

Feb. 17, 1953

J. D. SMITH
COIN COLLECTOR

2,628,772

Filed Aug. 28, 1950

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FIG. 1.

FIG. 2.

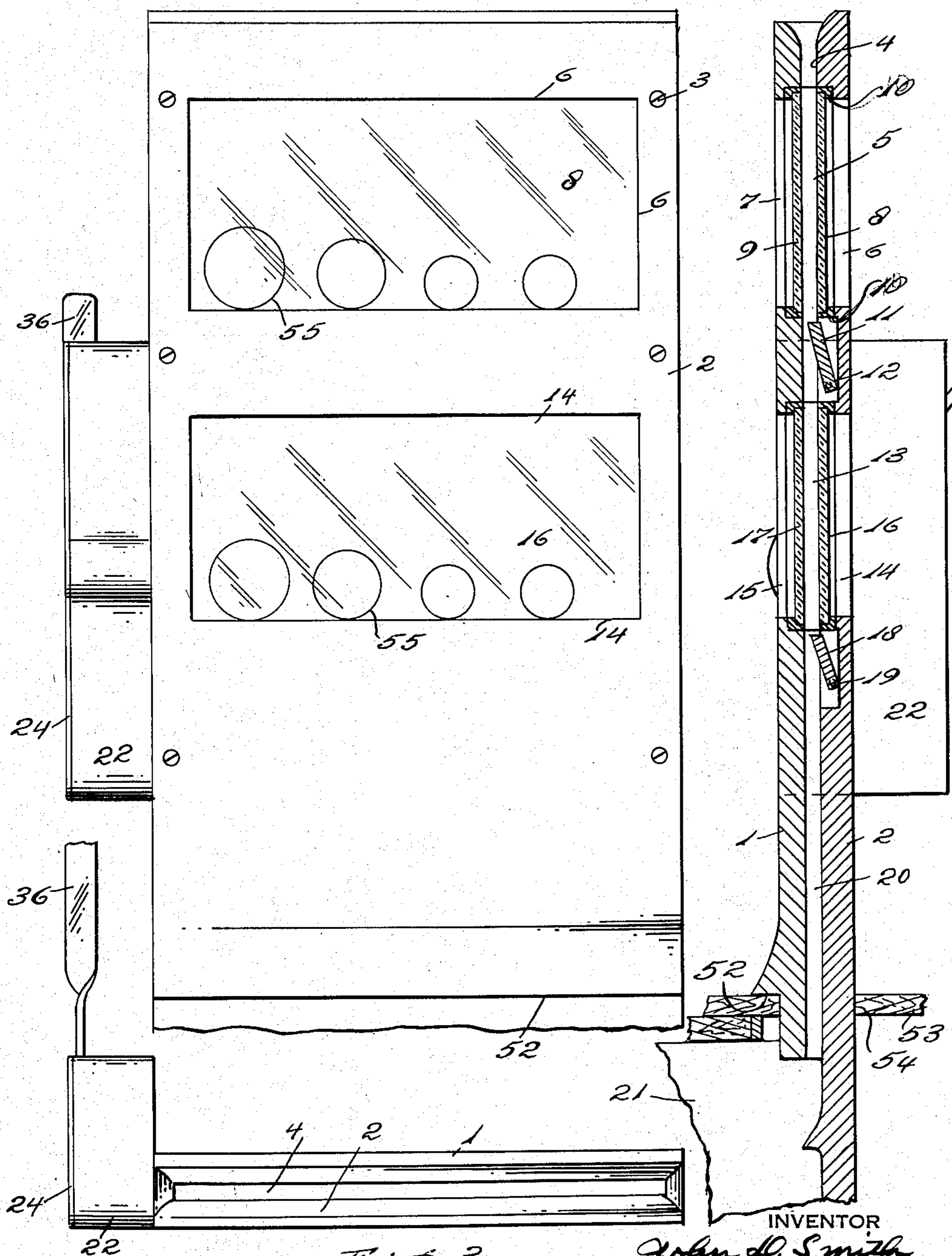


FIG. 3.

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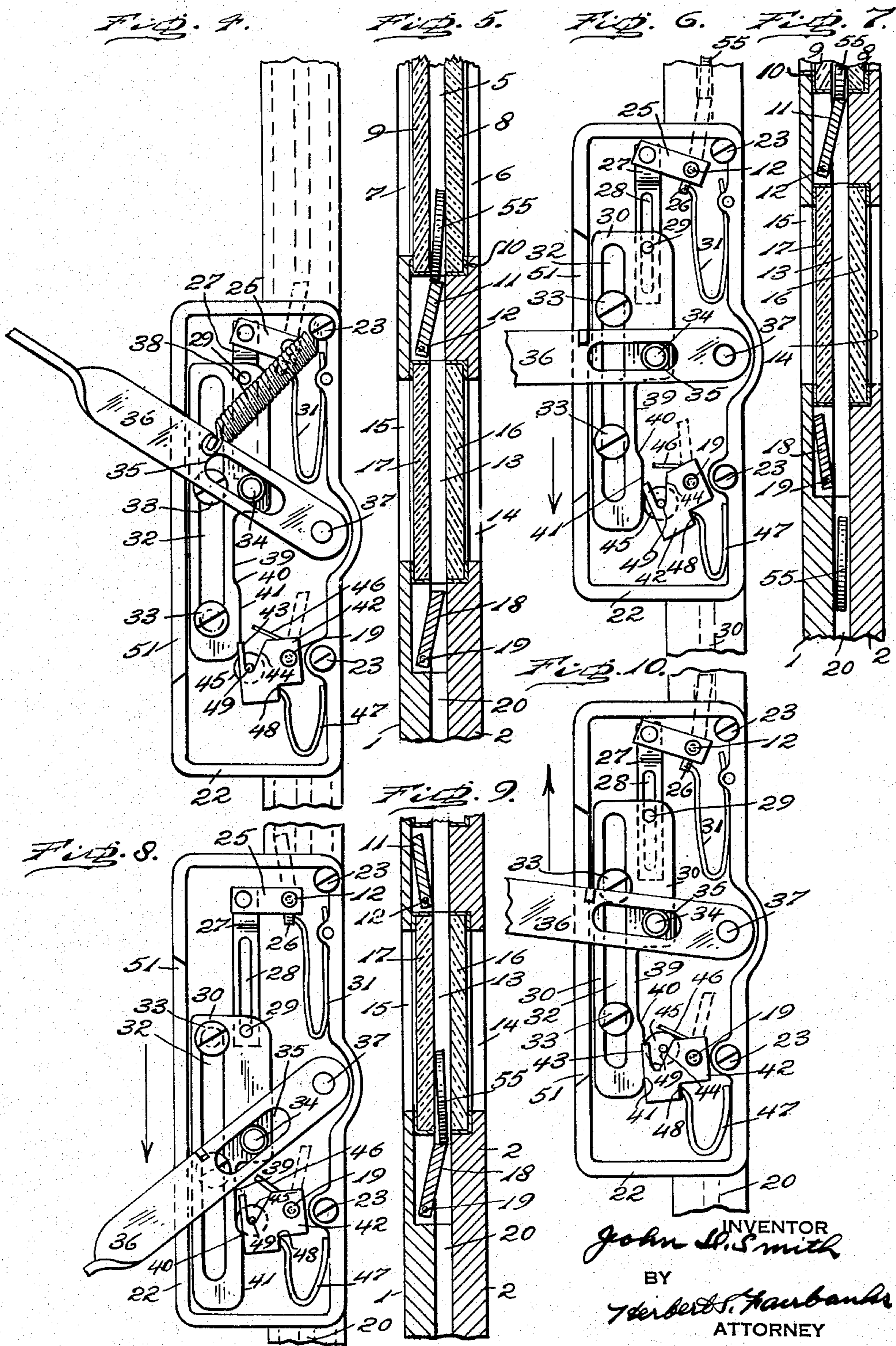
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FIG. 11.

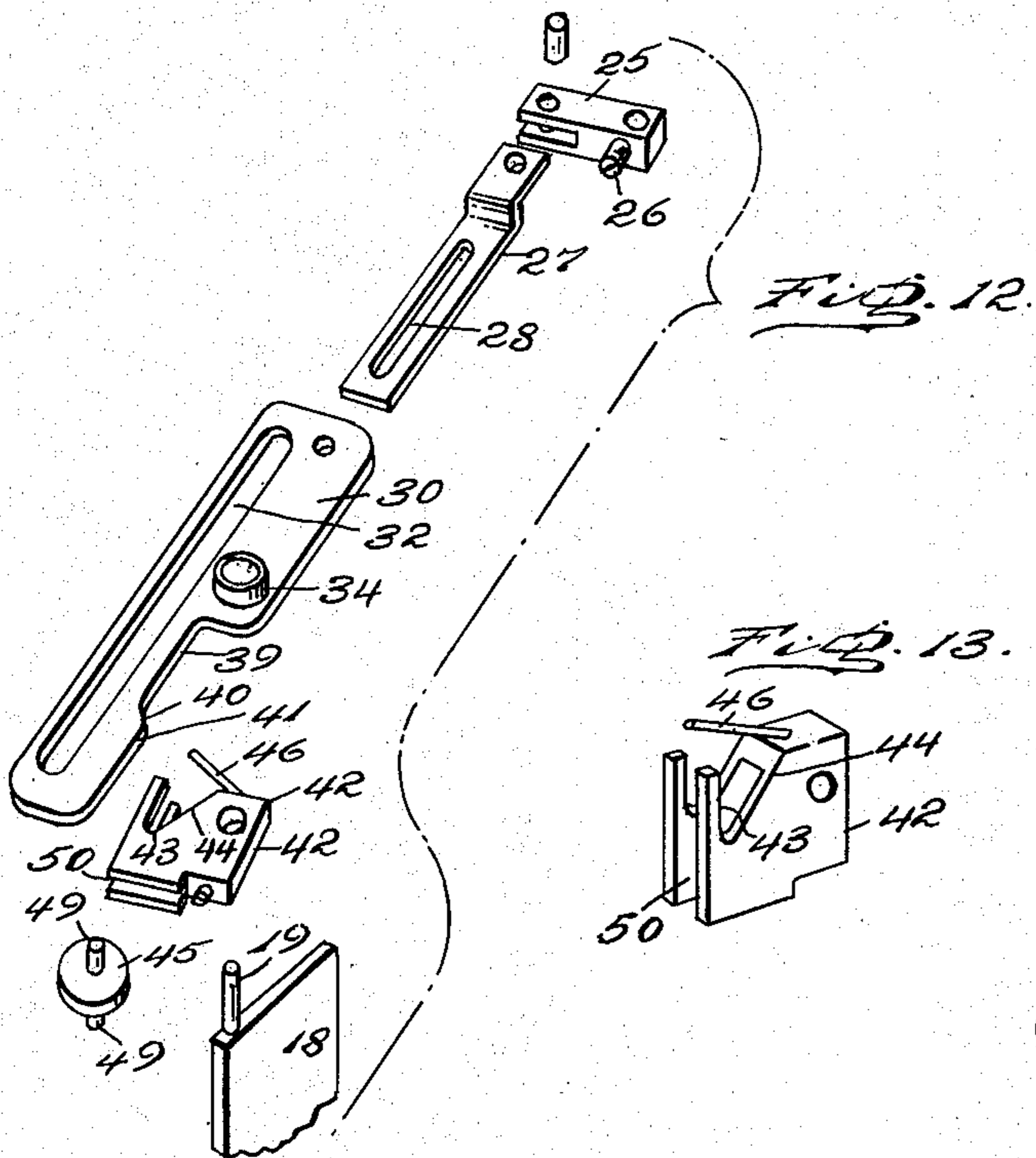
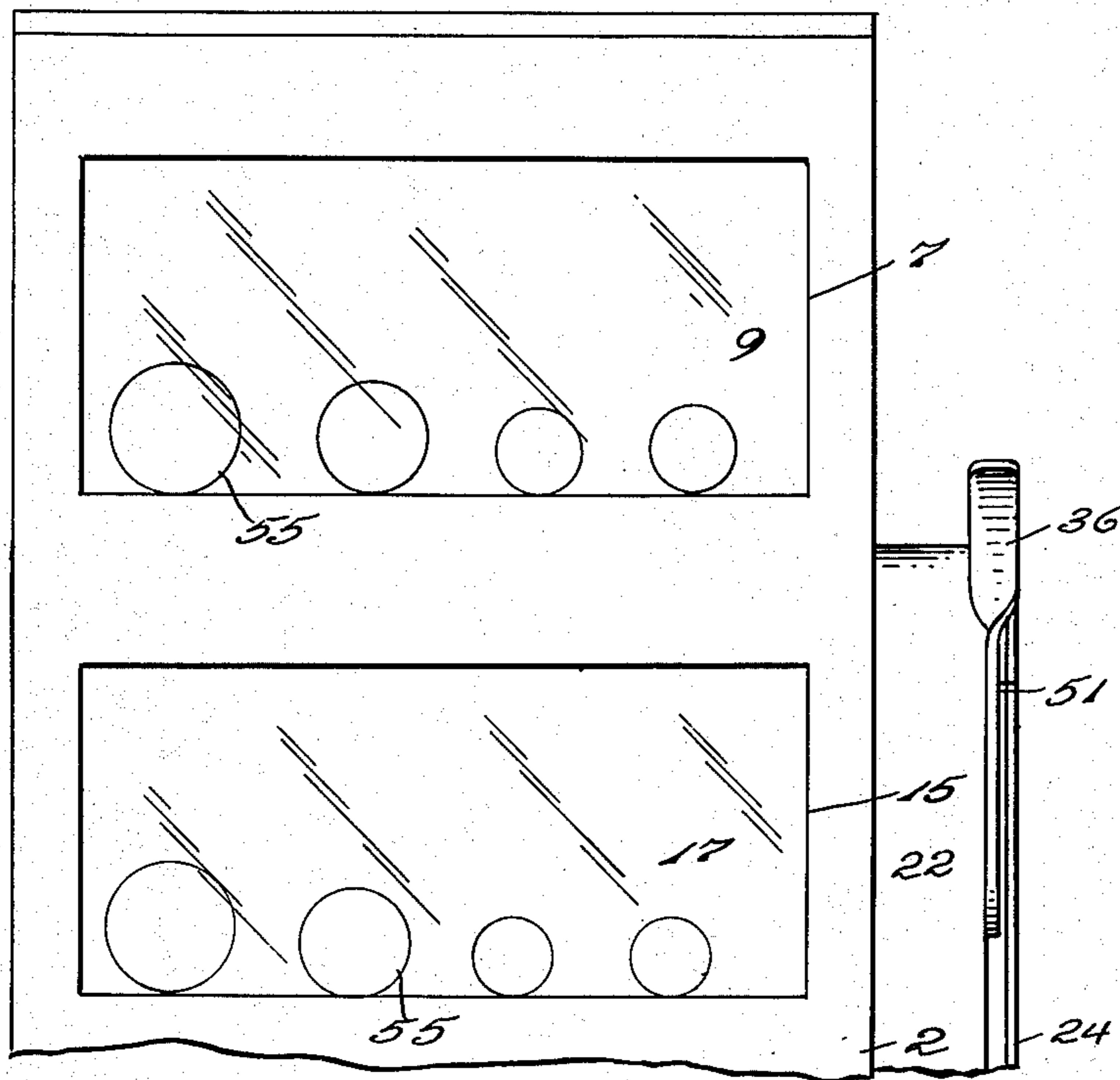
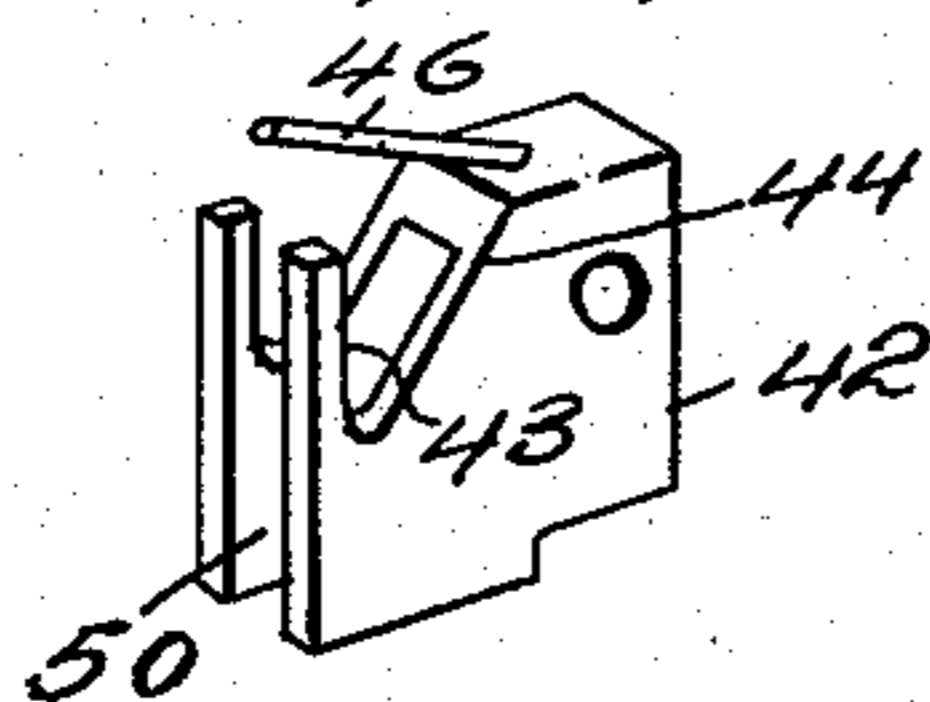


FIG. 13.



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COIN COLLECTOR

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Application August 28, 1950, Serial No. 181,753

5 Claims. (Cl. 232—57)

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The object of this invention is to devise a novel coin collector which will simultaneously indicate to the purchaser in front of the coin collector and to the attendant in rear of the coin collector if the inserted coins amount to the cost of the purchase which has been made.

A further object of the invention is to provide intercommunicating coin receiving compartments with front and rear sight openings so that the instant purchase will have the coins therefor visible in one compartment and the coins for the previous purchase visible in the other compartment.

Due to changing conditions, the price of articles frequently change in a short time and the number of coins to be deposited to cover the amount of the purchase varies, and also the denomination of the coins.

In many places where articles are sold and particularly in restaurants, a large number of customers make their purchases within a limited period of time and it is advantageous to reduce to a minimum the time involved in making the individual purchase payment. A further object therefore of this invention is to devise novel mechanism for retaining the coins deposited in view, and novel mechanism for controlling the discharge of coins from their compartments in timed relationship.

A further object of the invention is to devise a novel frame which can be installed in a minimum of space.

With the foregoing and other objects in view as will hereinafter clearly appear in the detailed description and the appended claims, my invention comprehends a novel construction and arrangement of a coin collector.

It further comprehends a novel construction of a frame having shutter controlled, coin receiving compartments visible from the front and rear of the frame and designed to receive a number of coins of the same or different denominations.

It further comprehends novel shutter controlling mechanism for controlling in timed relationship the discharge of coins from the coin receiving compartments.

For the purpose of illustrating the invention, I have shown in the accompanying drawings a preferred embodiment of it which I have found in practice to give reliable and satisfactory results. It is, however, to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized, and the invention is not limited to the exact arrangement and organization of these instrumentalities as herein set forth.

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Figure 1 is a front elevation showing a portion of a coin collector embodying my invention.

Figure 2 is a vertical section of Figure 1, showing in addition a portion of a coin box and a manner of supporting the coin collector.

Figure 3 is a top plan view.

Figure 4 is a side elevation, showing more particularly the controlling mechanism for the shutters with the housing cover removed.

Figure 5 is a vertical section through the frame showing the shutter positions when the controlling mechanism has its component parts in the positions seen in Figure 4.

Figure 6 is a side elevation similar to Figure 4 but showing the moving parts in a different relation to that seen in Figure 4.

Figure 7 is vertical section of the frame showing the shutter positions corresponding to the positions of the controlling mechanism of Figure 6.

Figure 8 is a side elevation similar to Figures 4 and 6 but showing the component parts of the controlling mechanism in a different relation from that seen in Figure 4 or in Figure 6.

Figure 9 is a vertical section of the frame showing the shutter positions corresponding to the positions of the controller parts seen in Figure 8.

Figure 10 is a side elevation of the controlling mechanism showing position of the parts during the return stroke of the actuating lever.

Figure 11 is a rear elevation showing a portion of the frame.

Figure 12 is an exploded view showing certain of the component parts of the controlling mechanism.

Figure 13 is a perspective view of a cam and roll carrier for the lower shutter of the lower coin receiving compartment.

Similar numerals of reference indicate corresponding parts.

Referring to the drawings:

Coin guiding and retaining construction

The coin collector has a frame through which the coins pass, and this frame consists of a rear plate 1 and a front plate 2, the plates being connected by suitable fastening devices 3. A coin receiving slot 4 is formed between the plates at their upper ends and directs the coin or coins to an upper coin receiving compartment 5 formed between the plates. This compartment 5 has a front sight opening 6 and a rear sight opening 7 whereby coins retained in this upper compartment are visible to a purchaser in front of the coin collector and also to an attendant in rear of the coin collector. The sight openings are provided in the same manner with transparent plates 8

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and 9 having, if desired, a marginal backing and insertable into slots 10 formed in the upper end of the frame.

The coins inserted into the coin slot 4 and passing into the upper compartment 5 come to rest upon an upper shutter 11 if the latter is in its closed position. The top face of the shutter is inclined but substantially horizontal when the shutter is closed. The upper shutter 11 has trunnions 12 near its bottom and these trunnions are mounted in the frame. The upper shutter is actuated by controlling mechanism which will hereinafter be explained.

If the upper shutter is in its open position, the coins pass into a lower coin receiving compartment 13 having a front sight opening 14 and a rear sight opening 15. These sight openings 14 and 15 are formed in the same manner as the upper sight openings 6 and 7 by transparent plates 16 and 17 having if desired a marginal backing and retained in recesses formed in the frame. The bottom of the lower coin receiving compartment is normally closed by a lower shutter 18 having an inclined top face which is substantially horizontal when the shutter is in its closed position. This lower shutter 18 has trunnions 19 mounted in the frame. The upper and lower shutters are in the form of bars or narrow plates pivotally mounted below their compartment by their trunnions.

The coins pass from the lower coin receiving compartment 13 into a coin chute 20 formed between the plates 1 and 2 of the frame, and this chute discharges into a coin box 21.

It now will be clear that I provide an upper and a lower coin receiving compartment and that coins retained in one or both of these compartments are visible to a purchaser in front of the coin collector and also to the attendant in rear of the coin collector.

The shutters are controlled in timed relationship by novel controlling mechanism which will now be described.

Shutter controlling mechanism

The shutter trunnions at one end extend into a housing 22 for the shutter controlling mechanism. The housing is fixed to the frame by fastening devices 23 and is provided with a cover 24.

Referring now more particularly to Figures 4 to 10, one of the trunnions of the upper shutter which extends into the housing has one end of a link 25 fixed to it by a set screw 26, and the opposite end of this link is pivoted to the upper end of a link 27 having a longitudinally extending slot 28 into which a stud 29 carried by a cam slide 30 extends. A bowed spring 31 has one end fixed to the housing and its other end bears against the set screw 26 and tends to return the upper shutter to and to retain it in its closed position.

The cam slide 30 is in the form of a plate having a longitudinally extending slot 32 into which headed studs 33 carried by a wall of the housing extend to guide the cam slide during its movement. A roller 34 on the cam slide extends into a longitudinally extending slot 35 in an actuating lever 36 which latter is pivotally mounted at its inner end within the housing as at 37. A spring 38 has one end fixed relatively to the housing and its other end connected with the lever 36 and tends to move such lever upwardly and to retain it in its upward position. The cam slide has an inwardly recessed side wall 39 which at its lower end merges into a cam wall

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40 which latter wall merges into a straight wall 41 extending to the rounded bottom wall of the cam slide. These walls 39, 40 and 41 contribute to control a cam device for the lower shutter.

The lower shutter has one of its trunnions extending into the housing to receive a cam 42 which is fixed thereto. The cam 42 has a slot opening through its upper face and formed by a straight wall 43 and an inclined wall 44 at each opposite side of the cam. A gravity roll 45 is free to rise and fall in said slot and its upward movement is limited by a stop 46 carried by the cam 42 and extending over and above the slot. A spring 47 has one end fixed to the housing and its other end bears against a shoulder 48 in the cam 42 and tends to move the shutter into and retain it in its closed position. The gravity roll has rods 49 at opposite sides, and the cam 42 has a vertical slot 50 to provide clearance for the movements of the gravity roll. A slot 51 in the housing provides clearance for the actuating lever 36.

The coin collector is supported at a desired location in any desired manner, and as illustrated, the rear plate 1 of the frame has a shoulder 52 which rests on a support 53 such as a counter or table having a slot 54 to receive the frame. The coins are shown at 55.

The operation

The operation will now be clear to those skilled in this art and is as follows:

Assuming that the component parts are in the position seen in Figures 4 and 5, the bottom of the upper coin receiving compartment 5 is closed by the upper shutter 11 and the bottom of the lower coin receiving compartment is closed by the shutter 18, and the lever 36 is in its raised position. Coins of the proper number and of the proper denomination have been inserted in the coin slot 4 have passed into the upper coin receiving compartment 5 and come to rest on the upper shutter 11.

The attendant, after noting that the proper amount has been deposited in the coin collector, moves the lever 36 downwardly, thereby moving downwardly the cam slide 32. The upper shutter remains in closed position because the stud 29 has not reached the bottom of the slot 28 in the link 27 so that no pull is exerted on the link 25 connected with the upper shutter. During this partial downward movement of the lever 36, for example from the position seen in Figures 4 and 6 into the position seen in Figures 6 and 7, the wall 41 of the cam slide contacts the gravity roll 45 and rocks the cam 42 to move the shutter 18 into its open position, to permit any coins of a previous purchase in the lower coin receiving compartment 13 to pass to the coin chute 20 and to the coin box 21.

As the downward movement of the lever continues, the stud 29 reaches the bottom of the slot 28 and the link 27 draws downwardly the link 25 to rock the upper shutter 11 into its open position so that coins in the upper compartment 5 can pass into the lower compartment 13. Before the upper shutter is opened, the gravity roll 45 passes along the cam wall 40 and the spring 47 acting on cam 42 causes the lower shutter 18 to close and the coins passing from the upper coin receiving compartment 5 come to rest in the lower coin receiving compartment 13.

During the upward return stroke of the lever

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36, see Figure 10, from the position seen in Figure 8, the upward movement of the cam slide 30 causes the gravity roll to move upwardly and laterally, and the spring 47 rocks the cam 42 to move the lower shutter 18 into its closed position. During this return stroke, the cam wall 40 moves the gravity roll upwardly against its stop 46.

The upward movement of the cam slide 30 moves the stud 29 upwardly in the slot 28 and permits the spring 31 to move the upper shutter into its closed position.

When the return stroke of the lever 36 is completed, the component parts of the controlling mechanism are in the positions seen in Figure 4. As the cam slide reaches its upward position, the gravity roll is free to move downwardly in its slot to the position seen in Figure 4.

It is to be noted that the actuating lever 36 can at all times be returned to its initial position. The advantage of this is that if the attendant after starting the downward movement of the actuating lever sees that the proper amount to cover the purchase has not been deposited he does not have to complete the cycle of operation but can return the parts to their initial or first positions.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a coin collector, a frame having open ended coin receiving compartments with transparent sides and communicating with a coin chute, shutters movably mounted at the bottom of the compartments to close and open said bottoms, one of said compartments being located above the other compartment, a cam member linked to the upper shutter and having a stud extending into a slot in said linkage to provide a delayed action of the shutter on movement of the cam member in one direction, a tension device for each shutter, a cam fixed to the lower shutter having a slot, a gravity roll bodily movable in said slot and in the path of said cam member, and a lever connected with said cam member to actuate it.

2. The construction defined in claim 1, wherein the slot for the gravity roll has an inclined wall, and is provided with a stop to limit upward movement of the gravity roll.

3. In a coin collector, a frame having a coin chute with open ended coin receiving compartments in communication with each other and with the coin chute, shutters at the bottom of the

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compartments and having trunnions mounted in the frame, one of said compartments being located above the other compartment, a link connected with a trunnion of the upper shutter, a second link connected with said first link and having a slot, a cam member mounted for limited movement in opposite directions and having a stud extending into said slot, a lever to actuate said cam member, the cam member at its lower portion having a cam wall merging into a straight wall, a cam fixed to a trunnion of the lower shutter and having a slot opening through its top face with an inclined wall at one side, a gravity roll free to move upwardly and downwardly in the slot of the cam for the lower shutter and in the path of the cam wall and straight wall of the cam member, and tension devices tending to move said shutters into position to close the bottoms of the compartments.

4. The construction defined in claim 3, wherein the cam for the lower shutter has a stop to limit upward movement of the gravity roll.

5. In a coin collector, a frame having a coin chute with an upper and a lower coin receiving compartment having transparent sides and in communication with each other and with the coin chute, movably mounted shutters at the bottoms of said compartments and tensioned to normally close said bottoms, and controlling mechanism for said shutters to control in timed relationship the retention of coins in said compartments and their release therefrom, said controlling mechanism comprising a manually actuated cam member linked to the upper shutter, a cam fixed to the lower shutter and having a slot, and a gravity roll bodily movable in said slot and cooperating with the cam member to actuate the cam to control the opening and closing movements of the lower shutter in timed relationship with the opening and closing movements of the upper shutter.

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