June 2, 1936. W. H. HARVEY 2,042,844

COIN RECEPTACLE

Filed Aug. 8, 1935 2 Sheets-Sheet 1

FIG. 1

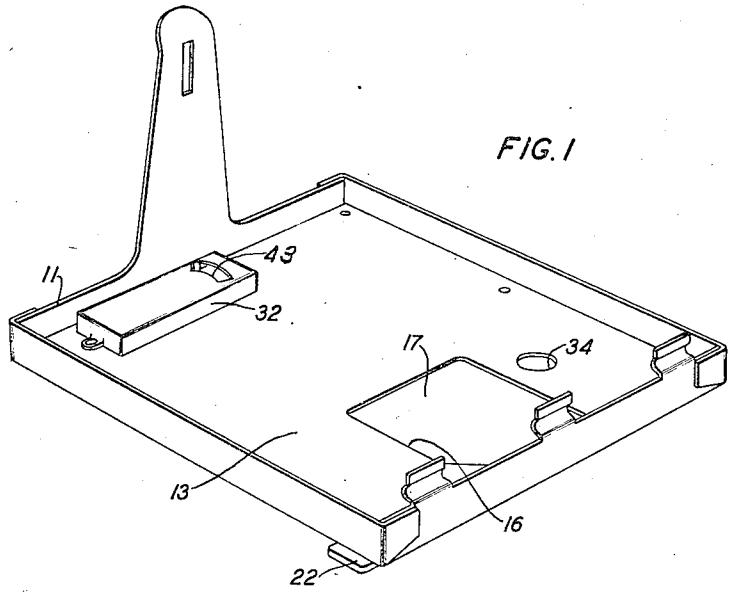

FIG. 2

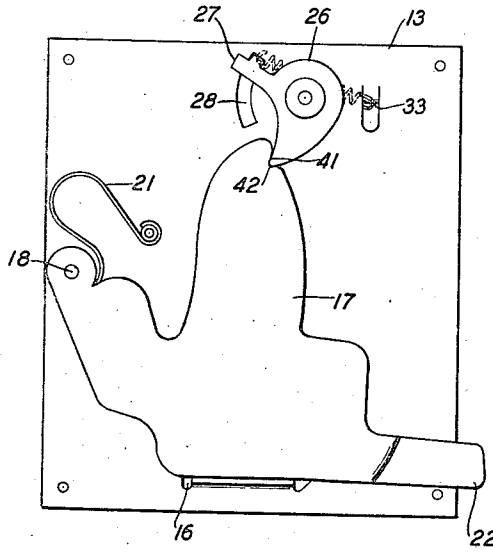

FIG. 3

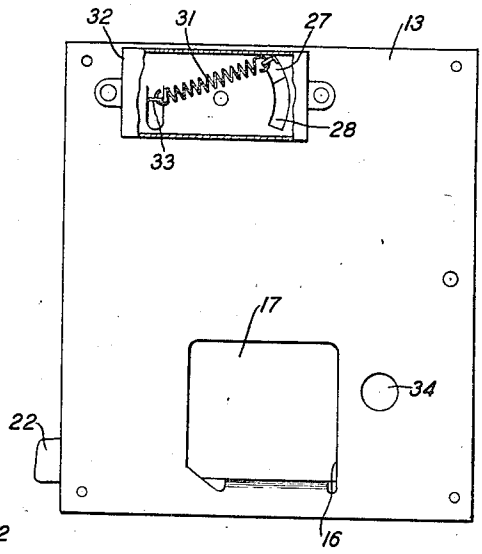

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FIG. 4

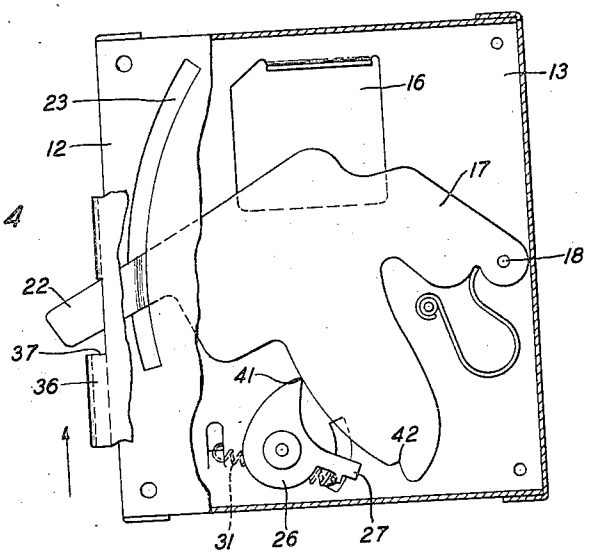


FIG. 5

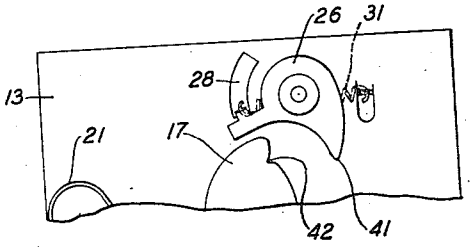


FIG. 6

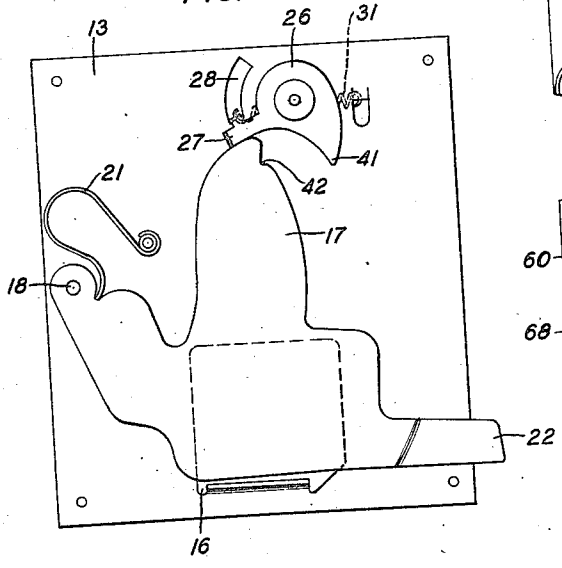
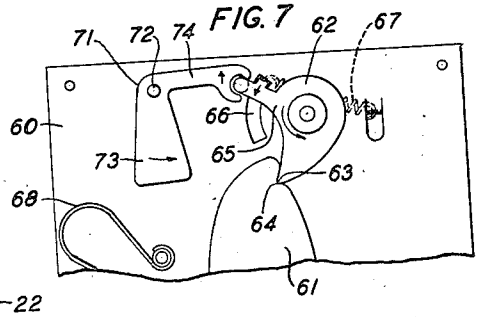


FIG. 7



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UNITED STATES PATENT OFFICE

2,042,844

COIN RECEPTACLE

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17 Claims. (Cl. 232—44)

This invention relates to covers for coin boxes or receptacles and more particularly to covers for coin receptacles of the type used in telephone coin collectors, such a receptacle being described, for example, in United States Patent 1,121,063, issued December 15, 1914 to W. O. Beck.

An object of the invention is the prevention of fraudulent removal of the contents of coin receptacles.

Cash receptacles used in telephone coin collectors are ordinarily furnished with a hinged cover which has an opening therein through which the collected coins pass. A sliding shutter is usually provided for closing the coin receiving opening. A projection carried by an extension of the shutter is adapted to engage with a portion of the coin collector housing when the coin receptacle is placed therein, this engagement being effective, when the receptacle is being inserted in the housing, to move the shutter to open position and being effective, when the receptacle is being removed, to move the shutter to closed position. Means is ordinarily provided for automatically locking the shutter in closed position.

In accordance with the usual practice the empty coin receptacles are prepared for distribution at a central cashier's office. Before the cover is placed on the receptacle the locking means is set in free position, i. e., a position which allows the shutter to move to open position. The cover is now placed in position on the receptacle. The receptacles are then taken by designated employees to be placed in the coin collectors. As the receptacle is inserted in the housing the shutter is moved to open position as stated above and the locking means is ordinarily so arranged that before the receptacle is fully inserted, the locking means is tripped and moved into locking position. Now when the filled receptacle is later withdrawn the shutter is closed as above mentioned, the locking means then being effective to hold the shutter in closed position.

According to a feature of the invention insertion of the receptacle to the proper point in the housing is prevented if the locking means be blocked and held from moving to locking position when tripped.

In accordance with a specific embodiment of the invention the shutter locking means comprises a pawl mounted on the underside of the cover and operating in conjunction with a notch provided on an extension of the shutter plate. The pawl may be biased in either of two positions, locking or free by a spring. When in locking position the pawl engages with the notch and prevents moving the shutter to the open position. The arrangement contemplated by the invention is such that the shutter is prevented from moving to its fully opened position if the pawl be so blocked, fraudulently or accidentally, that it is prevented from freely rotating to locking position when tripped. The fact that the shutter is, under these conditions, prevented from completing its opening movement indicates, of course, that the receptacle cannot be inserted to the proper position in the coin collector housing for, as previously pointed out, a projection of the shutter engages with a portion of the housing as the receptacle is inserted therein, this engagement being effective to progressively move the shutter to open position as the receptacle is moved back to its proper position in the housing.

In accordance with a modification of the invention, means is provided for preventing accidental or fraudulent disengagement of the locking pawl and the notch in the shutter.

A complete understanding of the operation of the receptacle cover contemplated by the invention and of the various advantageous features thereof may be gained from consideration of the following detailed description and the annexed drawings in which:

Fig. 1 is a view of the underside of a coin receptacle cover of the type contemplated by the invention;

Fig. 2 is a top view of the inner plate of the cover showing the arrangement of the shutter and locking pawl, the pawl being in locking position;

Fig. 3 is a bottom view of the inner plate shown in Fig. 2, a part of the casing being broken away to show the pawl spring;

Fig. 4 is a plan view of the coin receptacle cover as the coin receptacle is being inserted in the coin collector, a part of the outer wall of the cover being broken away to show the position of the shutter and locking pawl;

Fig. 5 is a top view of a portion of the inner plate showing the pawl in free position;

Fig. 6 is a view similar to that of Fig. 2, the shutter being shown in contact with the pawl and about to trip said pawl to locking position; and

Fig. 7 is a top view of a portion of the inner plate showing a modification of the pawl arrangement whereby fraudulent or accidental operation is prevented.

Referring now to the drawings and first to Fig. 1, a coin receptacle cover 11 is shown which comprises an outer plate 12 (Fig. 4) to which is at-

tached, by rivets or otherwise, an inner plate 13. A coin receiving opening 16 is provided in the plates, a shutter 17 for closing said opening being rotatably mounted on inner plate 13 by pivot 18. A formed spring 21, also mounted on inner plate 13, serves to normally hold shutter 17 in closed position with respect to opening 16. An extension arm 22 of shutter 17 extends upward through slot 23 provided in outer plate 12 (Fig. 4) and then laterally beyond the edge of the cover as shown.

A pawl 26 is rotatably mounted on the upper side of plate 13 (Fig. 2) a projection carried by arm 27 of the pawl being positioned in slot 28 which is provided in the plate. A biasing spring 31 is mounted on the underside of plate 13 (Fig. 3) being enclosed by casing 32. One end of the spring is attached to projection 33 of plate 13 while the other end is attached to the projection carried by arm 27, referred to above.

A coin leveling hole 34 is provided in the plates through which a pencil or other instrument may be inserted upon occasion to level off the accumulated coins.

Referring now, for the moment, to Fig. 4, the manner in which shutter 17 is moved to open position with respect to coin receiving opening 16 as the coin receptacle is inserted in the coin collector housing is illustrated. A portion 36 of the guide rail which is attached to the coin collector housing is shown, the guide rail being provided with an aperture 37 in which arm 22 is positioned when the receptacle is placed in the housing. Then, as the receptacle is pushed back into position in the housing in the direction indicated by the arrow, arm 22 is prevented from moving by its contact with the edge of aperture 37 so that the shutter is, in effect, moved to open position with respect to coin receiving opening 16. Conversely, when the receptacle is being moved in the opposite direction, that is, when it is being withdrawn from the housing, the shutter is, in effect, moved to closed position with respect to opening 16. The respective dimensions and arrangement of the coin receptacle and the coin collector housing are such that it is impossible to insert the receptacle in the housing without first positioning arm 22 in aperture 37.

Before the coin receptacle is inserted in the coin collector housing, locking pawl 26 should, of course, be set in free position to allow shutter 17 to be moved to open position as above described. The pawl is shown in locking position in Fig. 2, tip 41 of said pawl being positioned in notch 42 of shutter 17 in such a manner that rotation of the shutter towards open position is prevented. In order to move the pawl to free position, a suitable tool is inserted through aperture 43 of casing 32 (Fig. 1), this action taking place, of course, before the cover has been placed in position on the coin receptacle, and the pawl is rotated by said tool to the free position shown in Fig. 5. Spring 31 tends to bias pawl 26 in whichever direction it may be rotated beyond the dead center position.

It will be noticed that in the position of Fig. 5, tip 41 of pawl 26 is not in contact with notch 42 and the pawl does not, therefore, hinder rotation of the shutter.

Pawl 26 having been set in free position, as above mentioned, cover 11 is placed on the coin receptacle and sealed, after which the receptacle may be inserted in the coin collector housing. Now, as stated above, the shutter is opened as the receptacle is inserted in the housing and as the shutter starts to open, an edge thereof is brought into contact with arm 27 of pawl 26 (Fig. 6) and as rotation of the shutter continues this contact is effective to rotate pawl 26 against the biasing action of spring 31 until said pawl reaches the position shown in Fig. 4. The dead center position having been passed, the biasing action of spring 31 is now in the opposite direction to that of Fig. 2 and tends to hold the pawl in the position of Fig. 4. While tip 41 of the pawl is in contact with the edge of the shutter in this position, the rotation of the shutter is not retarded thereby as that portion of the edge contacted is smooth and presents no notches or other forms of recessed portions in which tip 41 of the pawl may lodge.

Pawl 26 remains in the position of Fig. 4 while the shutter is moved to the fully opened position. As the receptacle is later being removed from the housing and as the shutter is moved to closed position, tip 41 of the pawl rides along the edge surface of the shutter until, as the fully closed position is reached, notch 42 is brought into registry with tip 41, which thereupon drops into the notch due to the biasing action of spring 31 thereby locking the shutter in closed position (Fig. 2).

After the coin receptacle has been removed from the coin collector, the seal is broken by an authorized person and the cover removed from the receptacle. Before the cover is replaced, the pawl is reset in free position as mentioned above.

It will be apparent from the above description that insertion of the coin receptacle to its normal position in the coin collector housing is prevented if pawl 26 is accidentally or fraudulently disabled in such a manner that it is prevented from rotating to the locking position. Let us assume, for example, that pawl 26 is blocked in the free position of Fig. 5 either by "stuffing" slot 28 or, perhaps, by distorting parts of the pawl itself. As the receptacle is inserted in the housing and as movement of shutter 17 toward the open position takes place, the edge of the shutter is brought into contact with arm 27 as shown in Fig. 6. Now, as pawl 26 is prevented from rotating to the free position, wherein arm 27 would be out of the path of the shutter, further movement of the shutter and consequently, further movement of the receptacle into the housing is prevented. This is a valuable feature of the invention providing, as it does, an indication of fraudulent or accidental impairment of the locking arrangement and preventing inadvertent placing in service of coin receptacles which are not in proper working order.

Referring now to Fig. 7 a modification of the arrangement is disclosed in accordance with which means are included which cooperate with the locking pawl to prevent accidental or fraudulent operation thereof. So far as the general arrangement and operation of the mechanism are concerned it is similar to that just described in detail so it is not believed necessary to completely illustrate in Fig. 7 or to again describe in detail the features of the present modification which are common to the form just described. There is shown in Fig. 7 a portion of an inner plate 60 of a coin receptacle which is similar to plate 13 previously described and which is provided with a similar coin receiving opening. A shutter 61 for closing the opening is provided which is of similar form and operates in a similar manner to that of shutter 17 previously described. A locking pawl 62 is mounted on plate 60 and operates in a similar manner to that of pawl 26, being provided with a tip 63 which is adapted to

engage in notch 64 of shutter 61. An extension of arm 65 of the pawl is positioned in slot 66 of the plate, one end of biasing spring 67 being attached to said extension. A spring 68 serves to normally hold shutter 61 in closed position being similar in form and function to spring 21 previously described. A rotatable member 71 is mounted on plate 60 by means of pivot 72, said rotatable member comprising two arms 73 and 74. Arm 74 is provided with a socket-like end which is adapted to receive the end of arm 65 of pawl 62.

Member 71 is free to rotate on its pivot 72 and does not interfere in any way with the normal operation of pawl 62. However, should a fraudulent attempt be made to release the pawl from its locking position by twirling or striking the coin receptacle in such a manner that the resulting centrifugal force would tend to rotate pawl 62 in the direction indicated by the arrow thereon thereby throwing tip 63 out of its locking engagement with notch 64 (or should such action occur accidentally) centrifugal force would also tend to rotate arm 73 in the same direction as indicated by the arrow thereon. Now this rotation of arm 73 would, of course, tend to rotate arm 74 in the direction indicated by the arrow thereon, this being the opposite direction to that in which arm 65 tends to rotate. The weight of arm 73 is somewhat greater than that of pawl 62 so that the force produced in arm 74 is sufficient to overcome that produced in arm 65, the result being that rotation of pawl 62, by the method above referred to, is prevented.

While certain specific embodiments of the invention have been selected for detailed description, the invention is not, of course, limited in its application to the embodiments described. For example, while a notch has been shown on the shutter for cooperating with the locking pawl, a shoulder, step or various other forms of recessed portions or projections might be provided instead of the notch. Further, the pawl might act in conjunction with the end surface of the shutter itself. In short, the embodiments specifically described should be taken as illustrative of the invention rather than as restrictive thereof.

What is claimed is:

1. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover movable from a position closing said opening to a position unobstructing said opening, a pawl mounted on said cover, means on said shutter for cooperating with said pawl to hold the shutter in closed position, means effective when said cover is in position closing said box for biasing the pawl in either of two positions, the pawl being in the path of said first means in one of said positions and being out of the path of said first means in the other of said positions, and means for preventing complete movement of said shutter to said unobstructing position when said pawl is temporarily held in its said other position.

2. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover movable from a position closing said opening to a position unobstructing said opening, a pawl rotatably mounted on said cover, means on said shutter for cooperating with said pawl to hold the shutter in closed position, a spring for biasing the pawl in either of two positions, the pawl being in the path of said means in one of said positions and being out of the path of said means in the other of said positions and means for preventing any substantial movement of said shutter from said closing position to said unobstructing position before the pawl has moved to its first-mentioned position.

3. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover movable from a position closing said opening to a position unobstructing said opening, a notch in said shutter, a pawl mounted on said cover, means for biasing the pawl in either of two positions, the pawl being in the path of the notch in one of said positions and being out of the path of the notch in the other of said positions and means for preventing complete movement of the shutter to said unobstructing position before the pawl has moved to the first mentioned position.

4. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a notch in said shutter, a pawl mounted on said cover for cooperating with said notch to hold the shutter in closed position and means effective when said cover is in position closing said box for biasing the pawl in either of two positions, said pawl being effective in one position to cooperate with said notch to hold the shutter closed and being ineffective in the other position to hold the shutter closed.

5. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a notch in said shutter, a pawl rotatably mounted on said cover for cooperating with said notch to hold the shutter in closed position and a spring for biasing the pawl in either of two positions, said pawl being effective in one position to cooperate with said notch to hold the shutter closed and being ineffective in the other position to hold the shutter closed.

6. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a notch in said shutter, a pawl mounted on said cover for cooperating with said notch to hold the shutter in closed position, means effective when said cover is in position closing said box for biasing the pawl in either of two positions, said pawl being effective in one position to cooperate with said notch to hold the shutter closed and being ineffective in the other position to hold the shutter closed and means carried by said shutter for causing movement of said pawl from the ineffective position to the effective position.

7. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a notch in said shutter, a pawl mounted on said cover for cooperating with said notch to hold the shutter in closed position and means effective when said cover is in position closing said box for biasing the pawl in either of two positions, said pawl being effective in one position to cooperate with said notch to hold the shutter closed and being ineffective in the other position to hold the shutter closed and means carried by said shutter for causing movement of said pawl from the ineffective position to the effective position, said last-mentioned means being effective to cause said movement of the pawl before the shutter reaches its fully open position with respect to the coin receiving opening in the cover.

8. A coin receptacle comprising a box, a cover therefor having a coin receiving opening therein,

a shutter on said cover for closing said opening, a notch in said shutter, a pawl rotatably mounted on the cover for cooperating with the notch to hold the shutter in closed position, means for limiting the rotation of the pawl in each direction and means effective upon rotation of the pawl in either direction beyond its dead center position for biasing the pawl in that direction.

9. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a pawl mounted on said cover, means on said shutter for cooperating with said pawl to hold the shutter in closed position, means effective when said cover is in position closing said box for biasing the pawl in either of two positions, the pawl being effective to cooperate with said means on the shutter in one of said positions and being ineffective to cooperate with said means in the other position and means carried by said shutter and contacting said pawl for causing movement of said pawl from the ineffective position to the effective position when said shutter is being moved from said closing position.

10. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a pawl rotatably mounted on said cover, means on said shutter for cooperating with said pawl to hold the shutter in closed position, means for biasing the pawl in either of two positions, the pawl being effective to cooperate with said means on the shutter in one of said positions and being ineffective to cooperate with said means in the other position, and means carried by the shutter and contacting said pawl for causing movement of the pawl from the ineffective position to the effective position.

11. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover movable from a position closing said opening to a position unobstructing said opening, a pawl mounted on said cover, means on said shutter for cooperating with said pawl to hold the shutter in the closed position, means for biasing the pawl in either of two positions, the pawl being effective to cooperate with said means on the shutter in one of said positions and being ineffective to cooperate with said means in the other of said positions and means on said pawl cooperating with a portion of said shutter for preventing complete movement of the shutter to said unobstructing position before the pawl has moved to said effective position.

12. A coin receptacle comprising a box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a notch in said shutter, a pawl mounted on said cover for cooperating with said notch to hold the shutter in closed position, an extension on said pawl, a spring for biasing said pawl in either of two positions and a casing for enclosing said spring and said extension, said casing having an aperture therein through which a tool for manipulating said extension may be inserted.

13. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a notch in said shutter, said shutter being movable from a position unobstructing said opening to a position closing said opening, a pawl rotatably mounted on the cover, an extension arm and a projecting tip on the pawl, a spring for biasing the pawl in either of two positions, one end of the spring being attached to the cover and the other end being attached to said extension arm, said projecting tip being in the path of said notch in one of said positions of the pawl and being out of the path of the notch in the other of said positions, means on the pawl adapted to be engaged by a tool for movement of the pawl to said position in which said tip is out of the path of the notch and means on the shutter for causing movement of the pawl to the other of said positions.

14. A coin receptacle comprising a coin box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a pawl mounted on the cover for cooperating with an edge of the shutter to hold said shutter in closed position, means effective when said cover is in position closing said box for biasing the pawl in either of two positions, the pawl being in the path of said edge of the shutter in one of said positions and being out of the path of said edge in the other of said positions and means carried by said shutter and contacting said pawl for causing movement of the pawl from its last-mentioned position to its first-mentioned position when said shutter is being moved from said closing position.

15. A coin receptacle comprising a box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a notch in said shutter, a pawl rotatably mounted on the cover for cooperating with said notch to hold the cover in closed position and means for preventing rotation of the pawl due to centrifugal force.

16. A coin receptacle comprising a box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a notch in said shutter, a pawl rotatably mounted on the cover for cooperating with said notch to hold the cover in closed position and means for preventing rotation of the pawl due to centrifugal force, said means comprising a rotatable member comprising two arms, one of said arms being adapted to engage said pawl and the other of said arms being so arranged and positioned that any force tending to produce centrifugal action in the pawl tends to produce a similar centrifugal action in said other arm.

17. A coin receptacle comprising a box, a cover therefor having a coin receiving opening therein, a shutter on said cover for closing said opening, a pawl rotatably mounted on the cover, an extension arm on the pawl, means on the shutter for cooperating with said pawl to hold the shutter in closed position, said cover having an arcuate slot therein for receiving said extension arm and limiting the rotation of said pawl in each direction, and means effective upon rotation of the pawl in either direction beyond its dead center position for biasing the pawl in that direction.

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