

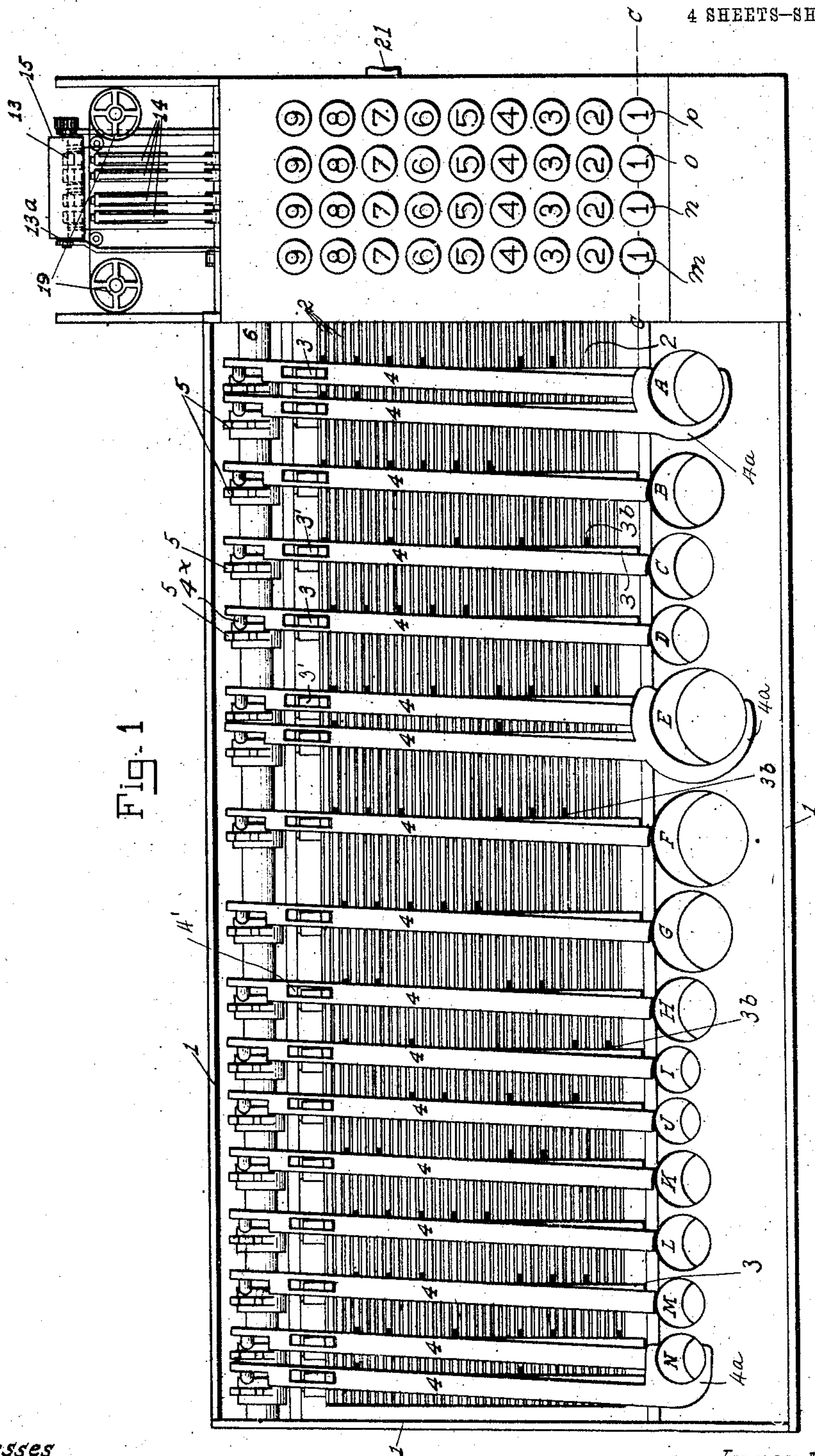
COIN DELIVERER.

APPLICATION FILED OCT. 12, 1909.

Patented Feb. 28, 1911.

4 SHEETS—SHEET 1.

985,136.



191

Witnesses

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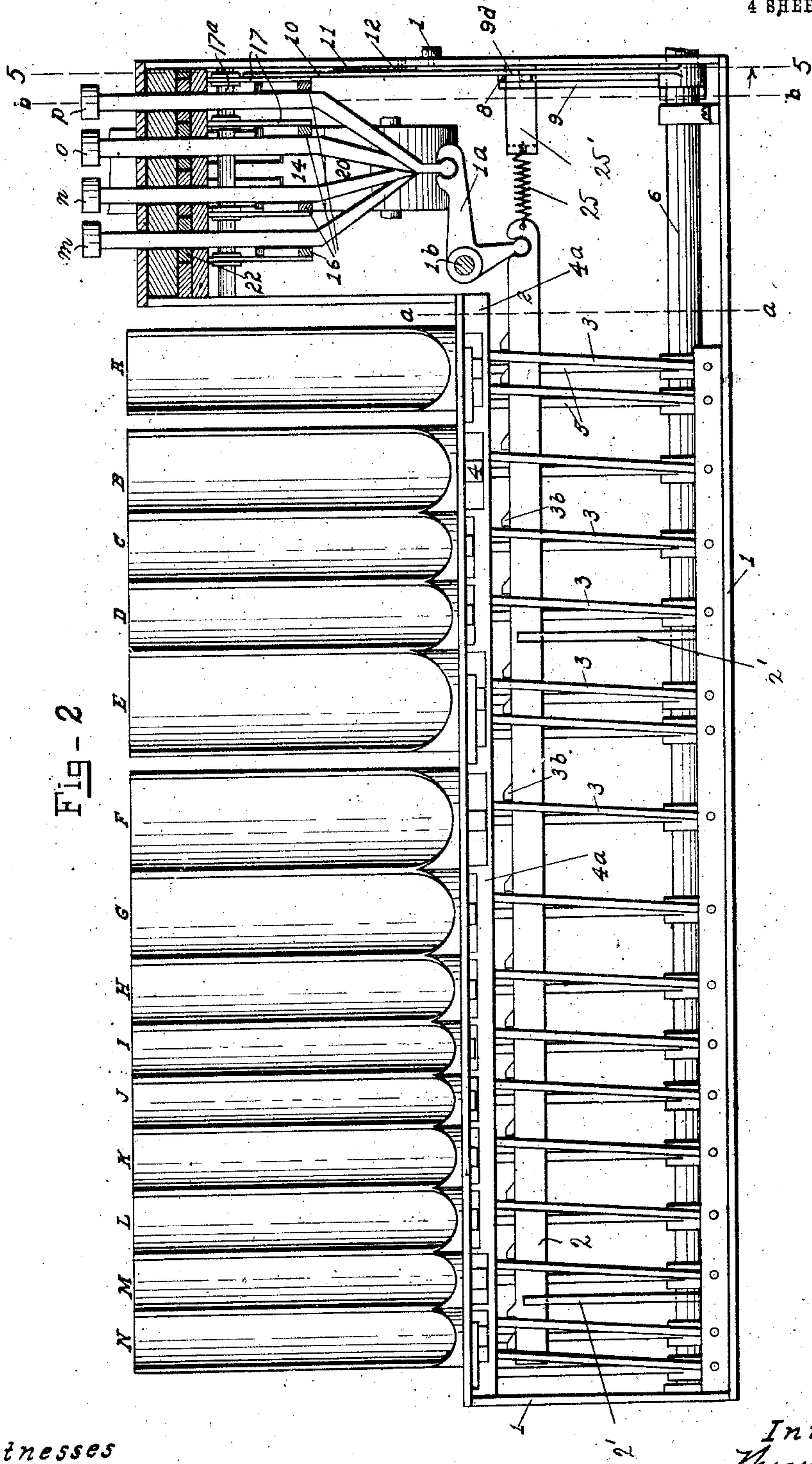


Fig-2

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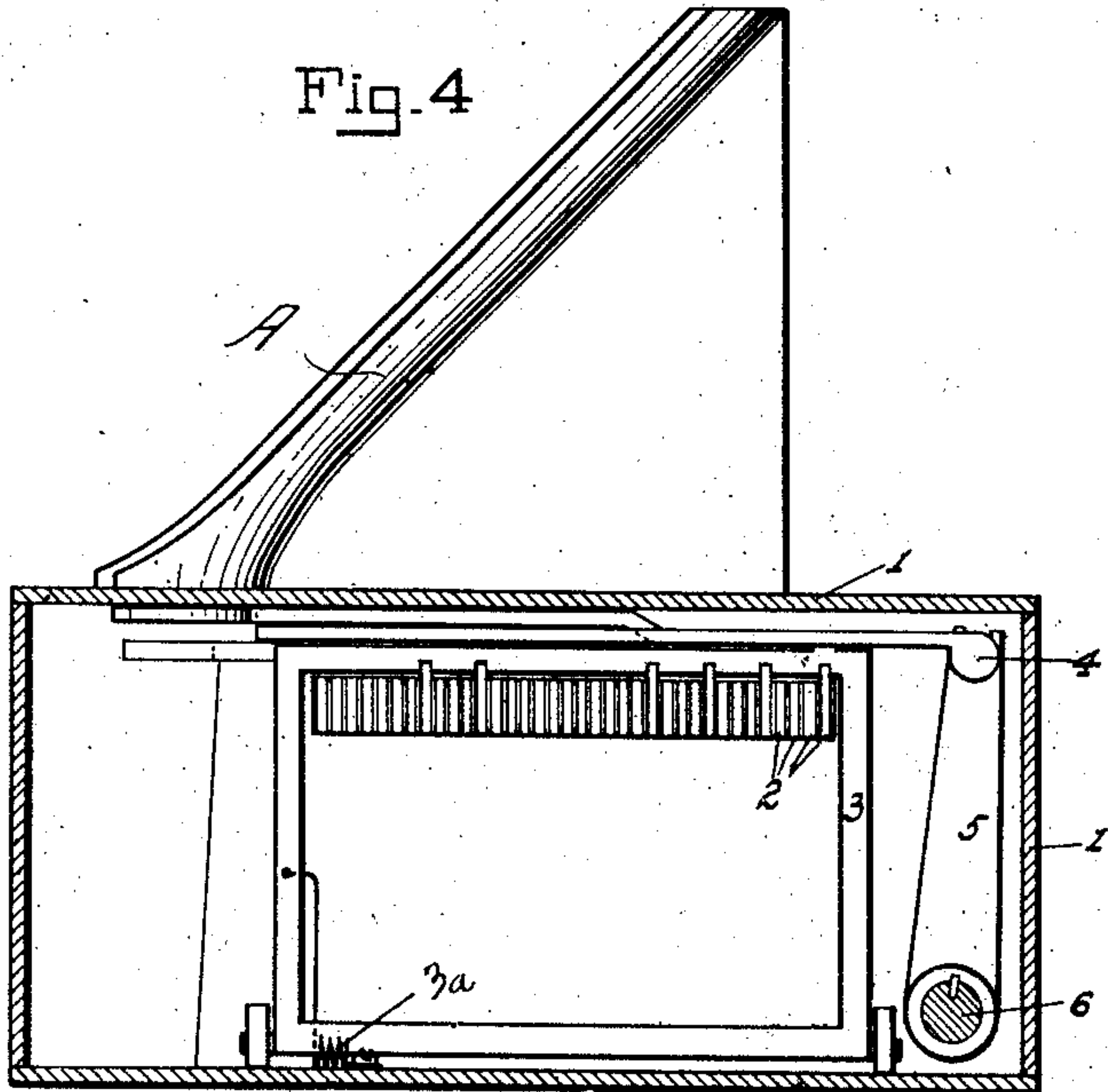
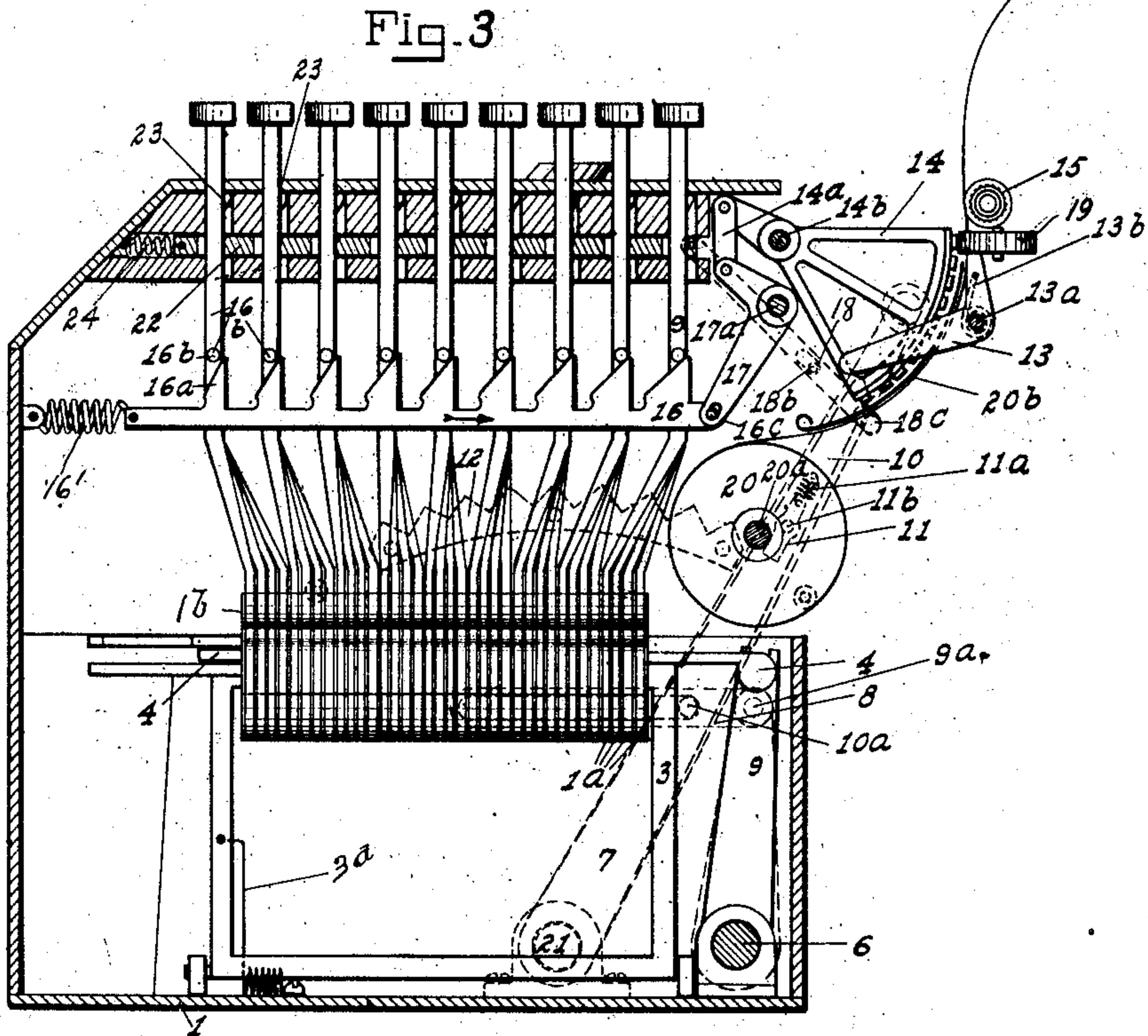
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4 SHEETS—SHEET 3.



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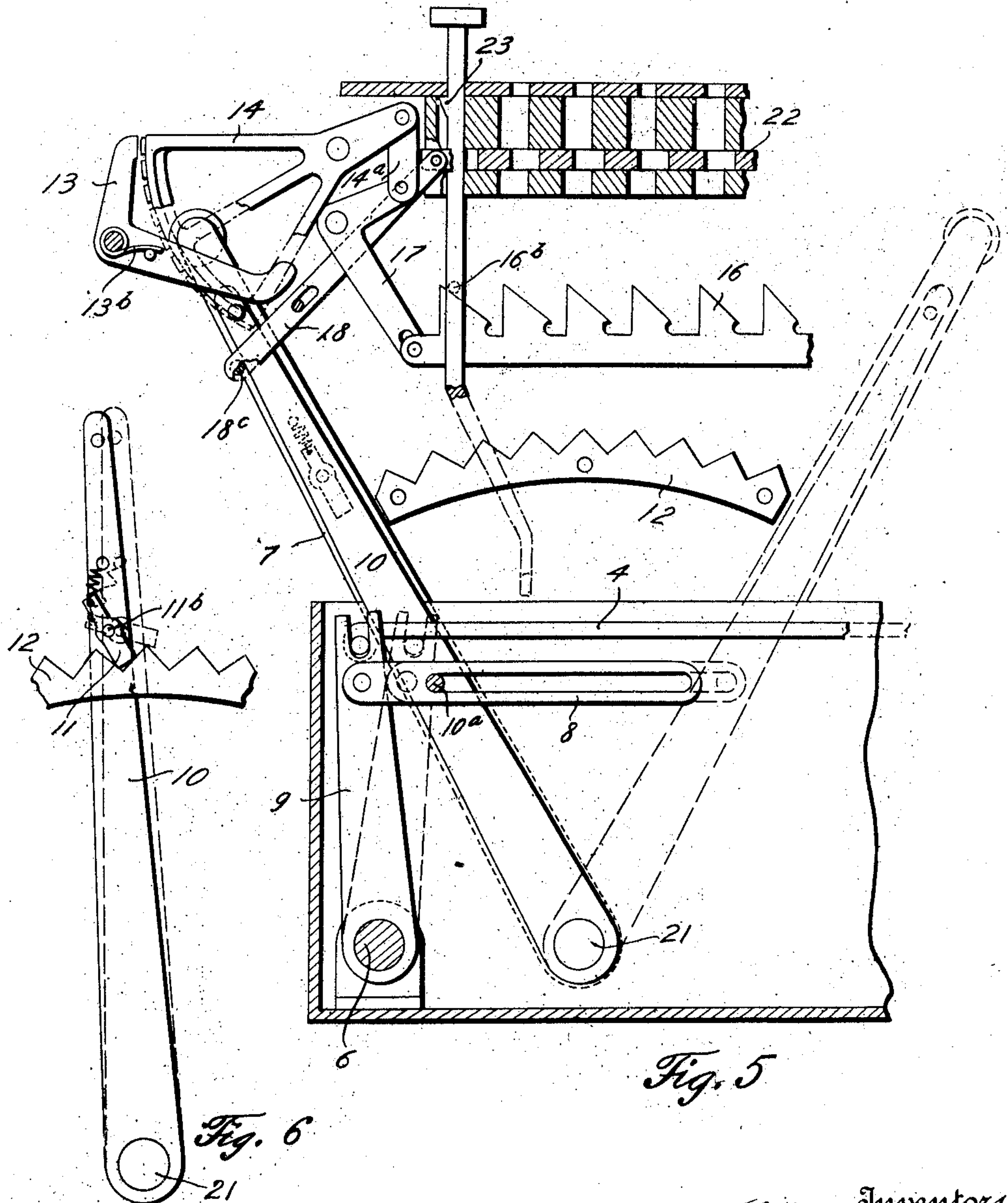
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4 SHEETS-SHEET 4.



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COIN-DELIVERER.

985,136.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed October 12, 1909. Serial No. 522,240.

To all whom it may concern:

Be it known that we, THOMAS BILYEU and WILLIAM S. OVERLIN, citizens of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have jointly invented a new and useful Coin-Deliverer, of which the following is a specification.

The invention pertains to devices of the character set forth for use in clearing houses, factories, theater box offices, and other places where large quantities of change in coin are desired to be made both rapidly and accurately.

The invention consists in certain specific novel features of construction hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the device, but with the cover removed; Fig. 2 is a front elevation, partly in section on the line C—C of Fig. 1; Fig. 3 is a transverse vertical section substantially on the line b—b of Fig. 2; Fig. 4 is a similar view on the line a—a of Fig. 2; Fig. 5 is an enlarged transverse sectional view on the line 5—5 of Fig. 2 looking in the direction of the arrow, and Fig. 6 is a detail view of a part shown in Fig. 5.

Throughout the following description and on the several figures of the drawings similar parts are referred to by like reference characters.

The coins to be delivered from the machine are placed in characteristic tubes, indicated on the drawings by the letters A to N inclusive. Tube A is to be supplied with twenty dollar gold pieces or double eagles and from which either one or two coins may be delivered at a single operation. Tube B also contains coins of the same denomination, but from this tube two coins are always to be delivered. Tube C contains ten dollar gold pieces, which are to be delivered therefrom singly. The tubes above mentioned are arranged in sets or groups, and for each group of tubes there are provided a series of depressible keys, there being nine keys, numbered from 1 to 9 inclusive, in each series. The group of tubes A, B and C are operated by the set of keys indicated at m. All of the keys of the sets above mentioned are adapted to operate upon ejector mechanisms so that said mechanisms may be set in position to deliver coins of the denominations desired and in accordance with the particular keys

depressed. Each key stem operates upon a bell-crank lever 1^a pivoted at 1^b and having operative connection with a bar 2 slidable horizontally or at right angles to the direction of movement of the key. Said slidable movement of the bar 2 is normally resisted by any suitable means, indicated in this instance as a spring 25 anchored to a stationary support 25', by virtue of which the key associated therewith is normally held elevated. At 3 are indicated a series of yokes pivoted on horizontal axes parallel to one another at or near the lower portion of the machine, and the upper portion of each of said yokes is adapted to be operated by one or more of the aforesaid slidable bars 2. Each of the yokes has connected thereto at any suitable point a lug 3' which operates an ejector bar 4 so as to bring the same into alinement with an arm 5. Each of the bars 2 is provided with one or more lugs 3^b which engage the corresponding yokes 3 for the purpose just mentioned.

Any suitable means may be employed for insuring operative engagement between the ejector bars 4 and the arms 5, but the means shown consists in providing each of the said bars 4 with a laterally extending lug 4^x, which when the ejector bar is moved laterally by the slidable bar 2 is brought between a pair of fingers at the upper end of the corresponding arm 5. The arms 5 are all rigidly set upon a rock shaft 6 adapted to be operated by a lever 9, hereinafter more fully described. The aforesaid yokes are so arranged that each has engagement through its lug 3' with a slot in the ejector bar 4 so that the ejector bar will not only be positively moved into delivering position but also will be restored by the yoke to its normal position by virtue of a suitable spring 3^a connected to the yoke. The tube A in order that provision may be made to deliver either one or two coins has associated with it two ejector bars with independent means for setting the same in accordance with the amount of change desired. One of said bars lies above the other and is provided with an arc-shaped finger 4^a which embraces the second coin of the tube and prevents discharge thereof when only the lower bar is operated to eject a single coin.

Referring now to Fig. 1, which is somewhat diagrammatic in character, and which is to be understood as being merely sugges-

tive of one arrangement which may be employed with respect to the keys and several ejector mechanisms, key 1 of set *m* if depressed will cause through its bell-crank 5 1^a the fourth bar 2 from the bottom of the figure to cause its lug 3^b to engage and move the pivoted yoke 3 to the left in said figure, causing its lug 3' to move the ejector bar at its rear end to the left, bringing its lug 10 4^x into engaging relation with the arm 5. When the rock shaft 6 is subsequently operated the arm 5 will move the ejector bar 4 longitudinally to eject a ten dollar gold piece, the slot in the bar 4 being long enough 15 to permit such movement without obstruction by the lug 3'. When the rock shaft is moved in the opposite direction the ejector bar 4 will be withdrawn from the tube. Upon depression of key 2 of series *m* the 20 eighth bar 2 from the bottom of the figure will be operated to bring the first ejector bar 4 into position to deliver a single double eagle from tube A. Upon depression of key 3 of the same set the twelfth bar 2 will operate upon the first ejector bar 4 and the 25 ejector bar 4 of tube C, whereby \$20.00 will be delivered from tube A and \$10.00 from tube C, and so on throughout the several keys of said set *m*, it being understood in 30 each instance that the number of the key indicates the amount of money desired to be had from the corresponding group of tubes.

The second group of tubes include those 35 indicated at D, E and F, tube D being designed to contain five dollar gold pieces, and tubes E and F to contain silver dollars. Tube E is arranged to deliver either one or two coins in the manner described in connection with the mechanism associated with 40 tube A. Tube D will deliver single coins only, and tube F will deliver two coins in each instance. This second group of tubes will be operated upon or controlled by the 45 set of keys denoted by *n*, which are units of dollars. If a single dollar be desired it will be received from tube E by operation of the first ejector bar 4 associated therewith, by operation of key 1 of set *n* operating upon the third bar 2 from the bottom 50 of Fig. 1. If two dollars are desired they will be received from tube F by operation of key 2 of set *n* operating upon the seventh bar, and so on throughout this group. 55 The operation of a key in any one set has no connection whatever with the key or ejector mechanism of any other set of keys or group of tubes.

The third group of tubes are indicated 60 at G, H, I, J, and K, designed to contain fifty cent pieces, twenty-five cent pieces, ten cent pieces, ten cent pieces and five cent pieces, respectively, a single coin being receivable from each of them. The reason for 65 duplicating the ten cent tubes is because it

is found difficult in practice to design a machine sufficiently accurate to make it reliable in delivering either one or two coins of this size. The keys pertaining to this third group of tubes are indicated at *o* and 70 represent tens of cents. If a single dime is desired key 1 of set *o* will be depressed causing the second bar 2 shown in Fig. 1 to set the ejector bar 4 pertaining to tube I. If two dimes are desired they will be 75 received one each from tubes I and J upon depression of key 2 of set *o* and the sixth bar 2, subject of course to the subsequent operation of the shaft 6, and so on throughout this group. 80

The fourth and last group of tubes are indicated at L, M and N. Tube L contains five cent pieces to be delivered singly. Tube M contains pennies to be delivered by twos 85 only, and tube N contains pennies to be delivered either singly or in twos. The set of keys pertaining to this last group of tubes are indicated at *p* and represent units of cents. When a single penny is desired it 90 will be delivered after operation of key 1 of set *p* and the first bar 2 at the bottom of Fig. 1 operating upon the first or lower ejector bar 4 associated with tube N. Two pennies will be delivered from tube M after 95 depression of key 2 of set *p* operating upon the fifth bar 2, and so on throughout this group.

From the foregoing description it will be appreciated that any amount of change less 100 than \$100.00 may be obtained upon depressing the keys whose numerals indicate the amount of money desired. For instance if \$12.34 change be desired the operator has but to depress keys 1, 2, 3 and 4 of the sets *m*, *n*, *o* and *p*, respectively, and then operate 105 the lever to cause rotation of the shaft 6. The coins which will be received in this instance will be one eagle from tube C, two silver dollars from tube F, twenty-five cents from tube H, five cents from tube K, and 110 two cents each from tubes M and N. No mental work whatever is required in setting the machine after the amount of change desired is once ascertained.

The rock shaft 6, above referred to, is 115 journaled in the ends of the frame 1 of the machine near the bottom and the rear side thereof, and secured to one end of said shaft is a lever 9, near the upper end of which is connected a slotted link 8. The hand lever 120 7 is mounted upon a shaft 21 journaled in the ends of the machine parallel to the aforesaid shaft 6. The lever 7 is preferably on the outside of the frame, and a companion lever 10 is secured to the shaft 21 on the 125 inside of the frame, the movements of which are synchronous with those of the lever 7. The lever 10 is provided with a stud 10^a which operates in the slot of the link 8 and which stud operates said link and lever 9 130

through a small angle as the lever 10 approaches the end of its throw, as indicated best in dotted lines in Fig. 5. In order to insure operation of the lever 10 to its full extent there is pivoted thereto a pawl 11 which operates over a fixed rack 12, the teeth of which rack are so shaped and placed as to prevent a reverse movement of the lever 10 while going in either direction without first the lever makes its full sweep, allowing the pawl 11 to pass over the last tooth.

Each set of keys *m*, *n*, *o* and *p* operate through a slotted bar 22 which is arranged substantially horizontal and adapted to be forced rearwardly by a lug 23 on any key which is being depressed, such rearward movement of the bar being normally resisted by a suitable spring 24. The purpose of this bar 22 is to cooperate with the lugs 23 to hold down any key depressed, its release being normally effected only after the operation of the hand lever 7 to deliver the coin. A peculiarity of this particular locking means for the keys lies in the fact that if any key is depressed by mistake and held down by the bar 22 it is only necessary to release said wrong key to depress the correct key, and while the latter mentioned key is being depressed its lug 23 will withdraw the bar 22 from the wrong key, permitting the wrong key to be restored to normal position by virtue of its spring 25.

From what has already been described it is to be understood that when change is desired the proper keys will be depressed to indicate the amount of change desired and said keys will be held depressed by means of bars 22 pertaining to the several sets of keys. The ejector bars 4 will thus have been set in place to be operated upon by the respective levers 5, whereupon by operation of the levers 7, 10 and 9, in the manner above described, the proper ejector bars 4 will be pushed longitudinally forwardly delivering the proper coins. This will be effected by a single forward movement of the lever 7, and upon the rearward or reverse movement of the lever 7 its companion lever 10 near the end of the reverse movement will engage a bar 18^c connected to a link 18^b connected in turn to each of the bars 22, whereby said bars will be drawn rearwardly against their springs 24 to release any keys that have been held down thereby. The links 18^b are mounted for slight longitudinal movement upon a stud or bar 18.

In order to provide a check upon the operations of the user of the machine and to assist in detecting errors which may have been made we prefer to employ in connection with the machine above described a recording device which includes a bell-crank lever 13 pivoted at 13^a and controlled by a spring 13^b. An arc 14, pivoted at 14^b, is

provided on its periphery adjacent the aforesaid bell-crank with a series of numerals from 0 to 9 inclusive beginning at the upper end thereof. Suitable means associated with the depressible keys are provided whereby the arc pertaining to any set of keys will be swung upwardly on its pivot 14^b to an extent corresponding to the value of the key depressed. The means herein illustrated for this purpose include a horizontally movable bar 16 connected at its rear end at 16^c to a bell-crank 17, pivoted at 17^a, and whose other end is connected by a link 14^a to the front end of the segment 14. The bar 16 is held in normal position by means of a suitable spring 16^f and is provided with a series of vertically extending cams 16^a opposite the respective depressible key stems. The throw of the several cams varies in proportion to the values of the corresponding keys, each cam of the said series being adapted to be operated by a stud 16^b on the adjacent stem. When any key therefore is depressed the bar 16 will be moved in the direction indicated by the arrow indicated on Fig. 3 to a distance proportionate to the throw of the cam operated upon at this time and the arc 14 will be elevated correspondingly bringing the proper numeral on its face or periphery up to the recording point where it will be held so long as the key is held depressed in the manner above described. At 20 is indicated a roll of paper mounted upon a shaft 20^a, the paper being movable upwardly along a guide 20^b toward a roll 15. During the operation of the lever 7 the bell-cranks 13 will be operated by virtue of the springs 13^b to cause an imprint to be made upon the paper opposite the numerals upon the several arcs 14 set for this purpose.

Having thus described our invention we claim:

1. In a change making machine, the combination of a series of coin tubes, ejector bars associated with said tubes, pivoted members associated with said ejector bars to move one end thereof in either direction laterally and in the same plane as their ejecting movement, a series of bars adapted to cooperate with said pivoted members, selective keys to cause operation of said bars, and means to operate such of the ejector bars as may have been moved laterally in one direction by the aforesaid means.

2. In a change making machine, the combination of a series of coin tubes, ejector bars associated with said coin tubes and movable longitudinally to eject coins therefrom by end thrust, the other ends of said ejector bars being movable laterally with respect to said longitudinal movement, and said laterally movable ends being provided with lugs, a rock shaft, a series of arms connected to the rock shaft and adapted to receive said ejector bar lugs when the latter are

moved laterally in one direction, key operated means to move said ejector bars laterally into engagement with said arms, and means to operate said rock shaft to cause the ejector bars to deliver coins from certain of the tubes.

3. In a change making machine, the combination of a series of coin chambers, an ejector bar associated with each of said chambers, a rock shaft, a series of arms connected to the rock shaft and adapted to cooperate with said ejector bars when the latter are moved out of normal position, sets of selective keys adapted to bring certain of said bars into engagement with the respective rock shaft arms, means to hold any one key of a set down after being depressed, said holding means being releasable upon depression of any other key of the same set, and means associated with the rock shaft to cause the selective ejector mechanisms to operate, said rock shaft operating means serving to release the key holding means when returned to initial position.

4. In a coin delivery machine, the combination of a plurality of coin receptacles, an ejector bar associated with each of said receptacles, an actuating member for moving each ejector bar and normally inoperative with relation thereto, means for operating the actuating member, and means for moving the ejector bar bodily in the plane of its ejecting movement to cause it to assume an operative position with respect to its actuating member preliminary to its operation to deliver a coin.

5. In a coin delivery machine, the combination of coin receptacles, ejector mechanisms associated therewith, an operating handle for operating the ejector mechanisms, key control selective mechanism cooperating with the ejector mechanisms and embodying a plurality of keys, locking bars engageable with the keys to hold the same in depressed positions after they have been depressed, a plurality of links connected with said locking bars, a guide bar passing through said links and permitting slight movement thereof, and a bar connected to the links and engageable by the handle as it returns to its normal position whereby to effect releasing movement of the locking bar to permit depressed keys to return to their normal position.

6. In a coin delivery machine, the combination of a plurality of coin receptacles, sliding ejector bars associated therewith and arranged so that corresponding ends are adapted to engage coins in said receptacles, a plurality of actuating arms arranged for effecting sliding movement of the ejector bars and normally inoperative in respect thereto, selective mechanism for engagement with opposite corresponding ends of the ejector bars to cause said ends to move in

the plane of their ejecting movement to assume positions wherein they are engageable by their actuating arms, and means for operating the actuating arms.

7. In a coin delivery machine, the combination of a plurality of coin receptacles, ejector mechanism associated therewith including ejector bars, actuating arms co-acting with the ejector bars but normally movable without engagement therewith, yokes having interlocking engagement with the ejector bars for moving the same laterally into positions in which they will be engaged by the actuating means therefor, and key operated selective mechanism for actuating said yokes to effect preliminary adjustment of the ejector bars for coin delivery movement.

8. In a coin delivery machine, the combination of a plurality of coin receptacles, ejector mechanism associated therewith including ejector bars, actuating arms co-acting with the ejector bars but normally movable without engagement therewith, yokes each comprising sides pivotally mounted adjacent to the ejector bars and an intermediate portion having interlocking connection with said ejector bars, key operated selective mechanism for tilting said yokes to move respective ejector bars connected thereto into operative positions relative to the actuating means for said bars, and means for restoring said yokes to their normal positions after the ejector bars connected therewith have performed their coin delivery movement.

9. In a coin delivery machine, the combination of coin receptacles, sliding ejector bars associated therewith and having corresponding ends arranged to engage coins in said receptacles, actuating device for said ejector bars adapted to engage the corresponding ends thereof in effecting coin delivery movement of said bars, yokes arranged beneath the ejector bars and having projections passing loosely through the last mentioned ends of the same, key operated selective mechanism including a plurality of bars movable in said yokes and having means to engage the latter for actuation thereof to move the ejector bars into the path of movement of their respective actuating devices, and means for restoring yokes to their normal positions after coin delivery movement of the ejector bars placed in operative position thereby.

10. In a coin delivery machine, the combination of coin receptacles, sliding ejector bars associated therewith and having corresponding ends arranged to engage coins in said receptacles, actuating device for said ejector bars adapted to engage the corresponding ends thereof in effecting coin delivery movement of said bars, yokes each comprising sides pivoted beneath the ejector

bars and an intermediate portion loosely connected with the last mentioned ends of the bars, key operated selective mechanism including a plurality of bars movable between the sides of said yokes and having means to engage the latter for actuation thereof to move the ejector bars into the path of movement of their respective actuating devices, springs connected with the yokes to restore same to their normal positions after operation of the ejector bars placed in operative position thereby, and spring means connected with the bars moving in said yokes to restore said bars to their normal positions on release of the selective mechanism.

11. In a change making machine, the combination of sets of selective keys each having a downwardly projecting shank, a series of bell-cranks mounted on a common axis, one arm of each of the bell-cranks being connected to one of said key shanks, a series of longitudinally movable bars connected to the other arm of said bell-cranks, means connected to said bars normally resisting downward movement of the keys, a series of coin tubes, a series of ejector bars associated therewith and adapted to be set into operative position by movement of said longitudinally movable bars, means to hold the depressed keys down, and means to in-

terlock with and operate the ejector bars that have been set into operative position, said means including a lever which when returned to initial position will release the aforesaid means for holding the keys down.

12. In a change making machine, the combination of a series of depressible keys, each of said keys having a locking lug, a locking bar through which the keys and lugs pass, means operating upon said bar to cause a depressed key to be locked depressed thereby, a series of coin tubes, ejector mechanisms associated with said tubes, means between the keys aforesaid and said ejector mechanisms to cause certain of the mechanisms to be set into operative position, means including a lever for operating said ejector mechanisms, and means connected to said locking bar adapted to be engaged by said lever on return to its initial position to cause said locking bar to release any previously depressed key.

In testimony that we claim the foregoing as our own, we hereunto attach our signatures in the presence of two witnesses.

THOMAS BILYEU.
WILLIAM S. OVERLIN.

Witnesses:

JOSEPHINE BILYEU,
FAY A. GRIDLEY.