, inventive ste	ep or industrial applicability
III Non-establ	lishment of opinion with re	egard to novelty, inventive ste	ep or industrial applicability
III Non-establ	nity of invention	(a)(ii) with regard to novelty,	ep or industrial applicability
III Non-establ IV Lack of un V Reasoned citations as	nity of invention statement under Rule 66.2	(a)(ii) with regard to novelty,	
III Non-establ IV Lack of un V Reasoned citations at VI Certain do	nity of invention statement under Rule 66.2 nd explanations supporting	(a)(ii) with regard to novelty, such statement	
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PA from the NTERNATIONAL PRELIMINARY EXA	ATENT COOPI	ERATION TR	EATY DE G G I V G	
To: JEFFRY W. SMITH LATHROP & CLARK LLP 740 REGENT STREET, SUITE 400 P.O.BOX 1507 MADISON WI 53701-1507		PCT CATHROP & CLAR WRITTEN OPINION (PCT Rule 66)		
		Date of Mailing (day/month/year)	n 1 *AUG2000	
Applicant's or agent's file reference EPIXINC-9		REPLY DUE within TWO months from the above date of mailing		
International application No. PCT/US99/25314	International filing de 28 OCTOBER 19		Priority date (day/month/year) 28 OCTOBER 1998	
This written opinion is the first This opinion contains indications re I X Basis of the opinion II Priority III Non-establishment of IV Lack of unity of inv	elating to the following	items:	etional Preliminary Examining Authority.	
V X Reasoned statement citations and explan	under Rule 66.2(a)(ii) ations supporting such	statement	, inventive step or industrial applicability;	
	on the international applicat	Total Control		
			e expiration of that time-limit, request this	
For the form and the Also For an additional of For the examiner's For an informal control of the Formal control of the Forman and the Fo	ne language of the ame pportunity to submit are obligation to consider mmunication with the conal preliminary exami-	ndments, see Rules 66 mendments, see Rule 66 amendments and/or ar examiner, see Rule 66 mation report will be e	guments, see Rule 66.4 bis6. stablished on the basis of this opinion.	
Name and mailing address of the IPEA Commissioner of Patents and Trade Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230		Authorized office MARGARET	ROSE VANBORITATION	

WRITTEN OPINION

International application No.

	PCT/US99/25314
I. Basis of the opinion	
With regard to the elements of the international application: X the international application as originally filed X the description: pages 1-23	
pages NONE	, filed with the demand
Pages	, filed with the letter of, med with the definant
x the claims: pages 24-34	, as originally filed
	, as amended (together with any statement) under Article 19
pages NONE	, filed with the demand
	the letter of
x the drawings: pages 1	, as originally filed
pages NONE	, filed with the demand
pages NONE	filed with the letter of
X the sequence listing part of the description: pagesNONE	, as originally filed
	, filed with the demand
pages NONE	filed with the letter of
the language of publication of the international the language of the translation furnished for the purp	purposes of international search (under Rule 23.1(b)). application (under Rule 48.3(b)). poses of international preliminary examination (under Rules 55.2 and/
Or 55.3).	nce disclosed in the international application, the written opinion was
drawn on the basis of the sequence listing:	are discussed in the international application, the written opinion was
contained in the international application in pri	nted form.
filed together with the international application	in computer readable form.
furnished subsequently to this Authority in writ	tten form.
furnished subsequently to this Authority in con	nputer readable form.
The statement that the subsequently furnished wri international application as filed has been furnished	tten sequence listing does not go beyond the disclosure in the ed.
The statement that the information recorded in complete furnished.	outer readable form is identical to the writen sequence listing has
4. X The amendments have resulted in the cancellat	ion of:
X the description, pages NONE	
X the claims, Nos. NONE	
X the drawings, sheets/fig NONE	
 This opinion has been drawn as if (some of) the ame beyond the disclosure as filed, as indicated in the St 	endments had not been made, since they have been considered to go upplemental Box (Rule 70.2(c)).
* Replacement sheets which have been furnished to the receive in this opinion as "originally filed",	ing Office in response to an invitation under Article 14 are referred to
opinion as on one of the control of the co	

Form PCT/IPEA/408 (Box I) (July 1998)*

International application No.

V. Reasoned statement under Rule 66.2(a citations and explanations supporting				
)(ii) with re such statem	gard to novelty, inve	ntive step or industria	l applicability
1. statement	200		1 1 da 4 d	
Novelty (N)	Claims	14-16, 28-54		YE
	Claims	A TABLE TELEVISION		NC NC
	A			
Inventive Step (IS)	Claims	14, 16, 28-54	····	YI
	Claims	1-13 and 17-27		NO
		a Mayor III d		
Industrial Applicability (IA)	Claims	1-54	Park Table	YI
	Claims	NONE		NO
				15
citations and explanations Claims 1-13, 17-28 lack novelty under PCT A	article 33(2) as	s being anticipated by H	utchins.	
Hutchins discloses a device which wirelessly to processor which calculates a distance traveled				
to a rate at which strides are taken.				
Claims 14-16 and 29-54 meet the criteria set				
suggest use of data input from runs or walks	over known di	istances to establish a ra	nge of stride rate versus s	stride length dat
NEW CITATIONS		*** -		
US 5724265 (Hutchings) 03 MAR 1998, see of US 5033013 (Kato et al) 16 JUL 1991, see of	enure document itire document	1 L		
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TRANS	MITT	AL	Filing Date	October 28, 1998		
FC	RM	*	First Named Inventor	Nathan Pyles O		
			Group Art Unit	2816 AUG 1 4 2000 C		
(To be used for all corre	spondence a	ter initial filing) Examiner Name		M. Wambach		
Total Number of Pages in	This Submis	slon	Attorney Docket Numbe	r KNOWMO-2		
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Signature Date	701	111 2000	<u> </u>			
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Typed or printed name		Jeffry W. S	mith, Reg. No. 3345	55		
Signature	CARR	WSMA		Date Aug 11, 20 A		

PTO/SB/17 (12-97)

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control Complete if Known **FEE TRANSMITTAL** Application Number 09/181,738 Filing Date October 28. First Named Inventor Nathan P 2816 Group Art Unit Note: Effective October 1, 1997,
Patent fees are subject to annual revision
JNT OF PAYMENT | \$130.00 Examiner Name M. Wamb TOTAL AMOUNT OF PAYMENT KNOWM Attorney Docket Number METHOD OF PAYMENT (check one) FEE CALCULATION (Continued) RADEMARY The Commissioner is hereby authorized to charge indicated fees and credit any over payments to: 3. ADDITIONAL FEES Deposit Account Number Large Entity Small Entity 15-0660 Fee (\$) Fee (\$) Fee Code Fee Pald 205 105 130 65 Surcharge - late filing fee or oath Deposit Account Name Lathrop & Clark Surcharge - late provisional filing fee or cover sheet 127 227 25 50 Charge the Issue Fee Set in 37 CFR 1.18 at the Mailing of the Notice of Allowance Charge Any Additional Fee 139 130 139 130 Non-English specification Required Under 37 CFR 1.16 and 1.17 147 147 2,520 2,520 For filing a request for reexamination 920* 112 920 112 Requesting publication of SIR prior to Payment Enclosed: ⊠^{Check} Other Requesting publication of SiR after ☐ Money ☐ 113 1,8401 113 1,840 FEE CALCULATION Extension for reply within first month 115 110 215 55 1. FILING FEE 116 380 216 190 Extension for reply within second Large Entity Small Entity 870 217 435 Extension for reply within third mo Extension for reply within fourth Fee Paid Fee Description 680 Fee Code 128 228 925 Extension for reply within fifth month 101 201 Utility filing fee 119 219 150 4 Notice of Appeal 106 Design filing fee 120 150 Filing a brief in support of an appeal 107 207 Plant filing fee 121 Request for oral hearing 108 760 208 Reissue filing fee 138 Petition to Institute a public use Provisional filing fee 214 75 114 150 140 240 55 110 SUBTOTAL (1) 141 1.210 241 605 Petition to revive - unintentional Fee from below 2. CLAIMS 1,210 Utility Issue fee (or reissue) Total Claims -20= X 11 \$0.00 143 243 215 Design Issue fee \$0.00 -3= 144 244 Independent Claims 122 130 Petitions to the Commissioner 122 130 Multiple Dependent Claims \$0.00 123 123 Petitions related to provisional 126 240 126 240 Submission of Information Disclosure Statement Large Entity Small Entity Fee (\$) Recording each patent assignment Fee Fee Description 581 581 40 Filing a submission after fina rejection (37 CFR 1.129(a)) 103 18 203 Claims in excess of 20 760 246 380 For each additional Invention examined (37 CFR 1.129(b)) 78 202 Independent Claims in excess of 3 102 104 260 204 130 Multiple dependent claims Reissue independent claims over 109 209 Other fee (specify) Petition fee under §1.17(I) for IDS 78 39 Reissue claims in excess of 20 and over original patent 210 110 18 Other fee (specify) SUBTOTAL (3) SUBTOTAL (2) \$0.00 \$130.00 Reduced by Basic Fliing Fee Pald SUBMITTED BY Complete (if applicable)

Jeffry W. Smith

Typed or Printed Name

Signature

Reg. Number

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Deposit Account User ID

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UNITED STATES DEPARTMENT OF COMMERCE

Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

APPL	ICATION NO.	FILING DATE	FIRST NAMED INVENTOR	- A	TTORNEY DOCKET NO.
	09/181,	738 107287	98 PYLES	N	EPIXINC-4
		% CLARK LLF ENT STREET S			EXAMINER IBACH, M
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				DATE MAILED:	10/17/00
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)

1- File Copy

<u>H</u>	Application No. 09/181,738	Applicant(s)	Pyles	
Notice of Allowability	Examiner Margaret War	nbach .	Group Art Unit 2816	
All claims being allowable, PROSECUTION ON THE MERI herewith (or previously mailed), a Notice of Allowance armailed in due course.				
☐ This communication is responsive to <u>I.D.S. (8/14/00)</u>				
The allowed claim(s) is/are 12, 13, and 15-45				
☐ The drawings filed on are accept	ptable.			
 □ Acknowledgement is made of a claim for foreign prior □ All □ Some* □ None of the CERTIFIED copie □ received. □ received in Application No. (Series Code/Serial in received in this national stage application from the composition of the certain prior of the certain prior	es of the priority docur	ments have		
*Certified copies not received:				
$\hfill \square$ Acknowledgement is made of a claim for domestic pri	ority under 35 U.S.C.	§ 119(e).		
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approved by the examiner.	g correction med on _	7 1 2	, will	Cit ilds Deen
including changes required by the attached Examin	er's Amendment/Com	ment.		
Identifying indicia such as the application number (see drawings. The drawings should be filed as a separate Draftsperson.	37 CFR 1.84(c)) shou paper with a transmit	uld be writte tal lettter ac	n on the revers idressed to the	e side of the Official
$\hfill \square$ Note the attached Examiner's comment regarding REO	UIREMENT FOR THE	DEPOSIT O	F BIOLOGICAL	MATERIAL.
Any response to this letter should include, in the upper rig CODE/SERIAL NUMBER). If applicant has received a Notic and DATE of the NOTICE OF ALLOWANCE should also be	ce of Allowance and Is			
Attachment(s) Notice of References Cited, PTO-892 Information Disclosure Statement(s), PTO-1449, Pa Notice of Draftsperson's Patent Drawing Review, P Notice of Informal Patent Application, PTO-152 Interview Summary, PTO-413	AND THE PERSON AS A STREET OF THE PERSON AS			aret R. Wambach
Examiner's Amendment/Comment			- Ph	mary Examiner
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Examiner's Statement of Reasons for Allowance			4	

Notice of Allowability

U. S. Patent and Trademark Office PTO-37 (Rev. 9-95)

Part of Paper No.



Patent Application

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Nathan Pyles

Date:

September 19, 2000

#154

Date Filed:

October 28, 1998

Docket No.:

KNOWMO-2

Serial Number:

09/181,738

Art Unit:

2816

For:

PEDOMETER

Examiner:

M. WAMBACH

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Washington, D.C. 20231

ystembe

Date

Signature

effry W. Smith, Reg. No.33455

Name of applicant, assignee or Registered Representative

TRANSMITTAL OF FORMAL DRAWINGS

Attention: Official Draftsman Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sir:

Enclosed for filing with respect to the above-referenced application, please find 1 sheet of new formal drawings having (1) figure to be substituted for the drawings presently on file in this application. It is believed that the drawings submitted are in conformance with the requirements set forth in 37 C.F.R. §1.84. These new formal drawings are transmitted in conformance with the requirement for new drawings set out in the Notice of Allowability on this application that

was mailed on June 21, 2000. Applicant believes no new matter has been added by these formal drawings.

It is requested that applicant's undersigned attorney be notified of any further or additional requirements with respect to the enclosed formal drawings.

Respectfully submitted,

Jeffry W. Smith, Reg. No. 33455

Attorney for Applicant Lathrop & Clark LLP

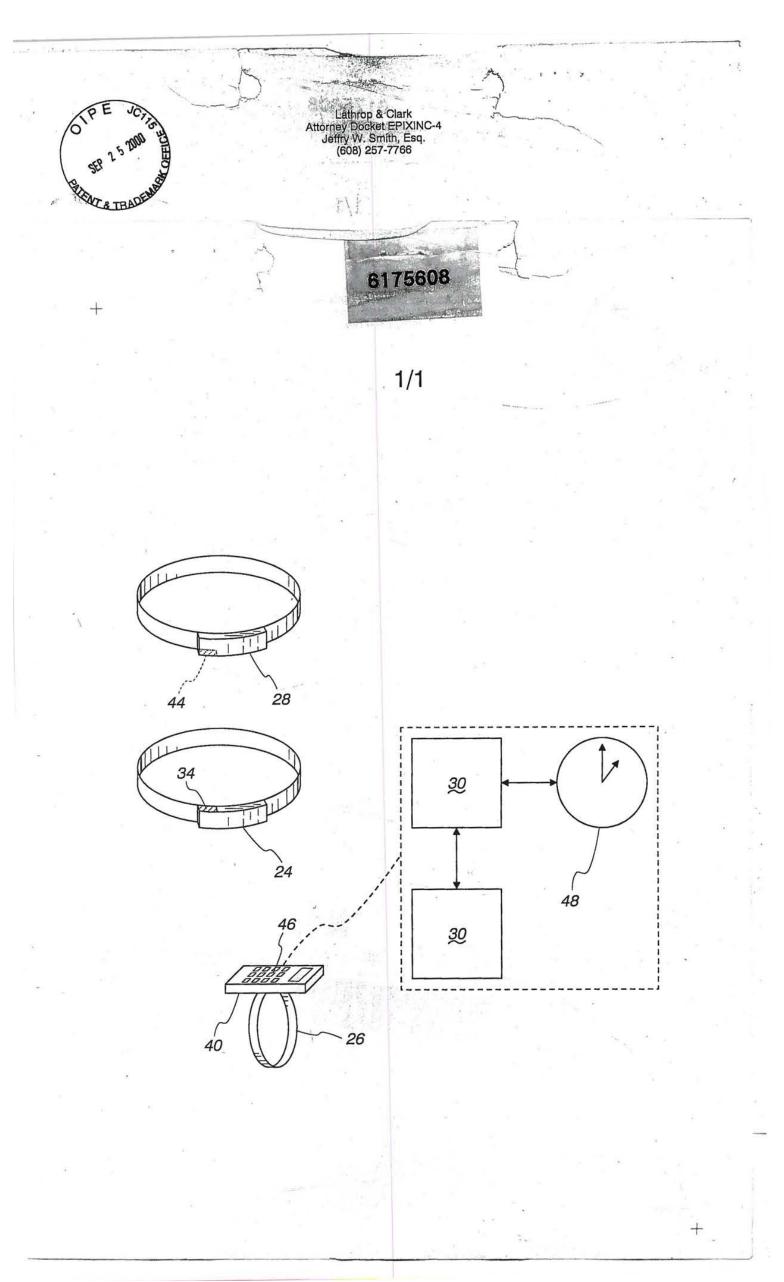
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2.	Signature (7/17)				

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					Jamix.	Jansen	(Signature)	
		200	300		September 19	, 2000	(Date)	
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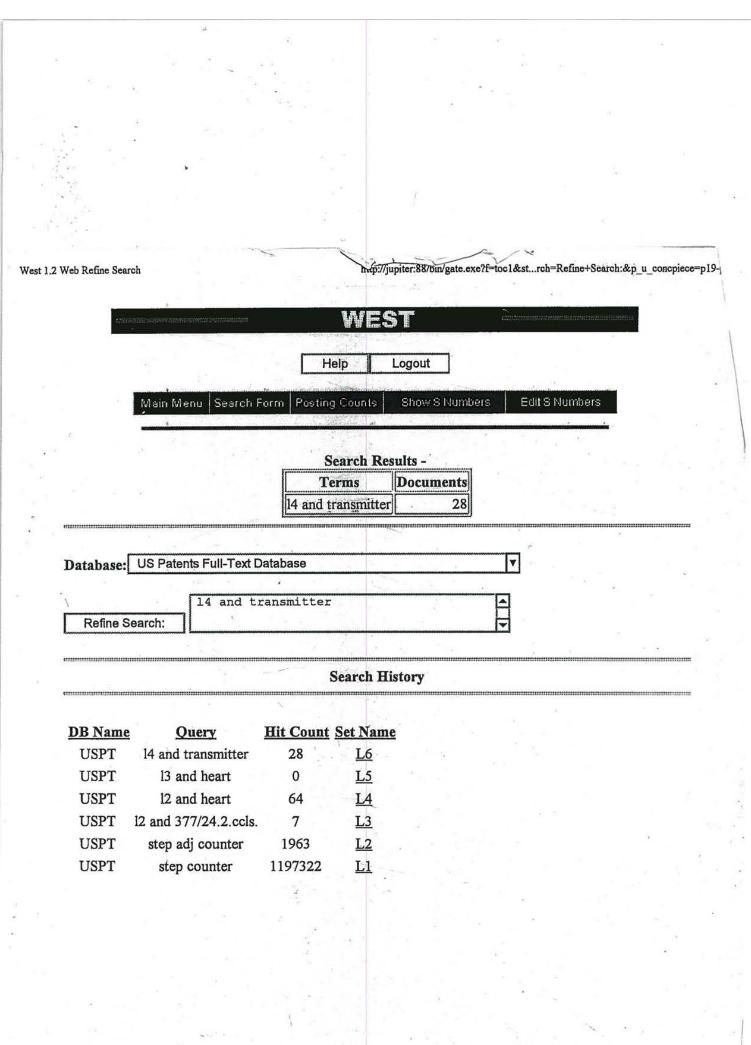
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