No. 893,450. PATENTED JULY 14, 1908.

A. K. CROSS.

COIN DELIVERY MACHINE.

APPLICATION FILED SEPT. 21, 1906.

2 SHEETS—SHEET 1.

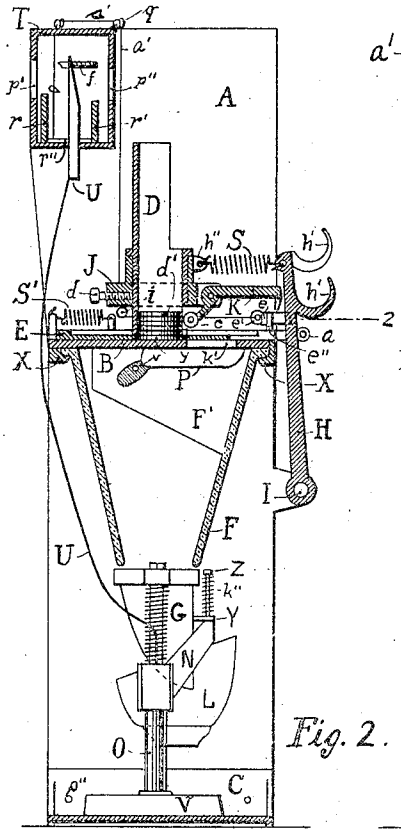

Fig. 2.

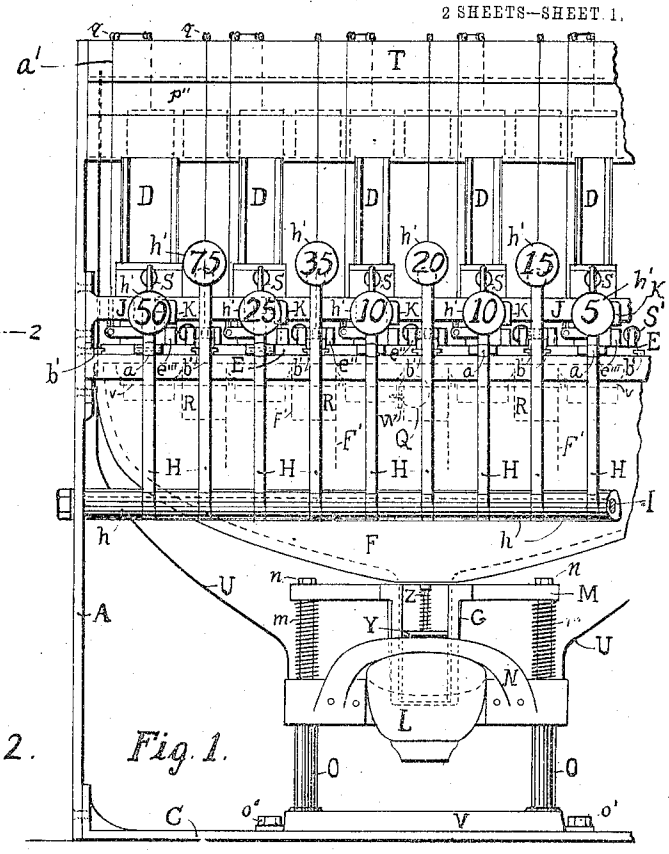

Fig. 1.

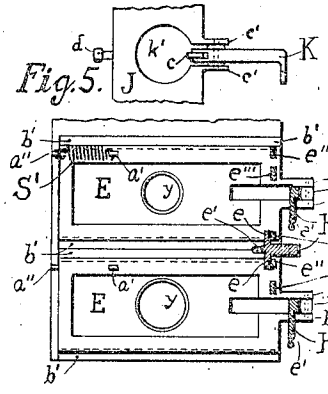

Fig. 4.

Fig. 5.

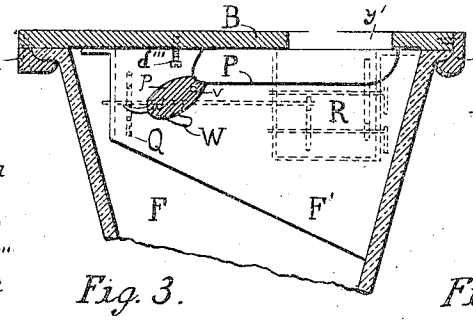

Fig. 3.

Fig. 16.

Fig. 8.

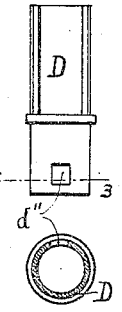

Fig. 6.

Fig. 7.

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2 SHEETS—SHEET 2.

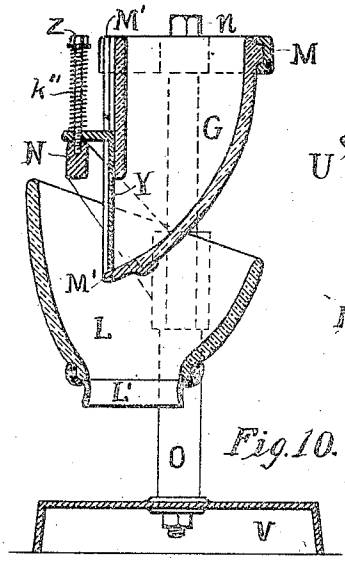

Fig. 10.

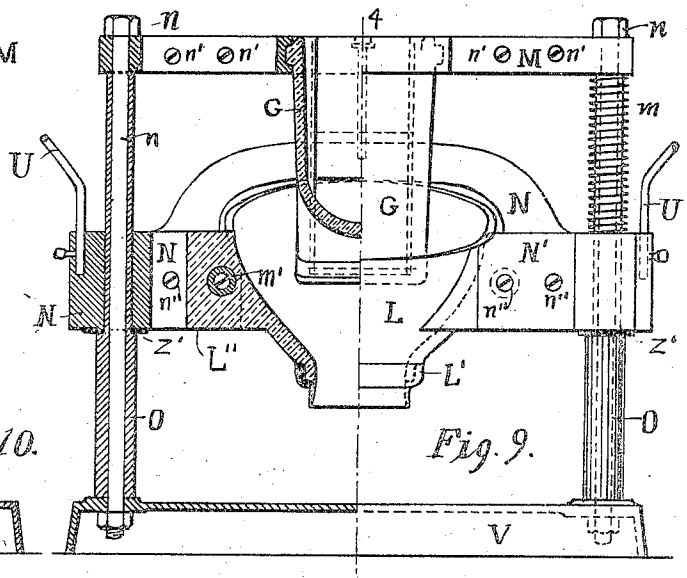

Fig. 9.

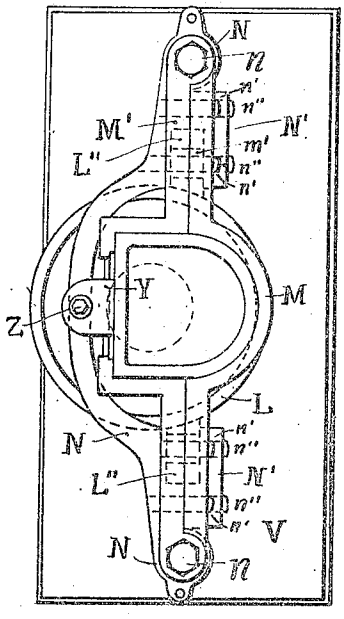

Fig. 11.

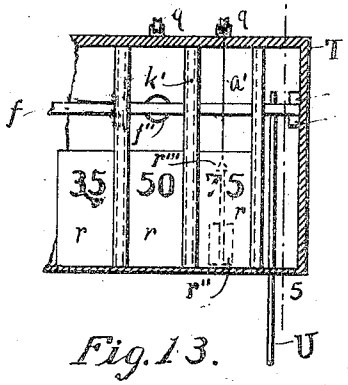

Fig. 13.

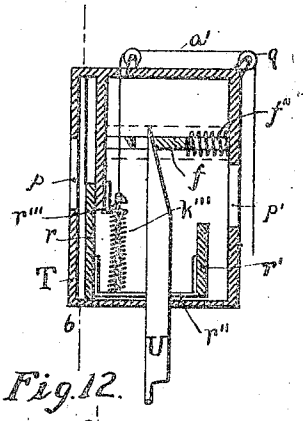

Fig. 12.

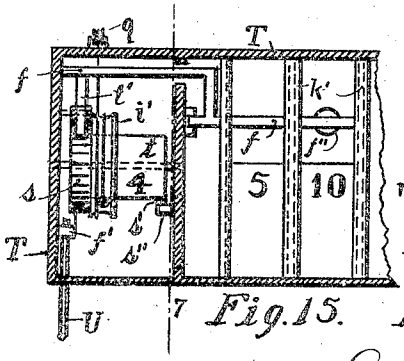

Fig. 15.

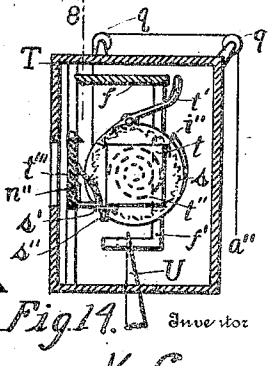

Fig. 14.

Witnesses:
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Arthur F. Davis

Inventor
Anson K. Cross.

UNITED STATES PATENT OFFICE.

ANSON KENT CROSS, OF WINTHROP, MASSACHUSETTS.

COIN-DELIVERY MACHINE.

No. 893,450. Specification of Letters Patent. Patented July 14, 1908.

Application filed September 21, 1906. Serial No. 335,543.

To all whom it may concern:

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

This invention relates to machines for holding and delivering coin, and has for its object, first, to provide a simple and inexpensive machine which will deliver coins in change for one dollar through the action of levers or slides, second, to afford facilities for showing the amount of coin delivered at each use of the machine, and also the total amount, third, to provide a coin receptacle capable of delivering the coins within it into a hand placed below it through the action of one mechanical impulse. I attain these objects by the mechanism illustrated in the accompanying drawings, in which,—

Figure 1 is a front view showing the machine with the right hand part broken away. Fig. 2 is a left end view, partly in elevation and partly in section. Fig. 3 is a view of a portion of Fig. 2, enlarged. Fig. 4 is a top view showing two of the slides E E arranged in line with the same as shown above. The view also shows a section on line 2 of Fig. 2, through three of the levers H. Fig. 5 is a bottom view of a portion of the plate J shown in Fig. 2, showing the locking lever K. Fig. 6 is a front view of a coin holding tube D. Fig. 7 is a section through line 3 of Fig. 6. Fig. 8 is a top view of the tube D. Fig. 9 is a back view of the coin delivery machine, the left half showing a section through the center. Fig. 10 is a section on line 4 of Fig. 9. Fig. 11 is a top view of the coin delivery machine. Fig. 12 is a section on line 5 of Fig. 13, showing the box T, which shows the coin delivered at each action. Fig. 13 is a section on line 6 of Fig. 12, through the indicating device. Fig. 14 is a section on line 7 of Fig. 15, showing the indicating device for the tube holding cents, which is not shown in Fig. 1. Fig. 15 is a section taken through Fig. 14 on line 8. Fig. 16 is a section showing part of the coin slide E and the beveled edge of the hole *y* within it.

The same letters of reference indicate the same parts in all the figures.

My machine will give the change most frequently required for one dollar, with the action of one or two levers, and to give any change requires the use of only one, two or three levers out of a total of only ten levers. This makes the machine simple and inexpensive, while having the new features of showing the coin delivered at each action, and also the total amount of coin delivered from each tube.

The machine is especially adapted for railways and public places, through its coin-delivery receptacle, which instantly drops all coins within it into the hand operating it.

The framework of the machine consists of uprights A at each side of the machine, and of horizontals C B J, and the top indicating box T between the uprights, all made of wood or metal and suitably fastened together. The plate J has six holes *k'* fitted to receive the coin tubes D, and provided with flanges to hold the tubes perfectly upright, and with set screws *d* to keep them in position. The coin tubes are arranged to hold cent pieces in the right hand tube, five-cent pieces in the next tube, ten cent pieces in the two adjoining tubes, twenty-five cent pieces in the next tube, and fifty cent pieces in the left hand tube. The tubes are cut away in front above the supporting flanges, so that their contents may be visible, and so that they may be filled by tipping the coins slightly. Each tube has a collar upon it to prevent its slipping. Under each tube is a slide E, whose central part is the thickness of the coin the tube is fitted to receive. The edges of the slides are thicker and are slotted to fit the guides *b' b'* by which the slides are held in place upon the table B. Each slide has a hole *y* in it adapted to receive freely one coin from the tube above it. A larger hole *y'* is cut through the table B in line with the hole *y* in the slide, so that when the slide E is moved forward, the coin within the slide will drop through the hole *y'* in the table B. To insure freedom of motion and provide for varying thicknesses of coins in the same tube, the slide E should have its central part of such a thickness that a new coin will drop freely into the hole *y*, and the edge of this hole *y* in the slide should be beveled, so that only the central part of the edge of the coin slide E will strike the coin, as shown in Fig. 16. The front edge of the slide E may project above the slide in a form adapted to receive a finger of the hand by which the slide may be withdrawn to drop its coin, and a spring S' is secured to the slide and to the table to return the slide. I have

shown the edge of the slide E projecting forward in two ears *b b*, which have between them a friction roller *a* and the lever H whose upper end is provided with a finger pull *h'*. The lower end of the lever H is held by the bolt I. Collars *h* are placed upon the bolt to keep the levers H in proper positions.

Springs S are secured to the upper ends of the levers H and to pieces *h''* projecting above the plate J to return the levers after they have been withdrawn by the finger. The lever H is not necessary, but is advisable when the coin tubes D are long.

It is evident that the hole *y'* in the table B may be placed behind the tube D, and the coins dropped by pushing the lever back and adjusting the spring to push it forward. By pulling the lever attached to the slide containing five cent pieces, one will be dropped through the table. By pulling the lever attached to the next slide containing ten cent pieces, one will be dropped. To obtain fifteen cents I provide a lever H between those directly in front of the coin slides, and near the top extend the lever in both directions by cross pieces *e e*, one of which fits against the piece *e''* on the slide E under the five cent tube, and the other fits against the piece *e''* on the slide under the tube holding ten cent pieces. It is evident that when the lever H with the pieces *e e* is drawn forward that the slides under the tubes holding five and ten cent pieces will move forward and drop fifteen cents. In the same way the lever between the two tubes holding ten cent pieces will drop twenty cents, that between the tubes holding ten cent pieces and twenty-five cent pieces will drop thirty-five cents, and that between the tubes holding twenty-five cent pieces and fifty cent pieces will drop seventy-five cents. The upper ends of the levers H are formed into finger pulls *h'* upon which I stamp the value of the coin delivered by the lever. I prefer to place the finger pulls for the levers actuating two slides higher than those upon levers moving only one slide. At the right of the tube for five cent pieces, I place one or more tubes for cent pieces. Generally in simple machines I prefer to use one tube, and obtain more than one cent by repeating the movements of the lever. It is evident that the principle of my machine may be applied to a greater number of coin tubes so as to produce any desired change from one dollar, by the action of one lever only.

To prevent motion of the slides E when the tubes D are empty, I cut a hole *d''* through the lower end of the tube D, adapted to permit the roller *c* attached to the pivoted arm K entering the tube, and thus dropping the outer end of the arm K so that it catches upon the projecting edge *e'''* of the slide E. When the coins fill the tube above the level of the roller *c*, they hold the arm K above the level of the catch *e'''*. The roller *c* may be omitted from the end of the locking arm K. Under the table B I place a chute or hollow bowl F which is held against the table by flanged pieces X X at the front and back of the table, and secured to it by screws. This chute has a central opening in its lower surface, and is so formed as to drop all the coins falling into the chute from this one opening, so that they may be readily caught by a hand placed below it. I prefer to use, however, a receptacle designed to receive the coins as they drop from the chute F, and to hold them until they are dropped into the hand placed below the bowl and acting on the discharging mechanism. The chute F may have its discharge opening for the coins in the center, both ways, as shown, or it may be placed at either side and in the center from front to back, or the chute may be extended forward so as to deliver the coins at any desired distance in front of the coin holding tubes, and instead of the chute dropping the coins into a coin receptacle closed by the sliding gate, this gate may be fitted directly to the end of the chute F, and operated by the motion of the tube L without departing from the spirit of my invention. This coin holding device may consist of a simple hollow tray or dish, capable of being tilted and of sliding the coins within it into a hand placed below it, but I prefer to use a bowl and a discharging mechanism, consisting of a hollow tube whose lower end is adapted to fit the palm of the hand snugly, and which is capable of motion and of opening the bowl above, so that the coins fall from it into the tube.

I have shown the tube L in the form of a hollow tunnel having flanges L'' at each side, secured between the parts N N', which form a yoke supporting the tube L by means of the screws *n''*. The inner screw *n''* has a collar *m'* upon it to prevent too great pressure upon the glass flanges. I have shown a deep bowl G made of glass so that the coins within it may be visible, and I prefer to make the tube L of glass. The bowl G is held by straps M and M' encircling its upper edge and grooved to fit the thickened edge of the bowl, and secured together by the screws *n'*. The strap M has its ends bored to fit upon the bolts *n n* which are screwed into the base V. The bolts *n n* have about them tubes O O. The lower portions of the tubes being larger than the upper, serve as supports for the yoke N, which has its ends bored to slide freely upon the upper parts of the tubes O O. The tubes O O support the straps M and M' and when the bolts *n n* are secured tight, a rigid frame is produced. The lower part of the back of the bowl G is cut away, and the hole thus produced is closed by a sliding shutter Y, which is fitted to move freely in

guiding slots cut in the frame produced by extending the strap M′ downward to support the lower part of the bowl G and frame its edge with metal. The upper part of the shutter Y is carried out and rests over the back of the yoke N, so that when the hand lifts the tube L the yoke N lifts the slide Y and allows the coins in the bowl G to fall into the tube L. To insure all the coins being held by the hand applied at the lower end of the tube L, I may place upon the lower edge of the tube a soft rubber collar L′ with a yielding edge adapted to conform closely to the hand. Upon the yoke N and about the tubes O O I place spiral springs *m* to insure quick return of the tube, and under the yoke are washers Z′ of rubber or leather to soften the fall. To insure the slide Y closing the opening after it has been lifted by the yoke, a bolt Z is passed through the top of the slide Y into the yoke N, and a spiral spring K″ placed upon the bolt Z. The details of this coin delivery bowl are unimportant, as they may be arranged in various ways, so as to empty the upper bowl G through motion of the tube L below it, or of suitable parts connected thereto, and I believe the principle involved is entirely new.

To register the number of coins delivered, a meter R is attached to the table under each tube, with suitable means for registering upon it the passage of coins from the tube above. If desired, one meter may be so adjusted as to register all the coins from all the tubes. The meter R is supported between two plates F′ F′ which are secured to the under side of the table B, and which support the spindle *v*. This spindle extends outside the plates F′ under the slide E and has upon it a weighted lever carrying at its outer end a shallow tray P, which the weight *p* keeps in a horizontal position under the table B, until a coin falls into it, when it rotates with the weight of the coin until the balanced finger W has lifted up one tooth of the sprocket wheel Q. By means of the screw *d‴* the motion of the lever may be stopped so as to secure the motion of exactly one tooth of the sprocket and the tray P is so formed as to drop the coin when one tooth of the sprocket has been revolved.

To indicate the dropping of the coins by each action of the levers, I provide a box T extending across the top of the machine. Its case may be of wood or metal. At the front and back of this case T are openings *p′ p″*, which may be covered with glass. Within the box a sliding shutter *r* is placed at one side, and just behind it another *r′*, and upon them the same figures are placed. The shutters *r r′* are connected by a bar *r″*, and the bar carries a vertical spring *k‴* having a hook *r‴* at its upper end adapted to catch upon the bar *f*. The bar *f* is adapted to slide in suitable guides, and is held in position in them above the hook *r‴* by springs *f″* bearing on the case T, and the edge of the rod *f*. The bar *f* has two slots cut in it adapted to receive the wedge-shaped ends of the push rods U U. These ends also bear in slots cut in the bottom of the case T, and not in line with those in the bar *f*, so that when the push rods U U are lifted up, the bar *f* will be moved, and release the hook *r‴*, and drop the shutter. When the rods U U are dropped, the springs *f″* return the bar to its position over the hooks *r‴*.

The shutters *r r′* are lifted by means of cords *a′*, which run over the pulleys *q* and *i*, and are attached to eyes *e′* projecting from the levers H. When the shutters *r r′* are held up by the bar *f*, the figures upon the shutters are visible through the openings at the front and the back of the box T, and thus both cashier and buyer see the figures which tell the coins which have been dropped through the chute E into the coin bowl G. This bowl being of glass and its contents visible, the directions printed upon the base V to obtain the coins by placing the hand below the holder, and pushing it upward, are readily understood and carried out.

The push rods U U are secured to the movable yoke N which holds the delivery tube and moving upward with it they release the shutters so that the same motion which delivers the coins causes all the shutters to disappear from sight. When one tube is used to deliver one cent pieces, it is necessary to show the figures 1, 2, 3, or 4, according to the motion of the slide which drops one, two, three or four cents. For this purpose a shutter *n″* with a spring catch *t‴* secured to it is used, and lifted up to show the drum behind it by a pin *s′*, which projects from the drum *t* and pushes the shutter up as the drum revolves. The drum *t* has the figures 1, 2, 3, 4, upon its surface, which may be in the form of a square prism to receive the figures. Within the drum *t* is a spiral or helical spring *t″* secured to the rigid arbor of the drum, and its inner surface, and tending to revolve the drum upon its arbor. This drum *t* has fitted upon its outer surface a hollow cylinder *i′* adapted to revolve upon the drum *t*, and containing a spring secured to its inner surface and the outer surface of the drum *t*, and adapted to revolve the outer drum upon the inner one in the same direction that the inner one is revolved by its spring. The drum *t* has at one end the ratchet *s*, in which the pawl *t′* engages, and prevents revolution except in one direction. The outer drum *i′* has wound upon its outer surface a cord *a″* attached to the lever operating the slide under the tube containing the cent coins. When this lever is drawn out, the cord turns the drum *i′* and by means of a spring pawl *i″* attached to the drum *t* and working into the ratchet *s* it

turns the drum t and lifts the shutter n'' and displays the figure 1. The next motion shows the figure 2, the next the figure 3 and the next the figure 4. When the figure 4 is shown, the pin s' comes against the stop s'', and prevents further motion. When the coins are dropped into the hand, the motion of the push rods U U moves the bar f which strikes upon the pawl t' and lifts it from the ratchet s, and drops the shutter n'' and allows the drum t to return to its original position. The push rods U U may be straight rods extending up through holes in the chute F and table B, or they may be bent as in the figures, in which case the one shown in Figs. 14 and 15 is shorter than the other, and the bar f is extended downward to meet it by the piece f'.

The coin receptacle under the chute F may be used in all places where change is required without the delivery machine shown above it, to the great advantage of the public, as much time is now lost in picking up change, coin by coin, when gloves are worn, and I believe the device shown is a new article of manufacture to be claimed broadly.

Having described my invention what I claim is:—

1. In a coin delivery machine the combination of a tube adapted to hold coins, suitable means to discharge one or more of the coins through the action of one mechanical impulse, with a coin receptacle adapted to receive the coins dropped from the tube above, a gate adapted to discharge the contents of the coin receptacle, and a tube placed below the coin receptacle substantially as specified.

2. In a coin delivery machine the combination of a series of tubes adapted to hold coins, suitable means to discharge one or more of the coins through the action of one mechanical impulse, with a coin receptacle adapted to receive the coins dropped from the tubes above, a gate adapted to discharge the contents of the coin receptacle and a tube placed below the coin receptacle substantially as specified.

3. A coin receptacle adapted to display to view the coins within it through one or more sides made of transparent material, and having a hole in its lower surface, a gate adapted to cover and uncover this hole, a tube of transparent material below the receptacle, and means to move the gate through motion of the tube, substantially as specified.

4. A coin receptacle having a hole at its lower end, and adapted by a gate covering the hole to retain coins dropped into it, the gate, supports for the gate, a tube below the receptacle, guides for the tube and means to move the gate through motion of the tube substantially as specified.

5. In a coin receptacle a bowl having an opening in its lower surface, a sliding gate adapted to cover and uncover the opening, guides for the gate, a tube capable of motion below the gate and of moving the gate and guides for the tube substantially as specified.

6. In a coin receptacle a bowl having an opening in its lower surface, a sliding gate adapted to cover and uncover the opening, guides for the gate, a tube capable of motion below the gate, guides for the tube, and suitable means for moving the gate by motion of the tube substantially as specified.

7. A coin chute having an opening in its lower surface, a sliding gate adapted to cover and uncover the opening, guides for the gate, a tube adjusted to reciprocate below the gate, guides for the tube, suitable means for moving the gate by motion of the tube and suitable supports for the coin receptacle, gate and tube substantially as described.

8. A coin receptacle having an opening in its lower surface and having one or more of its sides made of transparent material, a sliding gate adapted to cover and uncover the opening, guides for the gate, a tube of transparent material adjusted to reciprocate below the gate, means for discharging the contents of the coin receptacle by motion of the tube, and suitable supports for the coin receptacle, gate and tube substantially as described.

9. In a coin delivery machine a tube fitted to receive coins and suitably secured above a table, a table, a slide adjusted to reciprocate on the table under the tube and adapted to receive a coin from the tube and drop it through a hole in the table larger than the coin, guides for the slide, means for moving the slide back and forth, a chute adapted to receive the coins, a gate to retain the coins in the chute, a tube below the gate and operating to lift the gate and drop the coins from the chute into the hand placed below the tube and guides for the tube substantially as specified.

10. In a coin delivery machine a tube secured above a table, a table, a slide under the tube reciprocating in guides and adapted to receive a coin from the tube and to drop it through a hole in the table, guides for the slide, and a lever pivotally supported above the slide and having one end in contact with the coins in the coin tube and adapted to enter the coin tube when the coins are withdrawn from the coin tube below the level of the lever and thus cause the other end of the lever to fall upon and lock the coin slide substantially as specified.

11. In a coin delivery machine a tube secured above a table, a table, a slide under the tube adapted to receive a coin from the tube and to drop it through a hole in the table, guides for the slide, a spring to return the slide, a chute secured below the table and adapted to discharge the coins falling into it from one opening in its lower surface, a gate adapted to cover and uncover the opening in

the chute, supports for the gate, a tube adapted to receive the coins discharged from the chute and to move between suitable guides and to open the gate, and guides for the tube all substantially as specified.

12. In a coin delivery machine, a tube secured above a table, a table, a slide under the tube adapted to receive a coin from the tube and to drop it through a hole in the table, guides for the slide, a lever fitted to the slide and adapted to move the slide and a chute secured below the table and adapted to discharge the coins falling into it from one opening in its lower surface, a gate adapted to cover and uncover the opening in the chute, supports for the gate, a tube adapted to receive the coins discharged from the chute and to move between suitable guides and to open the gate and guides for the tube, all substantially as specified.

13. In a coin delivery machine a tube secured above a table, a table, a slide under the tube adapted to receive a coin from the tube and to drop it through a hole in the table, guides for the slide, a lever adapted to move the slide, a spring adapted to return the slide, a chute secured below the table and adapted to discharge the coins falling into it from one opening in its lower surface, a gate adapted to cover and uncover the opening in the chute; supports for the gate, a tube adapted to receive the coins discharged from the chute and to move between suitable guides, and to open the gate, and guides for the tube all substantially as specified.

14. In a coin delivery machine a tube secured above a table, a table, a slide under the tube adapted to receive a coin from the tube and to drop it through a hole in the table, guides for the slide, a spring to return the slide, a lever adapted to enter the coin tube when the coins are withdrawn and to lock the coin slide, a chute secured below the table and adapted to discharge coins falling into it from one opening, a gate adapted to cover and uncover this opening, supports for the gate, a tube adapted to receive the coins dropped from the chute and to move between suitable guides and to operate the gate and guides for the tube substantially as specified.

15. In a coin delivery machine a tube adapted to receive a coin and secured above a table, a table, a slide adapted to reciprocate under the tube and to receive one coin in a hole in the slide and to drop it through a larger hole in the table in line with that in the slide, suitable means to move the slide in one direction, a spring adjusted to move the slide in the opposite direction, a chute secured under the table and adapted to drop all coins falling into it from an opening in its lower surface into a bowl placed below the chute, this bowl having an opening closed by a sliding gate, the gate, guides for the gate, a tube below the gate, guides for the tube, and suitable means for moving the gate by the tube substantially as specified.

16. In a coin delivery machine a tube, adapted to hold coins of any value, suitably secured above a table, a table, a slide adapted to reciprocate under the tube and to receive a coin in a hole in the slide and to drop it through a larger hole in the table in line with that in the slide, suitable means to move the slide in one direction, a spring adjusted to move the slide in the opposite direction, and a lever adapted to enter a hole in the coin tube when the coins are withdrawn and lock the slide, and a chute secured under the table and adapted to drop coins falling into it from an opening in its lower surface into a bowl placed below the chute, a bowl having an opening in its lower surface, suitable supports for the bowl, a gate adapted to cover and uncover the opening in the bowl, guides arranged to permit the gate to slide freely, a tube under the bowl to receive the coins dropped from the bowl, and adapted to slide between suitable guides and to move the sliding gate, supports for the sliding tube, and springs to return the tube and close the bowl substantially as described.

17. In a coin delivering machine a tube adapted to receive coins, means for holding said tube above a table, a table, a reciprocating slide under the tube adapted to receive one coin from the tube in a hole in the slide, and to drop the coin through a larger hole in the table, means for holding and moving said slide, an oscillating coin dropper balanced to assume a horizontal position under the table and adapted to receive a coin dropped through the table and to hold it until the coin moves the dropper, a ratchet wheel adjusted thereto, and a meter connected with the ratchet wheel all substantially as and for the purpose specified.

18. In a coin delivery machine a tube adapted to hold coins of any given value and secured above a table, the table, a slide adapted to reciprocate under the tube and adapted to receive one coin in a hole in the slide and drop it through a larger hole in the table in line with that in the slide, suitable means to move the slide in one direction, a spring adjusted to move the slide in the opposite direction, a lever adapted to enter a hole in the coin tube when the coins are withdrawn and lock the slide, an oscillating coin dropper balanced to assume a horizontal position under the table and adapted to receive a coin dropped through the table and to descend with the coin and to move a ratchet wheel adjusted to the dropper, said ratchet wheel and a suitable meter connected therewith substantially as specified.

19. In a coin delivery machine a tube adapted to receive coins, means for holding said tube above a table, a table, a slide under the tube adapted to receive one coin in a

hole in the slide and drop it through a larger hole in the table in line with that in the slide, means for holding and moving said slide, a figured card adapted to move into sight and to withdraw from sight, a chute secured below the table and adapted to discharge coins falling into it from one opening, a sliding gate adapted to cover nd uncover this opening, guides for the gate, a tube below the gate adapted to operate the gate and guides for the tube substantially as specified.

20. In a coin delivery machine a tube adapted to hold coins, suitably secured above a table, a table, a slide adapted to reciprocate under the tube and adapted to receive one coin in a hole in the slide, and drop it through a larger hole in the table, suitable means to move the slide in one direction, a spring to move the slide in the opposite direction, an oscillating coin dropper balanced to assume a horizontal position under the table and adapted to drop with the coin and to move a ratchet wheel adjusted to the dropper, said ratchet wheel and suitable meter connected therewith, and a figured card adapted to be moved into sight and out of sight, and suitable connections for moving said card by the slide, all constructed and operating substantially as and for the purpose specified.

21. In a coin delivery machine a tube, adapted to hold coins, suitably secured above a table, a table, a slide adapted to reciprocate upon the table under the tube and adapted to receive one coin in a hole in the slide, the table with a hole in it larger than the coin in line with the slide, suitable means to move the slide in one direction, a spring to move the slide in the opposite direction, a chute secured below the table, an oscillating coin dropper balanced to assume a horizontal position under the table and adapted to revolve with the weight of the coin and to move a ratchet wheel, said ratchet wheel and a meter connected therewith, and a card adapted to be moved into sight and withdrawn from sight, and suitable means for moving said shutter substantially as described.

22. In a coin delivery machine a tube secured above a table and adapted to hold coins, a table with a hole in it, a slide adapted to reciprocate under the tube, and to receive one coin from the tube, suitable means to move the slide in one direction, a spring to move the slide in the opposite direction, a chute secured under the table, an oscillating coin dropper balanced to assume a horizontal position under the table and adapted to descend with the weight of the coin and turn a ratchet wheel, adjusted thereto, said ratchet wheel, a meter connected therewith, a card adapted to move figures into sight and withdraw them from sight, and suitable means for moving said card and a coin receptacle under the table adapted to hold and to discharge coins with means for discharging the same, all substantially as and for the purpose specified.

23. In a coin delivery machine a tube secured above a table and adapted to hold coins, a table with a hole in it in line with the tube, a slide fitted to reciprocate under the tube and to move one coin from the tube, suitable means to move the slide in one direction, a spring to move the slide in the opposite direction, a chute secured under the table, an oscillating coin dropper balanced to assume a horizontal position under the table and adapted to descend with the coin and turn a ratchet wheel adjusted thereto, said ratchet wheel, a meter connected therewith, a card adapted to move figures into sight and withdraw them from sight, suitable means for moving said card, a coin receptacle under the table, a tube below this coin receptacle and suitable means for dropping the contents of the receptacle into the tube substantially as and for the purpose specified.

24. In a coin delivery machine tubes adapted to hold coins, of any desired values, means for holding the tubes above a table, a table, slides adapted to reciprocate upon the table under each tube, each having a hole adapted to receive one coin from the tube above and to drop it through a larger hole in the table in line with that in the slide, suitable means for reciprocating one or more slides by the action of one mechanical impulse, a chute secured under the table having an opening in its lower surface, a gate adapted to cover and uncover this opening, supports for the gate, a tube below the gate adapted to operate the gate and guides for the tube.

25. In a coin delivery machine tubes adapted to hold coins of any desired values, means for holding the tubes above a table, a table, slides adapted to reciprocate upon the table under the tubes each having a hole in it adapted to receive one coin from the tube above and to move it into a larger hole in the table in line with the slide, suitable means for reciprocating one or more slides by the action of one mechanical impulse, a chute secured below the table, oscillating coin droppers, one under each tube adapted to descend with a coin and turn ratchet wheels, adjusted thereto, said ratchet wheels, and meters connected therewith, all substantially as specified.

26. In a coin delivery machine tubes adapted to hold coins, means for holding the tubes above a table, the table and slides adapted to reciprocate upon it under the tubes, each slide adapted to receive within a hole in it one coin from the tube above it and to drop the coin through a larger hole in the table, suitable means for reciprocating one

or more slides by the action of one mechanical impulse, a chute secured below the table, oscillatory coin droppers, one under each tube, adapted to descend with each coin and turn ratchet wheels adjusted thereto, said ratchet wheels, meters connecting therewith, shutters adapted to display to sight figures corresponding to the coins dropped by the different slides acting singly or combined, and suitable means for displaying to view and withdrawing said shutters through the motion of the slides or parts connected therewith, all constructed and operating substantially as described.

27. In a coin delivery machine tubes adapted to hold coins, means for holding the tubes above a table, the table, slides adapted to reciprocate upon it under the tubes, each slide adapted to receive one coin from the tube above it and to drop it through a hole in the table, suitable means for moving one or more slides by the action of one mechanical impulse, a chute secured under the table, oscillating coin droppers, one under each tube, adapted to descend with each coin and turn ratchet wheels adjusted thereto, said ratchet wheels and meters connecting therewith, shutters adapted to display figures corresponding to the coins dropped by the slides, suitable means for displaying to view and withdrawing said shutters through the motions of the slides or parts connected thereto, a coin receptacle suitably supported under the chute, and suitable means for dropping the coins into a hand below the receptacle substantially as specified.

28. In a coin delivery machine tubes adapted to hold coins, a table and means for holding the tubes above it, slides adapted to reciprocate upon the table, one under each tube, each slide adapted to receive one coin from the tube above it and to move it into a hole in the table in line with each tube and larger than the coins in the tube, suitable means for moving one or more slides by the action of one mechanical impulse, a chute secured under the table, oscillating coin droppers, one under each tube, adapted to descend with each coin and turn ratchet wheels adjusted thereto, said ratchet wheels and meters connecting therewith, shutters adapted to display figures corresponding to the coins dropped by the slides, suitable means for displaying to view and withdrawing said shutters through the motions of the slides or parts connected therewith, a coin receptacle suitably supported under the chute, a tube below the coin receptacle and suitable means for dropping the coins from the receptacle into the tube, all constructed and operating substantially as specified.

29. A coin delivery machine combining one tube adapted to hold coins of the value of one cent, one tube to hold five cent pieces, two tubes to hold ten cent pieces, one tube to hold twenty-five cent pieces, one tube to hold fifty cent pieces, slides adapted to reciprocate in suitable guides each having a hole in it adapted to receive one coin from the tube above it, a table supporting the slides and having a hole in line with each slide larger than the coin the slide receives, suitable support for the coin tubes, suitable means to move the slides in one direction, springs to move the slides in the opposite direction, a chute secured below the table and having an opening in its lower surface, a gate adapted to cover and uncover this opening, and a tube adapted to move below the gate and to operate the gate, all substantially as set forth.

30. A coin delivery machine combining one tube adapted to hold coins of the value of one cent, one tube to hold five cent coins, two tubes to hold ten cent coins, one tube to hold twenty-five cent coins, one tube to hold fifty cent coins, slides adapted to reciprocate in suitable guides, each slide having a hole in it adapted to receive one coin from the tube above it, a table supporting the slides and having a hole in line with each slide larger than the coin the slide receives, suitable supports for the coin tubes, levers suitably connected to each slide to move them in one direction, springs to move the levers and slides in the opposite direction, levers between the slides and suitable means for moving two or more slides by the action of one lever and springs to return the levers and a chute secured below the table and having an opening in its lower surface, a gate adapted to cover and uncover the opening, a tube below the gate adapted to operate the gate, and suitable supports for the gate and tube, all constructed and operating substantially as described.

31. A coin delivery machine combining one tube adapted to hold coins of the value of one cent, one tube to hold five cent pieces, two tubes to hold ten cent pieces, one tube to hold twenty-five cent pieces, one tube to hold fifty cent pieces, slides adapted to reciprocate in suitable guides, each slide having a hole in it adapted to receive one coin from the tube above it, a table supporting the slides and having a hole in line with each slide larger than the coin the slide receives, suitable supports for the coin tubes, suitable means to move the slides in one direction, springs to move the slides in the opposite direction, a chute secured below the table, an oscillating lever under each coin tube adapted to receive a coin falling from the table and to descend with the coin and drop it after having moved a ratchet wheel adjusted to the lever, said ratchet wheels and meters connected with the ratchet wheels and adapted

to register the number of coins dropped by each holder, all operating substantially as described.

32. A coin delivery machine combining one tube adapted to hold coins of the value of one cent, one tube to hold five cent coins, two tubes to hold ten cent coins, one tube to hold twenty-five cent coins, one tube to hold fifty cent coins, slides adapted to reciprocate in suitable guides, each slide having a hole in it adapted to receive one coin from the tube above it, a table supporting the slides and having a hole in line with each slide larger than the coin the slide receives, suitable supports for the coin tubes, suitable means to move the slides in one direction, springs to move the slides in the opposite direction, a chute secured below the table, an oscillating lever under each coin tube adapted to receive a coin falling through the table and to descend with the coin and drop it after having moved a ratchet wheel adjusted to the lever, meters connected with the ratchet wheels and adapted to register the number or value of the coins dropped by each holder, and figured cards for displaying the values of the coins discharged by the machine and suitable means for moving these cards, all constructed and operating substantially as described.

33. A coin delivery machine combining one tube adapted to hold coins of the value of one cent, one tube to hold five cent pieces, two tubes to hold ten cent pieces, one tube to hold twenty-five cent pieces, one tube to hold fifty cent pieces, slides adapted to reciprocate in suitable guides, each slide having a hole in it adapted to receive one coin from the tube above it, a table supporting the slides having a hole in it larger than the coin the slide receives in line with each slide, suitable supports for the coin tubes, levers to move the slides in one direction, springs to move the slides in the opposite direction, a chute secured below the table, an oscillating lever under each coin tube adapted to receive a coin falling through the table and to descend with the coin and drop the coin after the lever has moved a ratchet wheel adjusted to the lever, said ratchet wheel, meters connected with the ratchet wheels adapted to register the amount of coin dropped by each holder, figured cards for displaying the values of the coins dropped by each lever, suitable means to move these cards, a bowl suitably supported under the chute, a tube under the bowl and suitable means for discharging the contents of the bowl, all substantially as described.

34. In a coin delivery machine combining one tube adapted to hold coins of the value of one cent, one tube to hold five cent pieces, two tubes to hold ten cent pieces, one tube to hold twenty-five cent pieces, one tube to hold fifty cent pieces, slides adapted to reciprocate in suitable guides, each slide having a hole in it adapted to receive one coin from the tube above it, a table supporting the slides, having a hole in line with each side larger than the coin the slide receives, suitable supports for the coin tubes, levers to move the slides in one direction, springs to move the slides in the opposite direction, levers adapted to enter holes in the coin tubes when the coins are withdrawn and adapted to fall upon and lock the slides, a chute secured below the table, an oscillating lever under each coin tube adapted to receive a coin falling through the table and to descend with the coin and to drop it after the lever has moved a ratchet wheel adjusted to the lever, said ratchet wheels and meters connected therewith adapted to register the amount of coins dropped by each holder, figured cards for displaying the values of the coins dropped by each lever, suitable means for moving these cards, a bowl suitably supported under the chute, a tube under the bowl and suitable means for discharging the contents of the bowl through the tube, all operating substantially as and for the purpose specified.

35. In a coin delivery machine a drum having the numerals 1, 2, 3, 4, upon its outer surface, a spring within adapted to rotate the drum in one direction, a second drum capable of revolution upon the first and a spring within it adjusted to turn the outer drum upon the inner one in the same direction that the inner is revolved by the spring within it, a ratchet wheel secured to the inner drum, a pawl engaging with the ratchet and secured to the outer drum, a pawl engaging with the ratchet and secured to the box containing the drums, said box, a cord wound about the outer drum, and suitable means for revolving the drum substantially as set forth.

36. In a coin delivery machine a drum having numerals upon its outer surface, a spring within it adapted to rotate the drum in one direction, a second drum capable of revolution upon the first and a spring within it adjusted to turn the outer drum upon the inner one in the same direction that the inner is revolved by the spring within it, a ratchet wheel secured to the inner drum, a pawl engaging with the ratchet and secured to the outer drum, a pawl engaging with the ratchet and secured outside the drums, suitable supports for the drums in the form of a box or casing with an opening to allow the figures on drum to be seen, a shutter adapted to cover and uncover the figures on the drum, and suitable means for actuating the shutter and the drum in harmony with each other and the delivery of coins from the tube as shown by the drum, all substantially as and for the purpose specified.

37. In a coin delivery machine a tube fitted to hold coins of any given value and

secured to said machine and an extension tube, capable of ready adjustment to the upper end of said coin tube and of holding coins of the same value, and means for holding coins in the extension tube and of dropping them into the lower tube substantially as specified.

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

ANSON KENT CROSS. [L. S.]

Witnesses:
JAMES A. HURD,
WINFIELD S. SHANNON.