

No. 792,923.

PATENTED JUNE 20, 1905.

W. N. PORTER.  
MONEY CHANGING APPARATUS.  
APPLICATION FILED DEC. 18, 1903.

3 SHEETS—SHEET 1.

Fig. 1.

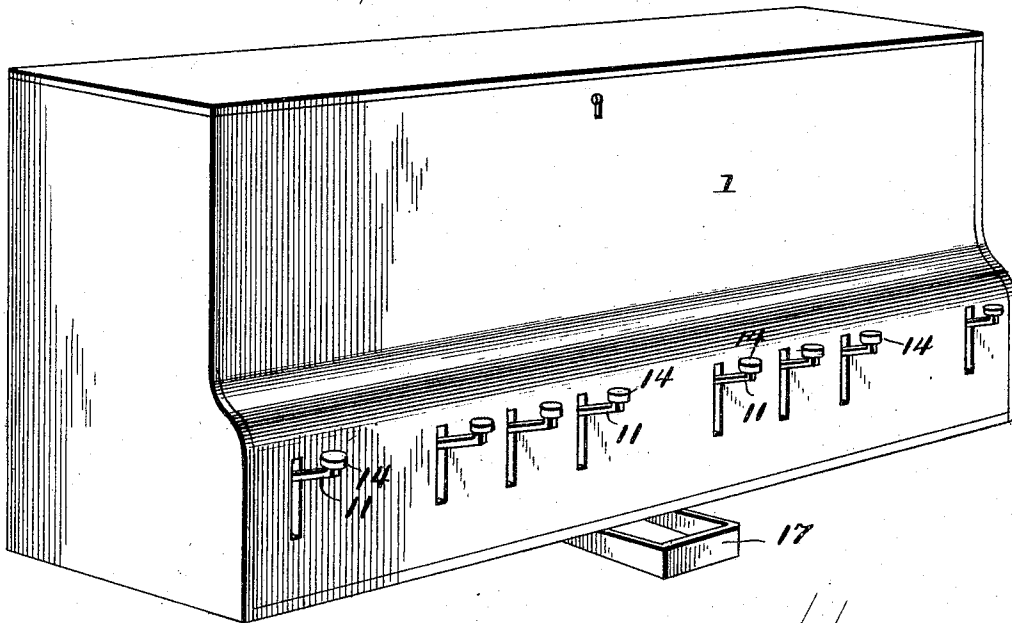
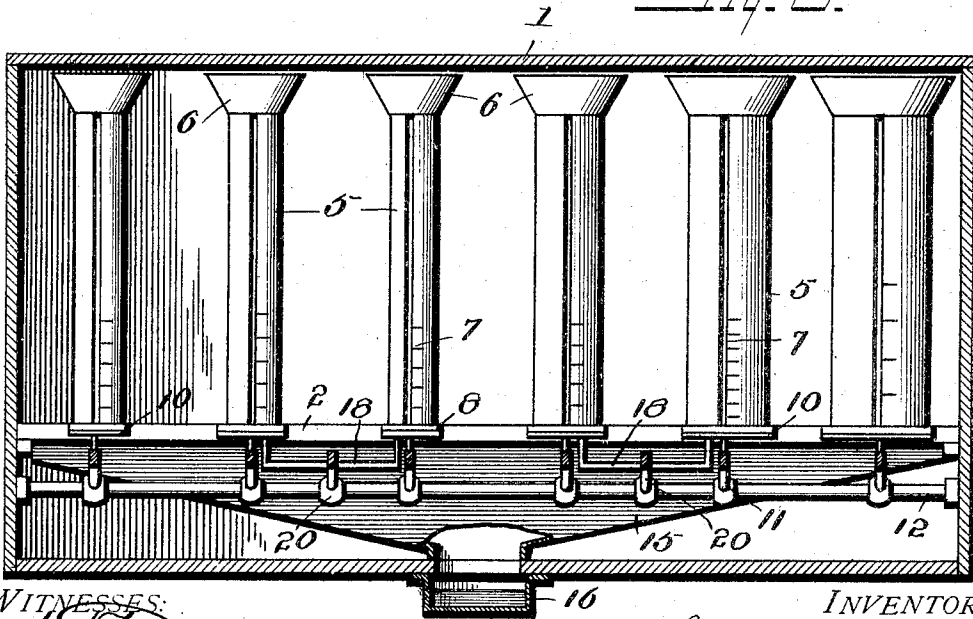


Fig. 2.



WITNESSES:

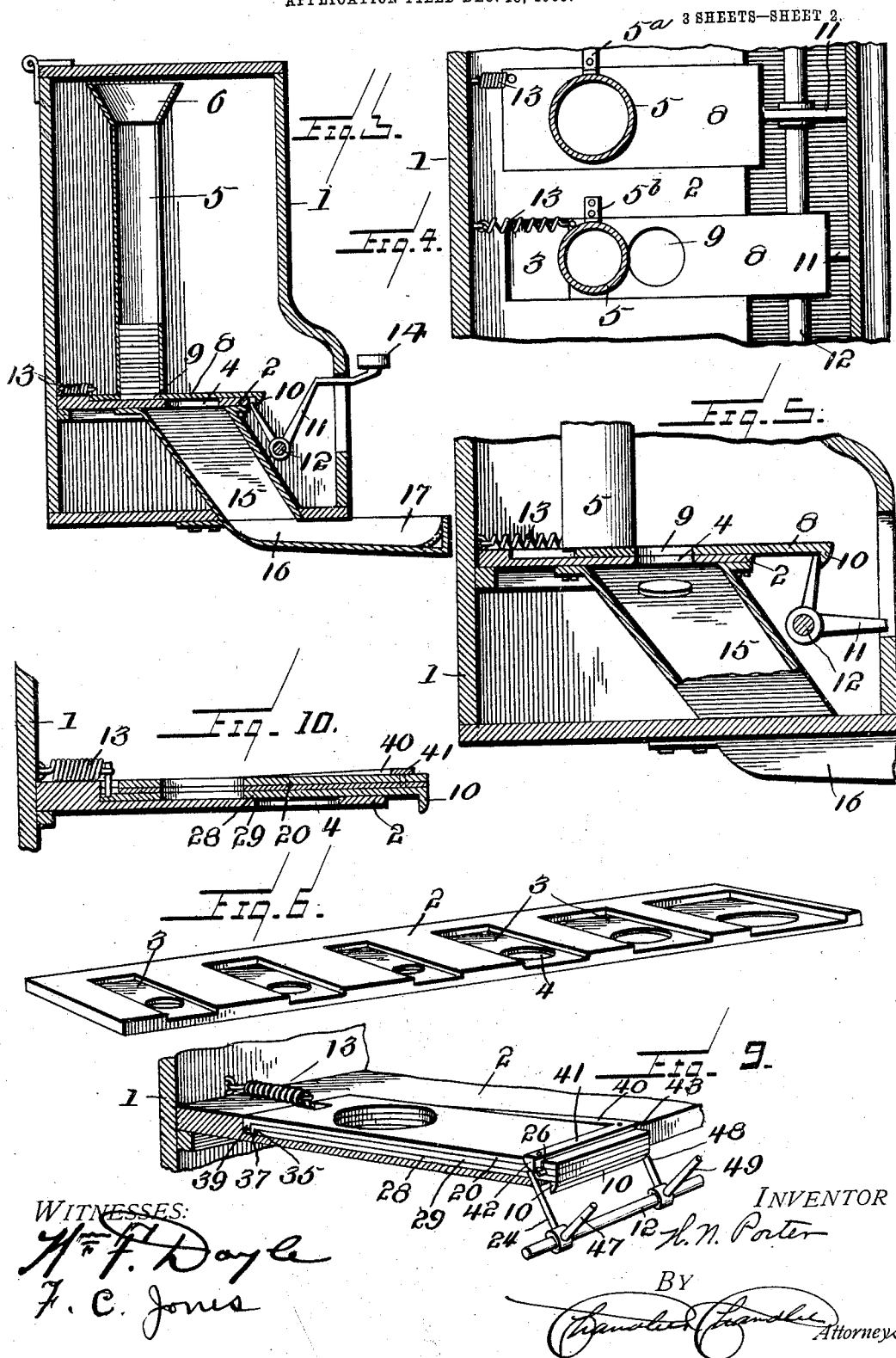
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3 SHEETS—SHEET 3.

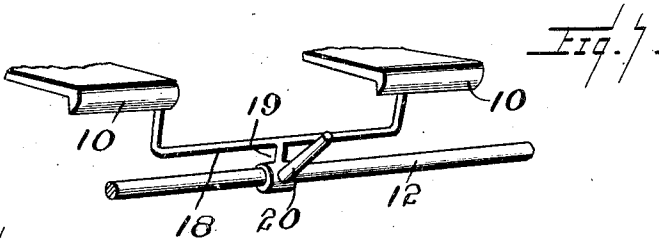


Fig. 8.

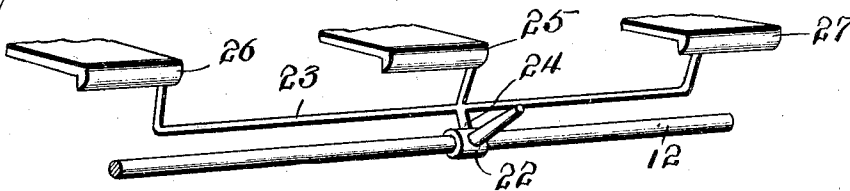
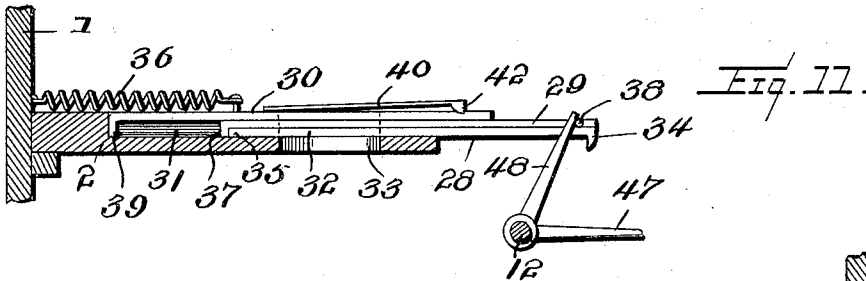


Fig. 12.

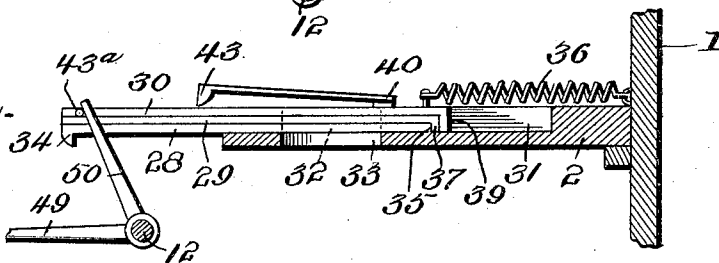


Fig. 13.

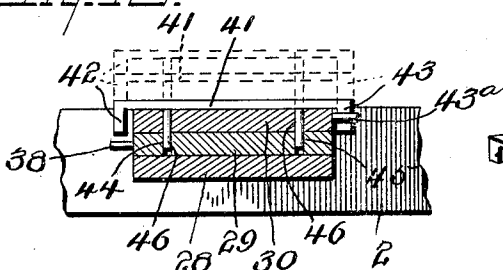
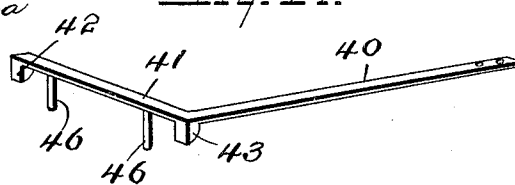


Fig. 14.



WITNESSES

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# UNITED STATES PATENT OFFICE.

WILLIAM N. PORTER, OF LENTS, OREGON.

## MONEY-CHANGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 792,923, dated June 20, 1905.

Application filed December 18, 1903; Serial No. 185,657.

*To all whom it may concern:*

Be it known that I, WILLIAM N. PORTER, a citizen of the United States, residing at Lents, in the county of Multnomah, State of Oregon, have invented certain new and useful Improvements in Money-Changing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a money-changing apparatus, one object being to provide an exceedingly simple, accurate, and efficient structure wherein much of the intricate mechanism heretofore employed in apparatus of the above-named character is obviated.

Another object of the invention resides in the provision of a money-changing apparatus wherein the mechanism will be of such few parts and nature that there will be little if any liability of derangement of the mechanism.

A still further object is to provide a money-changing apparatus that will be not only exceedingly simple in construction and accurate in operation, but one wherein durability and inexpensiveness is manifest.

It is to be understood at the outset that the manner of using my apparatus may be varied more or less to satisfy the convenience of the manipulator or proprietor and the character of the business with which the apparatus is employed and that the principle of the invention may be extended for the handling of any denomination of money, including paper money, in which event of course the number of mechanical elements of the mechanism and its construction may be varied without departing from the true spirit of the invention. The apparatus hereinafter described and illustrated is of such nature and parts as to handle from one-cent to dollar denominations, coin-tubes being employed for the reception of the different denominations, which of course may be increased in number for the reception of higher denominations, it being simply necessary to make a few additions to the structure without necessarily changing the arrangement for the handling of lower denominations.

With these and other objects in view the

present invention consists also in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the proportion, form, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the present invention.

In the drawings, Figure 1 is a perspective view of the invention. Fig. 2 is a vertical sectional view on the line *aa* of Fig. 1. Fig. 3 is a transverse sectional view on the line *bb* of Fig. 1, illustrating one of the levers arranged with relation to one of the slides for manipulating the latter. Fig. 4 is a top plan view of part of the mechanism within the casing. Fig. 5 is a fragmentary sectional view illustrating one of the slides in its extended position to discharge a coin from the corresponding tube into the chute arranged therebeneath. Fig. 6 is a detail perspective view of the support or shelf. Fig. 7 is a fragmentary view illustrating the arrangement whereby two adjacent slides may be moved forwardly simultaneously. Fig. 8 is a similar view illustrating the construction and arrangement whereby three spaced slides may be moved forwardly simultaneously. Fig. 9 is a fragmentary perspective view embodying a support or shelf and a transverse groove of sufficient depth to receive three slides arranged in the same groove of the shelf of the support, the view including all adjunctive parts arranged with relation to the manipulation thereof. Fig. 10 is a sectional view of the arrangement illustrated in Fig. 9, taken on the line *cc* of the latter figure. Fig. 11 is a view similar to Figs. 9 and 10, illustrating the two lowermost slides in their extended position. Fig. 12 is a view very similar to Fig. 11, illustrating the position of all the slides of the particular arrangement referred to in Figs. 9, 10, and 11 when the same are withdrawn for discharging purposes. Fig. 13 is a transverse sectional view of the said three-slide arrangement, illustrating in dotted lines the manner of cooperation

between the lock-spring and the slides; and Fig. 14 is a detail perspective view of the lock-spring.

Referring now more particularly to the drawings, the reference character 1 designates the box or casing of any suitable material in which the improved mechanism is contained. Disposed within and longitudinally of this box or casing 1 is arranged a support or shelf 2, having a series of transverse grooves 3 arranged in its upper face at equidistant points throughout its length, each groove having a circular opening 4 near the front edge of the support or shelf 2. Immediately over each groove and supported upon the shelf 2 by means of the rings or other means and suitable fastenings 5<sup>a</sup> and 5<sup>b</sup>, respectively, are a number of coin tubes or receptacles 5, each having a funnel or flaring open upper end 6 to facilitate the placing of coin into its respective tube, the tubes of course being of a cross-sectional diameter corresponding to the width of the respective denominations of coin in use. Each of these coin tubes or receptacles is slotted and provided with graduations throughout its length, as indicated by the character 7, permitting the change-maker to determine the condition thereof.

A slide 8 is fitted in each groove 3 of the support or shelf 2 and is provided with an opening 9, corresponding to the width and thickness of the coin in the tube beneath which it slides and which opening receives the lowermost coin from its respective tube, the front end of each slide having a depending projection 10 for engagement by the free end of the upright portion of the lever 11, which latter is pivotally mounted upon the rock-shaft 12, disposed slightly forward of and beneath the support or shelf 2, the rear end of each slide being connected by a coil-spring 13 in any suitable manner, the opposite end of the spring having suitable connection with the back of the box or casing 1. Each lever 11 is provided with a button or other form of disk 14, denoting the denomination of the coin in the respective tube. Disposed immediately beneath the support or shelf 2 is a chute 15, having its walls converging toward the center of the box or casing 1 and leading into a downwardly-directed inclined extension 16, whose free end terminates within or immediately above a receptacle 17, the latter being preferably arranged exterior of the casing. It will thus be seen that when it is desired to make change involving a single denomination it is only necessary to press upon the button of any one of the levers 11, and the depending projection of the respective slide will be consequently engaged by the rear end of the lever and moved forward, carrying the coin within the perforation of the slide, with the under face of the coin sliding within the groove of the support or shelf 2, until it reaches and falls

through the opening 9 in its path and into the chute therebeneath, passing into the receptacle 17, the coil-spring 13 serving to return the slide to its normal position for the reception of another coin immediately upon the release of the lever.

There are times when the change to be given a customer or patron is such that a single coin will not suffice to make the change. For instance, suppose it be desired to make change amounting to fifteen cents. It is obvious that the manipulation of a single lever in the manner described would not produce the desired change, which of course must be in two or more coins. By reference to Fig. 7 of the drawings the reference character 18 indicates a bar which is fixedly secured to the rear upright end 19 of the lever 20, pivoted upon the rock-shaft 12 intermediate the five and ten cent tubes, the bar 18 contacting with the aligning projections 10 of the corresponding slides upon a downward thrust of the lever 20, pulling both the five and ten cent slides outwardly and causing the respective coins to follow the course hereinbefore described. It will be seen that when the lever 11 is manipulated to produce a single coin that the lever 20 or its bar 18 is not molested.

If it be desired to make change amounting to forty cents, which ordinarily means that three or more coins of different denominations must be produced, it is accomplished in one way through the medium of the rock-lever 22, having the elongated cross-bar 23 arranged at the free end of its rear upright portion 24, the said lever being preferably arranged beneath the ten-cent-tube slide, the bar 23 being of sufficient length to contact not only with the depending projection 25 of the ten-cent-tube slide, but also with the projections 26 and 27, respectively, of the five and twenty-five cent tube slides whenever the rock-lever 22 is pressed and rocked upon the rock-shaft 12. Of course other combinations for the production of three other denominations of coins may be made, if desired.

As best shown in Figs. 9 to 13, inclusive, of the drawings, there is illustrated an arrangement wherein three slides 28, 29, and 30 are arranged one upon the other within the transverse groove 31 of the shelf 2 and means for sliding the lower or bottom slide within its groove independently of the intermediate or middle and the top slide, there being means also for sliding the lower and intermediate slides simultaneously independently of movement of the top slide and means also for moving all three slides simultaneously, the intermediate and top slides being normally locked together when the lower slide is operated. In other words, suppose the coin-tube above the series of three slides contains ten-cent pieces and it be desired to drop a single ten-cent piece in the chute 15, arranged, preferably, therebeneath, the lower slide may be

drawn outwardly, so that the coin within the coin-receiving opening 32 thereof is brought into registration with the opening 33 in the transverse groove in which the slide works, the other slides being arranged to coast with the bottom slide to deposit two or three ten-cent pieces in the chute 15, arranged therebeneath. The lower or bottom slide 28 has its forward end provided with a depending projection 34 and its rear end reduced to form shoulders 35 for a purpose presently explained, there being a spring 36 secured at one of its ends to the reduced portion of said slide and having its opposite end connected to the rear of the box or casing 1 to return the said slide to its normal position. The intermediate or second slide has not a depending projection at its forward end, but is provided with depending fingers 37 at its rear end, which are adapted to fit behind the shoulders 35 of the lower slide 28 and pull upon the lower slide whenever the projection 38 at the side of the forward end of the intermediate slide is engaged, as will be explained. The top slide is not provided with a depending projection at its forward end, but is provided with a depending finger 39, which fits behind the rear end of the intermediate slide to pull upon the latter whenever the top slide is drawn outwardly. Thus it will be seen that whenever the top slide is pulled outwardly the finger thereof will act upon the intermediate slide and the fingers of the latter in turn upon the lower slide, pulling all three of them out simultaneously and dropping three coins of like denomination into the chute—for instance, ten-cent pieces.

Disposed with one of its ends secured in any suitable manner to the shelf or support 2, adjacent the tube arranged above the three slides, is a lock-spring 40, having a lateral extension 41, which extends across the upper surface of the upper or top slide, with the end of the lateral extension bent downwardly to form an ear 42 depending therefrom and arranged along the sides of the slides and terminating in a curved lower end for a purpose presently explained. Arranged directly opposite the ear 42 of the lateral extension, or, in other words, at the opposite end of the lateral extension to the end having the ear 42, is another ear 43, which is arranged along the opposite sides of the slides and terminates in a curved lower end for a purpose hereinafter explained. The intermediate and top slides are provided with openings 44 and 45, respectively, for the reception of the depending pin or other element 46 of the lateral extension 41 of the lock-spring 40, the depending pin or other element engaging the said openings of the said slides for the purpose of locking them together and preventing them from being moved outwardly when it is desired to draw the lower slide outwardly independently thereof. If it be desired to drop two coins

into the chute, one coin being carried by the lower slide and the other coin being carried by the intermediate slide, it is simply necessary to press upon the rock-lever 47, mounted upon the rock-shaft hereinbefore mentioned, when the extreme free end of the upright portion 48 thereof will be brought into engagement with the curved portion of the depending ear 42 and ride thereupon to force the lateral extension 41 of the spring 40 upwardly until the said free end of the key or lever has reached about the middle of said ear, when the said lateral extension will have been raised sufficiently to clear its depending pin or other element of the opening in the intermediate slide and then engage the projection 38 of the intermediate slide, whereby a further pressure upon the rock-lever will draw both the lower and intermediate slides outwardly, the fingers at the rear of the intermediate slide engaging the shoulders at the rear of the lower slide to carry the bottom slide outwardly therewith, as well understood from the description hereinbefore given. When it is desired to drop three coins into the chute, it is only necessary to press upon the rock-lever 49, when the extreme free end of the upright portion 50 thereof will engage the curved portion of the ear 43 opposite to the ear 42 and ride thereupon until it has reached about a middle point thereof, when the lateral extension 41 of the spring 40 will have been raised sufficiently to clear the openings of the intermediate and the top slides of the depending pin or other element of the lateral extension, when by further pressure upon the lever the latter will engage the side projection 43 of the top slide and by reason of the fingers at the ends of the slides permit all three slides to be drawn outwardly simultaneously and deposit three coins into the chute 15 through the opening arranged within the groove in which the slides move, as well understood.

In order to return the levers 47 and 49 to their normal position after actuating the spring-lock mechanism of the intermediate and top slides just referred to above, there is arranged a spring 51, mounted upon a shelf or support 52 beneath the keys or levers and bearing against the under side of the keys, as clearly shown in the drawings. The spring 51 in pressing upon the under side of the levers 47 and 49 serves to drive the levers against the front sides of the side projections of the intermediate and top slides, and thereby return the latter to their normal position, when the lock-spring will fasten said slides together, as well understood.

From the foregoing it will be seen that change involving denominations from one cent to one dollar may be made accurately without the employment of complicated mechanism, and it is not absolutely essential that other elements or mechanisms be added to the structure for making of change falling within

the denominations named. However, in some instances, for the accommodation of certain lines of business or for other reasons, additions may be made to the structure, or the structure may be simplified as regards its arrangement, without departing from the spirit of the invention so long as I confine myself to the scope of my claims.

I claim—

- 10 1. A coin-changing apparatus, comprising a casing having a shelf arranged therein, a series of grooves in the shelf, each of said grooves having an opening, a series of slides arranged one upon another within one of the grooves,
- 15 a single slide arranged in each of the remaining grooves, a lever for operating the slides either singly or collectively within the single groove, a lever for operating a single slide within one of the remaining grooves, and a
- 20 lever for operating a series of slides of different grooves.
2. A coin-changing apparatus, comprising a casing having a shelf arranged therein, a series of grooves in the shelf, each of said grooves
- 25 having an opening, a series of slides arranged one upon another within one of the grooves, a single slide arranged in each of the remaining grooves, means for operating the superposed slides either singly or collectively, means
- 30 for operating a single slide within one of the remaining grooves, and means for operating a series of slides of different grooves.
3. A coin-changing apparatus, comprising a casing having a shelf arranged therein, a series of grooves in the shelf, each of said grooves
- 35 having an opening, a series of slides arranged one upon another within one of the grooves, means for locking the said series of slides together, a single slide arranged in each of the
- 40 remaining grooves, a shaft arranged beneath the aforesaid shelf, a lever for unlocking and operating the superposed slides either singly or collectively, a lever for operating a single slide within one of the remaining grooves, and
- 45 a lever for operating a series of slides of different grooves, all of the levers being mounted upon the aforesaid shaft.
4. A coin-changing apparatus, comprising a casing having a shelf arranged therein, a series of grooves in the shelf, each of said grooves
- 50 having an opening, a series of slides arranged one upon another within one of the grooves, means for locking the said series of slides together, a single slide arranged in each of the
- 55 remaining grooves, means for unlocking and operating the superposed slides either singly or collectively, means for operating a single slide within one of the remaining grooves, means for operating a series of slides of different
- 60 grooves, and means for automatically returning the slides to their normal position after withdrawal.
5. A coin-changing apparatus, comprising a casing having a shelf arranged therein, a series of grooves in the shelf, each of said grooves

having an opening, a series of slides arranged one upon another within one of the grooves, means piercing the uppermost slides of said series to lock them together, a single slide arranged in each of the remaining grooves,

70 means for unlocking and operating the series of superposed slides either singly or collectively, means for operating a single slide within one of the remaining grooves, and means for operating a series of slides of different grooves.

6. A coin-changing apparatus, comprising a casing having a shelf arranged therein, a series of grooves in the shelf, each of said grooves having an opening, a series of slides arranged one upon another within one of the grooves,

80 a single slide arranged in each of the remaining grooves, a lever for operating the superposed slides either singly or collectively, a lever for operating a single slide within one of the remaining grooves, a lever for operating

85 two different slides of the said remaining grooves, and means for automatically returning all the slides to their normal position after withdrawal.

7. A coin-changing apparatus, comprising a casing having a shelf arranged therein, a series of grooves in the shelf, said grooves each having an opening therein, a series of slides arranged one upon another within one of the grooves, a locking element secured to the shelf

95 associated with the said series of slides for locking purposes, single slides arranged in the remaining grooves, means for withdrawing a single slide, and means for withdrawing a series of slides.

8. A coin-changing apparatus, comprising a casing having a shelf arranged therein, a series of grooves in the shelf, said grooves each having an opening therein, a series of slides arranged one upon another within one of the

105 grooves, a locking element secured to the said shelf and associated with the said series of slides for locking purposes, single slides arranged in the remaining grooves, means for operating said locking element and the slides

110 to permit of the withdrawal of the slides singly or collectively, slides arranged in the remaining grooves, means for operating one of the slides of the remaining grooves, and means for operating a series of separate slides of the

115 remaining grooves.

9. A money-changing apparatus, comprising a casing having a shelf arranged therein, said shelf having transverse grooves arranged therein, an opening in each groove, a coin-tube

120 arranged over each groove, a series of slides arranged one upon another within one of the grooves, each of said slides having an opening therein for registering relation with the respective coin-tube and the opening in the

125 corresponding groove, a single slide arranged in each of the remaining grooves, a chute arranged beneath the shelf, means for operating the series of slides within the single groove, means for operating a single slide within one

130

of the remaining grooves, and means for operating a series of slides of different grooves.

10 10. A money-changing apparatus, comprising  
5 having a casing having a shelf therein, said shelf  
having a series of transverse grooves in its  
upper face, each groove having an opening  
therein, a coin-tube arranged over each tube  
in the rear of the opening therein, a slide ar-  
ranged within each groove and having an open-  
ing adapted to register with the opening in  
15 the groove, a chute arranged beneath the shelf,  
a shaft arranged within the casing in front of  
and beneath said shelf, a lever for operating  
one of said slides, a lever for operating two of  
15 said slides, and a lever for operating a series  
of said slides, all of said levers being mounted  
upon the aforesaid shaft.

20 11. A coin-changing apparatus, comprising  
a casing having a shelf therein, said shelf hav-  
ing a groove, the groove being provided with  
an opening leading therefrom through the  
shelf, a coin-tube disposed above the groove  
in the rear of the opening, a series of slides  
arranged one upon another within said groove,  
25 each slide having an opening therein for reg-  
istration with the opening in the said groove,  
a locking element secured to the shelf and ex-  
tending over the uppermost slide of said se-  
ries, and means engaging the locking element

and for operating said slides either singly or 30  
collectively.

12. A coin-changing apparatus, comprising  
a casing having a shelf arranged therein, said  
shelf having a series of grooves formed in its  
upper face, each groove having an opening 35  
leading through the shelf, a coin-tube disposed  
above each groove, a series of slides arranged  
within one of said grooves, a single slide ar-  
ranged in the remaining grooves, all of the  
slides having an opening adapted to register 40  
with the respective coin-tubes and the open-  
ings in the corresponding grooves, a shaft ar-  
ranged within the casing, levers mounted upon  
the shaft and associated with the aforesaid  
slides, whereby one slide of the said series 45  
may be operated independently of the other  
slides of the series and whereby the slides of  
the series may be operated either singly or  
collectively, and means associated with the  
remaining slides for operating them singly or 50  
in series.

In testimony whereof I affix my signature in  
presence of two witnesses.

WILLIAM N. PORTER.

Witnesses:

F. B. WINES,

A. H. MCGOWAN.