Jan. 6, 1953 J. H. SMITH ET AL 2,624,351

COIN DISPENSER

Filed Sept. 13, 1948 2 SHEETS--SHEET 1

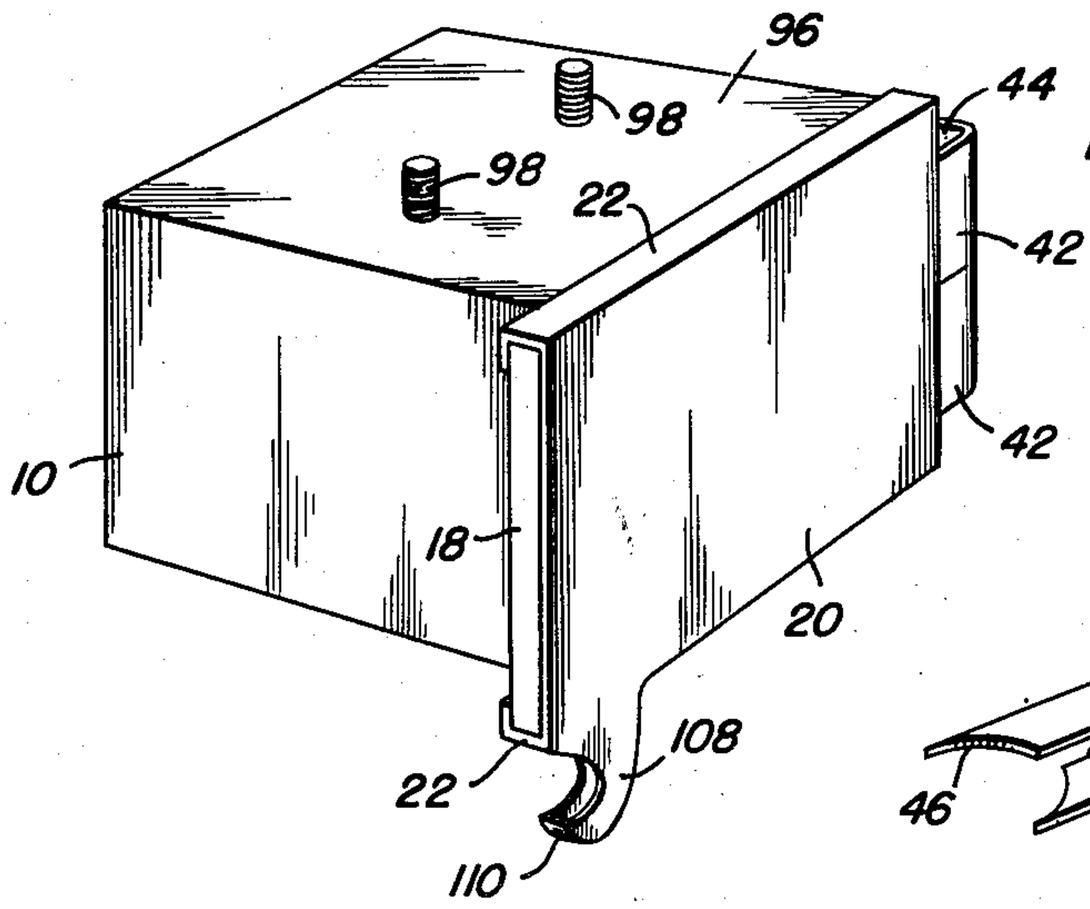

Fig. 1.

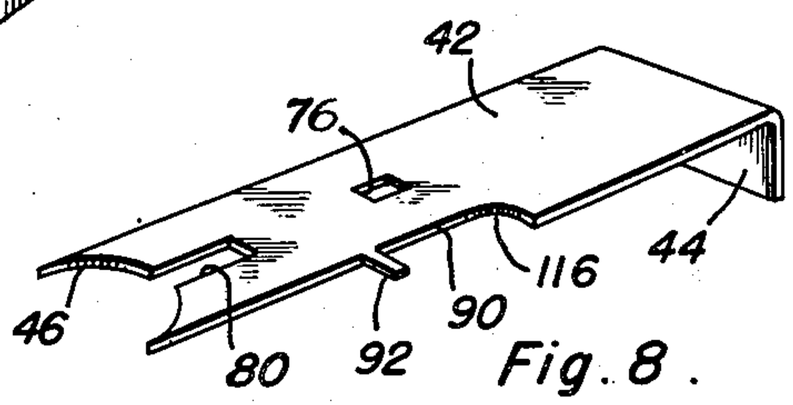

Fig. 8.

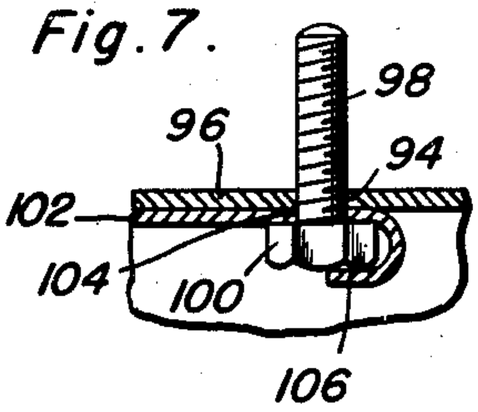

Fig. 7.

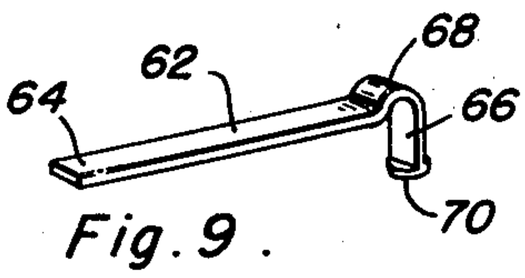

Fig. 9.

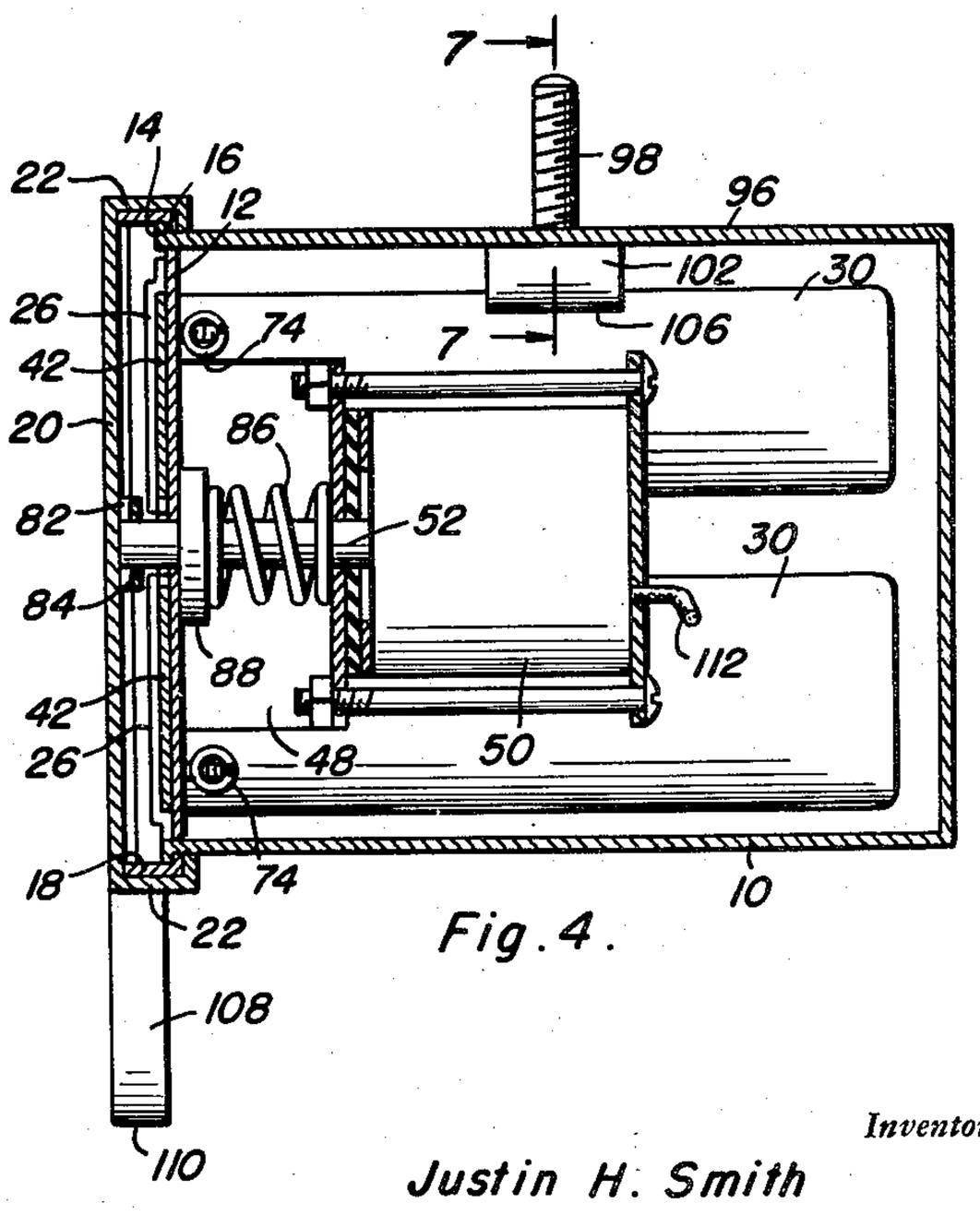

Fig. 4.

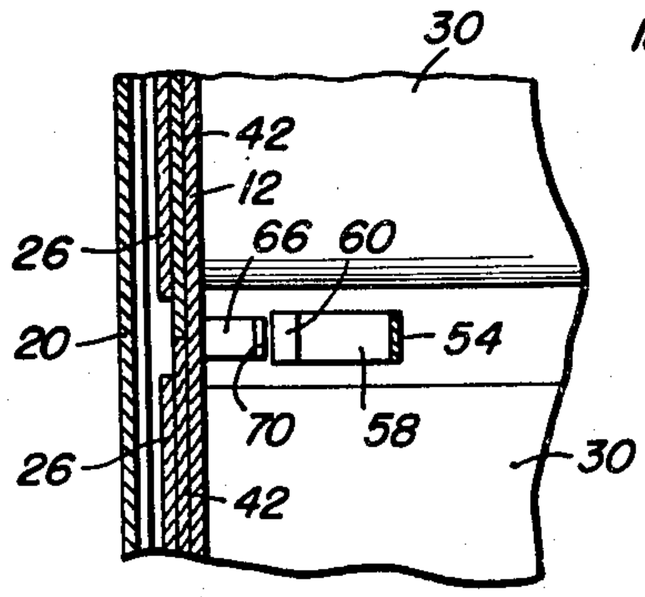

Fig. 6.

Inventors

Justin H. Smith

Robert S. Barrett

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

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COIN DISPENSER

Filed Sept. 13, 1948 2 SHEETS--SHEET 2

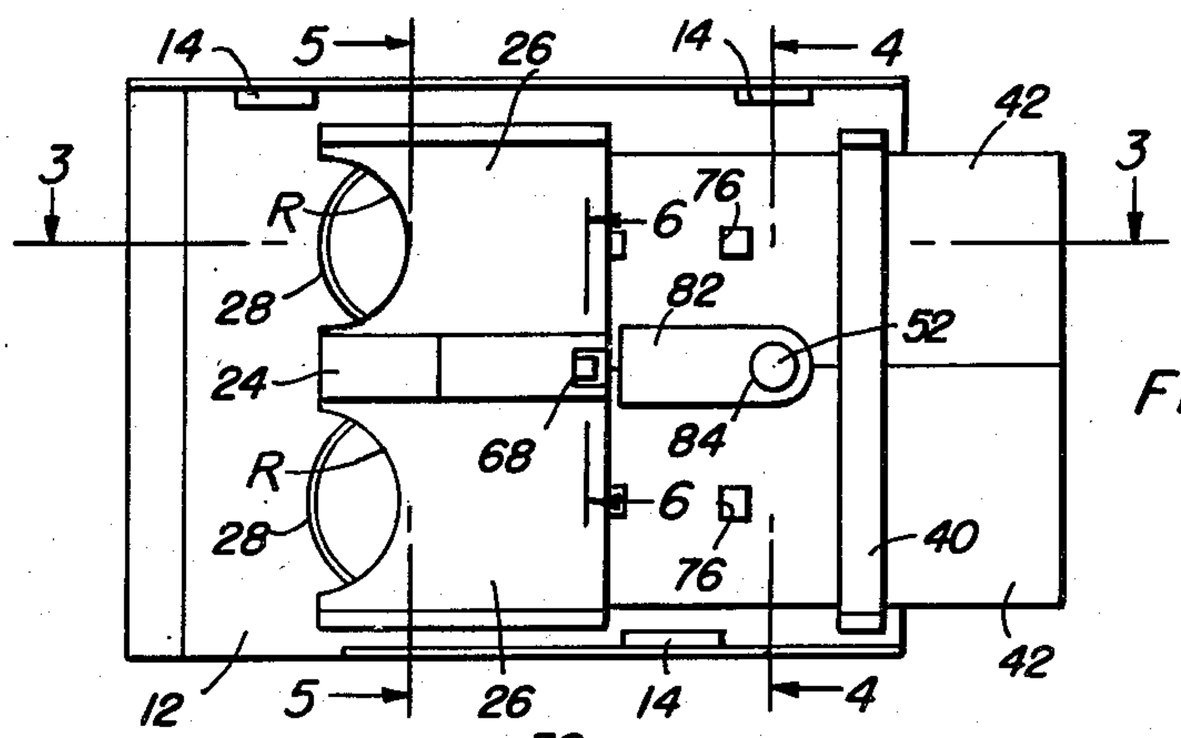

Fig. 2.

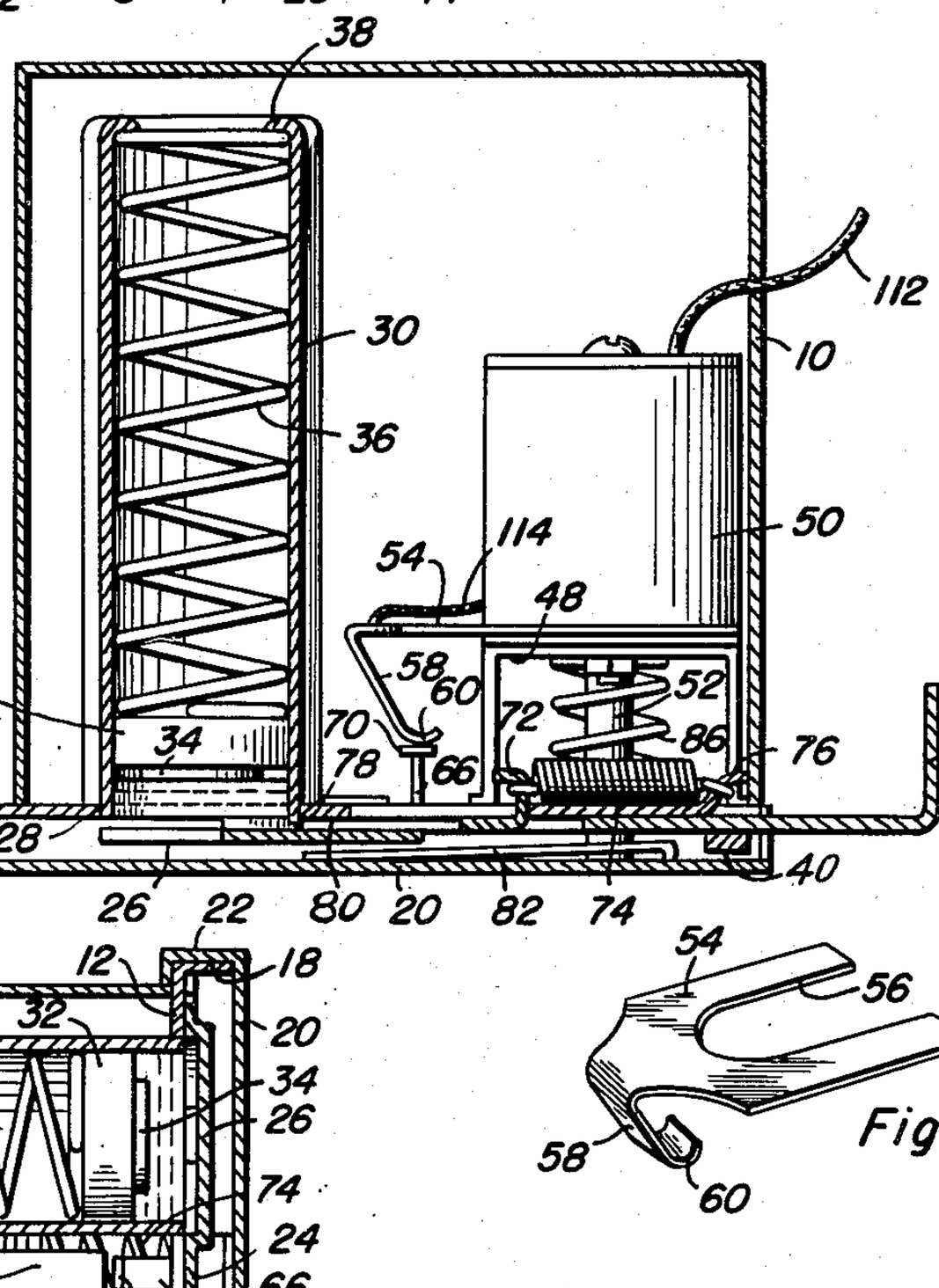

Fig. 3.

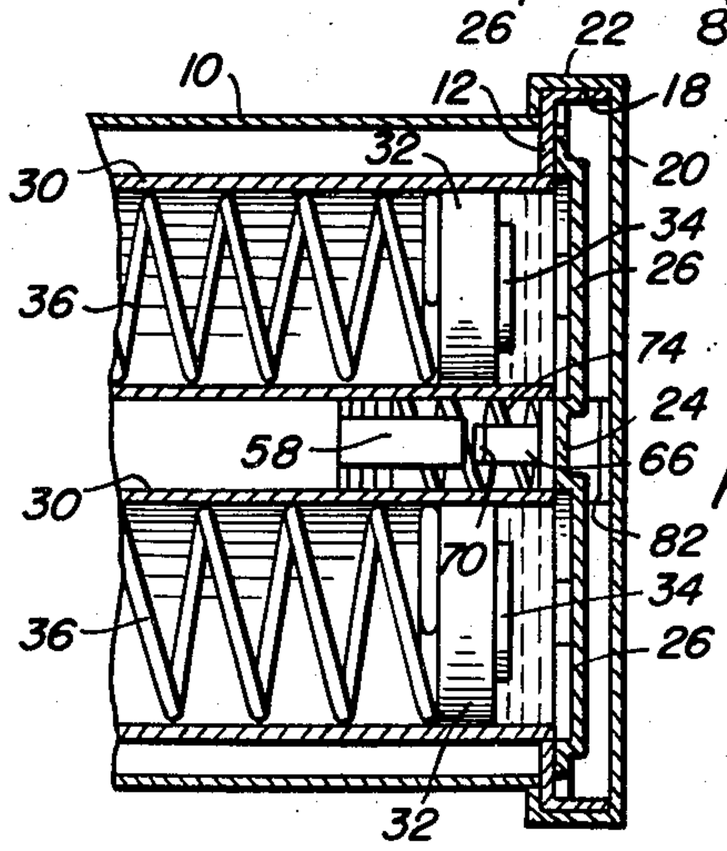

Fig. 5.

Fig. 10.

Inventors
Justin H. Smith
Robert S. Barrett

By Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

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COIN DISPENSER

Justin H. Smith, Claremont, and Robert S. Barrett, Walpole, N. H.

Application September 13, 1948, Serial No. 48,946

6 Claims. (Cl. 133—5)

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This invention relates to new and useful improvements in coin dispensers and the primary object of the present invention is to provide a coin dispenser for vehicles and the like including a novel and improved locking mechanism that is controlled by the ignition switch of a vehicle thus preventing operation of the dispenser until the ignition switch has been moved to an "on" position resulting from the insertion of a proper key.

Another important object of the present invention is to provide a coin dispenser including an electrically controlled locking mechanism, a switch for the locking mechanism, and embodying novel and improved means for actuating the switch and ejecting coins from the dispenser when the locking mechanism has been energized.

A further object of the present invention is to provide a coin dispenser that is quickly and readily applied to or removed from a vehicle dash-panel or the like in a convenient manner and which will retain coins in an easily accessible position for an operator or passenger of a vehicle for paying toll bridges, parking meters, ferry boats and the like.

A still further aim of the present invention is to provide a thief-proof coin dispenser that is simple and practical in construction, strong and reliable in use, small and compact in structure, neat and attractive in appearance, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the coin dispenser constructed in accordance with the present invention;

Figure 2 is a front elevational view of the present invention, the closure removed therefrom and showing the lock receiving member, carried by the closure, engaged with the locking pin;

Figure 3 is an enlarged longitudinal. horizontal sectional view taken substantially on the plane of section line 3—3 of Figure 2;

Figure 4 is an enlarged, longitudinal vertical sectional view taken substantially on the plane of section line 4—4 of Figure 2;

Figure 5 is an enlarged, fragmentary, longitudinal vertical sectional view taken substantially on the plane of section line 5—5 of Figure 2;

Figure 6 is an enlarged, fragmentary, longitudinal vertical sectional view taken substantially on the plane of section line 6—6 of Figure 2;

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Figure 7 is a sectional view taken substantially on the plane of section line 7—7 of Figure 4;

Figure 8 is a perspective view of one of the slide members used in conjunction with the present invention;

Figure 9 is a perspective view of the movable switch member used in conjunction with the present invention; and,

Figure 10 is a perspective view of the fixed switch member used in conjunction with the present invention.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a substantially rectangular housing or casing of any suitable material having a forward wall 12 that is fixed thereto by lugs or bendable fingers 14 carried by the housing and extending through slots 16 in the forward wall (see Figures 2 and 4).

The forward wall 12 includes a continuous forwardly extending flanged portion 18 for a purpose which will later be more fully apparent.

The numeral 20 represents a substantially rectangular closure, the upper and lower longitudinal edges of which are integrally formed with channeled guides 22 that embrace the upper and lower sections of the flanged portions 18 for sliding movement.

A base and guide plate 24 having a plurality of channel shaped portions 26 is fixed to the outer surface of the forward wall 12 and the webs of the channel shaped portions 26 oppose annular openings 28 provided in the forward wall 12.

Suitably fixed to the forward wall 12, is a plurality of cylindrical coin containers 30 having forward open ends which communicate with the openings 28. Plungers 32 having reduced end portions 34 are slidably mounted in the containers 30 and are urged forwardly by coil springs 36 disposed in the containers. The rear ends 38 of the containers 30 are turned inwardly to provide abutments for the coil springs 36.

A channel-shaped guide 40 is fixed to the outer surface of the forward wall 12 and supports a plurality of slidable members or plates 42 which engage the channel-shaped portions 26 for sliding movement. The outer ends of the members 42 are angulated to provide finger-grips 44 and the inner ends of the members 42 are notched to provide arcuate or concaved surfaces or edges 46 that conform to the curvature of a coin.

Fixed in any suitable manner to the inner surface of the forward wall 12, is a supporting

bracket 48 on which there is mounted a solenoid 50 having an operating core, plunger or locking pin 52.

A conductive plate or fixed contact member 54 is secured to the solenoid 50 and is slotted as at 56 to permit the same to extend past the core 52. A resilient contact finger 58 integrally formed with the fixed contact member 54 is provided with an arcuate bearing portion 60 at its free extremity that is spaced relative to the forward wall 12.

An elongated, resilient movable contact member 62 is fixed at one end 64 to the inner surface of the forward wall 12 and the free end 66 of the movable contact member or switch member 62 is angulated to provide a bearing hump 68. A bearing plate or tip 70 is fixed to the free extremity of the end 66 and is normally spaced from the bearing portion 60 of the finger 58.

The central portions of the members 42 are struck inwardly to provide tongues 72 that engage eye terminals at one end each of a plurality of coil springs 74 and further tongues 76 are struck inwardly from the forward wall 12 to engage the free eye terminals of the springs 74, to normally urge the members 42 outwardly.

Lugs 78, integral with the containers 30, project through suitable apertures in the forward wall 12 and are slidably received in longitudinal slots 80 provided in the inner ends of the members 42 to limit the sliding movement of the members 42 in one direction.

The lugs 78 also act as stops when coins are being inserted into containers 30. The coins are inserted into channel portions 26 until the same engage the lugs 78, thus preventing any coins from passing by the openings in the ends of the containers 30 which would cause coins to jam while being inserted.

A locking plate 82 is fixed to the inner surface of the closure 20 and includes an aperture 84 that will receive the outer end portion of the core 52 in order to lock the closure 20 against sliding movement.

A coil spring 86 embraces the core 52 and is biased between the bracket 48 and a ring 88 fixed on the core 52 for normally urging said core into the aperture 84 in the plate 82.

The members 42 are provided with longitudinal recesses or notches 90 in their inner edges that receive the core 52 to permit sliding movement of the members 42 relative to the core 52. Stops or fingers 92 extend from the recesses 90 and are adapted to bear against the member 62 during sliding movement of members 42 to force the plate 70 into engagement with the bearing portion 60 of the member 54 in a manner which will later be more fully described.

Projecting outwardly through openings 94 in the upper wall 96 of the housing 10, is a plurality of fastening bolts 98 having head portions 100. Holding plates 102 are fixed to the inner surface of the upper wall 96 and include openings 104 that register with the openings 94. The plates 102 include arcuate extensions 106 that extend beneath the head portions 100 to support and prevent inward movement of the fasteners 98.

The fasteners 98 receive suitable nuts whereby the present housing 10 may be detachably secured to a supporting structure such as a vehicle dash panel.

Integrally formed with the closure 20, is a delivery chute 108 having an arcuate bottom wall 110.

In practical use of the present invention, the

solenoid 50 is connected by suitable conductive elements 112 to the ignition switch of a vehicle (not shown). The member 54 is also connected to the solenoid 50 by wires 114 so that the said solenoid will not be energized until the member 54 is grounded.

When the ignition switch has been turned on by the proper key and one of the slide members 42 is forced inwardly, the finger 92 on the member 42 will force the contact plate 70 into engagement with the bearing portion 60 of the member 54 grounding the solenoid 50 and causing the core 52 to raise disengaging the curved portion 116 on sliding member 42. This will permit sliding member 42 to continue its inward movement. Arcuate edges 46 then engage the coin and force it outwardly through the channel portion 26 and the said coin will drop into chute 108 where it is easily accessible. When the applied pressure is released from the sliding member, spring 74 will return the sliding member to its normal position.

When either container 30 is empty of coins, and the sliding member 42 coinciding with that container is forced inwardly, finger 92 on the member 42 causes solenoid 50 to be grounded, as before stated, but arcuate edges 46 engage portions 34 of plungers 32.

Obviously, the grounding of the member 54 and solenoid 50 may be accomplished by sliding a selected one of the members 42, and it is intended that the containers 30 be of such a size as to accommodate suitable coins, such as nickels, dimes, or quarters. The channel shaped portions 26 are provided with concave recesses R, whereby coins may be fed into the containers.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention, the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A coin dispenser comprising a housing having a forward wall, a slidable closure carried by said forward wall, coin containers mounted in said housing and having forward open ends fixed to said forward wall, said forward wall having a plurality of openings in registry with the open ends of said containers, a plurality of slidable members carried by said forward wall and located between said closure and said forward wall for ejecting coins from said containers, a solenoid having an operating core, means normally urging said operating core outwardly of said solenoid and through said forward wall, means carried by said closure lockably receiving said core, means carried by each of said members engageable with said core for limiting sliding movement of said members in either direction, a switch controlling said solenoid, and means carried by said members for actuating said switch to retract said core when said solenoid is energized.

2. The combination of claim 1 wherein said switch includes a fixed contact member carried by said solenoid, and a movable contact member carried by said forward wall and normally spaced from said fixed contact member.

3. A coin dispenser comprising a housing

having a forward wall, a slidable closure carried by said forward wall, coin containers mounted in said housing and having forward open ends fixed to said forward wall, said forward wall having a plurality of openings in registry with the open ends of said containers, a plurality of slidable members carried by said forward wall and disposed between said forward wall and said closure for ejecting coins from said containers, a solenoid mounted in said housing and having an operating core, means normally urging said operating core outwardly of said solenoid and through said forward wall, means carried by said closure lockably receiving said core, means carried by each of said members engageable with said core for limiting sliding movement of said members in either direction, a switch within said housing and operatively connected to said solenoid, lugs mounted on the open forward ends of said containers, said members having apertures receiving said lugs, said lugs limiting sliding movement of said members in one direction and also functioning as stops when coins are being inserted into the containers by preventing coins from passing by the open forward ends of the containers, and fingers projecting laterally from the members for actuating the switch to retract the core when the solenoid is energized.

4. A coin dispenser comprising a housing having a forward wall, a slidable closure carried by said forward wall, coin containers mounted in said housing and having forward open ends fixed to said forward wall, said forward wall having a plurality of openings in registry with the open ends of said containers, a plurality of slidable members carried by said forward wall and disposed between said forward wall and said closure for ejecting coins from said containers, a solenoid having an operating core, means normally urging said operating core outwardly of said solenoid and through said forward wall, means carried by said closure lockably receiving said core, means carried by each of said members engageable with said core for limiting sliding movement of said members in either direction, a switch in said housing and operatively connected to said solenoid, lugs mounted on the open forward ends of said containers, said members having apertures receiving said lugs, said lugs limiting sliding movement of said members in one direction and also functioning as stops when coins are being inserted into the containers by preventing coins from passing by the open forward ends of the containers, and fingers projecting laterally from the members for actuating the switch to retract the core when the solenoid is energized, said members having slots slidably receiving said lugs, said switch including a fixed contact member mounted on the solenoid, a resilient contact finger projecting from the fixed contact member, and an elongated movable contact member fixed at one end to the forward wall, the free end of said movable contact member being angulated to provide a bearing hump adapted to engage said fingers during sliding movement of said slidable members.

5. A coin dispenser for vehicles comprising a housing having a forward wall, a slidable closure carried by the forward wall, a pair of spaced parallel coin containers having forward open ends detachably secured to the forward wall, said forward wall having coin discharge openings concentric with the open ends of said containers, a pair of spaced parallel channel-shaped guides mounted on the forward wall, a pair of slidable members received in said guides and having inner concaved edges for ejecting coins, resilient means in said containers for urging coins in the containers against said guides, a solenoid mounted in said housing and having an operating core for locking said closure and said members against sliding movement in either direction, means guiding and limiting sliding movement of said members in one direction, a switch controlling said solenoid, and means carried by each of said members for selectively actuating said switch to retract said core when said solenoid is energized.

6. The combination of claim 5 wherein said means guiding and limiting sliding movement of said members in one direction includes lugs securing said containers to said forward wall, said members having openings therein slidably receiving said lugs.

JUSTIN H. SMITH.
ROBERT S. BARRETT.

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