

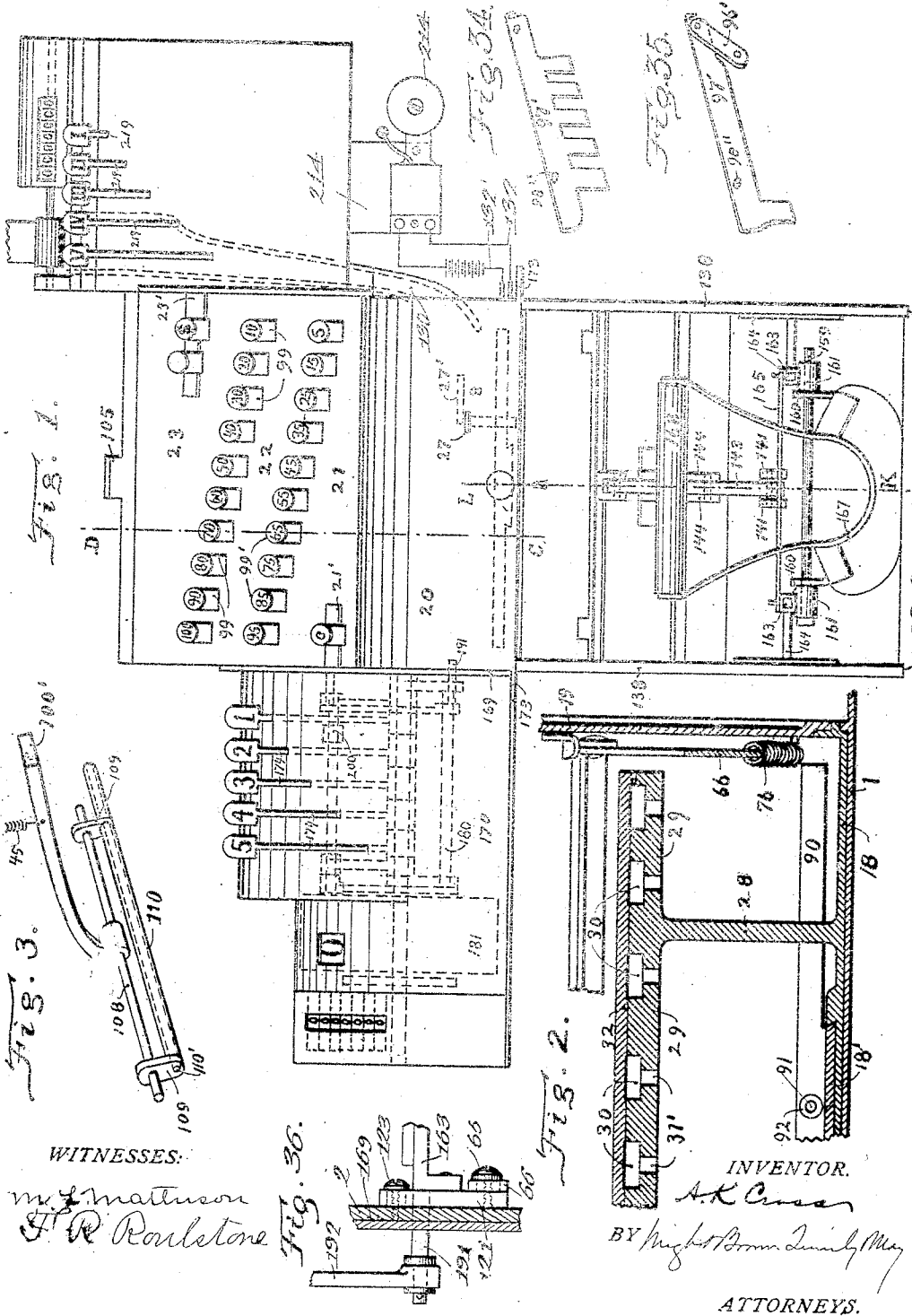
A. K. CROSS.
 COIN AND TICKET DELIVERY MACHINE AND CASH REGISTER.

1,035,862.

APPLICATION FILED JAN. 28, 1909.

Patented Aug. 20, 1912.

8 SHEETS—SHEET 1.



WITNESSES:
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Fig. 36.

Fig. 2.

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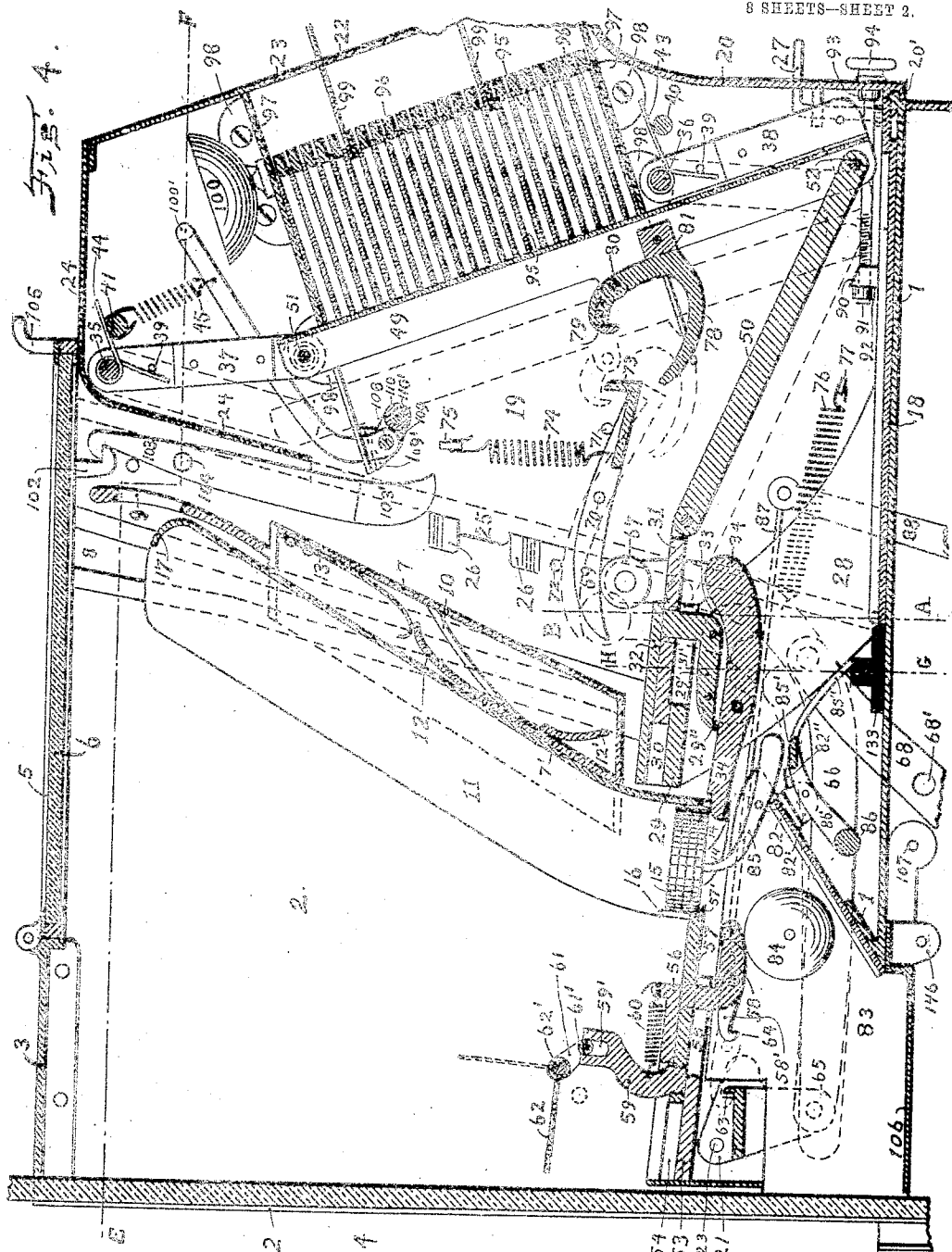
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8 SHEETS—SHEET 2.



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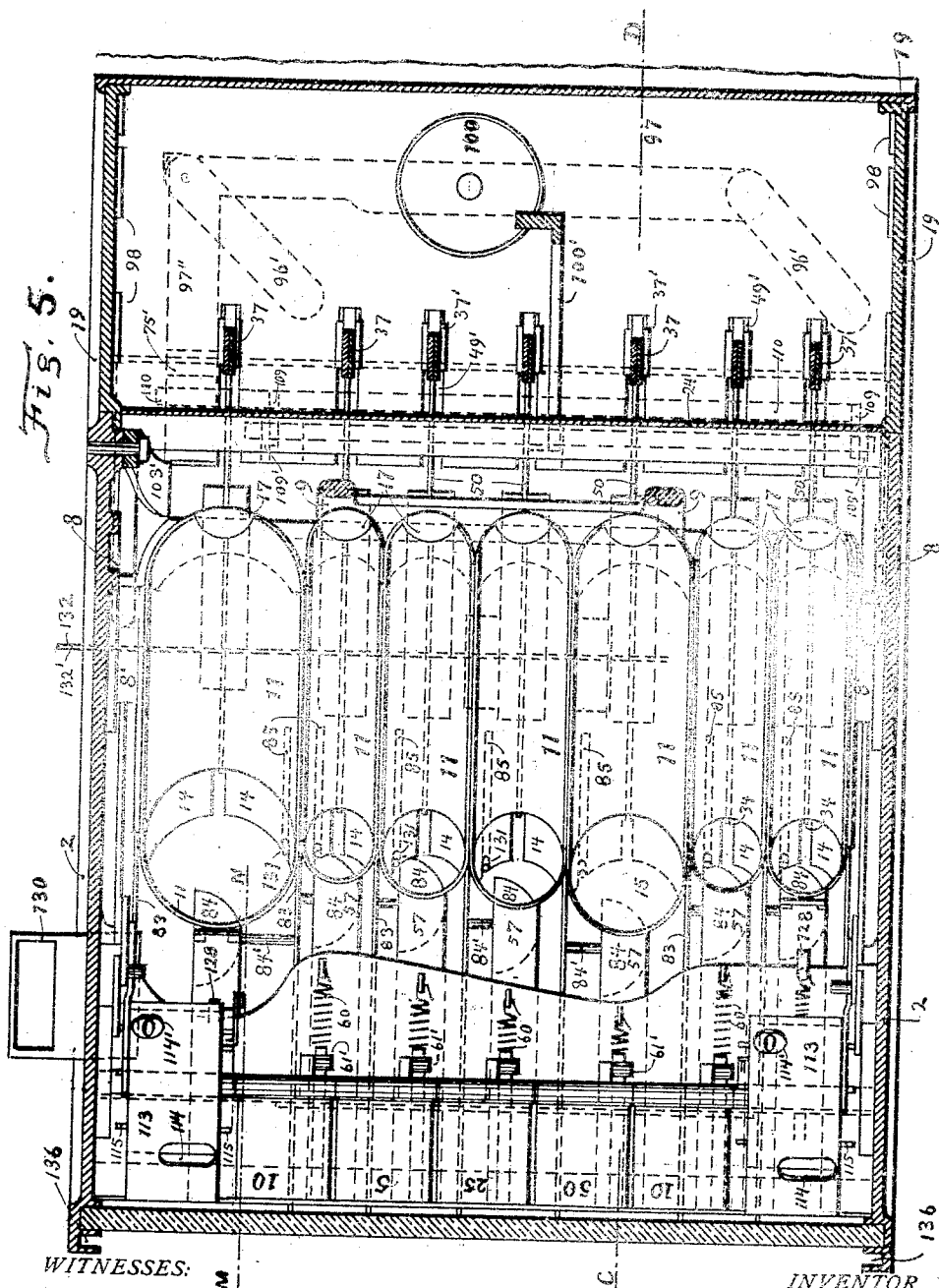
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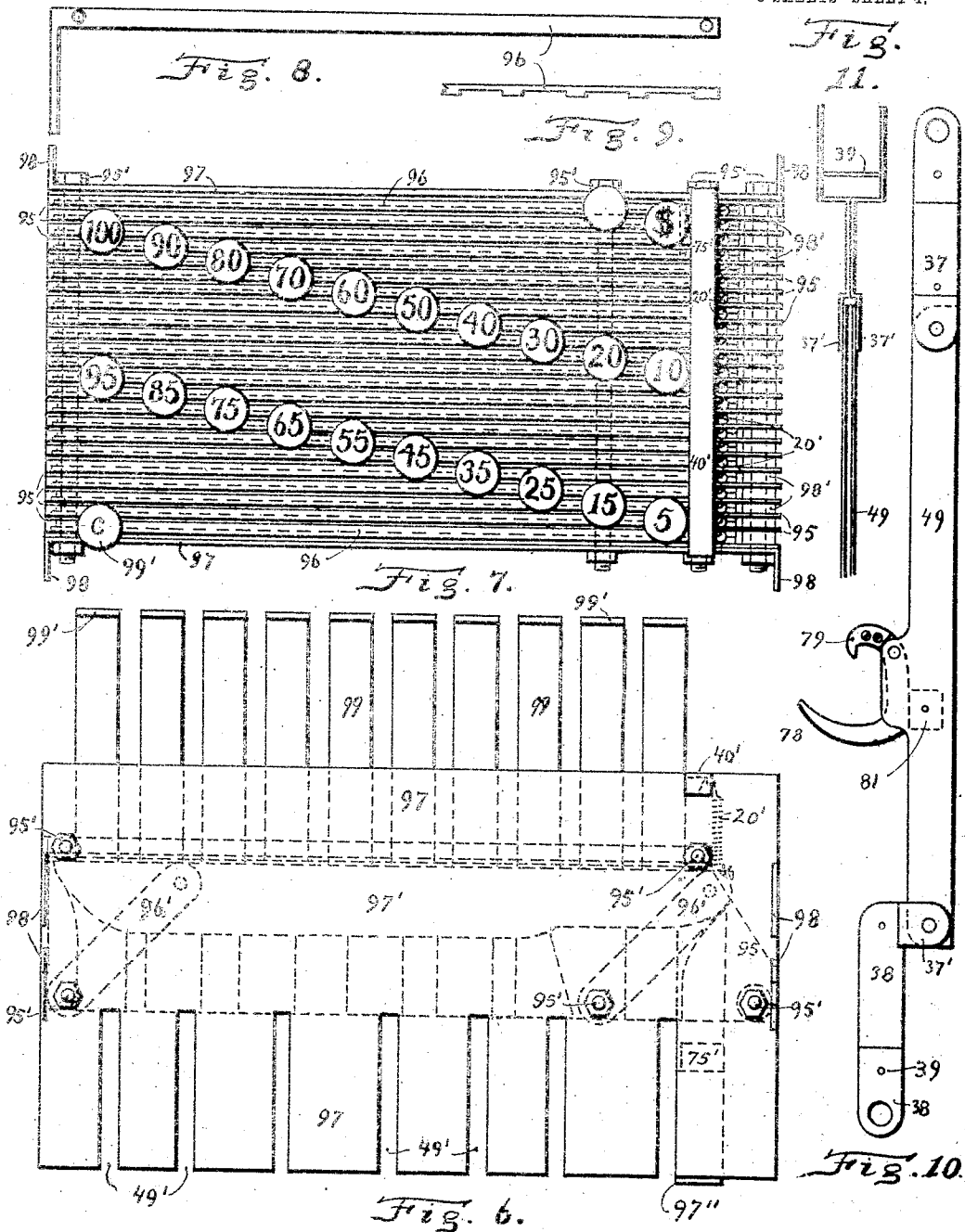
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8 SHEETS—SHEET 4.



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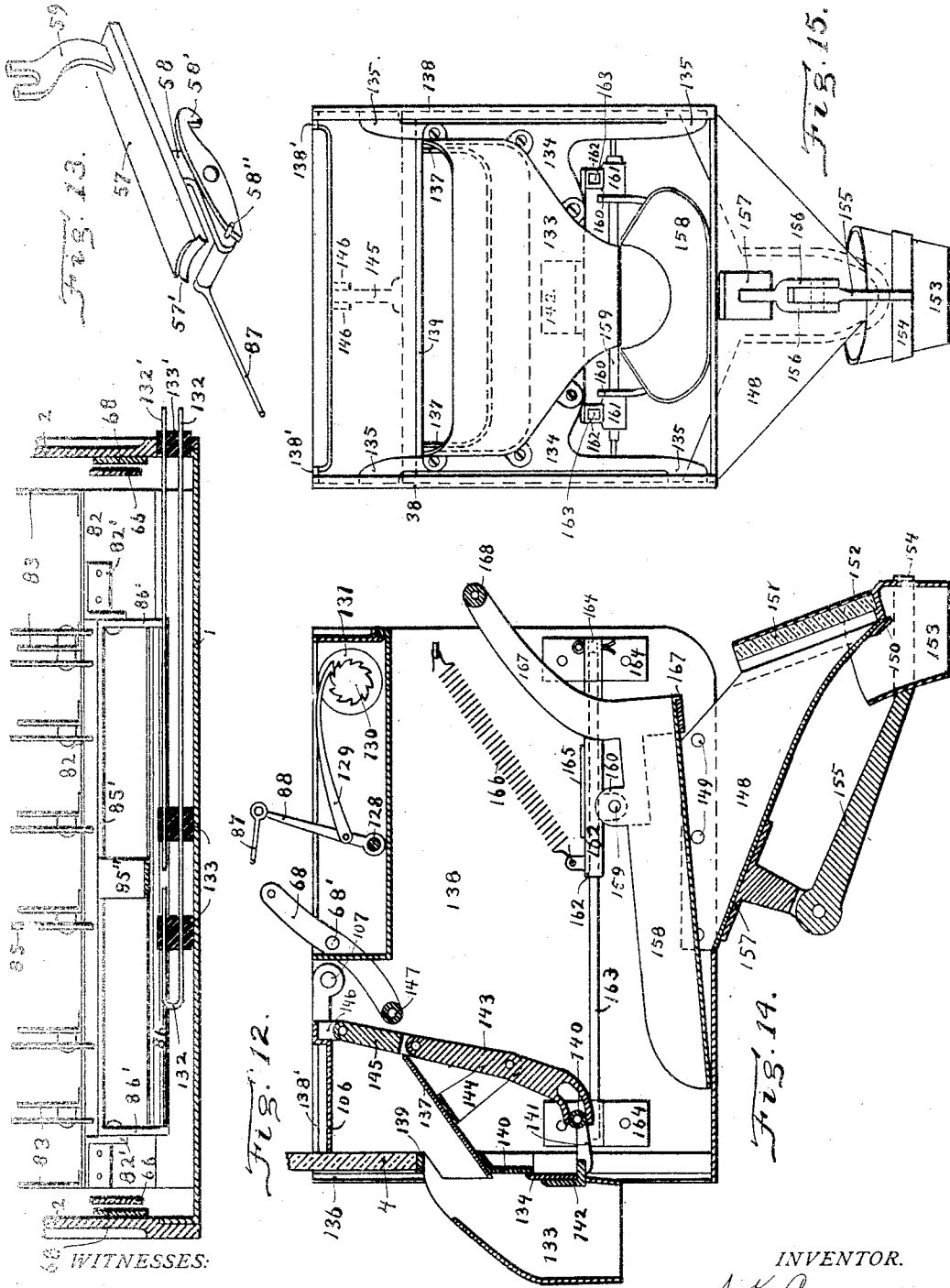
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8 SHEETS—SHEET 5.



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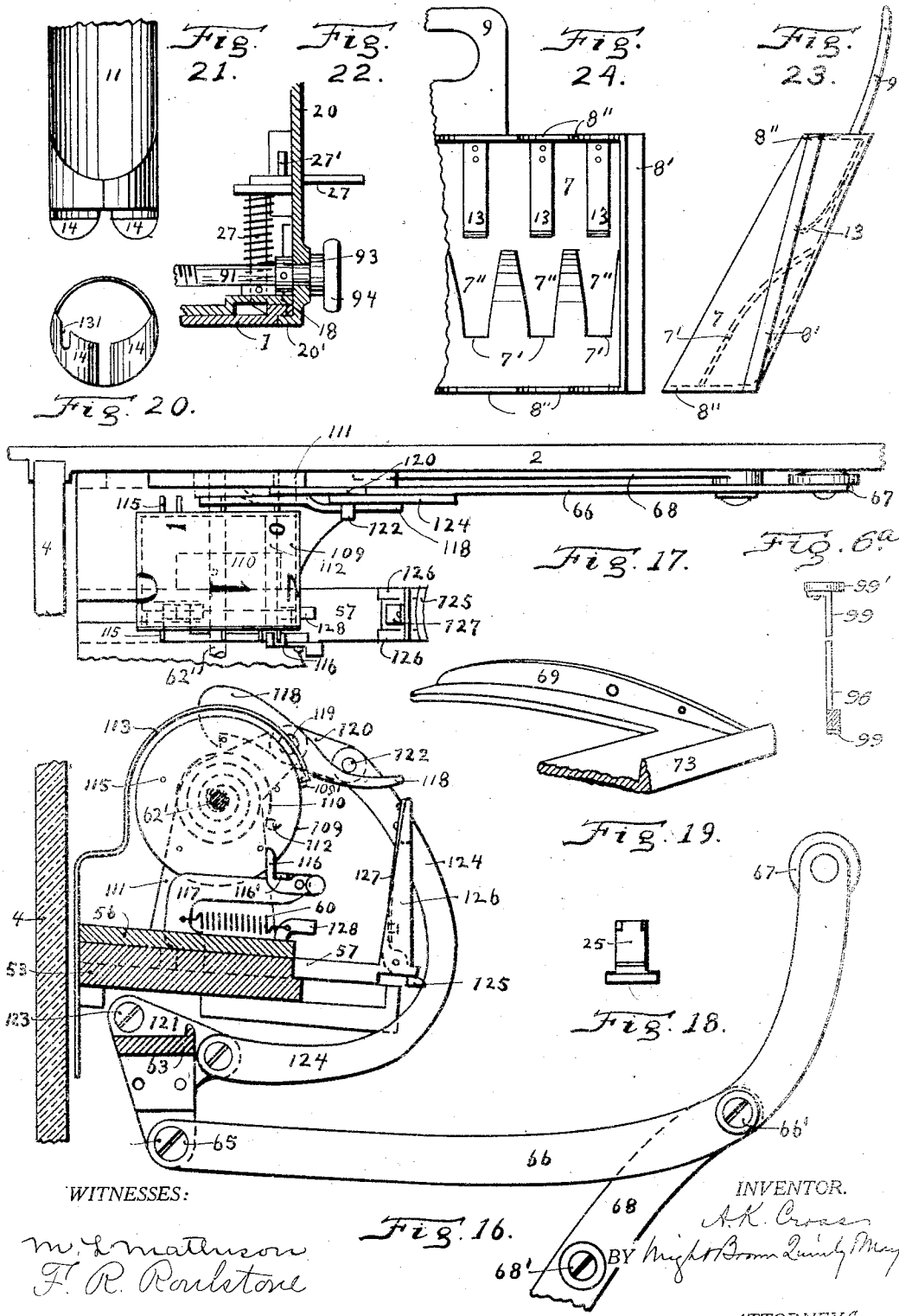
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8 SHEETS—SHEET 6.

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8 SHEETS—SHEET 7.

1,035,862.

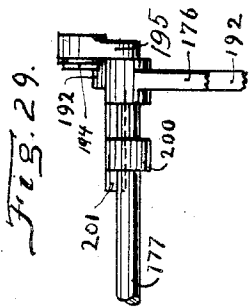


Fig. 28

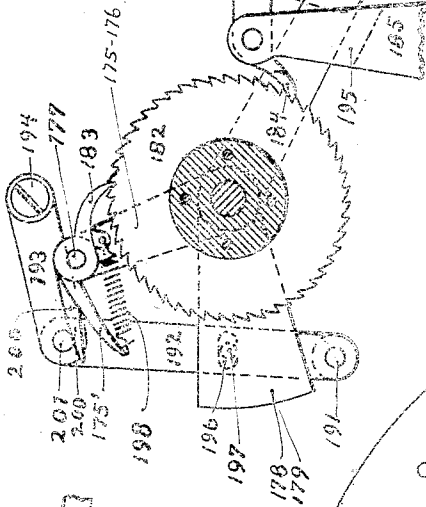


Fig. 25.

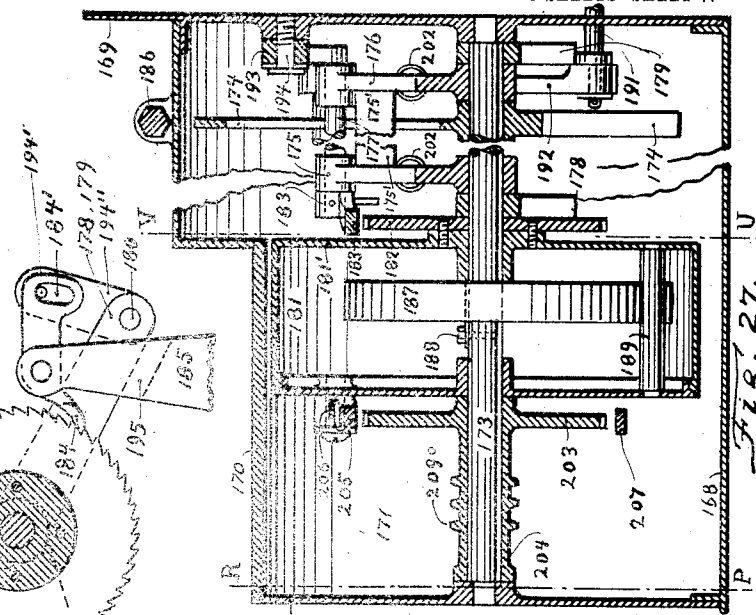
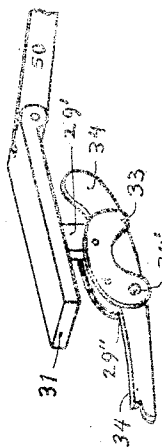


Fig. 27.

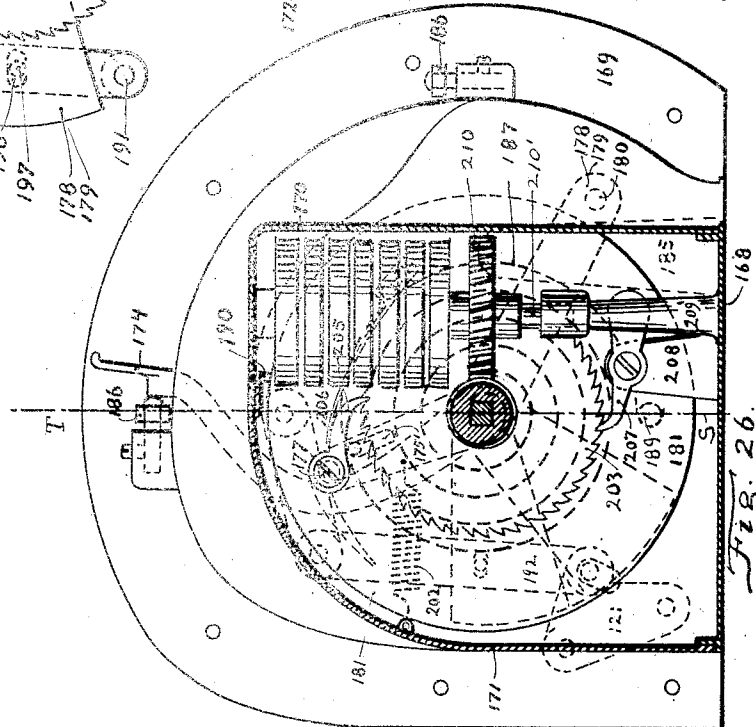


Fig. 26.

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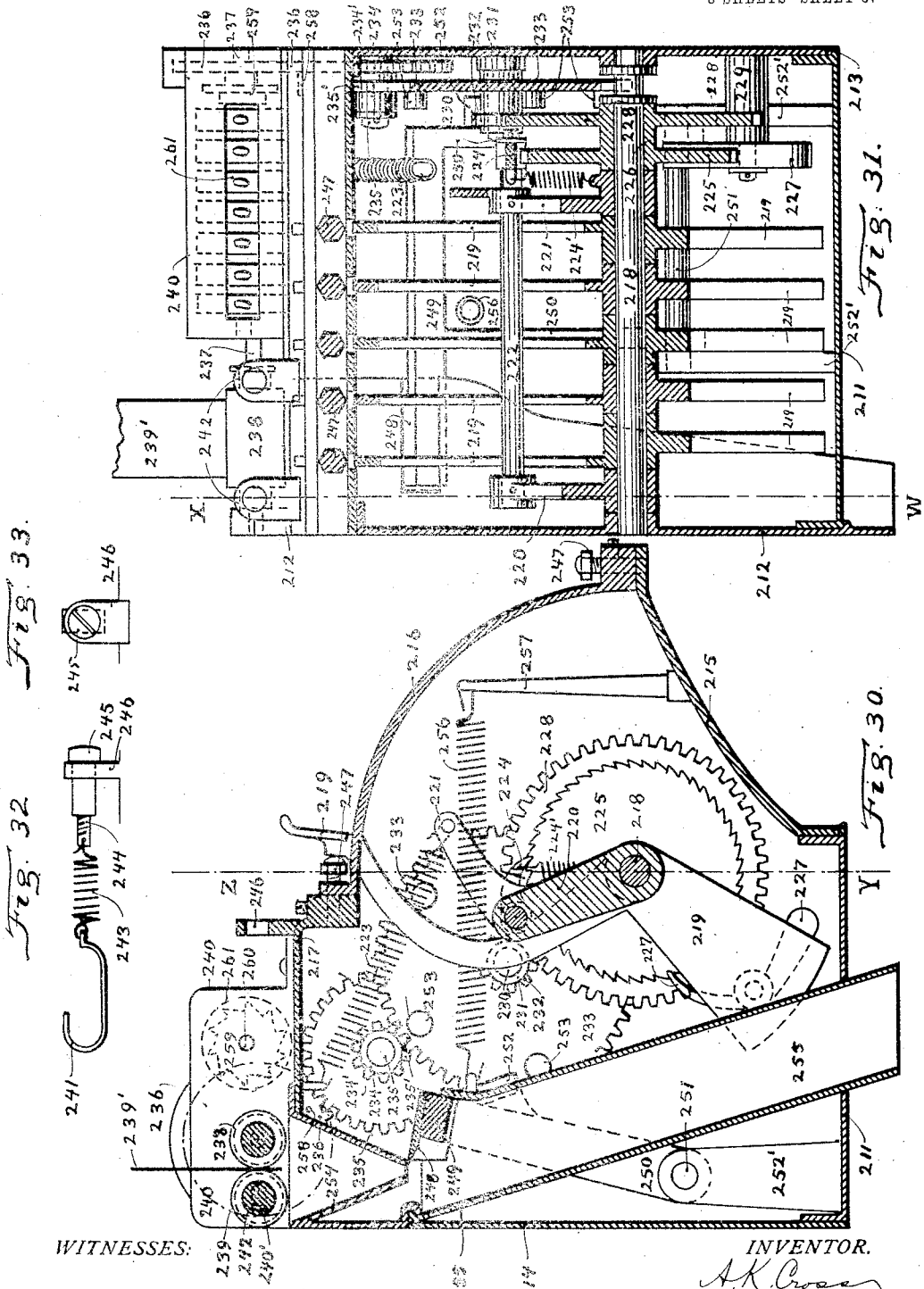
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 APPLICATION FILED JAN. 28, 1909.

1,035,862.

Patented Aug. 20, 1912.

8 SHEETS—SHEET 8.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ANSON K. CROSS, OF WINTHROP, MASSACHUSETTS.

COIN AND TICKET DELIVERY MACHINE AND CASH-REGISTER.

1,035,862.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed January 28, 1909. Serial No. 474,730.

To all whom it may concern:

Be it known that I, ANSON K. CROSS, of Winthrop, in the county of Suffolk and State of Massachusetts, have invented certain
5 new and useful Improvements in Coin and Ticket Delivery Machines and Cash-Registers, of which the following is a specification.

My invention relates to coin-delivery machines, and its objects are: first, to provide
10 improved means for delivering coins, for displaying them to the sight of the purchaser, for indicating their value, and for delivering them directly into his hand; second, to provide means for registering and
15 indicating the amount of the sale; third, to provide means to withdraw from sight both the indicating figures in the cash register and those in the coin-delivery machine by the motion which delivers the coins to the
20 customer; fourth, to provide means for delivering and registering tickets; fifth, to provide means by which the cashier may return the coins to his possession; sixth, to provide means for notifying the cashier
25 when a coin tube is empty; and seventh, to provide means for readily detaching and replacing the coin-ejecting mechanism from the coin-holding mechanism. I attain these objects by the mechanism illustrated in the
30 accompanying drawings, in which—

Figure 1 is an elevation showing the coin delivery, the ticket delivery, and the cash register, from the cashier's side. Fig. 2 is a portion of a section taken on line A—B of
35 Fig. 4. Fig. 3 is a perspective view of the bell-ringing device shown in elevation in Fig. 4. Fig. 4 is a section on line C—D of Figs. 1 and 5. Fig. 5 is a section on line E—F of Fig. 4. Fig. 6 is a bottom view of
40 the set of parallel motion plates for operating the coin-discharging slides. Fig. 6^a is a detail edge view of one of the push-button slides, and showing the separating strip in section. Fig. 7 is a top view of the plates
45 shown by Fig. 6. Fig. 8 is a bottom view of one of the strips separating the plates forming the guides for the parallel motion plates. Fig. 9 is a portion of a top view of the separating strip, shown by Fig. 8, showing the
50 slots for receiving the push slides. Fig. 10 is a side view of the parallel motion rod shown in Fig. 4 with its upper and lower supporting links attached to it. Fig. 11 is a portion of an edge view of the rod shown

by Fig. 10. Fig. 12 is a portion of a section taken on line G—H of Fig. 4. Fig. 13 is a perspective view of the coin-holding and indicating slide shown in section in Fig. 4. Fig. 14 is a section on line K—L of Fig. 1. Fig. 15 is an elevation representing the parts
60 shown by Fig. 14 as seen from the left side. Fig. 16 is a portion of a section on the line M—N of Fig. 5. Fig. 17 is a top view of the parts shown by Fig. 16. Fig. 18 is a right side view of the coin support 125 shown in
65 Figs. 17 and 18. Fig. 19 is a perspective view of one end of the locking bar shown in section in Fig. 4. Fig. 20 is a bottom view of one of the coin holders. Fig. 21 is the lower portion of a front view of the coin
70 holder shown in Fig. 20. Fig. 22 is a portion of a section taken on line K—L of Fig. 1 and enlarged. Fig. 23 is a side elevation of the coin holder shown in section in Fig. 4. Fig. 24 is a portion of an elevation of the
75 coin holder shown in Fig. 23. Fig. 25 is a perspective view of the coin-expelling finger and slide carrying it, shown in section in Fig. 4. Figs. 26 and 27 are sections through the cash register, Fig. 26 being a section on
80 line P—R of Fig. 27, and Fig. 27 being a section on line S—T of Fig. 26. Fig. 28 is a portion of a section on line U—V of Fig. 27. Fig. 29 is a right side view of a portion of Fig. 28. Figs. 30 and 31 are sections through
85 the ticket-delivery machine, Fig. 30 being taken on line W—X of Fig. 31 and Fig. 31 being taken on line Y—Z of Fig. 30. Fig. 32 is a side view of the tension-regulating device, and Fig. 33 shows the same as seen
90 from the right. Figs. 34 and 35 are perspective views of two of the parallel motion plates for operating the coin ejectors. Fig. 36 is a detail view showing the connection between the cash register and the coin deliv-
95 ery machine.

Similar reference letters refer to similar parts throughout the several views.

This machine combines four different machines each having a suitable outer frame-
100 work or casing and all being fastened together by screws, so that one, two, three or four of the machines may be used as desired, but though it is possible to use the coin-holding and delivering machine without the
105 coin display plate and delivering tube, and to use the coin display plate without the coin delivery machine, or to use either the

cash register or the ticket delivery machine without the coin delivery machine, it is not possible to use the coin delivery machine in "Pay-as-you-enter" street cars and railroad offices, where its use is most necessary as a time saver for both cashier and customer, without combining with the coin delivery machine the cash register and ticket delivery machine, as all these machines combine to form one machine which cannot be sold or used if any of its parts are omitted.

The coin-delivery machine, shown principally by Figs. 4, 5, 6 and 7, consists of a bottom plate 1 with side plates 2 secured to it. The side plates are slotted to receive the glass plate 4 forming the front of the machine. The side plates 2 are connected at the top by a horizontal plate 3. A hinged cover 5, having its larger part formed of a plate of glass 6, is hinged to the plate 3.

The rear portion of the machine is formed separate from the front portion and is adapted to be readily disengaged and withdrawn from the front portion in order that its parts may be readily inspected. The bottom of the rear portion is formed of the plate 18 to which the side plates 19 are secured. The plates 20, 21, 22, 23 are secured to the side plates 19 and form the rear casing. The top plate 24 extends under the cover 5. The plates 19 are flanged and project inwardly upon the plates 2, as shown in Fig. 5. A lip 20', formed upon the lower edge of plate 20 (see Fig. 22), passes under the outer edge of the plate 1, and a spring catch 27 engages with the upwardly projecting flange upon plate 1 and prevents the rear portion being drawn back until the catch has been lifted.

The flanges upon the plates 19 are extended centrally at 25 to engage with two bosses 26. To disengage the rear portion, it is necessary to lift the catch 27, slide the rear part back until it is free from the flange upon the plate 1 and the flange 25 is withdrawn from the bosses 26.

A lock 27' may be provided, if desired, to prevent motion of the spring catch 27.

The cover 5 is locked by means of a hook 102 formed upon its under surface which engages with a pivoted catch 103. The cover is lifted by means of the handle 105 after the catch 103 has been revolved.

The coins are held in channels 11 which are formed of thin metal and shown in Figs. 4, 5, 20 and 21. At the bottom a thick seat 14 is provided as a support for the coins. This seat may project below the coin for any desired distance and have its inner outline formed to the coin which the channel is designed to carry. I have shown the seat 14 projecting one-half inch upon the diameter of the coin, but a greater or less distance may be taken as a support for the coin. The

central part of this coin support is slotted 6 to permit the passage of the coin ejector 34, and the slot extends upward in the back of the channel a distance equal to the thickness of as many coins as it may be desired to eject from the coin channel by one motion of the coin ejector. In the case of thin coins, the cent and ten cent pieces, I prefer to eject but one at a time, but with the thick coins, holders may be designed to deliver more than one at each action of the ejector. The slot in the bottom of the coin channel for the passage of the coin-ejecting finger is made with sides curving outwardly in order that the finger may slip into the slot readily when the coin channel is dropped into its seat over the finger. The sides of the coin-holding channel are bent around the coins at the base in the form of a tube, and the bottom of this front portion is cut away (as shown in Figs. 4 and 21) to allow the passage of one or more coins from the holder. At the top the back plate is bent forward to form the handle 17 by which the coin holder may be lifted.

It is evident that a machine may be provided with coin-holding channels for all the different coins in use or for as many of them as may be desired. In Fig. 5 I have shown one holder for coins of each of the following values: one cent, five cents, twenty-five cents, fifty cents, and one dollar, and two holders for ten-cent pieces.

Each coin-holding channel has a strap 12 fastened to its rear surface and extending downward in the form of a hook 12', by means of which the holder is supported upon the flange 7' of the coin carriage 7. The upper end of the strap 12 projects a little distance behind the coin channel and engages with a spring 13 which serves to press the channel firmly into its seat and against the coin carriage.

Any coin channel may be removed from its seat when emptied of its coins by means of the handle at its upper end, and replaced by a channel which is filled with coins, or the coins may be placed in the channel while it is in its position in the machine.

By making the upper part of the coin-holding channel at an angle with the lower portion, a large part of the weight of the coins is borne by the channel, thus involving the use of less power in discharging the coins from the channel.

To facilitate the handling of the coin channels, I provide a removable carriage 7 to hold them. This carriage consists of a framework having plates 8'' at top and bottom which are cut to fit about the coin-holding channels. The lower front portion of the carriage consists of a plate whose upper surface is provided with slots 7'', see Fig. 24, adapted to receive and guide the hooks

12' to their seats 7' at the bottoms of these slots. From the top plate of the carriage, a handle 9 rises above the tops of the coin channels. Springs 13 are fastened to the back of the carriage opposite each coin channel. A groove 8 is formed in each side plate 2, and projecting guides 8' upon the sides of the carriage 7 fit in these grooves and allow the carriage with all the coin channels to be removed at one motion.

The coin ejector consists of a finger 34 (see Figs. 4 and 25) so balanced and pivoted as to bear against the under surface of the lowest coin in the coin channel. The finger bears upon its lower surface and rises behind the coin a distance slightly less than the full thickness of the coin. The edge of the finger bearing on the edge of the coin is at such an angle as to tend to press the coin downward upon the finger. In case more than one coin is desired from each motion of the finger, the finger is raised to bear upon as many coins as may be desired, and the notches in front and back of the coin channel are raised to correspond. By extending the end of the finger and having it bear upon the under surface of the coin, a more positive adjustment is possible than with adjustments regulated by parts outside the plane of the lower surface of the lowest coin. The coin-expelling finger 34 is pivoted between two plates 33 which are riveted to a finger 29' solidly fixed in a slide 31 which is adapted to reciprocate in a groove 30 cut in the upper surface of a plate 29. This plate 29 is supported by two upright webs 28 extending from the base plate 18, and has a groove 30 in it opposite each coin channel. The slides 31 move freely in the grooves 30 and are held in place by a covering plate 32 suitably secured to the plate 29. The fingers 29' depending from the slides 31 move in slots 31' cut in the rear edge of the plate 29.

The forward end of the finger 29' is formed into a stop 29'' adapted to hold the expelling finger 34 so that its projecting end may rest in the plane of the lower edge of the lowest coin. The rear portion of the finger 34 is elevated above the pivot 34' so that the effect of moving the finger forward is to cause the finger to press more closely against the coin to be expelled.

The rear end of the slide 31 is slotted and within it is pivoted the rod 50 which moves the slide. The lower end of the rod 50 is pivoted to the rod 49, which is formed by bending sheet metal and riveting the two parts together with a separating plate 81 between them, thus permitting the rod 50 and the catch 78 to be pivoted between the two halves of the rod 49. The rod 49 is pivotally suspended by means of an upper link 37 and a lower link 38 from two rods 35 and 36 which are secured in the side

plates 19. These links are each formed in two sections (see Figs. 10 and 11) and riveted together with ears 37' adapted to fit the outer surfaces of the rod 49, and the links are of equal length between the centers of their pivots. The distance between the rods 35 and 36 is equal to the length of the rod 49 from center to center, so that this rod is adapted to move in parallel lines. The two parts of each link 37 and 38, fitting the rods 35 and 36, are separated far enough to hold the rod 49 in one vertical plane. Between the two parts forming each link 37 and 38 and about the rods 35 and 36, springs 44 and 43 are coiled. These springs have one end bearing on the rivet 39 and the other end upon the rod 40 or 41. The rods 40 and 41 are held by the side plates 19, and the springs 43 and 44 return the parallel motion rod 49 and the coin-expelling finger 34 to their original positions after they have been moved to expel a coin.

A parallel motion rod 49 is attached to every coin-expelling slide 31. The links 37 and 38 are kept in position upon the rods 35 and 36 by collars or washers placed on the rods between the adjacent links. In Fig. 10 the links 37 and 38 and the rod 49 are shown arranged in one straight line, but in the machine they occupy the positions shown in Fig. 4.

To move the parallel motion rods 49, I provide a set of plates having feet bearing on the rods. Thus to give change for one dollar, it is necessary to move all the slides except the two outer ones which deliver cents and silver dollars, and a plate must be provided with feet to bear upon the five central parallel motion rods. This plate is shown by Fig. 34. To deliver a coin from any one coin channel, it is necessary to provide a plate with one foot bearing upon the parallel motion rod which delivers coins from that channel. To deliver from two coin channels at once, a plate having two feet bearing on the parallel motion rods delivering from these channels must be provided, and it is only necessary to provide a plate for each separate coin or combination of coins that it is desired to discharge at one action.

Fig. 35 represents the parallel motion plate having one foot adapted to discharge coins from the channel holding cent pieces. These plates may be held and moved in various ways. I prefer, however, to provide two links for each plate, and have the plates form a set of parallel motion rods and move in planes at right angles to the parallel motion rods 49 attached to the connecting rods 50.

Figs. 6, 7, 8 and 9 show the construction of the nest of parallel motion plates, which contains one plate for cents, one for silver

dollars, and twenty for any desired change up to one dollar, including five cents and its multiples. A plate for unlocking the cover 5 is also included so that I have shown
 5 twenty-two plates 97' with feet of equal length adapted to bear upon the parallel motion rods 49 and move them equal distances, and one plate with the long foot 97'' adapted to move the catch 103. These parallel motion plates are placed in separate
 10 compartments formed by separating plates 95 which are bound together by means of bolts 95'. Upon these bolts, the links 96' are placed which support the plates by means of pivots at their outer ends. Separating strips 96 are held at the upper edges
 15 of the plates 95 by the bolts 95'. Washers 98' upon the lower right hand bolt 95' also serve to hold the separating plates which extend at the top to the upper bolts 95' and at the bottom to the bottom edges of the feet depending from the plates 97'.
 20 The outer plate on each side 97 extends both above and below the other plates. At the top it serves to support the cross bar 40', which fits in a notch cut in the top of the plate 97 and projects downward upon the plate. Spiral springs 20' are attached to the cross bar 40' and to each of the plates
 25 97' (see Fig. 7) to keep the plates as high in their compartments as they will go. These plates 97' are depressed by means of push buttons 99' attached to the upper ends of slides 99. The lower ends of these slides
 30 are bent at right angles so as to project under the separating strip 96 (see Fig. 6^a) and lock the slides in their places. The plates 21, 22 and 23 are cut to separate and support the slides 99 at the level of the top
 35 edge of the plates 97. Plate 21 comes up below the lower line of slides 99, the upper edge being notched to fit them. Plate 22 has both edges notched to fit the upper and lower lines of slides 99 and plate 23 has
 40 its lower edge notched to fit the upper line of slides. The slides for cents, dollars, and unlocking the cover pass through holes cut in the plates 21 and 23 which are covered by the small plates 21' and 23', see Fig. 1. The
 45 plates 97 have ears 98 projecting from them on each side by means of which the plates are held to the side plates 19. The lower portions of the plates 97 are provided with slots 49' through which the rods 49 pass.
 50 Secured to the top plate 97 is a bell 100 which is rung by the striker 100' which is rigidly secured to a pivot rod 108. This rod is supported by plates 109' attached to the under side of the plate 97. Arms 109
 55 are fixed to the rod 108 and at their outer ends a friction roller 110 is carried upon a rod 110' secured to the arms 109. This roller is in a position to be moved by the rod 49 before it discharges a coin and thus
 60 notice of the discharge is given by the ring-

ing of the bell attendant on the depression of the arm 100'. A spring 45 is provided to lift the striker off the bell. A striker 75' is attached to the under side of the plate 97'' in such a position that it rings the bell 70 100 before the catch 103 is moved away from the hook 102.

To lock the parallel motion rods 49 so that no coins can be discharged by them and so that they need not vibrate while the machine is being transported, I provide a bar 75 90 which is secured to a slide 18' which is adapted to move in a dovetailed slot formed in the bottom plate 18. A threaded hole in the center of the bar 90 engages the bolt 91. 80 By means of the milled head 94, this bolt is turned and draws the bar 90 against the lower ends of the rods 49. Collars 92 and 93 hold the bolt in the plate 20 and in the bar 90. A lock may be provided to prevent motion of the bolt 91 after it has
 85 clamped the bars 49.

To insure the delivery of no more than one coin at each motion of the finger 34, I place a slide 57 in front of each coin-hold- 90 ing channel in grooves 54 cut in a supporting plate 53. Each slide has a spring 60 which holds the slide in position to support the coin upon its lower edge 57'. When the coin is moved forward, it bears upon this edge 57' and upon the surface just above which is cut to conform to the outline of the coin and is also beveled so as to press the coin upon the seat 57'. Secured to the slide and extending below it is a finger 58' 100 to which is pivoted a balanced catch 58' which is kept in position to engage with the locking bar 63 by means of the projecting pin 58''. The finger 58 moves in a slot 55 cut in the plate 53, and the plate 53 is secured to the side plates 2 and covered by the 105 plate 56 which holds the slides 57 in place. Rising above the slides 57 are fingers 59 firmly secured in the slides and moving in slots cut in the covering plate 56. The 110 spring 60 is attached to the finger 59, and to the edge of the plate 56. The upper end of the finger 59 is slotted and within it is fitted a friction roller 61' carried upon the arm 61 which extends from the lower edge 115 of the indicator tablet 62. The indicator tablets are pivotally supported upon the rod 62' by having their lower edges in the form of a tube encircling the rod. Each tablet shows to the customer when it has been 120 lifted, one or more large figures indicating the value of the coin dropped by the action which raises the tablet, and in small figures upon the back of the tablet the cashier may read the value of the coin. When the slide 125 is carried forward by a coin, it moves the tablet from the horizontal position into the vertical position in which it is supported by means of the hook 58', so that, when the expelling finger 34 is withdrawn from under 130

the coin, it falls into the compartment below the slide. As the coin falls it strikes the bell 84, which may have a different tone for each different value of coin the machine is adapted to hold. The rod 62' is secured within the two upright flanges 111 which extend from each side of the plate 56, and the bells 84 are fastened upon rods 84' secured to the partitions 83.

It is intended to operate each coin-expelling finger only when the opposing coin-holding slide 57 is in position to support the coin. If it is desired to discharge coins by moving the finger 34 more than once before the customer takes the coins from the machine, I prefer to use in place of the tablets 62, the revolving cylinder shown by Figs. 16 and 17 which is adapted to display indicator figures showing the value when one or more coins are consecutively discharged. The hollow cylinder 109 has a spring 110 within it which is secured to the rod 62', and has a bent end engaging the pin 112 which is fastened within the cylinder. The tension of the spring is adjusted so as to return the cylinder to the position in which the figure 0 may be seen. A stop is provided to hold the cylinder in position to show the figure 0. It consists of a pin 109' which projects far enough from the outer surface of the cylinder to engage with the intumed edge of the covering plate 113. I have drawn the cylinder to display to both the customer and cashier figures from 0 to 4 inclusive. I place these figures on the lateral surface of the cylinder; the larger figures for the customer on one side, and the smaller ones for the cashier to read on the other side. A covering strip 113 is provided with openings 114 and 114' (see Fig. 5) through which the figures in the cylinder may be seen. The outer bases of the cylinder are supports for five pins 115, which on the inner side are engaged by the tripping catch 116, which is pivoted to the finger 117. A stop 116' keeps the catch in position to engage the pins 115. On the outer side, the pins 115 are engaged by the ratchet 118 and thus the cylinder is held at the end of the motion communicated to it by the slide 57. The ratchet 118 is pivoted to the flange 111 by the pin 119 which also holds a link 120, from which a pin 122 extends over the rear end of the ratchet 118. The link 120 is attached at its outer end by the pin 122 to a curved link 124 pivotally connected to the plate 121 to which the locking bar 63 is riveted. The plates 121 are pivoted to the side plates 2 by the screws 123 and at their lower end by the screws 65 to the links 66. The links 66 are pivotally connected to the levers 68. The outer ends of the links 66 are bent upward and carry friction rollers 67.

When the coin has carried the slide 57 far enough to move the cylinder one fifth

around, it is held in this position by the ratchet 118 while the slide 57 discharges the coin upon it by means of the pivoted lever 125 which is held between two uprights 126 rising from the end of the slide 57 and kept in position to support the coin by means of a spring 127 secured to the top of the uprights 126. A stop 128 projects from the plate 57 and revolves the lever 125 so that the coin falls from the seat at the end of the lever 125.

The coins discharged are supported in sight of the customer upon the display plate 106 where they are separated by means of partitions 83 which are secured to a plate 82 which is supported at an angle by the up-turned edge of the bottom plate 1.

A rod 87 (see Fig. 13) attached by the pivot 58'' to the end of the finger 58 is connected to the lever 88 (Figs. 4 and 14) which is secured by the pivot 128 extending between the plates 138. One of these levers 88 may be provided for each coin-discharging channel, slots in the bottom plates 1 and 18 being provided for the levers 88 to enter the plates. By means of the ratchet 129 and ratchet wheel 130 and meter 131, the coins discharged may be registered if desired.

In order to deliver tickets with the coins when the ticket-delivery machine is not combined with the coin-delivery machine, I cut a slot through the right side plate 2 and place a chute 130 outside this slot and continue the chute inside the outer partition 83 inclosing the space for silver dollars.

To give notice when all coins have been discharged from the coin holders, I pivot under each, a finger 85 adapted to rise within the coin holder through the slot 131 (Figs. 5 and 20) cut in the bottom of the holder. This finger is pivoted to the partition 83 and extends outside the partition above a frame-work consisting of a horizontal bar 85' at the top and a rod 86 at the bottom connecting the two side pieces 86' which are so pivoted by means of straps 82' to the under side of the plate 82 that the weight of the finger 85 upon the bar 85' depresses it far enough to cause the finger 85'' which extends downward from the crossbar 85' to come in contact with the two ends of the wires 132 and 132'. These wires are insulated by the rubber block 133 holding them above the base plate 1 and by the rubber socket 133' holding the wires in the side plate 2. To the ends 132' and 132 wires connected with a battery and electric bell 214' placed at any convenient distance outside the machine are connected, and, when the circuit is closed by the depression of the finger 85'', notice is given that one of the coin channels is empty.

To deliver the coins to the customer, I employ a chute 133'' whose lower end is adapted to fit the palm of the hand. This

chute is firmly secured to a frame 134 adapted to reciprocate, supported by its extremities 135, which fit the vertical grooves 136 in the side plates 2. The upper edge of the frame 134 conforms to the shape of the chute 137 which consists of a plate set at an angle and firmly secured to the side plates 138. At the tops, these side plates have inturned flanges 138' by means of which the plates 138 are secured to the bottom plate 1. The top of the opening in the chute 137 is covered by a horizontal strip 139 serving as a support and protection to the under edge of the glass plate 4 which continues below the delivery machine and covers the space in front of the chute. This strip 139 is the upper edge of a plate 140 which is fastened to the bottom of the chute and to the side plates 138. The chute 133' is suspended by means of a friction roller 140 which is pivoted at the back end of arms 141 extending from a plate 142 which is screwed to the frame 134. This roller fits within a curved slot cut in the lower end of a lever 143 which is pivoted within ears 144 depending from the chute 137.

The upper end of the lever 143 is pivoted to a link 145, and the upper end of this link is pivoted between ears 146 projecting from the under side of the display plate 106. The weight of this plate and of the reciprocating parts 133 and 134 thus serve to balance each other, and the weights may be so adjusted that the display plate will normally remain in a horizontal position. Lifting the chute 133 will depress the plate 106 and cause coins and tickets upon it to fall into the hand.

Various connections between the chute 133' and the locking bar 63 may be employed. I have shown a lever 68 pivoted at each side to the plate 138 and a friction roller 147 pivoted between the lower ends of the levers 68 and held slightly behind the link 145.

Two springs 76, attached to the pins 77 and to the links 66, serve to keep the locking bar 63 in a horizontal position with sufficient tension to keep the indicator cards 62 in a vertical position. When the chute 133 is lifted, it moves the lever 68, and thus drops the bar 63 and releases the hooks 58'.

The display plate and delivery chute may be made and used without the coin-delivery mechanism, the change and tickets being slid by the cashier upon the plate and taken by the customer by lifting the chute or by sliding the change into his hand over the front edge of the display plate as he prefers.

To prevent the discharge of coins when the display plate 106 is dropped, I provide a bar crossing the rear part of the delivery machine and having a vertical surface 73.

This bar is pivotally supported by two levers 69 which may be formed in one piece

with the bar 73. The under sides of the levers 69 are adapted to bear upon the rollers 67. Springs 74 are secured to pins 75 and to the pieces 69 and serve to hold the levers 69 against the stops 71. When the chute 133 is lifted, the roller 67 will depress the bar 73 so that it serves as a stop to prevent motion of the striker 78 which is pivoted between the two parts of each of the rods 49.

If it is desired, each parallel motion rod may be locked after it has discharged once by screwing to the upper end of the striker 78 a catch 79 adapted to hook over the edge of the bar 73. These catches 79 may be readily secured to the plate forming the striker and as readily detached in case more than one motion from each push button is desired.

To enable the cashier to return the coins upon the display plate to his own charge, a return chute 148 is provided (Figs. 14 and 15), which is formed by fastening a sheet of metal to the side plates 138 by the rivets or screws 149. This plate has its lower end bound with a metal band 150 to which is adjusted a glass cover 151. This cover is held by the frame 152 extending upward from the delivery tube 153. This tube is held by an encircling band 154. To this band, the arm 155 is attached, and its upper end is pivoted between the ears 156 which extend below the plate 157 which is secured to the lower side of the chute 148. The glass cover 151 tends by gravity to close the opening in the chute, and, when the tube 153 is lifted, the coins fall into the hand. To conduct the coins into the chute 148, a movable chute 158 is employed. This chute is suspended from the pivot 159 by ears 160 extending above the edges of the chute. The pivot 159 passes through blocks 161 attached to tubes 162 which slide upon rods 163 supported by hangers 164 fastened to the side plates 138. A connecting plate 165 yokes the tubes 162 together. Springs 166 attached to the tubes 162 and to the side plates 138 keep the chute 158 behind the chute 133.

The rear end of the chute 158 is supported by a band 167 whose ends are constructed to support the handle 168 by which the cashier first moves the chute 158 forward as far as it will go, and then, by depressing the handle 168, lifts the chute 133 and causes the coins to roll back to the cashier.

It is evident that the chutes and delivery tubes shown may be used with advantage in many of the automatic machines now in use, and I do not restrict myself to the use of the mechanism in simply the coin machine I have shown.

The cash registering mechanism is at the left in Fig. 1 and consists of suitable plates 168, 169, 170, 171, 172, forming a case which

is secured to that of the coin-delivery machine. In practice, I prefer to cut the lower machine, shown in Fig. 1, into the counter so that the coin-delivering machine may rest upon the counter upon the flanges 173 which project from the base of each side plate. The bottom of the cash register is also supported by the counter.

The side plates 169 and 172 are provided with square holes to receive the ends of the rod 173 which serves as a fulcrum for the five levers 174 which fit loosely upon it and against each other. Outside of these levers and fitting against them are two arms 175 176 which have secured in their upper ends the rod 177 which is parallel to the rod 173 and in front of the five levers 174. The two arms 175 176 are rigidly yoked together by a connecting plate 175' fastened between them and extending through both arms. Outside the two arms 175 and 176 and working freely upon the shaft 173 are two levers 178 179 whose outer ends are secured to the rod 180.

To display the amount of the sale I provide a drum 181 which is adapted to revolve upon the shaft 173 and has upon its curved surface two sets of figures, one set for the cashier and the other set for the customer. To revolve the drum, I secure to its side plate 181' a ratchet wheel 182 having fifty teeth which are engaged by the ratchet 183 which is fast upon the end of the rod 177. When one of the levers 174 is drawn down, it carries the rod 177 with it and revolves the ratchet wheel and drum attached to it. The levers 174 move in slots of such length that they are respectively adapted to register the sale of one, two, three, four or five tickets. The ratchet wheel 182 is prevented from motion except in one direction by the pawl 184 which is pivoted to the support 185. The motion of each of the levers 174 may be adjusted by the screws 186 placed at each end of each slot.

The drum 181 has within it a spring 187, one end of which is fastened to the shaft 173 by the screw 188, and the other end of the spring is bent so as to engage with the pin 189 which is held within the drum by having its ends fitted to two holes in the base plates of the drum. The tension of the spring is sufficient to revolve the drum when it is freed from the ratchets, so that the stop 190 secured to the drum will cause the drum to stop with the figures 0 visible through the openings cut in the front and back plates.

To disengage the ratchets, I attach to the pin 191, (see Figs. 26, 27 and 28) which extends inside the casing through a slot in the plate 169 and is secured at its other end to the plate 121 of the coin-delivery machine, a link 192 pivoted at its upper end to the link 193 which, by the pin 194, is secured to the

plate 169. The levers 178 and 179 have their rear ends in the form of weights to counterbalance in part the rod 180 and the link 194'. The weights of these parts are so adjusted that the lever 178 will normally return to the position in which it is shown in Fig. 26. To keep it from going below this position, a supporting shelf 195 is formed upon the upright 185.

The pawl 184 has a slot 184' in its rear end adapted to receive the pin 194' which projects from the upper end of the link 194'. The link 194' is fitted to turn freely upon the rod 180, and, when this rod is lifted, it moves the pawl 184 from the ratchet wheel 182. To lift the rod 180, a pin 197 is fitted to the link 192 so as to engage in a slot 196 cut in the rear end of the lever 179. When the link 192 is moved downward, the lever 179 is lifted.

The ratchet 183 is fast upon the rod 177 and is kept against the ratchet wheel 182 by a spring 198 fastened to the ratchet and to the outer end of the arm 175' which extends back from the top of the arm 175.

To disengage the ratchet 183, I secure to the rod 177 an arm 200 adapted to bear upon the under surface of the pin 201 which projects from the link 193. The rod 177 being fast within the ratchet 183 and the arm 200, and free to revolve within the arms 175 176, when the pin 201 is lowered, the ratchet will be lifted from its wheel, and both ratchet and pawl are thus released by the action of the coin-delivery machine in discharging coins from its display plate to the customer.

To return the arms 175 176 after they have been lowered by the action of any arm 174, springs 202 are secured to the arms and to the back casing.

To register the total amount indicated by the action of the various levers 174, a meter is provided. It is operated by a ratchet wheel 203 which is secured upon a sleeve 204 fitting loosely upon the shaft 173. This ratchet has the same number of teeth as the one upon the indicator drum. A ratchet 205 is pivoted to the side of the drum 181 and kept upon the wheel by the spring 206 which is also secured to the side of the drum. A pawl 207, pivoted to a support 208 rising from the base plate 168, prevents retrograde motion. The sleeve 204 has upon it a double worm thread 209 which operates the worm gear 210 attached to the shaft 210' bearing the various meter wheels. I prefer to use and have indicated simply the form of meter known as the crown straight reading register made by the National Meter Company. In a later application, I intend to show the means by which this meter may be released from the worm gear, and its wheels all turned to show the figure 0, in order that the meter may be readily set back to 0 when desired. When there is room, I prefer to make

the casing of the register enough wider to allow the meter shaft to be placed horizontally, as in the meter shown in Figs. 30 and 31.

5 It is evident that various modifications of the construction shown may be made without departing from the spirit of my invention, and I do not limit myself to the exact construction shown.

10 By adding another indicating cylinder with meter and with operating levers, it will be possible to indicate and register for general purposes instead of for the special purpose of five cent sales and the smaller multiples of five, which are generally required
15 where five-cent fares are collected, and I do not limit myself to the register with only one indicating cylinder.

To deliver tickets from a roll of tickets in
20 strip form, I provide the machine shown in elevation in the upper right hand part of Fig. 1. In it a base plate 211 is secured to side plates 212, 213 and to the rear plate 214. Plates 215, 216 and 217 cover the front and
25 top. The operating mechanism is similar to that in the cash register. Secured in the side plates 212, 213 is the pivot rod 218 which serves as a fulcrum for the five levers 219 whose hubs fit loosely against each
30 other. Outside these levers 219 are two arms 220, 221 which fit loosely upon the rod 218. These arms are fastened at their tops to the rod 222 which is normally against the front edges of the levers 219. A spring 223
35 is attached to the arm 221 and to the upper casing to keep the arms in an upright position. A ratchet 224 is pivoted at the end of the rod 222 in position to engage with the ratchet wheel 225 below the ratchet. The
40 ratchet is kept in action with the teeth of the ratchet wheel 225 by means of a spring 224' which is secured to the under side of the ratchet and to the hub of the arm 221. The wheel 225 is fast upon the sleeve 226
45 which fits loosely upon the pivot rod 218. The wheel 225 is also engaged by the pawl 227 which is pivoted upon the stud 229 projecting from the plate 213. Beside the wheel 225 is a gear 228 fast upon the sleeve
50 223. The ratchet wheel and gear both have fifty teeth.

Above and behind the lower pivot rod is a pivot 230 projecting from the plate 213, and upon this a sleeve 231 fits loosely carrying a
55 pinion 232 with ten teeth engaging the gear 228. The sleeve 231 also bears a gear 233 with fifty teeth which engages with a pinion 235' with ten teeth, which is carried upon the pivot 235 projecting from the plate 213.
60 The pinion 235' and gear 234' revolve together and drive the gear 236 which is fast upon the shaft 237 which extends across the top of the machine. The shaft 237 has secured to it the roller 238. In the same hori-
65 zontal plane as the roller 238 and back of it,

a second roller 239 of the same size is placed in horizontal grooves 240' cut in the side plate 212 and the covering plate 240. Curved straps 241 encircle the ends 242 of the roller 239. Springs 243 attached to the
70 straps 241 and to a screw 244, serve to vary the tension of the rollers upon each other by means of the nut 245, which turns loosely in the ear 246 which extends above the plate 217.

The levers 219 are placed in slots of in-
75 creasing lengths and the screws 247 are provided to adjust the motions of the levers at both ends of each slot. The length of the shortest slot is such that, when the lever marked I is moved, it causes the rolls 238,
80 239 to deliver just one ticket from the strip 239'. The levers marked II, III, IV, V are adjusted to deliver two, three, four and five tickets. More than five tickets may be deliv-
85 ered by repeating the action of the delivery levers. The weights forming the lower portions of the levers 219 serve to return them to the upper ends of their slots. To cut
90 the tickets from the strip, a knife 248 is secured to a horizontal arm 249 which is supported by the upright arms 250 upon the pivot rod 251. This rod is held by the uprights 252' 252' which rise from the base plate 211 on the outer sides of the arms 250.
95 To move the knife, a striker 252 is provided upon the arm 250 adjoining the gears. Upon the face of the gear 233 five friction rollers 253 are placed upon studs projecting from the gear far enough so that the rollers engage the striker 252 and cause the
100 knife to move five times every time the gear revolves. The edge of the knife blade is adapted to act with the lower side of the upper chute 254 as a pair of shears to cleanly
105 cut the ticket. The chute 254 is held by a projecting lip upon the upper edge of the lower chute 255 and also by screws upon the upper plate 217. The lower chute 255
110 is adapted to convey the tickets cut off by the knife to the chute 130 in the coin-delivery machine below. It is fastened to the back plate 214 and to the side plate 212 by
115 screws. Its upper edge is notched to receive the knife arm and the sides of the notch serve as stops to the arm in its motions both
ways. A spring 256 is attached to the arm 250 and to an upright stud 257 to withdraw the knife after it has cut off a ticket.

The pinion 236 has a pin 258 projecting
120 from its surface and adapted to move one tooth of the ratchet wheel 259. This ratchet wheel operates the spindle 260 upon which the disks forming the meter 261 are carried.

Many variations of the herein described
125 parts may be made but, as I believe that I am the first to attempt the ideas involved in these machines, I will leave further details to later applications and simply claim broadly the essential points involved.
130

I claim:

1. In a coin-delivery machine, means for holding and discharging coins, means for indicating the values of the discharged coins, means for indicating and registering the amount of the sale, means to drop the discharged coins into the hand of the customer and at the same time to withdraw from sight the figures indicating the values of the discharged coins, and the figures in the cash-registering mechanism indicating the amount of the sale.

2. In a coin-delivery machine, means for holding and discharging coins, means for indicating the values of the discharged coins, means to display to the customer the coins discharged, means for registering and indicating the amount of the sale, means to drop the discharged coins into the hand of the customer and to withdraw from sight both the figures indicating the values of the discharged coins and those of the cash-registering mechanism indicating the amount of the sale.

3. In a coin delivery machine, means for holding and delivering coins, means for retaining the coins where they may be seen and counted, but not obtained except through a coin-delivery tube adapted to drop the coins into the hand moving it, means for indicating to the customer the values of the discharged coins, means for registering the amount of the sale, means for indicating the amount of the sale, means to discharge the coins exposed to the customer's sight and indicated by the exposed tablets into his hand, and adapted at the time of discharging the coins to withdraw from sight the tablets indicating their values, also the figures indicating the amount of his purchase, as shown by the cash-registering portion of the machine.

4. In a coin-delivery machine, means to hold and to discharge coins, means to indicate to both cashier and customer the value of the coin discharged, means to display to the customer the coins discharged, means to register the amount of the sale and to indicate this amount to both cashier and customer, and means to deliver the discharged coins exposed to the customer's view into the customer's hand and to withdraw from sight the figures indicating their value and also those indicating the amount of the sale indicator figures from view by the motion which delivers the coin to the customer.

5. In a coin-delivery machine, means to hold and to discharge coins, means to deliver the coins into the customer's hand, operated by the customer, and means to prevent the discharge of coins when the customer's hand is operating the discharging mechanism.

6. In a coin delivery machine, a holder adapted to retain coins within it having a

slot at its lower end for the entrance of a coin ejector, and an opposite slot for the coins to pass from the holder, a coin ejector adapted to project below the lowest coin in the coin-holder to support the coin while it is being moved from the holder, a coin-slide adapted to project below the coin at a point opposite the coin-ejector to support the coin until it has been carried outside the coin-holder, and suitable means for freeing the coin from these supports when it has been carried outside of the coin-holder.

7. In a coin-delivery machine, a holder adapted to retain coins and having at its lower end two slots, one for the entrance of a coin ejector and an opposite slot for the passage of the coin acted on by the ejector from the holder, a coin ejector adapted at each motion to discharge a coin from the holder, a coin slide opposite the ejector adapted to be moved by the ejected coin, an indicator tablet, means for moving the tablet through the motion of the coin slide, and means to retain the table with the figures in sight until the coin has been taken by the customer.

8. In a coin-delivery machine, a holder adapted to retain coins within it and having two slots at its lower end, one for the entrance of a coin ejector and an opposite slot for the passage of the coins from the holder, a coin ejector adapted to move one coin from the holder, a coin slide opposite the coin ejector having a lip projecting below the coins in the holder to support them, and a catch adapted to retain the coin slide at the end of its motion, and suitable means to release the catch and to return the slide after the coin has dropped from the slide.

9. In a coin-delivery machine, a coin holder adapted to retain coins within it and provided with a slot for the entrance of a coin ejector and an opposite slot for the passage of the coin acted upon by the ejector, a balanced coin-expelling finger projecting beneath the surface of the lowest coin to push the lowest coin from the holder and having its center of gravity in such a position with reference to its pivot that the motion of the finger tends to keep the finger in engagement with the coins.

10. In a coin-delivery machine, a coin holder adapted to retain coins within it by means of supports projecting beyond the center of gravity of the coins, slots at the bottom of the holder adapted to permit the entrance of a suitable coin ejector and the passage of the coin acted upon by the coin ejector from the holder, a balanced coin-expelling finger projecting beneath the surface of the lowest coin to move the lowest coin from the holder and having its center of gravity in such a relation to its pivot that the motion of the finger to expel the coin causes the finger to press against the coin

more closely, and suitable means connected to the balance finger to reciprocate it for the purpose of discharging the coins.

11. In a coin-delivery machine, a coin ejector adapted to move the lowest coin from the coin holder and to support the coin by projecting below it, and a slide adapted to press the coin against the coin ejector and to support the coin by projecting below it at a point opposite the coin ejector.

12. In a coin-delivery machine, a pivoted coin ejector adapted to project a little distance below the under surface of the lowest coin in the coin holder and to bear upon this surface and to project far enough above it to move the lowest coin from the coin holder, and a slide adapted to bear upon the coin opposite the coin ejector and to support the coin at this point by projecting a little distance beneath the coin.

13. In a coin-delivery machine, a coin ejector balanced upon a pivot and adapted by gravity to bear upon the under surface of the lowest coin in the coin holder and adapted to move the lowest coin from the coin holder, and to support it, while moving it, and a slide adapted to bear upon the coin opposite the coin ejector and to support the coin by projecting a little distance below the coin.

14. In a coin-delivery machine, a coin holder, an ejector adapted to move the lowest coin from the holder, a slide adapted to bear upon the coin opposite the ejector and to support the coin, and means to retain the slide at the end of its motion in order that the coin may drop from it when the coin ejector is withdrawn from the coin.

15. In a coin-delivery machine, a coin holder, an ejector adapted to move the lowest coin in the holder, a slide adapted to bear upon the coin opposite the ejector and to move with it and to support it, and means to move the coin from the supporting slide without retaining the slide at the end of its motion.

16. In a coin-delivering machine, means for holding and discharging coins, a coin discharge tube movable up and down and adapted to deliver the discharge coins into the customer's hand when the tube is moved upwardly, and means operated by the movement of said tube to lock all the coin-discharging mechanism, so that the tube can receive no further coins when lifted.

17. In a coin delivery machine a coin display plate adapted to hold coins in position to be readily seen and counted, a coin delivery tube below the plate, suitable connections between the delivery tube and the display plate to move the plate by the motion of the tube, and suitable means for preventing downward motion of the display plate excepting as the delivery tube is operated to discharge the coins.

18. In a coin-delivery machine, a coin chute provided with means to support coins in sight of the customer, a delivery tube below the chute adapted to move upward and downward and to receive the coins discharged by the chute, and suitable connections between the tube and the coin support to retain the support in a horizontal position, and to drop the coins upon it into the chute when the delivery tube is moved, substantially as specified.

19. In a coin-delivery machine, a coin chute having a support adapted to hold coins in sight of the customer, a movable delivery tube below the chute adapted to move upward and downward and receive the coins discharged by the chute, a lever pivoted between the coin support and the delivery tube and adapted to support and move the coin support at one end of the lever through the weight and motion of the delivery tube at the other end of the lever.

20. In a coin-delivery machine, a coin chute having a coin support adapted to hold coins in sight of the customer and to drop them into the coin chute, a delivery tube secured below the chute and adapted to receive the coins falling from the chute, a lever pivoted between the coin support and the delivery tube adapted to support both, and to hold the coin support in a horizontal position through the weight of the delivery tube, and to move it so that the coins fall from it into the chute, substantially as specified.

21. In a coin-delivery machine, a coin chute having a gate adapted to hold coins in position to be readily counted by the customer and to be so moved as to discharge the coins upon it into the chute, a delivery tube secured below the chute adapted to receive the coins falling from the chute, a lever pivoted between the tube and the coin support and supporting the delivery tube at one end and the coin support at the other, through a suitable connecting link or arm attached to the coin support and pivoted to the upper end of the lever, substantially as specified.

22. In a coin-delivery machine, a coin chute having a gate adapted to hold coins in position to be readily counted by the customer; and to be so moved as to discharge the coins upon it into the chute, a movable delivery tube secured below the chute adapted to receive the coins falling from the chute, a lever pivoted between the tube and the coin support and connected with the delivery tube at the lower end and with the coin support at the upper end, suitable guides for the delivery tube, and means to prevent the customer obtaining the coins except from the delivery tube.

23. In a coin-delivery machine, a coin chute having a movable coin support adapted-

ed to hold coins in position to be counted by the customer and to be moved so as to drop the coins upon it into the chute, a movable delivery tube secured below the chute adapted to receive the coins falling from the chute, a lever pivoted between the tube and the coin support and connected with the delivery tube at the lower end through a friction roller fitting within a slot in the lever and carried at the back of the delivery tube, and at its upper end so secured to the coin support as to cause it to be held in a horizontal position by the weight of the delivery tube, and suitable supports for the delivery tube.

24. In a coin delivery machine, a display plate adapted to support coins in position to be readily seen and counted, means to lock the display plate to prevent motion of said plate until the locking mechanism is released by the hand which receives the coins, a chute below the display plate adapted to receive the coins dropped from the display plate, a delivery tube below the chute, and suitable connections between the delivery tube to move, support, and lock, the display plate.

25. In a coin-delivery machine, a coin chute having a movable coin support adapted to hold coins in position to be readily counted, partitions dividing the space above the coin support into separate spaces, one for each coin-holding tube or channel of the delivery machine, a delivery tube movable below the chute and adapted to receive the coins discharged from the chute, and by its motion to drop the coins from the coin support into the coin chute, and a lever pivoted between the delivery tube and the coin support and adapted to support both, and to operate the coin support through the motion of the delivery tube.

26. In a coin-delivering machine, means for holding and discharging coins into a chute, said chute being constructed to permit the coins to be seen but not removed, a delivery tube movable to permit the coins to be removed upon lifting said tube, and means for lifting said tube, said means being adapted to be operated by the cashier, said means being adapted to receive the coins discharged from the chute and return them to the cashier.

27. In a coin-delivery machine adapted to hold and to discharge coins, a chute adapted to receive the discharged coins, a gate adapted to open and close the chute and to hold the coins upon it in position to be counted by the customer, a delivery tube below the chute, and means to open the gate and conduct the coins through a second chute adapted to return them to the cashier.

28. In a coin-delivery machine adapted to hold and to discharge coins, a chute adapted to receive the discharged coins, a gate adapted to open and close the chute, a delivery

tube adapted to drop the coins from the chute into the tube, and suitable means to move the delivery tube and conduct the coins through it and a second chute back to the cashier.

29. In a coin-delivery machine adapted to hold and to discharge coins, a chute adapted to receive the discharged coins, a gate adapted to open and close the chute, and a movable chute adapted to open the gate and conduct the coins from the first chute through the movable chute back to the cashier.

30. In a coin-delivery machine adapted to hold and to discharge coins, a chute adapted to receive the discharged coins, a gate adapted to open and close the chute, a movable delivery tube below the chute adapted to open and close the gate, and a movable chute below the delivery tube adapted to move the tube and to conduct the coins from the first chute back to the cashier.

31. In a coin-delivery machine, a chute having a gate adapted to open and close the chute, and a delivery tube below the chute capable of motion in an upward and downward direction about a suitable pivoted support and of opening the gate above it through suitable connections therewith.

32. In a coin-delivery machine, means to hold coins, means to eject the coins from the coin holder, means to operate the coin-ejector, said means consisting of a pivotally supported rod, two parallel links of equal length, one loosely pivoted at each end of the rod and each free to rotate about rigid supports whose distance apart is equal to the length of the parallel motion rod.

33. In a coin-delivery machine, means to hold coins, means to eject the coins from the coin holder, means to operate the coin-ejector, said means consisting of a pivotally supported rod, two parallel links of equal length, one loosely pivoted at each end of the rod and each free to rotate about rigid supports whose distance apart is equal to the length of the parallel motion rod, and means to move and return the parallel motion rod.

34. In a coin delivery machine, a plurality of means to hold coins, means to eject the coins from the coin holders, means to operate the coin-ejectors, said means consisting of rods, each of which is pivotally supported and adapted to move in parallel lines, two parallel links of equal length whose plane of motion is parallel with or the same as that of the parallel motion rod, a push button, and means to operate one or more of the parallel motion rods to discharge coins from more than one coin holder by the action of said push button.

35. In a coin delivery machine, a plurality of means to hold coins, means to eject the coins from the coin holders, means to oper-

ate the coin-ejectors, said means consisting of rods, each of which is pivotally supported and adapted to move in parallel lines, two parallel links of equal length whose plane of motion is parallel with or the same as that of the parallel motion rod, a push button, and means to operate one or more of the parallel motion rods to discharge coins from more than one coin holder by the action of said push button, said means comprising also a plate adapted to move in a plane at right angles to that in which the parallel motion rod moves and having one or more feet adapted to bear upon and move as many of the parallel motion rods as may be necessary to discharge coins whose total value is indicated upon the push button operating the plate.

36. In a coin-delivery machine, means to hold coins consisting of a series of tubes or channels, means to eject the lowest coin from each holder, means to operate the coin-ejectors consisting of rods pivotally supported and adapted to move in parallel lines by two parallel links of equal length, pivoted to the rod and to rigid supports outside the rod, means to operate one or more of the parallel motion rods consisting of a series of parallel motion plates adapted to move in planes at right angles to those of the first parallel motion rods, each plate having a foot or feet bearing on and adapted to move one or more of the first parallel motion rods, and suitable means to return all the moving parts to their original positions after they have been moved to eject one or more coins from the coin-holders.

37. In a coin-delivery machine, a tube or channel adapted to hold coins, a coin-ejector adapted to discharge the coins, a parallel motion rod adapted to move the coin-ejector, a parallel motion plate adapted to move the parallel motion rod, a coin-chute, a gate adapted to open and close the coin-chute, a delivery tube adapted to receive the coins discharged from the chute, and means to open and close the gate through the motion of the delivery tube.

38. In a coin-delivery machine, a series of tubes or channels adapted to hold coins, a series of coin-ejectors adapted to discharge coins from the coin-holders, a series of parallel motion rods adapted to operate the coin-ejectors, a series of parallel motion plates arranged in planes at right angles to those of the first series of parallel motion rods, each parallel motion plate having means adapted to operate one or more of the first series of parallel motion rods, means to move each of the parallel motion plates, means to return all of the parts to their original positions, a coin-chute adapted to hold the coins discharged from each coin-holder in separate compartments where they may be seen by the customer, but not ob-

tained, and means to release the coins from the chute and deliver them into the hand of the customer who operates the coin-delivery tube.

39. In a coin-delivery machine, a series of tubes or channels adapted to hold coins, a series of coin-ejectors adapted to discharge coins from the coin-holders, a series of parallel motion rods adapted to operate the coin-ejectors, a series of parallel motion plates arranged in planes at right angles to those of the first series of parallel motion rods, each parallel motion plate having means adapted to operate one or more of the first series of parallel motion rods, means to move each of the parallel motion plates, means to return all of the parts to their original positions, a coin-chute adapted to hold the coins discharged from each coin-holder in separate compartments where they may be seen by the customer, but not obtained, means to release the coins from the chute and deliver them into the hand of the customer who operates the coin-delivery tube, and means to display to view indicating figures to show the value of the coins displayed to view in the coin-chute.

40. In a coin-delivery machine, a series of tubes or channels adapted to hold coins, a series of coin-ejectors adapted to discharge coins from each of the coin-holders, a series of parallel motion rods adapted to operate the coin-ejectors, a series of plates having feet bearing on the parallel motion rods and adapted by each foot to move one parallel motion rod, means to move each of the plates with feet, a coin-chute having separate compartments adapted to display for counting the coin discharged from the coin-holders, and means to release the displayed coins and deliver them into the hand operating the releasing mechanism.

41. In a coin-delivery machine, a series of tubes or channels adapted to hold coins, a series of coin-ejectors adapted to discharge coins from each of the coin-holders, a series of parallel motion rods adapted to operate the coin-ejectors, a series of plates having feet bearing on the parallel motion rods and adapted by each foot to move one parallel motion rod, means to move each of the plates with feet, a coin-chute having separate compartments adapted to display for counting the coin discharged from the coin-holders, means to release the displayed coins and deliver them into the hand operating the releasing mechanism, and means to display to view indicating figures to show the value of the coins displayed to view in the coin-chute.

42. In a coin-delivery machine, a tube or channel adapted to contain coins, a coin ejector adapted to discharge one or more of the coins, a parallel motion rod adapted to move the coin ejector, a parallel motion

plate adapted to move the parallel motion rod, a coin chute, a gate adapted to open and close the chute, a delivery tube adapted to receive the coins discharged from the chute, means to support and move the gate, means to lock the coin-discharging mechanism after it has discharged a coin, and means to unlock the coin-discharging mechanism operated by the motion of the delivery tube.

43. In a coin-delivery machine, a tube or channel adapted to contain coins, a coin-ejector adapted to discharge one or more of the coins, a parallel motion rod adapted to move the coin ejector, a parallel motion plate adapted to move the parallel motion rod, a coin chute, a gate adapted to open and close the chute, a delivery tube adapted to receive the coins discharged from the chute, means to support and move the gate, means to lock the coin-discharging mechanism after it has discharged a coin, means to unlock the coin-discharging mechanism operated by the motion of the delivery tube, and means to display indicator cards and

to drop them when the coins have been discharged from the chute, substantially as specified.

44. In a coin delivery machine a series of coin holders, means for discharging the lowest coin in each holder, a coin chute leading from each holder and adapted to convey the coins from the holder, a display plate adapted to retain discharged coins in sight of the customer and in the separate spaces or compartments formed by the separate coin chutes, a coin chute below the display plate adapted to assemble the coins from all the coin chutes, a coin delivery tube adapted to convey the coins from the coin assembling chute into a hand placed below the tube, and means to move the coin display plate and drop the coins upon it through motion of the hand operating the coin delivery tube.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ANSON K. CROSS.

Witnesses:

C. F. BROWN,
P. W. PEZZETTI.