

[54] **SECURE MONEY CHANGING AND MONEY RECEIVING SYSTEM**

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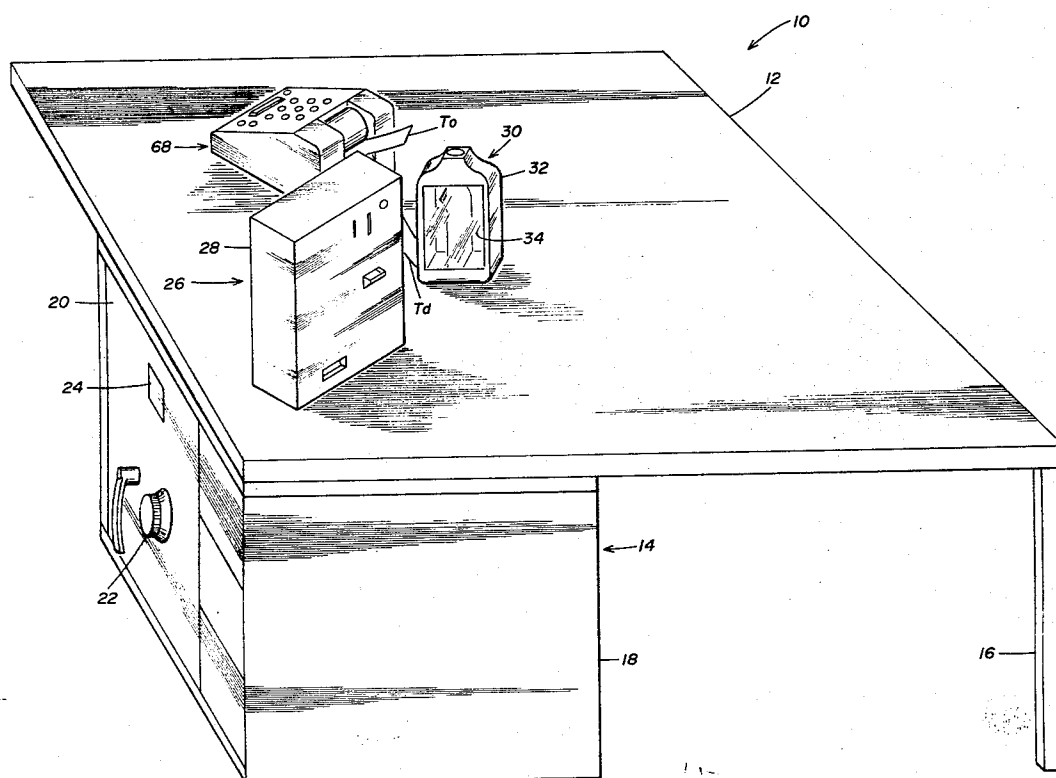
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[57] **ABSTRACT**

A secure money changing and money receiving system for convenience establishments and the like includes a safe, a money-changing apparatus, and a money receiving apparatus. The safe has a theft proof housing and a normally locked access door, and the money-changing apparatus has a theft proof housing which is attached to the housing of the safe. The money receiving apparatus includes a theft proof housing having at least one window and includes a partition which separates the housing into coin and currency receiving portions. A pair of doors are provided for normally retaining coins and currency in the coin and the currency receiving portions of the housing, respectively, and for selectively permitting the coins and the currency to pass into the safe. Thus, all of the money that is on the premises of the convenience establishment is situated either in the safe or in the change-making apparatus and is therefore totally secure from theft.

3 Claims, 4 Drawing Figures



SECURE MONEY CHANGING AND MONEY RECEIVING SYSTEM

BACKGROUND AND SUMMARY OF THE INVENTION

As is well known, the United States has recently experienced a very marked increase in crime. A major aspect of this increase has comprised thefts from convenience establishments, i.e., convenience food stores, liquor stores, service stations, and the like. This is because convenience establishments are almost always situated in highly accessible locations and heretofore have almost always had relatively large amounts of readily accessible cash on hand.

The present invention comprises a secure money changing and money receiving system which completely eliminates any possibility of theft from a convenience establishment, or the like. In accordance with the broader aspects of the invention, the personnel of the establishment do not handle and are denied access to any money which may be on the premises. This prevents theft from the establishment since absolutely no money is available to be stolen or taken in an armed robbery.

In accordance with the more specific aspects of the invention, a secure money changing and money receiving system comprises a safe and a change-making apparatus each having a theft proof housing. Customers of the convenience establishment receive change from the change-making apparatus and then deposit the exact amount of money required for each transaction in a money receiving apparatus. When the proper amount of money has been deposited, the money receiving apparatus is actuated to deposit the money in the safe. Thus, all money on the premises of the convenience establishment is situated either in the change-making apparatus or in the safe, and any possibility of theft from the convenience establishment is completely eliminated.

DESCRIPTION OF THE DRAWINGS

A more complete understanding of the invention may be had by referring to the following Detailed Description when taken in conjunction with the accompanying Drawings, wherein:

FIG. 1 is a perspective view of a secure money changing and money receiving apparatus incorporating the preferred embodiment of the invention;

FIG. 2 is a perspective view of the money receiving apparatus of the embodiment of the invention shown in FIG. 1;

FIG. 3 is a sectional view of the money receiving apparatus shown in FIG. 2; and

FIG. 4 is a schematic illustration of part of a secure money changing and money receiving apparatus incorporating an alternative embodiment of the invention.

DETAILED DESCRIPTION

Referring now to the Drawings, and particularly to FIG. 1 thereof, there is shown a secure money changing and money receiving system 10 incorporating the preferred embodiment of the invention. The system 10 comprises a work table 12 which may be formed from any convenient material, such as one of the various plastic materials that are commonly employed in fabricating work counters for convenience establishments. A safe 14 is situated under and preferably supports one

end of the work table 12. It will be understood that the work table 12 may be as large as necessary for a particular installation and may be provided with additional supporting structures 16, if desired.

The safe 14 of the secure money changing and money receiving system 10 comprises a theft proof housing 18 and an access door 20. The door 20 is normally secured in the closed position shown in FIG. 1 by a locking mechanism 22 which may comprise either a combination lock or a key operated lock. In any event, access to the safe 14 through the door 20 is preferably available only to the owner of the convenience establishment, an armored car crew, or the like, and is not available to personnel of the convenience establishment. The safe 14 may be equipped with a plate 24 bearing a legend to this effect, if desired.

The safe 14 preferably comprises one of the commercially available models, such as the safe manufactured by Diebold, Inc., of Canton, Ohio, and identified by that company as Model Number 12940. Depending on the requirements of a particular installation, the safe 14 may be mounted either directly on the floor of a convenience establishment or on suitable supporting structure. Regardless of how it is supported, the safe 14 is rendered immovable either by its own mass or by securing the housing 18 to the floor or other structure which supports the safe 14.

The secure money changing and money receiving system 10 further includes a change-making apparatus 26 which is mounted on the work table 12. The change-making apparatus 26 is equipped with a theft proof housing 28 and preferably comprises one of the commercially available change-making devices. For example, the device manufactured by National Rejectors of Hot Springs, Ark., and identified by that company as X Changer Model 30-05-000 modified to accept coins in 25 cent and 50 cent denominations and currency in \$1, \$5, \$10, and \$20 denominations may be used. The change-making apparatus 26 is rendered immovable, preferably by attaching the housing 28 of the change-making apparatus 26 to the housing 18 of the safe 14. The latter may be accomplished either by bolts extending from the interior of the housing 28 to the interior of the housing 18 or by welding the housing 28 directly to the housing 18.

Referring now to FIGS. 2 and 3, the secure money changing and money receiving system 10 is also equipped with a money receiving apparatus 30. The money receiving apparatus 30 comprises a theft proof housing 32 including a pair of windows 34. As is best shown in FIG. 3, the housing 32 is mounted on the work table 12 and is threadably engaged with the housing 18 of the safe 14. A bolt 36 extends through a lug 38 secured to the housing 18 and through the housing 32 of the money-receiving apparatus 30 to prevent removal of the housing 32.

The housing 32 is provided with a coin receiving aperture 40, a currency receiving aperture 42 and a tape receiving aperture 44. A partition 46 having an upper curved portion 48 is mounted within the housing 32 and functions to divide the interior of the housing into a coin receiving portion 50 and a currency receiving portion 52. The upper curved portion 48 of the partition functions to prevent coins deposited in the housing through the coin receiving aperture 40 from commingling with currency deposited in the housing 32 through the currency receiving aperture 42.

The money receiving apparatus 30 is further equipped with a pair of doors 54 and 56 mounted in the lower portion of the housing 32. The doors 54 and 56 are normally positioned in the horizontal orientations shown in FIG. 3 and therefore normally function to retain coins in the coin receiving portion 50 and to retain currency in the currency receiving portion 52, respectively. However, as is shown in FIG. 2, the doors 54 and 56 are provided with a pair of actuating levers 58 and 60, respectively, whereby the doors may be pivoted downwardly to permit coins and currency to drop out of the coin receiving and currency receiving portions of the housing 32 and through the lower portion of the housing.

A coin and currency receiving assembly 62 is secured to the lower portion of the housing 32 of the money receiving apparatus 30. The coin and currency receiving assembly 62 includes an adapter 64 which is secured to the housing 32 and which supports a pair of money receiving bags 66. The partition 46 extends downwardly into the adapter 64 to prevent commingling of coins and currency falling therethrough from the housing 32. Thus, all coins which are received in the money receiving apparatus 30 are eventually accumulated in the bag 66 situated beneath the coin receiving portion 50 of the housing 32 and all currency that is received in the money receiving apparatus 30 is eventually accumulated in the bag 66 situated beneath the currency receiving portion 52 of the housing 32.

Those skilled in the art will realize that the money receiving apparatus 30 of the secure money changing and money receiving system 10 is adapted to numerous variations and design. For example, whereas the doors 54 and 56 illustrated in FIG. 3 are mounted for pivotal movement about axes extending parallel to the plane of the partition 46, the money receiving apparatus 30 could be provided with a single door mounted for pivotal movement around an axis extending perpendicular to the plane of the partition 46. In such a case, only one actuating lever would be required. Single lever actuation may also be accomplished by providing a linkage for operating the doors 54 and 56 in synchronism. Another modification to the structure shown comprises providing a single bag for accumulating all of the money that is deposited in the money receiving apparatus 30. Such a bag could be secured directly to the lower portion of the housing 32, if desired. Other changes to the basic structure of the money receiving apparatus 30 illustrated in the Drawings will readily suggest themselves to those skilled in the art.

Referring again to FIG. 1, the secure money changing and money receiving system 10 further includes an adding machine 68 which is mounted on the work table 12. The adding machine 68 is of the type that makes an original tape T_o and a duplicate tape T_d bearing each transaction that is entered into the adding machine 68. In the practice of the present invention, the duplicate tape T_d is directed into the safe 14 through the tape receiving aperture 44 formed in the housing 32 of the money receiving apparatus 30. As is clearly shown in FIG. 3, the duplicate tape T_d thereafter is directed into the bag 66 positioned to receive currency deposited in the money receiving apparatus 30. The tape T_d is stored in the bag 66 until it is retrieved by the owner of the convenience establishment, an armored car crew, or the like.

Referring now to FIG. 4, there is shown a secure money changing and receiving system 10' comprising an alternative embodiment of the invention. The system 10' is basically similar to the secure money changing and receiving system 10 in that it comprises a work table 12' which is supported on a safe 14' comprising a theft proof housing 18'. The system 10' further comprises a change-making apparatus 26' including a housing 28' which is secured to the housing 18' of the safe 14' and a money receiving apparatus 30' constructed identically to the money receiving apparatus 30 shown in FIGS. 2 and 3.

The basic difference between the two embodiments of the invention is that whereas currency received in the money receiving apparatus 30' of the system 10' is deposited in a bag 66', coins received in the apparatus 30' are not so deposited. Rather, all coins in the money receiving apparatus 30' are directed to a coin sorter 70 wherein they are sorted into the various denominations of circulated coinage. The sorted coins are then directed to a conveyor 72 which transports the coins to the change-making apparatus 26'. By this means a full supply of coins is maintained in the change-making apparatus 26' at all times.

OPERATION

In the practice of the present invention a secure money changing and money receiving system incorporating the invention is installed in a convenience establishment. If the safe of a particular system is relatively small, it is mounted on suitable supporting structure and is secured to the floor of the establishment. On the other hand, if the safe has sufficient mass so as to be immovable by ordinary means, it is merely positioned at a suitable location on the floor. After the safe has been installed, the work table 12 is erected and the change-making apparatus 26, the money receiving apparatus 30 and the adding machine 68 are mounted on the work table 12. As has been indicated, installation procedure for the changemaking apparatus 26 and the money receiving apparatus 30 includes securing the housings of both devices to the housing of the safe 14.

After the secure money changing and money receiving system has been installed, it is employed to service customers of the convenience establishment. Each customer brings his merchandise, etc. to the work table 12 whereupon personnel of the convenience establishment actuate the adding machine 68 to calculate the total money owed by the customer. The portion of the original tape T_o produced by the adding machine relating to the particular customer's transaction is removed and given to the customer. The customer then obtains change as necessary from the change-making apparatus 26. Finally, the customer deposits the sum required for his particular transaction in the money receiving apparatus 30 of the secure money changing and money receiving system 10. When the proper amount of money has been deposited in the money receiving apparatus 30, the doors 54 and 56 are actuated to admit the money into the safe.

It will be appreciated that throughout the operation of the secure money changing and money receiving system 10, the duplicate tape T_d prepared by the adding machine 68 is admitted to the safe 14 through the tape receiving aperture 44 of the money receiving apparatus 30. Thus, all money received at the convenience establishment and the duplicate tape T_d are accumulated

within the safe during the operation of the system. Subsequently, preferably after the convenience establishment is closed, the access door of the safe is opened to permit retrieval of the money and the duplicate tape therefrom. At the same time the change-making apparatus 26 is refilled with coins and bills to permit further money changing thereby. Of course, if the embodiment of the invention illustrated in FIG. 4 is employed, it is unnecessary to refill the change-making apparatus with coins.

As will be appreciated by those skilled in the art, secure money changing and money receiving systems incorporating the present invention can be constructed otherwise than is shown in the Drawings. For example, the change-making apparatus can be rendered immovable other than by securing it to the safe, such as by securing it to a wall, etc. Also, the safe need not be located under the work table but could be situated in the basement, etc. Money changing and money receiving systems incorporating the invention may also be constructed in smaller size versions for use in buses, etc.

From the foregoing, it will be understood that in accordance with the present invention the personnel of a convenience establishment do not handle any money whatsoever. Rather, all of the money situated at the convenience establishment is enclosed either in the safe or in the change-making apparatus of the secure money changing and receiving system. By this means access to money by the establishment is totally prevented and any possibility of theft from the establishment is completely eliminated.

Although preferred embodiments of the invention have been illustrated in the accompanying Drawings and described in the foregoing Detailed Description, it will be understood that the present invention is not limited to the embodiments disclosed, but is capable of numerous rearrangements, modifications, and substitutions of parts and elements without departing from the spirit of the invention.

What is claimed is:

1. A secure money changing and money receiving system comprising:

a safe including a substantially theft proof outer housing and having a normally locked access door; a relatively large work table supported on the safe wherein a sales clerk may face a customer across said table;

a change-making apparatus mounted on the work table and having a substantially theft proof outer housing; said change-making apparatus mounted to be primarily accessible to a customer and including

a money inlet and a change outlet, said change-making apparatus only dispensing change upon the insertion of money into said money inlet;

a money receiving apparatus mounted on the work table and comprising:

a substantially theft proof box extending above said work table including at least one transparent window portion on the side thereof and having separate coin and currency receiving apertures formed therein in the upper portion;

means mounted within the housing for dividing the interior thereof into coin receiving and currency receiving portions;

means for normally retaining coins and currency in the coin receiving and currency receiving portions of the box to enable the sales clerk and the customer to view the currency deposited in said box prior to deposit, respectively, and for selective actuation to admit coins and currency from the housing into the safe; calculating means mounted on the work table for determining and for providing duplicate tapes indicating the amount of money to be received in the money receiving apparatus and wherein the money receiving apparatus further includes an aperture for receiving one of the tapes from the calculating means and for directing the tape into the safe; and

means rendering the safe, the change-making apparatus and the money receiving apparatus substantially immovable.

2. The secure money changing and money receiving system according to claim 1 wherein the retaining means of the money receiving apparatus comprises separate doors for normally retaining coins in the coin receiving portion and for normally retaining currency in the currency receiving portion, respectively, and wherein the receiving means of the money receiving apparatus comprises separate members located within the safe for receiving coins from the coin receiving portion and for receiving currency from the currency receiving portion, respectively.

3. The secure money changing and money receiving system according to claim 1 further comprising a coin sorting apparatus located within the safe for receiving coins from the coin receiving portion of the housing of the coin receiving apparatus and means for transporting coins from the coin sorting apparatus to the change-making apparatus.

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