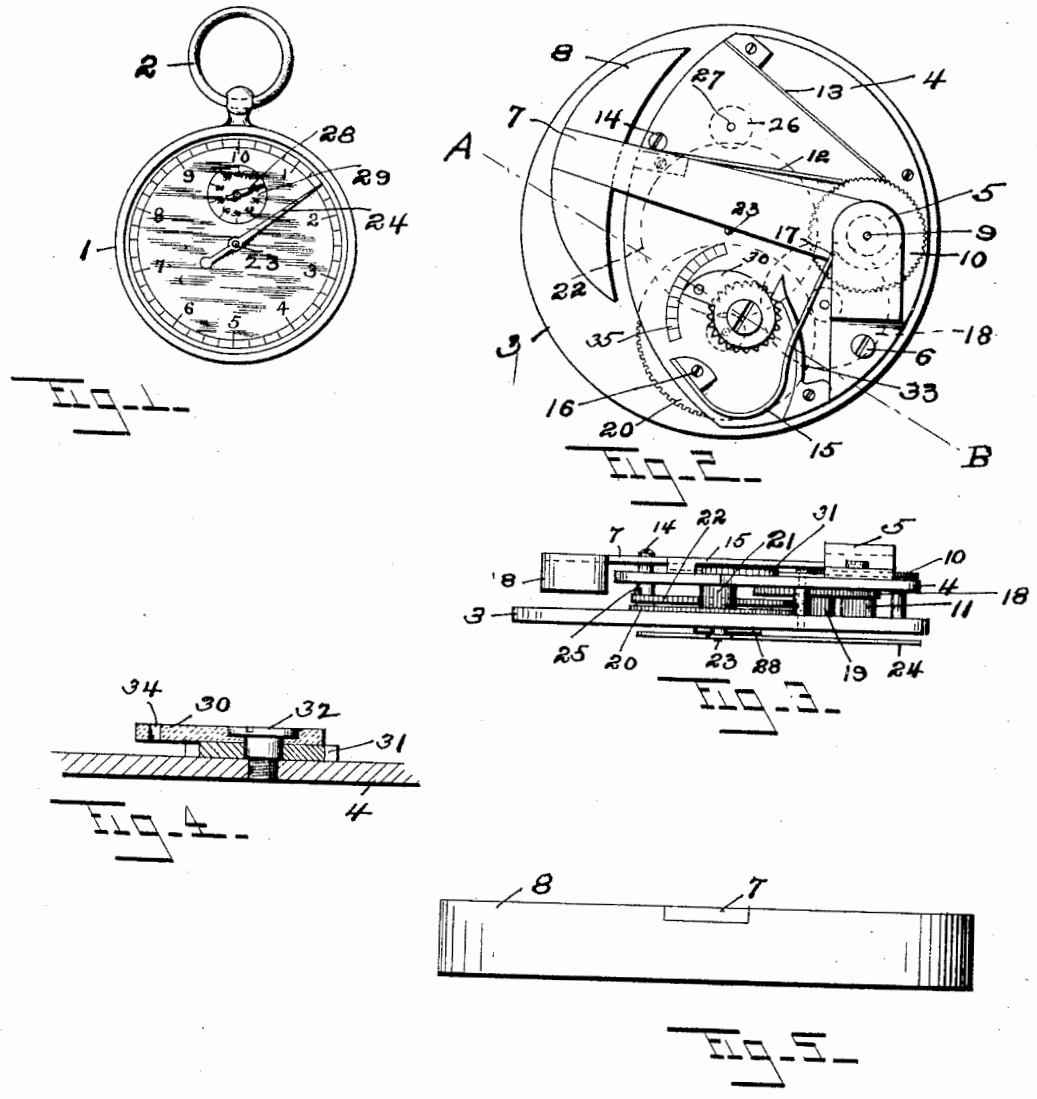


E. KUHN.
PEDOMETER.

(Application filed July 17, 1901.)

(No Model.)



Witnesses.
Wallace E. Clark
Edward J. Mahan

Inventor.
Edmond Kuhn
George E. Hall
 Attorney.

UNITED STATES PATENT OFFICE.

EDMOND KUHN, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE
AMERICAN PEDOMETER COMPANY, OF NEW HAVEN, CONNECTI-
CUT, A CORPORATION OF CONNECTICUT.

PEDOMETER.

SPECIFICATION forming part of Letters Patent No. 694,652, dated March 4, 1902.

Application filed July 17, 1901. Serial No. 68,624. (No model.)

To all whom it may concern:

Be it known that I, EDMOND KUHN, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Pedometers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in pedometers of that class which are designed to be carried in the pocket or attached to the person of a pedestrian to register the distance traveled, and has for its object, among other things, simplicity of construction and fewness of parts, so designed as to be economically constructed and readily assembled, and, further, to provide means for adjusting the mechanism for steps of varying lengths.

To these and other ends my invention consists in the pedometer having certain details of construction and combination of parts, as will be hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals designate like parts in the several figures, Figure 1 is a front view of the pedometer. Fig. 2 is a view of the interior mechanism looking from the back, upon an enlarged scale. Fig. 3 is an elevation thereof. Fig. 4 is an enlarged sectional elevation of the regulating mechanism, taken upon line A B of Fig. 2; and Fig. 5 is an end view of the vibratory lever upon a large scale.

In the drawings the numeral 1 designates the case, within which the mechanism is secured in any preferred manner and having the usual ring 2 connected therewith.

The pedometer may be carried in the pocket or fastened to the clothing by a pin, which can be secured to the back of the case.

The interior mechanism in part comprises a circular bottom plate 3, a top plate 4 of less width than the bottom plate, a bridge 5, attached to the top plate by a screw 6, a vibratory lever 7, having a weight 8 upon its outer end and pivotally secured upon a spindle 9 between the overhanging end of said bridge and top plate, a notched wheel 10, rotatably mounted upon the spindle 9 between the vibratory lever and top plate, a pinion 11 be-

tween the said plates and fixed to the notched wheel 10, (see Fig. 3,) a spring-finger 12, secured to the lever 7, the free end of which bears against the periphery of the notched wheel 10, a stop-finger 13, attached to the top plate, which also bears against the periphery of the notched wheel and by engaging its teeth prevents movement thereof in one direction.

The stationary position of the vibratory lever 7 is shown in Fig. 2, wherein the upper edge thereof is held against a fixed stop 14 by a spring 15, which is fastened at one end to the top plate by a screw 16, and the other end of which engages a shoulder 17 in the lower edge of the said lever adjacent to its pivot-mounting. The weight 8 is of greater thickness than the lever 7 and projects below the top plate 4. (See Fig. 3.) This lever and weight may be made in one piece, if desired; but I find it more economical to make them of two parts, which are fastened together by any preferred means. As shown, a slot is cut in the upper surface of the weight and within which the end of the vibratory lever 7 is secured.

Connected with the notched wheel 10 and the pinion 11 is a gear-train, comprising a gear 18, which meshes into the pinion 11, a pinion 19 upon the same spindle as the gear 18, a gear 20, meshing into the pinion 19 and fixed upon the same spindle as the pinion 21, and a gear 22, mounted on the main spindle 23 and meshing into the pinion 21. This spindle projects through the bottom plate 3 and carries the units-indicating finger 24. The indicating-dials are either graduated upon the bottom plate 3 or a printed dial can be attached thereto, as is common and well known in the art. A tens-register is operated from the gear 22, there being a pin 25 in one side of said gear which engages the teeth of a pinion 26 upon a spindle 27 once during each revolution, and upon the said spindle 27 is a tens-indicating finger 28, which rotates over the tens-dial 29. The proportions of the gear 22 and pinion 26 are as one to ten, so that every ten revolutions of the gear 22 will impart one rotation to the pinion 26 and the tens-finger 28, as is common in counting mechanisms.

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The pedometer is actuated by the vibrations of the vibratory lever 7, which vibrations are in a vertical plane and result from the shock to the body of the pedestrian as the foot strikes the ground. As the weight 8 drops against the tension of the spring 15 the finger 12 rides over the teeth in the notched disk 10, and when returning under the pressure of the spring 15 this finger 12 engages one of the teeth upon the periphery of the disk 10 and imparts to said notched disk a partial rotation, which rotation is communicated to the gear 22 and the units-indicating finger 24 through the train of gears above described.

To regulate the length of stroke of the vibratory lever, I have provided a regulating mechanism which comprises a cam-disk 30, having a pin-hole 34 therein, a notched disk 31, a screw 32, by which said parts are rotatably secured to the top plate, and a click-spring 33, which is secured to the top plate 4, as shown in Fig. 2. In the drawings the cam 30 and notched disk 31 are shown as being made of two separate pieces, but do not limit myself thereby, as they can be made integral with each other, if desired. It will be apparent that the location of the cam 30 about the screw 32 will lengthen or shorten the open space between the stop-pin 14 and the cam 30. As the lower edge of the vibratory lever engages the cam 30 at the bottom of each stroke, the length of stroke of said vibratory lever is varied according to the position of said cam. The cam is rotated by placing a pin or similar thing in the pin-hole 34 and is held in any of its adjusted positions by the click-spring 33, the point of which engages one of the notches in the disk 31. (See Fig. 2.) A scale 35 is graduated upon the top plate 4, so that the cam may be adjusted to any predetermined position.

There are minor changes and alterations that can be made within my invention aside from those herein shown and described, and I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but claim all that falls fairly within the spirit and scope of my invention.

Having described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. In a pedometer, the combination with a vibratory lever; of an indicating-finger; a train of gears operated by the movement of said lever for actuating said indicating-finger; a fixed stop to limit the movement of said lever in one direction; and a cam-stop for limiting its movement in the opposite direction.

2. In a pedometer, the combination with a vibratory lever; of an indicating-finger; a train of gears operated by the movement of said lever for actuating said indicating-finger; a fixed stop to limit the movement of said lever in one direction; and a pivotally-secured adjustable stop for limiting its movement in the opposite direction, comprising a rotatably-mounted cam; and spring mechanism for holding said cam in any of its adjusted positions.

3. In a pedometer, the combination with a vibratory lever 7; of an indicating-finger; a train of gears; a fixed stop 14 for limiting the movement of said lever in one direction; a rotatably-mounted cam 30 for limiting the movement of said lever in the opposite direction; and a spring 33 having connection with said cam for holding the same in its adjusted positions.

4. In a pedometer, the combination with the bottom plate 3; of the top plate 4 of less width than said bottom plate; a vibratory lever 7 pivotally secured above said top plate; a weight 8 fixed to said lever and projecting below said top plate; a dial; an indicating-finger; a train of gears between the said plates, operated by the movement of said lever and actuating said indicating-finger; a fixed stop 14 for limiting the movement of said lever in one direction; and an adjustable stop for limiting its movement in the opposite direction, all constructed and operating substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDMOND KUHN.

Witnesses:

DANIEL J. HURLEY,
JOS. E. O'CONNOR.