No. 715,735. Patented Dec. 16, 1902.

J. H. ALBERT & F. A. WIGGINS.

COIN DELIVERY APPARATUS.

Application filed Mar. 23, 1901. Renewed Apr. 23, 1902.

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

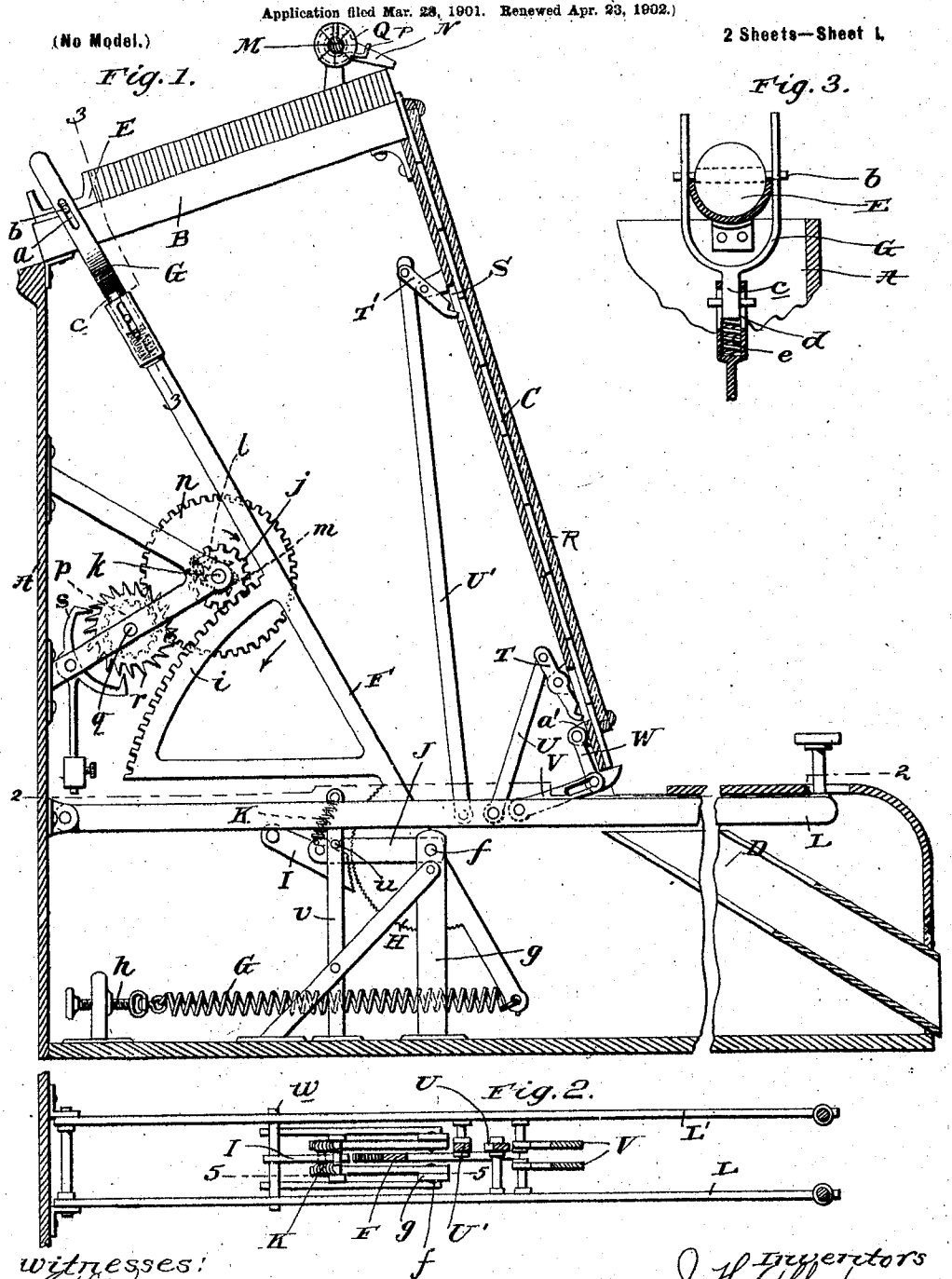


Fig. 3.

Fig. 2.

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Fig. 4.

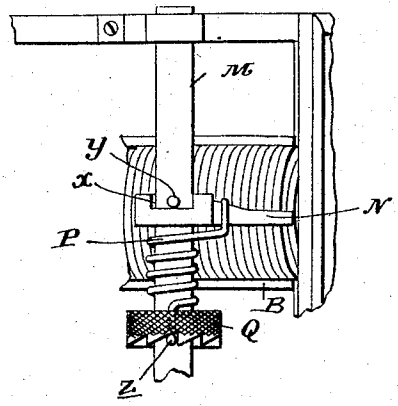


Fig. 6.

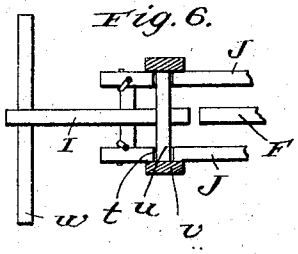


Fig. 7.

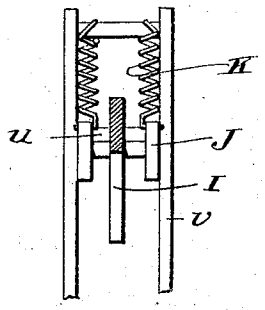
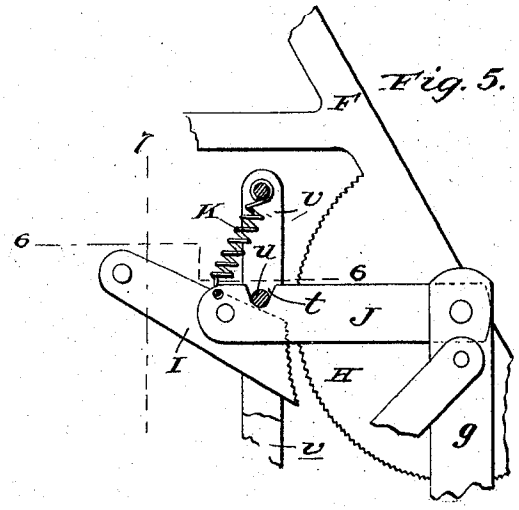


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH H. ALBERT AND FREDERICK A. WIGGINS, OF SALEM, OREGON.

COIN-DELIVERY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 715,735, dated December 16, 1902.

Application filed March 28, 1901. Renewed April 23, 1902. Serial No. 104,313. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH H. ALBERT and FREDERICK A. WIGGINS, citizens of the United States, residing at Salem, in the county of Marion and State of Oregon, have invented new and useful Improvements in Coin-Delivery Apparatus, of which the following is a specification.

Our invention relates to improvements in coin-delivery apparatus, and has for its general object to provide a coin-delivery device in which the coins are separated according to their diameters and are held edge to edge precedent to delivery with a view of securing perfect accuracy and one which when properly operated is calculated to deliver either one or any desired number of coins of a particular denomination.

Other advantageous features of the invention will be fully understood from the following description and claims when taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical section of a coin-delivery apparatus constructed in accordance with our invention. Fig. 2 is a detail section taken on the broken line 2 2 of Fig. 1. Fig. 3 is a detail section taken in the plane indicated by the broken line 3 3 of Fig. 1. Fig. 4 is a detail plan view, on an enlarged scale, illustrating the spring-pressed lever for imparting a slight impulse to the coins as they are fed from the coin-trough to a point coincident with the reservoir. Fig. 5 is an enlarged detail section taken in the plane indicated by the broken line 5 5 of Fig. 2; and Figs. 6 and 7 are detail sections taken in the planes indicated by the broken lines 6 6 and 7 7, respectively, of Fig. 5.

In the said drawings similar letters of reference designate corresponding parts in all of the several views, referring to which—

A is the case of the apparatus, which may be of any suitable construction and material.

B is a coin-trough, which is concavo-convex in cross-section and of a size corresponding to the diameter of the particular denomination of coins which it is designed to receive, and C is a coin-reservoir, which is of a width slightly greater than the diameter of the particular denomination of coins which it is designed to receive from the coin-trough and deliver, as hereinafter pointed out. The coin-trough has its forward end arranged in a plane above its rear end, as illustrated in Fig. 1, and the coin-reservoir is inclined downwardly and forwardly from the forward end of the trough to a point adjacent to a coin-chute D, which is arranged, as shown, to receive coins from the reservoir and deliver the same to the operator. The coins are arranged side by side in the trough B after the manner illustrated in Fig. 1, and in order to feed them to the reservoir C subsequent to an operation of the machine and the removal of coins from said reservoir the coin-elevator E is provided. This elevator E is arranged and adapted to move in the trough B in rear of the series of coins and is designed to be actuated through the medium of a lever F and a yoke G at the upper end of the same, the said yoke having slots *a*, receiving lugs *b* on the elevator, and also having a stem *c*, arranged in a socket *d* in the upper end of the lever and on a coiled spring *e* therein contained, whereby it is enabled to accommodate itself to and move in the plane of the trough. The lever F is fulcrumed at *f* between two standards *g* and is connected at its lower end to one end of a spring G, the other end of said spring being connected in a swiveled manner to a screw *h*, whereby its tension may be readily regulated. Above its fulcrum-point the lever is provided with a segmental rack *i*, which is intermeshed with a pinion *j* on a shaft *k*. The pinion is not fixed on the shaft, but is provided with a pawl *l*, arranged to engage a ratchet *m*, fixed with respect to the shaft, whereby it will be seen that when the lever is rocked in the direction indicated by arrow the pinion will turn loosely on the shaft; but when the lever is moved in the opposite direction under the action of the spring G the pinion and the shaft will turn together. In addition to the pinion *j* and ratchet-wheel *m* the shaft *k* carries a gear-wheel *n*, which is intermeshed with a pinion *p* on a shaft *q*, which latter also carries an escapement-wheel *r*, arranged to be engaged by a pallet *s*. By virtue of this construction it will be seen that when the lever F is moved in the direction indicated by arrow in Fig. 1 to relieve the coins in the trough B of pressure the spring G is expanded. Said spring is, however, prevented when pressure is removed from the lever from forcibly rocking

said lever in a direction opposite to that indicated by arrow by the escapement mechanism, which insures the lever and the elevator carried thereby moving in a slow and steady manner in the direction opposite to that indicated by arrow until the elevator brings up against the rear coin in the trough B. The loose arrangement of the pinion *j* on the shaft *k* is advantageous, since it enables the operator to rock the lever in the direction indicated by arrow by pressing rearwardly on the upper end thereof when it is desired to place coins in the trough B.

Formed integral with or fixed with respect to the lever F is a semicircular disk H, the periphery of which is milled or roughened, as shown. This semicircular disk is designed to be engaged by the milled or roughened end of a dog I, which is fulcrumed at an intermediate point of its length between two levers J, which in turn are fulcrumed between the standards *g* and are disposed at opposite sides of the lever F and milled disk H, as best shown in Fig. 2. The levers J are returned to and normally held in the position shown in Fig. 1 by coiled springs K and are provided in their upper edges with notches *t*, which are calculated when the parts are in their normal position to seat a cross-bar *u* between two uprights *v*, and thereby enable said cross-bar to disengage the dog I from the milled or roughened disk H. At its end remote from the disk H the dog I is provided with a transversely-disposed bar *w*, which is arranged, as shown, below two key-levers L L'. It follows from this that when either one of the key-levers is depressed the dog I will be thrown into engagement with the disk H, and through the medium of the said dog I and disk H the lever F will be thrown in the direction indicated by arrow and the elevator E will be moved rearwardly to relieve the coins of pressure; also, that when pressure is removed from the key-lever the springs K will operate to return the levers J, the dog I, and the said key-lever to their normal positions illustrated.

M is a rod which extends across the apparatus above the trough B, and N is a lever which is pivotally mounted on said rod and is provided in one side with a notch *x* to receive a stop-pin *y* on the rod. The said lever is pressed downwardly by a spring P and has for its purpose to impart a slight downward impetus to each coin as the same reaches a position coincident with the reservoir C, so as to insure the downward movement of said coin and those below it in the reservoir. The movement of the lever N is limited by the notch *x* and stop-pin *y*, and the tension of the spring P, and consequently the pressure which the lever exerts on the coins, may be readily regulated by turning a disk Q, which is loosely mounted on rod M and has a ratchet-face held in engagement with a stud *z* on the rod by the action of the spring, as best illustrated in Fig. 4.

As before described, the reservoir C is of a width slightly greater than the diameter of the particular denomination of coin which it is designed to receive; but otherwise it may be of any suitable construction. We prefer, however, to provide it with a front panel R, of glass, and with one or a plurality of openings S in its back wall. The said openings are designed to permit of coin-retainers T T' being moved in and out of the reservoir. The retainers T T' are preferably in the form of levers and are connected by links U U' to the key-levers L L', respectively. Also connected to the key-levers L L' are links V, which in turn are disposed at opposite sides of and loosely connected to an L-shaped gate W, pivotally connected to lugs *a'* at the rear of the reservoir and adapted in its normal position to rest below the lower end of said reservoir, as shown, and thereby prevent the escape of coins therefrom.

In the practical operation of the apparatus it will be observed that when the key-lever L is depressed the lever F will be rocked in the direction indicated by arrow to relieve the coins in the trough B from pressure, the gate W will be drawn from its normal position below the lower end of the reservoir C, and the retainer T will be caused to assume a position below the second upper coin in the reservoir. From this it follows that on such manipulation of the key-lever L but one of the particular denomination of coins contained in the reservoir C will be delivered to the chute D. When, however, the key-lever L' is depressed, the lever F and the gate W are moved as described and the retainer T' is caused to assume a position in the reservoir immediately below the coin above it, with the result that the coins below it are permitted to pass down and out of the reservoir. If it be assumed that the particular trough B and reservoir C herein shown and described are adapted to receive quarters or twenty-five-cent pieces, it will be appreciated that incident to the manipulation of the key-lever L one quarter will be delivered, while incident to the manipulation of the key-lever L' one dollar and seventy-five cents in quarters will be delivered. By reason of the slots in the links V the gate W may be moved through the medium of one of the key-levers without moving or otherwise affecting the other key-lever. It will also be observed that as many key-levers and retaining devices may be employed in conjunction with the reservoir C as desired, the retaining devices being of course arranged at intervals in the height of the reservoir and adapted when manipulated to permit certain predetermined numbers of coins to pass from the reservoir. Subsequent to the return of a key-lever to its normal position the spring G tends to rock the lever F in the direction opposite to that indicated by arrow, and thereby carries the elevator E against the rear coin in the trough B. The forward movement of the elevator E under

the action of the spring G is slow and steady, because of the escapement mechanism, and on such movement the elevator E operates to push the coins before it up the inclined trough, from whence they drop into the reservoir C until the latter is filled and the uppermost coin in said reservoir rests in the position shown in front of the series in the trough B, when the feed of coins to the reservoir is stopped.

While we have shown but one trough B and reservoir C and their appurtenances, it is obvious that any desired number of troughs B and reservoirs C of different sizes and the appurtenances thereof may be embodied in a single apparatus with a view of adapting the same to deliver coins of different denominations.

We have entered into a detailed description of the construction and relative arrangement of the parts embodied in our improved apparatus in order to impart a full, clear, and exact understanding of the same. We do not desire, however, to be understood as limiting ourselves to such specific construction and arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of our claims.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A coin-delivery apparatus comprising a coin-holding trough, means for exerting pressure against and feeding coins forwardly in said trough, a coin-reservoir arranged to receive edgewise-superposed coins from the trough, and extending downwardly from said trough, a device for normally closing the lower end of the coin-reservoir, a retainer arranged, when operated, to assume a position below one or more of the coins in the reservoir, means for operating the said closing device and the retainer, and means connected with said operating means whereby pressure is removed from the coins in the trough.

2. A coin-delivery apparatus comprising a coin-holding trough, means for exerting pressure against and feeding coins forwardly in said trough, a coin-reservoir arranged to receive edgewise-superposed coins from the trough, and extending downwardly from said trough, a key-lever, a connection intermediate of the key-lever and the coin-pressing means whereby pressure is removed from the coins when the key-lever is operated, means controlled by the key-lever for normally closing the lower end of the coin-reservoir, and a retainer connected with the key-lever and arranged to assume a position below one or more of the coins in the reservoir incident to the operation of said key-lever.

3. A coin-delivery apparatus comprising a coin-holding trough, means for exerting pressure against and feeding coins forwardly in said trough, a coin-reservoir arranged to receive edgewise-superposed coins from the trough, and extending downwardly from said trough, means for imparting impetus to the coins as they reach a position coincident with reservoir, a key-lever, a connection intermediate of the key-lever and the coin-pressing means whereby pressure is removed from the coins when the key-lever is operated, means controlled by the key-lever for normally closing the lower end of the coin-reservoir, and a retainer also controlled by the key-lever and arranged to assume a position below one or more of the coins in the reservoir, incident to the operation of said key-lever.

4. A coin-delivery apparatus comprising a coin-holding trough, means for exerting pressure against and feeding coins forwardly in said trough, a coin-reservoir arranged to receive edgewise-superposed coins from the trough, and extending downwardly from said trough, a plurality of key-levers, means whereby pressure is removed from the coins when any one of the key-levers is operated, means normally closing the lower end of the coin-reservoir, connections between such means and the levers, whereby the lower end of the reservoir is opened incident to the operation of either key-lever, and retainers connected to the respective levers and arranged at intervals in the height of the reservoir.

5. A coin-delivery apparatus comprising a coin-holding trough, means for exerting pressure against and feeding coins forwardly in said trough, a coin-reservoir arranged to receive edgewise-superposed coins from the trough and extending downwardly from said trough, a key-lever, a connection intermediate of the key-lever and the coin-pressing means whereby pressure is removed from the coins when the key-lever is operated, and means controlled by the key-lever for normally closing the coin-reservoir.

6. A coin-delivery apparatus comprising a coin-holding trough, an elevator movable therein, a spring-actuated lever connected with said elevator, an escapement mechanism connected by gearing with the lever, a disk fixed with respect to the lever and having a milled or roughened periphery, a lever, a spring connected thereto, a dog fulcrumed on said lever and having a lateral extension, key-levers arranged above the lateral extension of the dog and adapted when depressed to throw said dog into engagement with the milled or roughened disk, a coin-reservoir arranged to receive edgewise-superposed coins from the trough and extending downwardly from said trough, a gate for normally closing the lower end of the reservoir, and connections between said gate and the key-levers.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOSEPH H. ALBERT.
FREDERICK A. WIGGINS.

Witnesses:
G. J. THOMAS,
JOHN T. ALBERT.