

(No Model.)

4 Sheets—Sheet 1.

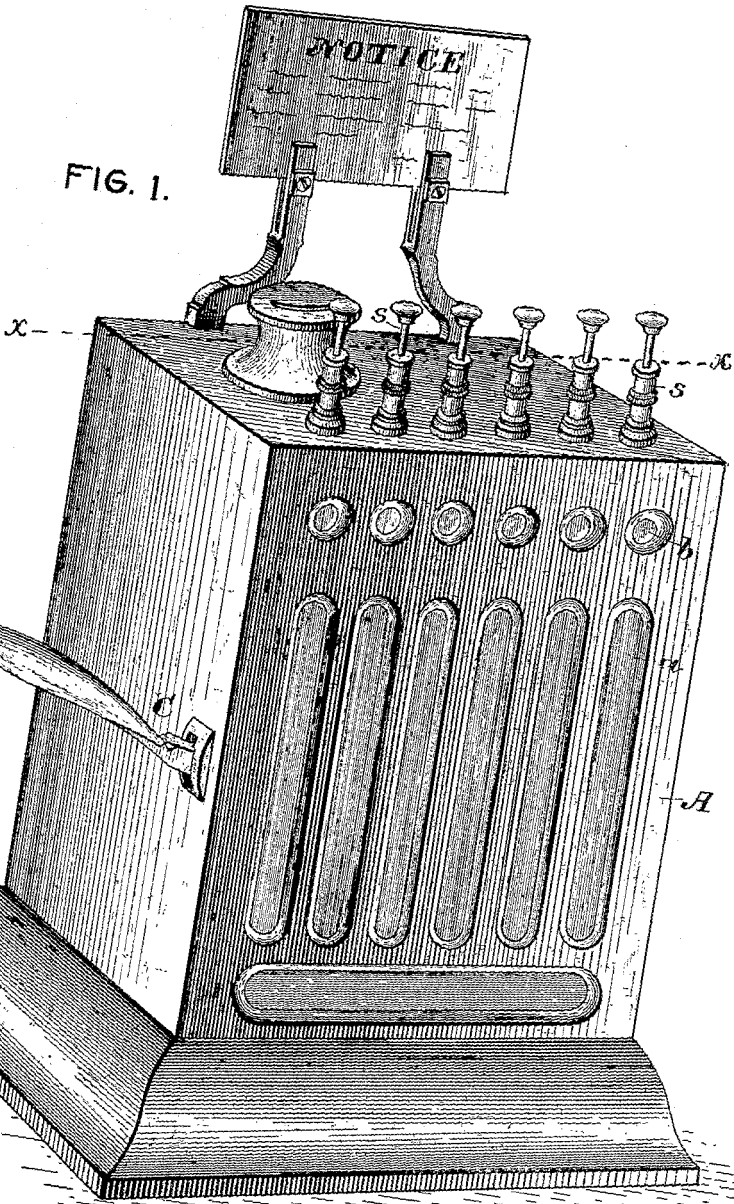
F. W. BROOKS.

COIN OPERATED CALCULATING MACHINE.

No. 399,129.

Patented Mar. 5, 1889.

FIG. 1.



TEST.
Wm. Kaiser
and Ellis

Franklin W. Brooks
INVENTOR

By
Wm. C. W. Intire atty.

(No Model.)

F. W. BROOKS.

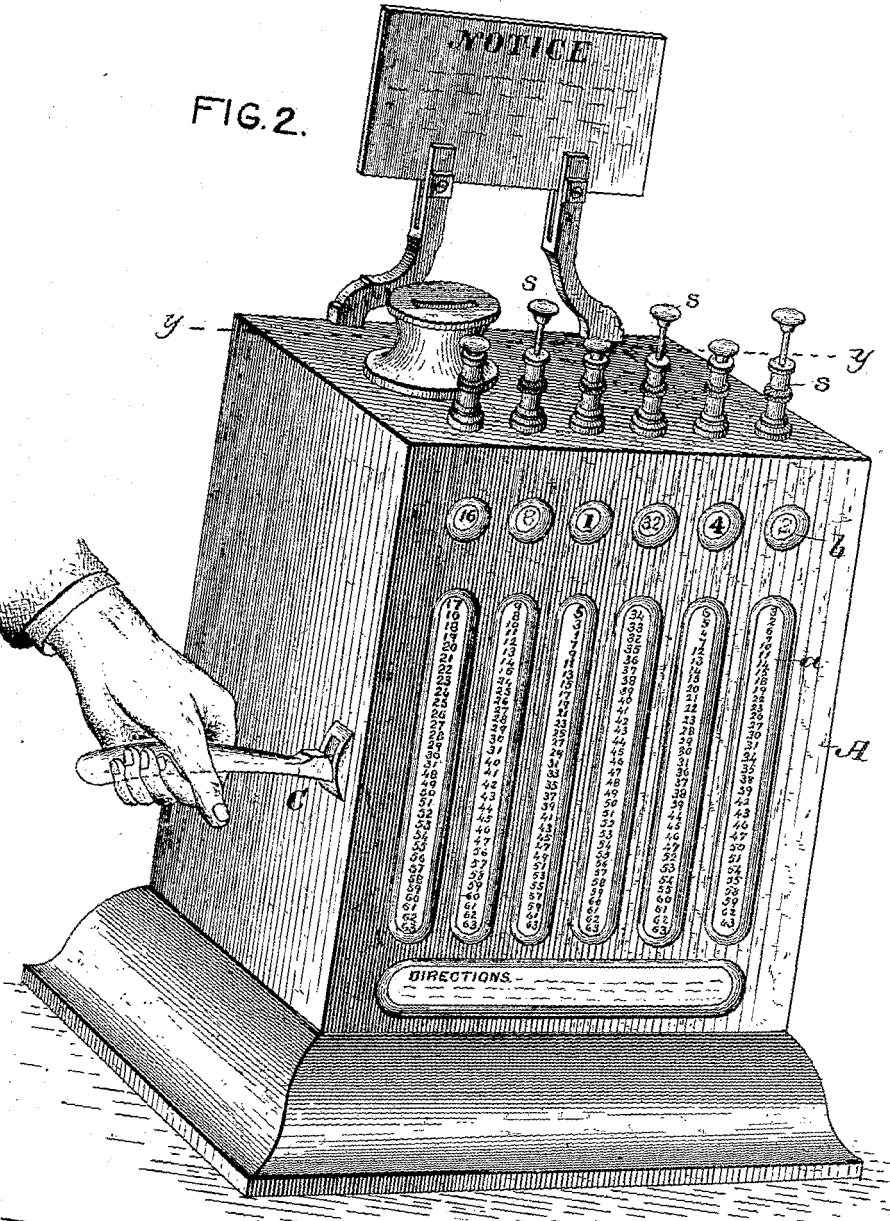
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COIN OPERATED CALCULATING MACHINE.

No. 399,129.

Patented Mar. 5, 1889.

FIG. 2.



TEST.
Kaiser-
with Ellis

Franklin W. Brooks
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By
Geo. C. W. Inters
Atty.

(No Model.)

4 Sheets—Sheet 3.

F. W. BROOKS.

COIN OPERATED CALCULATING MACHINE.

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FIG. 3.

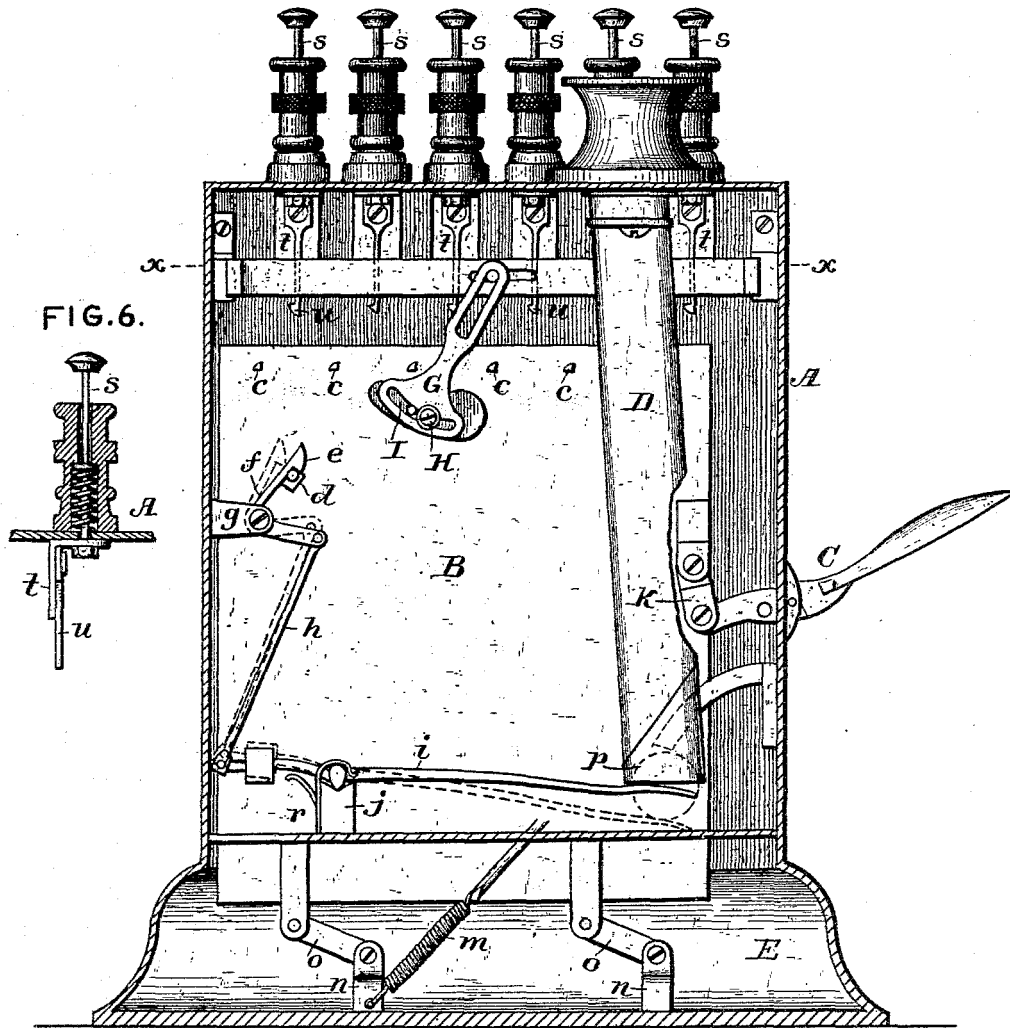


FIG. 6.

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FIG. 4.

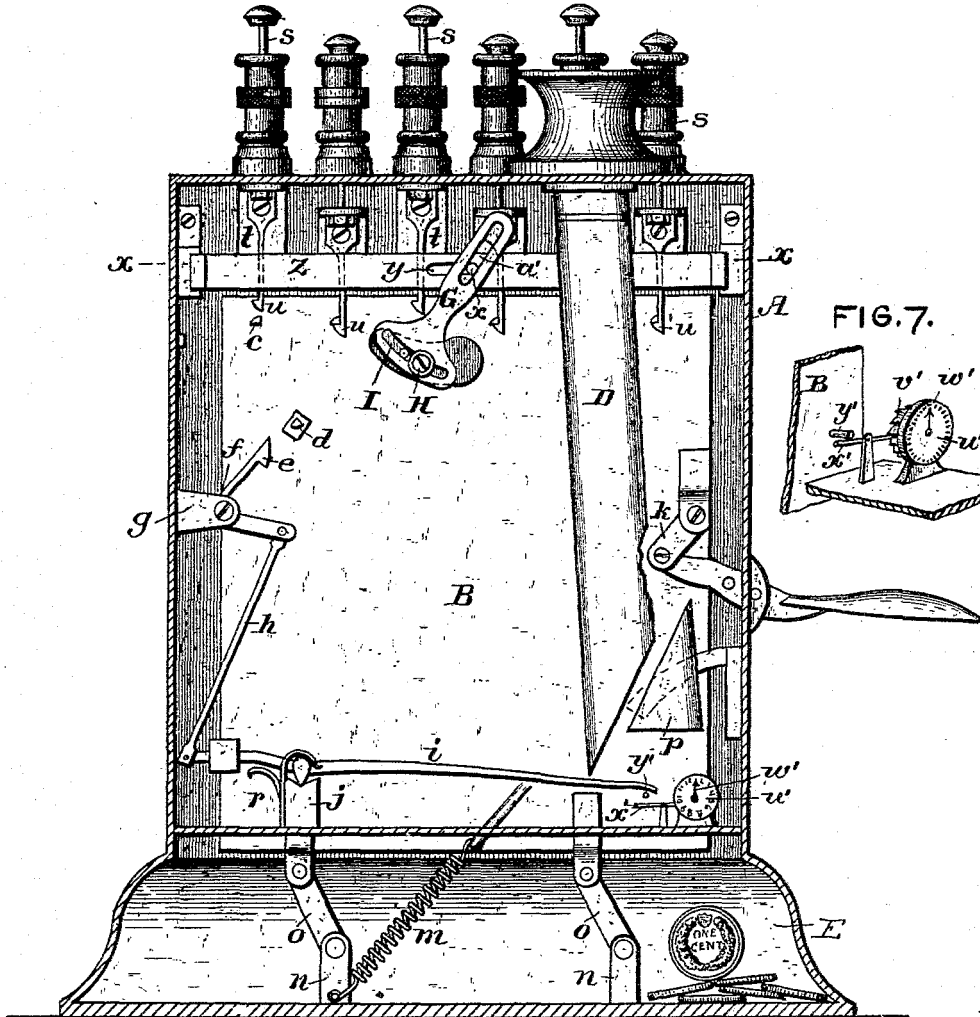


FIG. 7.

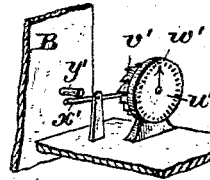
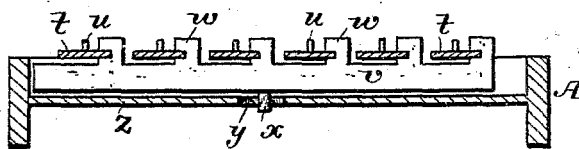


FIG. 5.



ATTEST.

J. Henry Kaiser

INVENTOR.

Franklin W. Brooks

By

Wm. C. McIntire

Att'y.

UNITED STATES PATENT OFFICE.

FRANKLIN W. BROOKS, OF NEW YORK, N. Y.

COIN-OPERATED CALCULATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 399,129, dated March 5, 1889.

Application filed November 17, 1888. Serial No. 291,079. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN W. BROOKS, a citizen of the United States, residing at New York, N. Y., have invented new and useful Improvements in Coin-Operated Calculating-Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in calculating machines or apparatus.

The object of the invention, generically stated, is to provide a machine or apparatus the parts of which being so arranged or combined that the weight of a coin shall act to place the same in condition or readiness to be operated to bring to visual inspection a set or series of numbers from which the ages of individuals may be calculated or determined, all as will more fully hereinafter appear when taken in connection with the accompanying drawings, wherein—

Figure 1 represents a view in perspective of a calculating machine or apparatus constructed in accordance with my invention as it appears from the outside and when not in use or operation. Fig. 2 is a similar view of the machine or apparatus as it appears from the outer side after or in the course of operation. Fig. 3 is a vertical sectional elevation of Fig. 1 on the line $x x$. Fig. 4 is a similar view of Fig. 2 on the line $y y$, and Fig. 5 is a horizontal sectional view of a portion of the interior mechanism, taken on the line $x x$ of Figs. 3 and 4. Fig. 6 is a detail of one of the spring-bolts. Fig. 7 is a detail of the registering device.

In carrying my invention into effect I provide a box or casing for inclosing or containing the several operative devices, and in the front of said casing or box I form a series of vertically-elongated openings, above each of which is a circular, square, or other shaped opening.

Interiorly of the machine I arrange a plate of metal or other suitable material, on one face of which is inscribed or printed a column of numbers corresponding to each of the vertical openings in the face of the box or casing, and this plate is locked or held down normally in such position that the columns of numbers thereon will be concealed behind the divisions of the openings. Operating in con-

junction with the locking devices for the plate are other devices which, when a coin is deposited in the machine, will act to release such locking devices and permit of the plate being elevated through the medium of a hand-lever, to bring its columns of numbers to view before the vertical openings of the casing. After the calculation has been effected or determined the plate is drawn down by a spring, and it again becomes locked, as before, automatically. I resort, further, to the use of a conduit or chute for the coin so constructed and arranged that it is only until the movable plate has been raised that the coin is permitted to fall below into the till or receptacle for containing it, and I also employ suitable guides for directing and maintaining the true plane of movement of said movable plate. Further, in connection with the movable plate, I employ for the upper openings in the front of the casing movable spring-bolts, each of which is formed or provided with a spring-catch for engaging a corresponding lug on the plate, and has a plate on which is inscribed or printed a number that is brought before its respective opening, accordingly as either of said bolts is depressed. In the normal position of the movable plate the spring-bolts are all held or locked against movement; but as soon as the plate is elevated or raised they are free to be operated for the purpose intended, and which will be explained more fully hereinafter.

In addition to the features of the invention which give to it the nature of a calculator for determining the ages of individuals, I resort, preferably, to the employment of a mechanism for registering each and every coin deposited in the machine, so that the person in charge or authority can know at all times the number of coins received, thus rendering it difficult for any one to abstract any of the coins without trace or detection.

Reference being had to the several parts of the drawings by the letters marked thereon, A represents a box or casing for inclosing or containing the operative mechanism, and having in its face or front the vertically-elongated openings a , above each of which is another opening, b , of any preferred contour, the several openings a and b communicating with the interior of the box. Located and

working within the box or casing is a movable plate, B, having printed or inscribed upon its face contiguous to the openings *a* a column of numbers corresponding to each of said openings, and having formed with or secured thereto on its opposite face, near the top edge, a set of horizontally-arranged teats or lugs, *c*, while on the same face thereof, at a point lower down and near to one of its side edges, is another lug or projection, *d*. This latter lug or projection, *d*, is designed to be engaged by the hooked arm *e* of a bell-crank lever, *f*, having its fulcrum in a projection, *g*, on the inner side of the casing, and the remaining arm of which is movably connected to the upper end of a rod, *h*, which in turn is movably connected to the weighted end of a rocking lever, *i*, having knife-edge fulcrum *7*, working in V-shaped bearings *j*, located on the bottom of the casing. The longer arm of said rocking lever *i* extends over to a point beneath the conduit or chute for the coin, and it is by the weight of the coin that the said lever is depressed to elevate the bell-crank lever *f*, in the manner shown in dotted lines, Fig. 3. As soon as the bell-crank lever is released from its locking-connection with the lug *d* on the plate the latter is free to be moved upward, and this is effected through the medium of a hand-lever, C, having its fulcrum on a projection of the casing, and a link, *k*, movably connecting said lever with the plate. The hand-lever is intended to be held down until the desired calculation has been made, and then on releasing the hold thereon the plate is drawn downwardly by the action of a spring, *m*, connecting it with the bottom of the casing, and the rounded edge of the hooked arm of the lever *f* moving against the lug *d* until the latter has passed, the plate will again become locked automatically in a manner clearly obvious.

It will be observed that the spring *m* so connects the lower edge of the plate B with the bottom of the casing A that said plate is drawn downwardly in a slightly-diagonal direction, the purpose of which is to have the columns of figures brought out of alignment with the openings in the casing when said plate is acted upon by said spring.

As soon as the coin drops from the end of the rocking lever *i*, the said lever is restored to its original position, and thus is the locking mechanism always brought into position to catch and hold the plate when it is drawn down by its spring. The lower edge of the plate is also movably connected to posts *n n* through the medium of links *o o*, such connection being provided for the purpose of limiting the upward movement of said plate, and also to assist in the proper guidance thereof.

D represents the conduit or chute for the passage of the coin, and in order to prevent the coin from passing to its receptacle until the plate B has been moved upwardly I divide the same at its bottom end into two parts, the line of division beginning at a suitable point

from the bottom at one of the sides and extending diagonally downward to or near to the lower edge at the opposite side, this giving to the contiguous or meeting faces of the two parts a bevel or incline, as is clearly represented in the drawings. The main portion of said conduit or chute is supported in any suitable manner from the top of the casing; but the smaller or separable part, *p*, thereof is supported from the inner face of the plate B by an arm (not shown) of just sufficient length to cause the inclined or beveled faces or edges of the two parts to neatly fit together when the plate is down. From this construction of chute it follows that when the two parts thereof are together, as represented in Fig. 3, the coin will not be allowed to pass out, owing to the distance between the bottom of the chute and the farthest downward point to which the lever *i* can go being less than the diameter of the coin. It further follows that when the plate B is moved upwardly the part *p* of the chute will be carried with it, thereby increasing the space beneath and permitting the coin of its own weight or gravity to fall off the lever and drop into the receptacle E below.

As before stated, the rocking lever *i* has a knife-edge fulcrum, *7*, which works in a V-shaped bearing, *j*, and it is well to state here that for the purpose of maintaining such lever in place I employ a piece of metal, *r*, split or divided, as shown, so that one portion shall extend over or around the bearing, while the other portion shall lie beneath the shorter arm of said lever and serve as a stop to prevent it from being carried too far downward by its weight.

From the description given thus far it will be understood that when the several devices are in the positions indicated by Fig. 3 the columns of numbers on the front face of the movable plate will be concealed from view behind the divisions between the openings *a*, giving to the machine the appearance represented by Fig. 1, and that when said operative devices have been brought to the positions indicated by Fig. 4 of the drawings said columns of figures will be brought before the openings, thus giving to the machine the appearance represented by Fig. 2.

As a further attribute to my invention, I employ, in conjunction with the movable plate, a movable spring-bolt, *s*, for each of the upper openings, *b*, each of said bolts working through the top of the casing A and carrying a small plate, *t*, having inscribed or printed thereon a number designed to be brought before the corresponding openings *b* when said bolts are pushed down or depressed. In the present instance there are six bolts, with a corresponding number of openings, *b* and *a*, and the numbers contained on the plates *t* are 16, 8, 1, 32, 4, and 2, respectively, this being the preferred arrangement, although the results would not be changed were the numbers arranged in any other order. The said spring-bolts *s* are formed or provided with depend-

ing spring-catches *u*, which engage with the teats *c* on the plate B when said bolts are depressed downward or pushed in, and in this way are said bolts held to a position by which their numbered plates will remain before the openings *b* until automatically released by the plate B in its downward movement.

In order that the spring-bolts *s* shall remain locked when the machine is not in use, or, in other words, to prevent them from being operated except when the movable plate has been operated, I employ a horizontally-sliding locking-plate, *v*, supported within the casing near the top, and having a series of projections or lugs, *w*, that come beneath the lower ends of the plates *t*, and it is evident that said bolts cannot be depressed until the plate *v* has been moved to one side to carry its lugs away from said plates.

To effect a lengthwise movement of the plate *v*, (the length of which, it will be understood, is less than the width of the casing,) I provide the same with a lug, *x*, projecting through and working in a slot, *y*, formed in a strip, *z*, extending across the interior of the casing, and this lug also enters a slot, *a'*, of a sector, G, tightly fitted to the side of the movable plate B by means of a set-screw, H, passing through an additional slot, I, which permits of the adjustment of said sector on said screw to compensate for wear of the sides of slot *a'* from contact or friction with the lug *x*.

When the movable plate is down, the projections *w* of the strip *v* will, as before stated, lie beneath the ends of the plates *t*, and thus prevent the bolts *s* from being depressed.

When a coin is deposited in the chute D, the locking-connection of the bell-crank lever *f* with the stud *d* is released, and when the hand-lever C is depressed the plate B will be drawn to the position shown in Fig. 4, and it is obvious that in its movement the said plate will, from its described connection with strip *v*, carry the latter with it to one side, thus carrying the projections away from the lower ends of the plates *t*, and permit any or all of the spring-bolts being depressed or operated, and when they are so depressed or operated their spring-catches *u* will engage with the lugs *c* on the plate, and thus be held down to expose through openings *b* the numbers on plates *t* until pressure on the hand-lever is released. When this latter is done, the plate B first describes a side movement, which releases catches *u* from lugs *c*, and then it moves downwardly and is engaged and held down by the devices hereinbefore described until again operated in a similar manner.

As illustrative of the purpose of the invention, I will proceed to describe how the age of an individual may be determined from the within mechanical devices, combined with the columns or combinations of figures shown in the drawings at Fig. 2. After the machine has been operated to bring the columns of numbers before the openings to determine

one's age the several columns are gone over, beginning with the first, and in such of the columns as the person's age is found the bolts corresponding therewith are depressed to bring before the openings *b* the respective numbers which they carry. For instance, a person whose age is twenty-one will find such number in the first, third, and fifth columns, and the spring-bolts corresponding to these columns will expose through openings *b* the numbers 16, 1, and 4, the sum of which added together is twenty-one, the age of the person in question.

In order that an account may be had of every coin deposited within the machine, I resort to the employment of a registering mechanism, such as is more clearly represented in Fig. 7. In this figure will be seen stationary dial *u'*, having on its face the proper register, and to the rear of which is a movable ratchet, *v'*, to the spindle of which is attached the indicator *w'*. The ratchet is operated to turn the distance of one tooth on each downward movement of the plate B by means of a pivoted pawl, *x'*, that is actuated by a stud or projection, *y'*, on said plate. On each upward movement of the plate the stud depresses the pawl, so that it will engage and properly operate the register or indicator on the next downward movement of the plate.

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

1. The combination, with the casing having the vertically-elongated openings *a*, of the movable plate located in said casing, and having columns of figures thereon adapted to align with said openings, and also having the lug *d*, and a pivoted bell-crank lever engaging said lug when the plate is in its downward position, substantially as described.

2. The combination, with the box or casing having the vertically-elongated openings, of the movable plate located in said casing and having columns of figures thereon adapted to align with said openings, and the spring *m*, connecting the lower edge of said plate with the bottom of the casing and tending to draw the plate diagonally downward, substantially as described.

3. The combination, with the box or casing having the vertically-elongated openings *a*, of the movable plate B, having columns of figures thereon adapted to align with said openings, a hand-lever having its fulcrum in one side of the casing, and a link connecting said lever and plate, whereby when the lever is depressed the plate will be caused to move slightly to one side and then upwardly, substantially as shown, and for the purpose set forth.

4. The combination, with the box or casing having the vertically-elongated openings *a*, of the movable plate B, having thereon columns of figures adapted to align with said openings, and also provided with the lug *d*, with the pivoted bell-crank lever engaging said lug when

the plate is down, and the spring *m*, connecting the lower edge of said plate with the bottom of the casing at diagonally-opposite points, substantially as described.

5 5. The combination, with the box or casing having the vertically-elongated openings *a*, of the movable plate located in said casing, and having thereon columns of figures adapted to align with said openings, and also provided
10 with lug *d*, the pivoted bell-crank lever engaging said lug when the plate is down, the spring *m*, connecting the lower edge of the plate with the bottom of the casing, the hand-
15 lever having its fulcrum in one side of the casing, and a link connecting said lever and plate, substantially as shown, and for the purpose described.

6. The combination, with the box or casing having the vertical openings *a*, of a movable
20 plate located in said casing, and having thereon columns of figures adapted to align with said openings, a spring tending to draw said plate diagonally downward, a lock for main-
25 taining the plate in such downward position, and a hand-lever and link-connection for operating said plate, substantially as described.

7. The combination, with the box or casing having the vertically-elongated openings *a*, of the movable plate *B*, having the lug *d*, and
30 provided with columns of figures adapted to align with said openings, a pivoted bell-crank lever for engaging said lug when the plate is drawn downwardly, a rod connected to said
35 lever, and a weighted rocking lever connected to said rod, substantially as described.

8. The combination, with the weighted rocking lever *z*, mounted in V-shaped bearings, of the metal strip *r*, formed to overlap the lever and retain it in its bearing, and having a
40 portion turned under said lever to act as a stop therefor, substantially as shown and described.

9. The combination, with the casing having in its bottom the posts *n n*, of the movable
45 plate *B* and the links *o o*, connecting said plate to said posts, substantially as described.

10. The coin chute or conduit *D*, constructed in two parts, the line of separation beginning a suitable distance from the bottom at one of
50 the sides, and extending diagonally downward to or near to the lower edge at the opposite side, substantially as described.

11. The combination, with the box or casing *A* and the movable plate *B*, of the coin-chute
55 *D*, constructed of two parts, the lower part, *p*, of which is connected to said plate, by which to be carried therewith when the same is moved, substantially as described.

12. The combination, with the casing *A* and
60 movable plate *B*, having the stud or projection *y'*, and spring *m*, drawing the plate

downward diagonally, of pawl *x'*, operated by said stud, and the indicator and ratchet-wheel, substantially as described.

13. The combination, with the casing *A*,
65 having the upper openings, *b*, and the movable plate provided with the series of lugs or teats *c*, of the spring-bolts *s*, provided with spring-catches for engaging said lugs or teats when the plate is up and said bolts are de-
70 pressed, the same being also provided with the plates *t*, having numbers thereon for registering with said openings *b*, substantially as described.

14. The combination, with the box or casing
75 *A*, having the vertical openings *a* and the upper openings, *b*, of the movable plate *B*, provided with columns of figures adapted to align with said vertical openings having the series of teats *c*, the spring-bolts *s*, having
80 the spring-catches *u* and numbered plates *t*, and a hand-lever and link for moving said plate upwardly, substantially as described.

15. The combination, with the box or casing
85 having the vertical openings *a* and upper openings, *b*, of the movable plate *B*, having the lug *d*, and the series of teats *c*, and also provided with columns of figures adapted to align with said vertical openings, the spring-
90 bolts having the spring-catches and numbered plate, a hand-lever and link for moving the plate upwardly, and a lever for engaging lug *d*, to maintain the plate locked in its downward position, substantially as described.

16. The combination, with the movable plate
95 *B*, having lug *d*, of the lever *f*, engaging said lug, the rod *h*, and the weighted rocking lever *z*, connected to the rod and adapted to release said lever *f* from lug *d* when depressed, substantially as shown and described.
100

17. The combination, with the spring-bolts
s, having the plates *t*, of the movable locking-strip *v*, having the projections *w*, which rest beneath the lower ends of said plates when the parts are in their normal positions,
105 substantially as shown, and for the purpose described.

18. The combination, with the casing having strip *z*, provided with slot *y*, and the
110 spring-bolts having the plates *t*, of the movable plate *B*, the strip *v*, having projections *w*, and provided with pin *x*, and the sector *G*, formed with slot *a'*, working on pin *x*, and secured to the movable plate, substantially as shown and described.
115

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANKLIN W. BROOKS.

Witnesses:

CURTIS LAMMOND,
E. EVERETT ELLIS.