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(54) **METHOD FOR SELLING, PROTECTING, AND REDISTRIBUTING DIGITAL GOODS**

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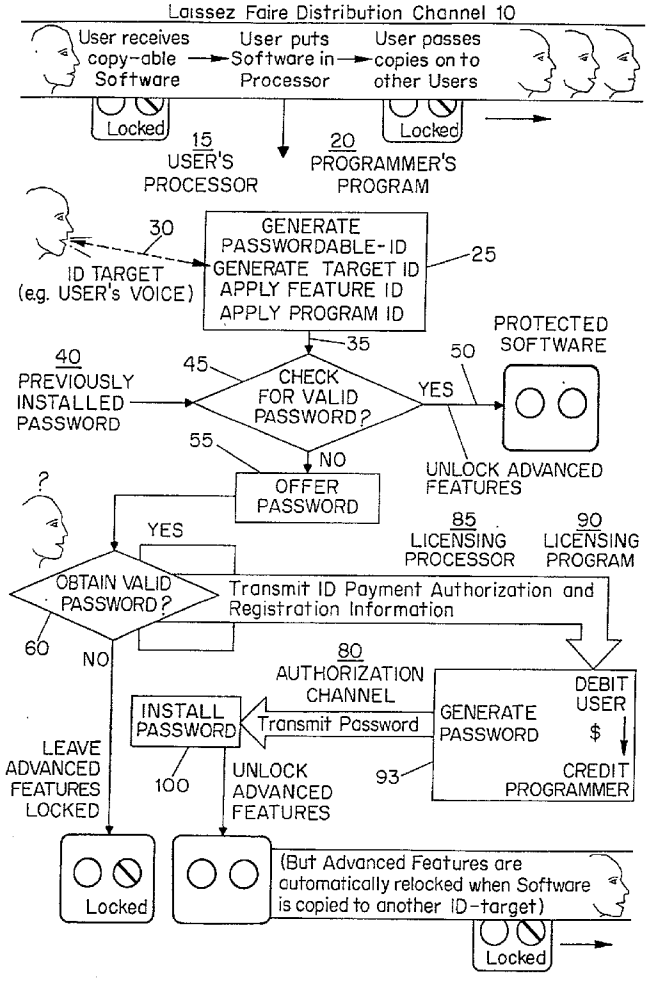
(57) **ABSTRACT**

This is a method for limiting access to selected features of a freely distributed multimedia file, by disabling selected features of the file (using encryption, compression, or other access denial), distributing the file with some enabled features as an inducement to new users, and offering to enable more features when a new user attempts to use a disabled feature. A licensing system then receives a request from the user's system, identifying a specific operating context and one or more features desired by the corresponding user. Accounting is done and an authorization is sent to the user or the user's system to enable the features. However, the authorization is uniquely associated with the measured operating context of the user and the features remain enabled only for said operating context, thus limiting full operation to authorized users, while permitting new users access to limited operations.



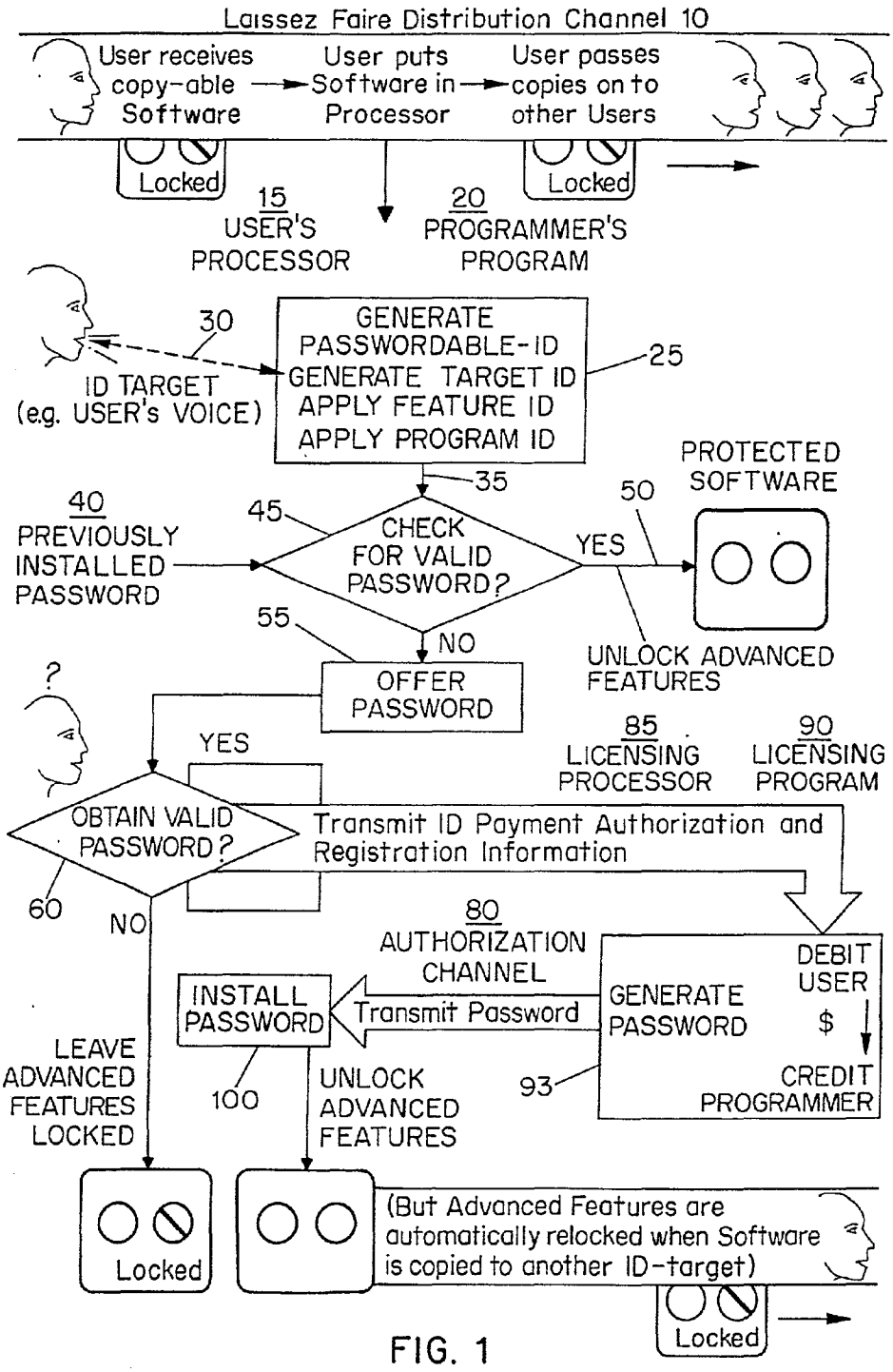


FIG. 1

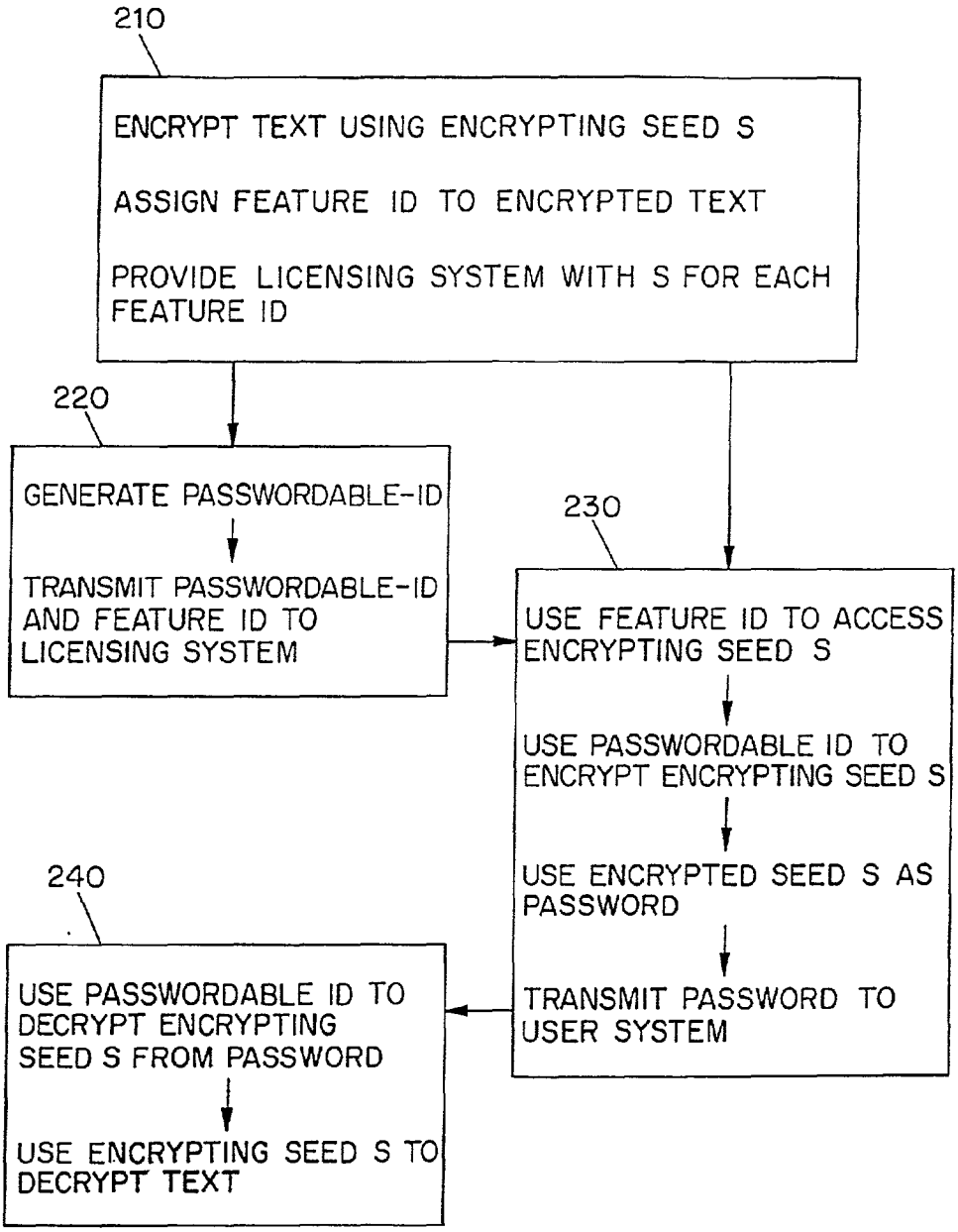


FIG. 2

METHOD FOR SELLING, PROTECTING, AND REDISTRIBUTING DIGITAL GOODS

[0001] This is a Continuation in Part based upon pending application U.S. Ser. No. 09/764,293, which was filed on Jan. 19, 2001, which was a Continuation of U.S. Ser. No. 08/631,411, filed on Apr. 12, 1996, now issued as U.S. Pat No. 6,266,654, which was a Continuation in Part of U.S. Ser. No. 07/990,445, filed on Dec. 15, 1992, now issued on Apr. 16, 1996 as U.S. Pat. No. 5,509,070.

BACKGROUND-FIELD OF THE INVENTION

[0002] This invention relates to a method of encouraging distribution, registration, and purchase of freely copyable software and other digital information. The invention applies to software as well as other information which can be repeatedly copied with little loss of fidelity, and which is expressed via a hardware- or software- programmable apparatus, such as a computer or a digital audio tape player.

[0003] The Copyability of Software—problem and Opportunity.

[0004] Digitally encoded information ("software") is one of the most economically important commodities of the era. The ease and economy with which perfect copies can be made, copied and distributed has promoted the spread of software and related technologies through "traditional" commercial channels (retail and mail order sales, etc.) and through "non-traditional" distribution channels: computer user groups, user-to-user copying and sharing (e.g., of software and of music and video tapes), digital data networks such as the internet, CompuServe, static media such as CD-ROM disks loaded with large quantities of data, public libraries, and broadcast media. These non-traditional distribution channels in particular have made it difficult for software creators and copyright holders to regulate the use of their creations, or to receive payment and registration information from their users. Consequently, software producers forfeit substantial revenues and valuable information about their customer base and potential markets, while businesses and universities find themselves subject to legal prosecution and intimidation for software piracy.

[0005] Two approaches to these problems are copy-deterrence, and copy- encouragement. Copy-deterrence is implemented through laws, license agreements and copy-protection technologies. Copy-encouragement is practiced by "shareware" and small scale marketers who tolerate the low registration rates in order to reach the many potential users who can be reached at little cost through non-traditional distribution channels. Separately and in combination, however, these approaches have had significant disadvantages.

[0006] Copy-deterrence.

[0007] Legal copy-deterrence techniques such as licensing agreements, and litigation against companies and universities whose members knowingly or unknowingly engage in piracy are inefficient, expensive, and often unsuccessful. They incidentally create large numbers of "software criminals" or "pirates" who routinely violate these unenforceable, hard-to-understand, and often unreasonable contracts.

[0008] Hardware and software copy-deterrence technologies have also been developed, but they often raise the price and complexity of the software product, and inspire the development, sale and use of counter—technologies intended to defeat these copy—protection technologies. Copy-protection techniques often inconvenience Users who have legitimate needs and good reasons for making copies, and User protests against such inconveniences have in fact caused many software vendors to abandon copy-protection schemes. Yet another disadvantage of hardware-based copy-protection techniques, as well as those which involve modification or customization of the executable program itself is that they prevent software vendors from exploiting the remarkable non-traditional distribution networks which have sprung up in the software marketplace, and which have given rise to the alternative approach, copy-encouragement.

[0009] Copy-encouragement

[0010] Shareware programmers and vendors encourage their users to copy, share, and distribute software to others in hopes that an adequate proportion of recipients will voluntarily contact the vendors, register themselves, and pay for the software which they are using. Only a small fraction of users actually oblige, but the non-traditional distribution channels reach so many potential customers so cheaply, that the shareware strategy has been adopted by small-scale vendors who do not have the resources for traditional manufacturing, advertising, packaging, and distribution methods.

[0011] In addition to the explicitly-shareware oriented software vendors, it has been observed that many purveyors of popular software packages actually tolerate a large amount of illicit copying in the hopes that users will eventually purchase a copy or an upgrade. In any case, it is obviously and crucially desirable to the vendors of easily-copyable software that users register and pay for software.

[0012] Users of freely copyable software are often encouraged to register and pay for software by offering them additional benefits including "enhanced" versions of the software. But this strategy is deficient: withholding such benefits reduces the attractiveness of the product to potential users, and reduces the probability that users will recommend or give the program to other paying customers. And once a user has purchased one enhanced copy, he or she has even less incentive for registering additional copies to be used on additional machines, and is now able to pirate the more powerful program, thus undercutting incentives for registration among future users who might receive copies. There is a need for a means of INSTANTLY rewarding Users who register and pay for freely copyable software, without undercutting future incentives for registering, copying, and distributing additional copies.

[0013] Another problem with the prior art is that the people who actually create software (i.e., programmers) often do not have the financial resources, business experience, time or motivation required for registering, billing, and collecting money from paying users. This is why they often license their programs to established publishers and settle for a small percentage of the profits which arise from the sale of their creations. Programmers would benefit greatly if they could "program a business operation" into their software just as they can now "program a computational operation" into their software—i.e., by adding a few lines of code which activate other routines which will do their bidding. The present invention provides a means of satisfying this unrecognized need in the industry.

[0014] Objects of the Present Invention

[0015] One object of the present invention is to encourage users to pay for, and register the freely-copyable software they actually use.

[0016] Another object is to enable programmers to "program a business operation" by writing a few lines of code, and thus reduce their financial and other dependence upon software publishers, distributors, and vendors.

[0017] Another object is to allow programmers to be confident that their licensed representatives (software distributors and vendors) are in fact reporting and paying royalties on all product sales.

[0018] Another object is to encourage and allow users to evaluate and exploit useful software before deciding whether to purchase, and to provide a convenient and rapid way for them to purchase access to advanced features severally or individually, as they and the programmer choose.

[0019] Another object is to incent users to distribute freely-copyable software to other people who would benefit from, and possibly purchase the software.

[0020] Another object is to create economic and pragmatic incentives which deter piracy: the idea is that if higher registration rates could be attained, software prices could more accurately reflect their actual utility to the average user. This would reduce the incentives for piracy and associated technologies.

[0021] Another object is to increase the availability and profitability of freely copyable software and of the grassroots distribution channels.

[0022] Another object is to enable users to gain instant access to advanced features of freely copyable software with minimal delay through virtually any form of communication technology with or without auxiliary telecommunications equipment such as modem.

[0023] Another object is to eliminate the need for costly and inconvenient non-copy-able adjuncts to software programs (such as expensively printed manuals and packaging, hardware locks) etc., whose only purpose is to deter illegal copying of software and whose effect is to inflate software prices.

[0024] Another object is to improve upon the technology embedded in the author's prior art (TAU) so that technology can be made available to other programmers as freely-copyable software tools.

[0025] Still further objects and advantages of the present invention will become apparent from a consideration of the ensuing description and drawings.

SUMMARY DESCRIPTION OF THE INVENTION

[0026] Some of the above objects have been partially realized in a computer program developed for different purposes by the present author in 1989. This is probably the most relevant prior art, and the present invention is both an improvement and a new use of the author's earlier invention, and of other related inventions, such as U.S. Pat. Nos. 4,796,220 and 5,113,118.

[0027] My previously-developed program ("TAU" for the scientific analysis of biological rhythms data) is not copy-protected, and copying is encouraged. However certain "advanced features" of the program are inaccessible on a given machine until a unique, or nearly-unique password is installed on that machine. These advanced features (such as the ability to make publication-quality reports) are inessential for educational and evaluation purposes (and so they do not discourage distribution along the grassroots channel), but they are desirable for serious or professional use (and so they do encourage user registration). The instant the password is installed, the "advanced features" of the program are unlocked. The password, like the program itself, is freely-copyable (so backups can be made and restored freely on the machine for which that password is appropriate). However, since the password is useless on other machines to which copies might be transferred, a new password must be purchased for each new machine on which the advanced features are desired. Thus the method encourages all users to evaluate, copy, and distribute the software to other machines and other potential users, while at the same time encouraging serious users to register and pay for not-merely-evaluative use.

[0028] During two years of experimental monitoring, some deficiencies of this method were identified. While the method did ensure that the software vendor would report and pay royalties to the author (who was the only party with the routine for generate appropriate passwords) the process by which the user obtained a password proved inconvenient for vendor, author, and customer. The protocol for obtaining passwords was: Program presents ID to User, User gives ID to Vendor (by phone, mail or fax), Vendor gives ID to Author (by phone), Author gives Password to Vendor (by phone), the Vendor gives ID to User, User gives ID to program (via the keyboard), the program installs the ID. The present invention preserves the security advantages while simplifying and making more flexible the process by which passwords are obtained. A second deficiency was that while the method allows selective locking of particular features in an otherwise functional program, it became clear that we needed a method by which Users could selectively purchase only those advanced features which were required on a particular machine. A third deficiency was that when users upgraded or repaired their computers over the course of the experimental period, we had to issue replacement passwords at no charge, and had no convenient means of verifying claims about computer modifications. During testing it became clear that if such deficiencies could be addressed, and if the scheme could be disembedded from the particular biological rhythms program for which it had been developed, it could be of quite general utility. The present invention addresses these deficiencies, generalizes the scheme tested in the author's earlier creation, and disembeds it from that experimental context in such a way that it can be incorporated into other programmer's and software producers creations.

OVERVIEW OF THE INVENTION

[0029] The invention as described is most easily understood as a set of software tools which computer programmers can incorporate into their own programs by adding a few lines of code. These programmer-written lines activate the software tools which enable or perform some or all of the functions to be described. However, it should be understood

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