

(No Model.)

12 Sheets—Sheet 1.

C. L. TRAVIS.

CHANGE MAKING AND DELIVERING DEVICE.

No. 502,242.

Patented July 25, 1893.

Fig. 1.

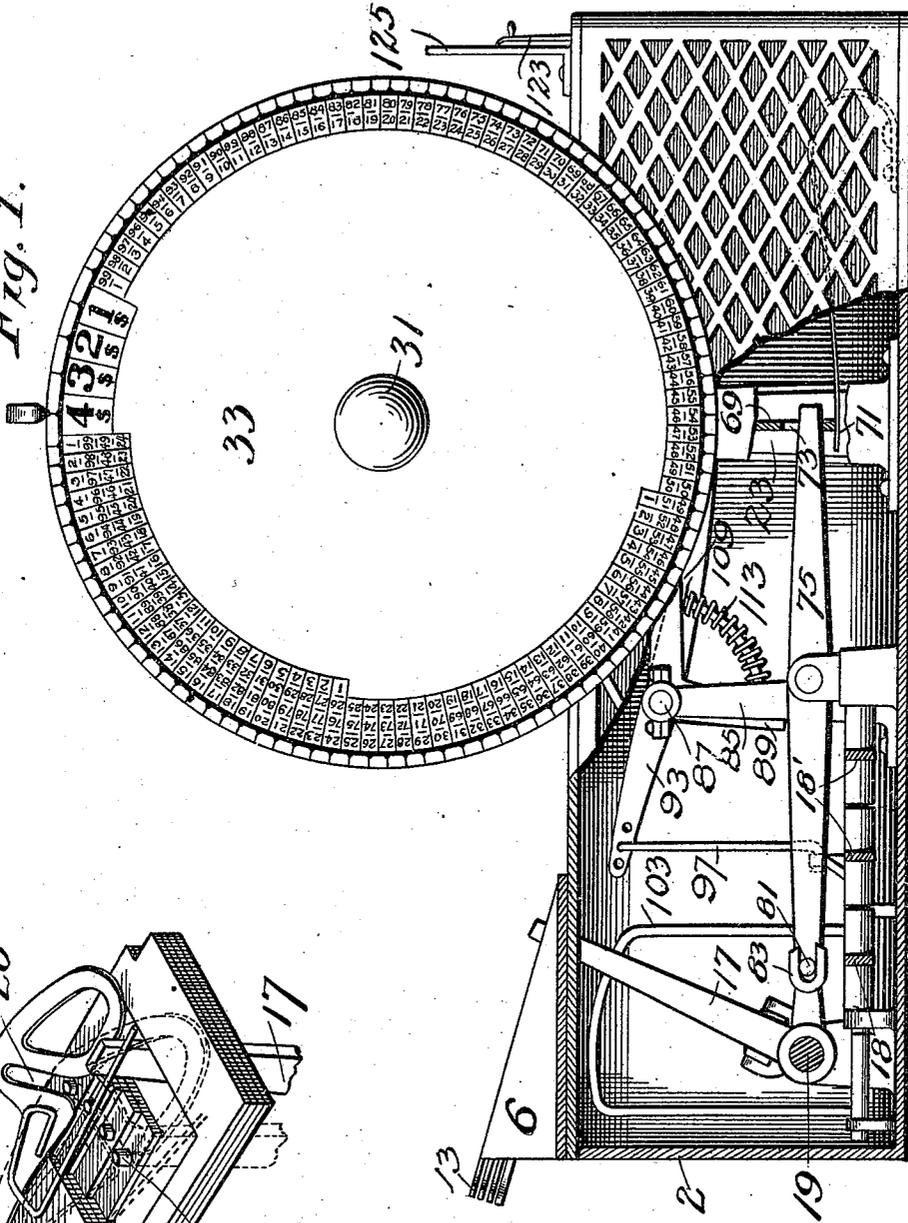
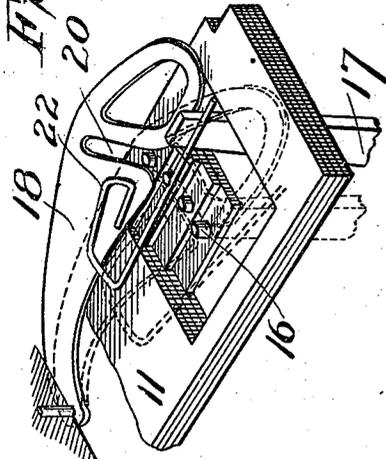


Fig. 2-2



Witnesses,
 Chas. E. Van Dorn,
 J. P. You

Inventor,
 Charles L. Travis.
 By Paul Omeron
 his Attorneys.

(No Model.)

12 Sheets—Sheet 2.

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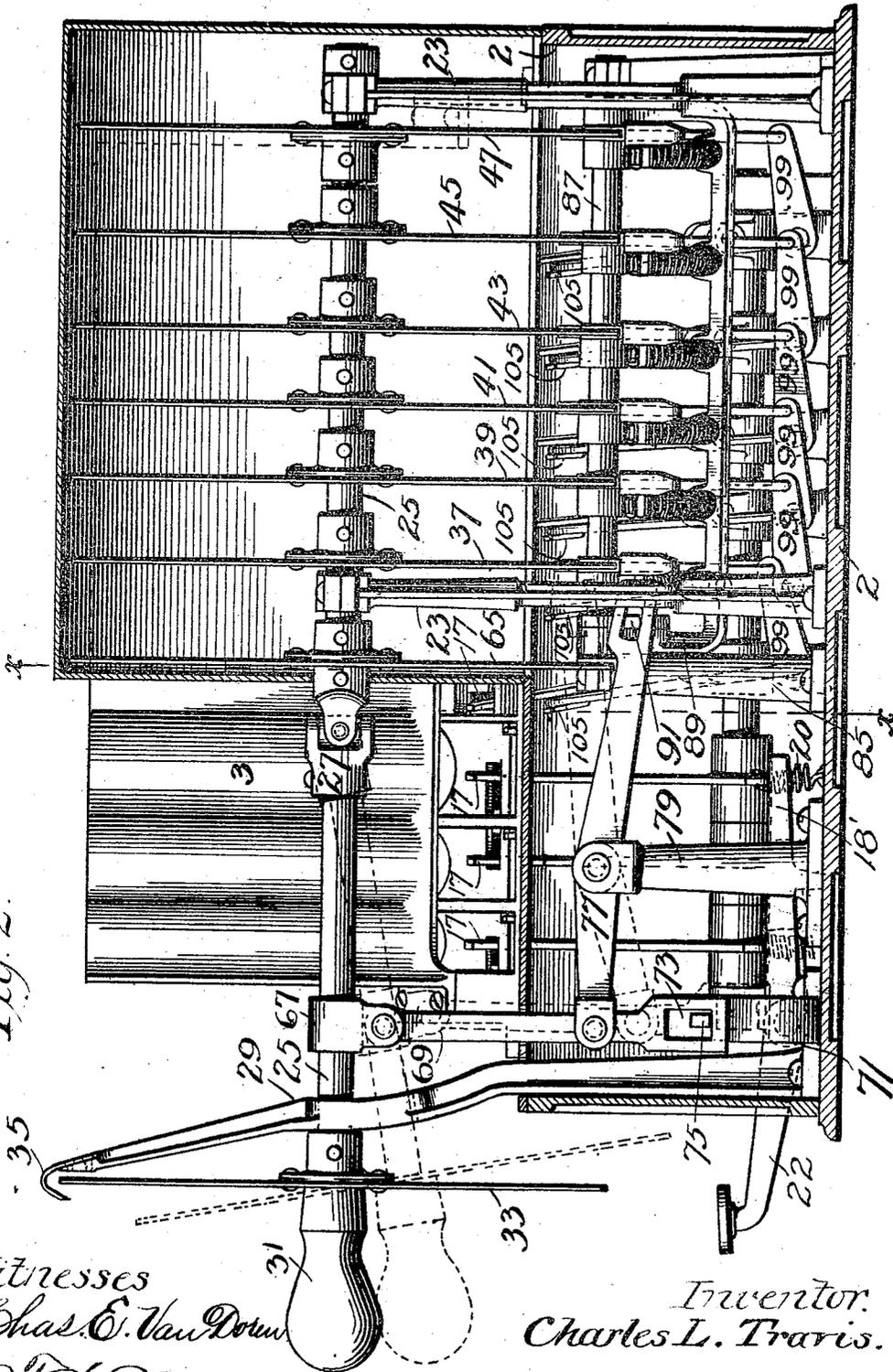


Fig. 2.

Witnesses

Chas. E. Van Doren

H. J. Lyon

Inventor.

Charles L. Travis.

By *Paul & Merwin* atty.

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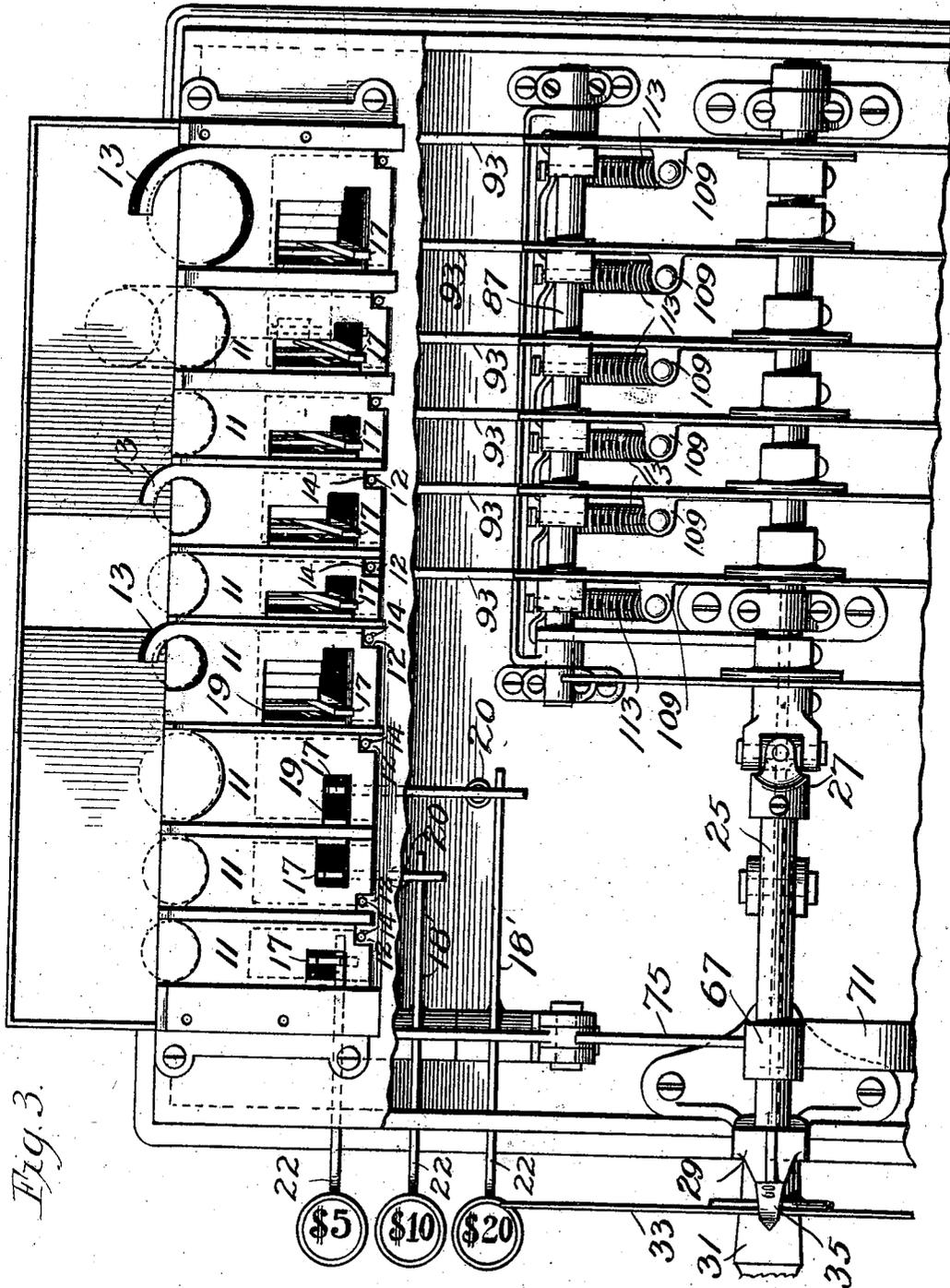


Fig. 3.

Witnesses,
 Chas. E. Van Dorn.
 H. Lyon

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C. L. TRAVIS.

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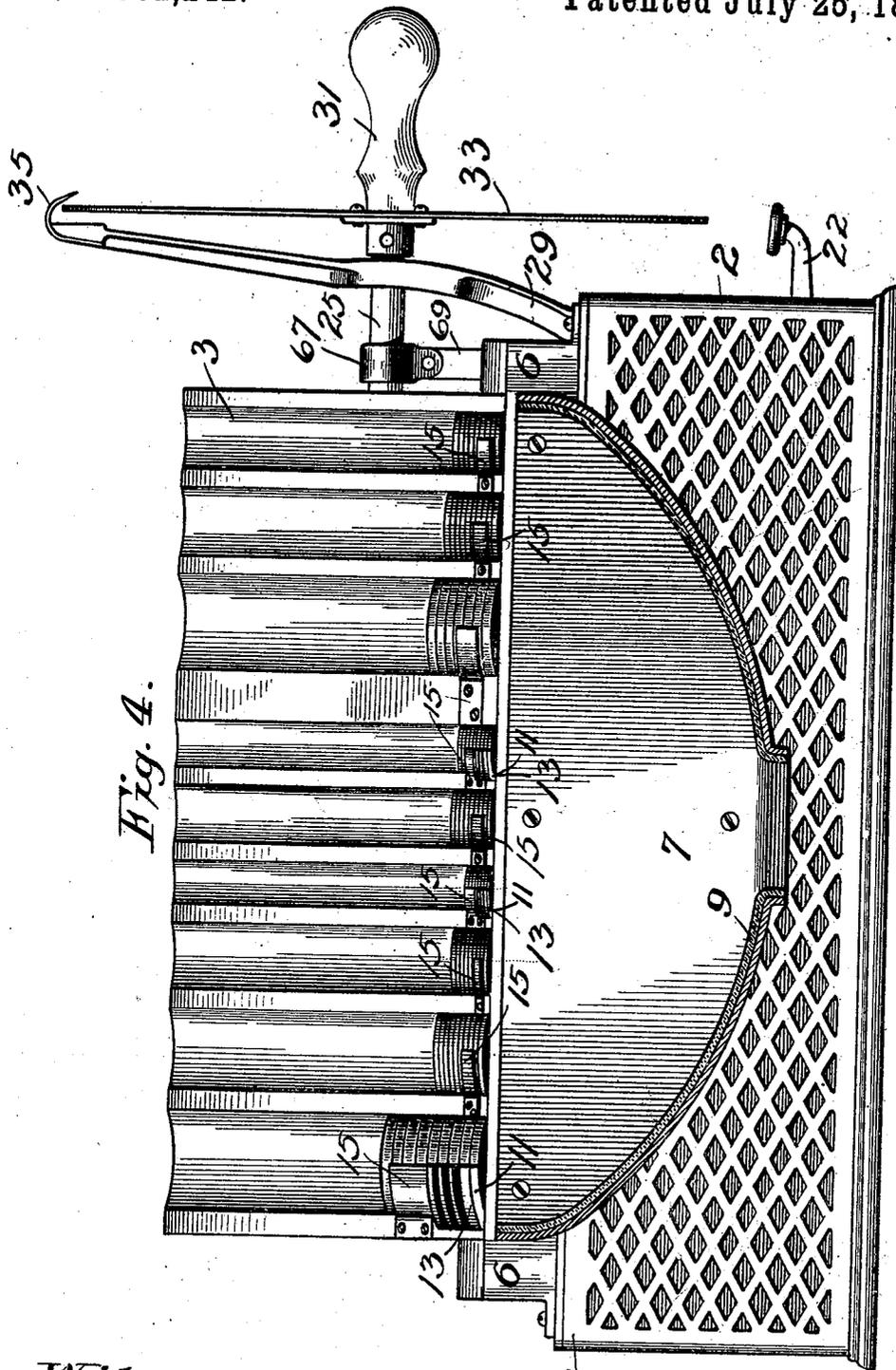


Fig. 4.

Witnesses,
 Chas. E. Van Dorn
[Signature]

Inventor,
 Charles L. Travis,
 By Paul Quirion
 his Attorneys.

(No Model.)

12 Sheets—Sheet 5.

C. L. TRAVIS.

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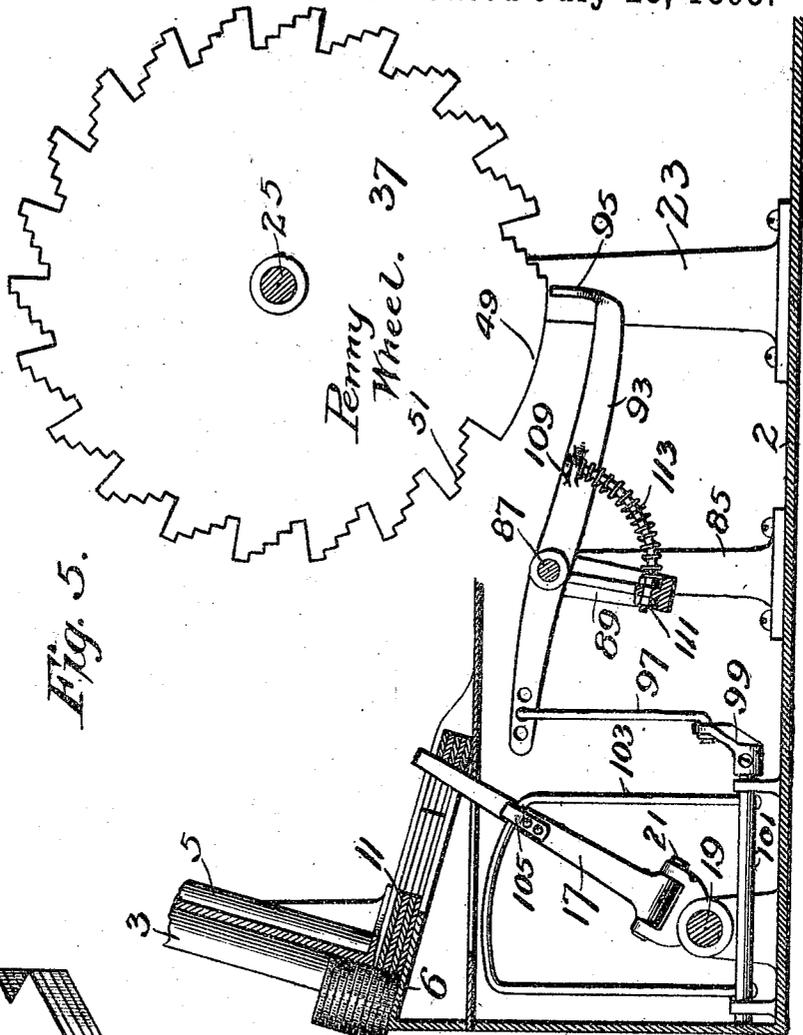


Fig. 5.

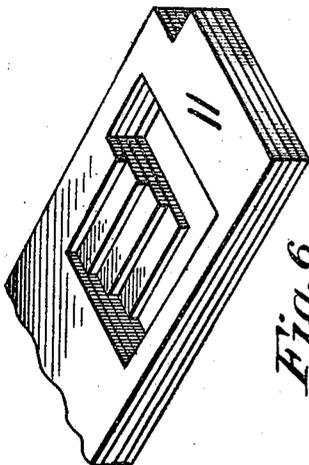


Fig. 6.

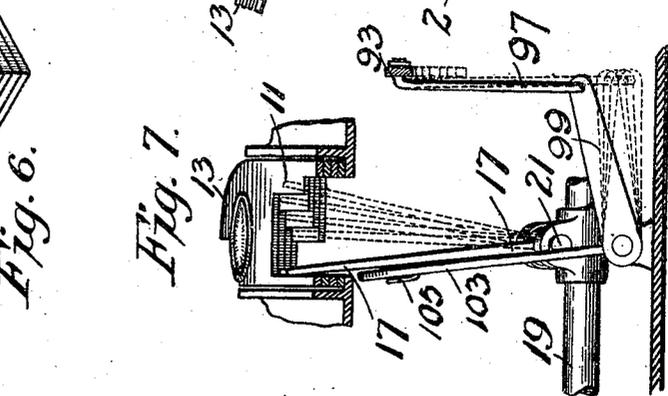


Fig. 7.

Witnesses
 Chal. E. Van Doren
[Signature]

Inventor:
 Charles L. Travis.
 By Paul & Merwin
 his Attorneys.

(No Model.)

12 Sheets—Sheet 6.

C. L. TRAVIS.
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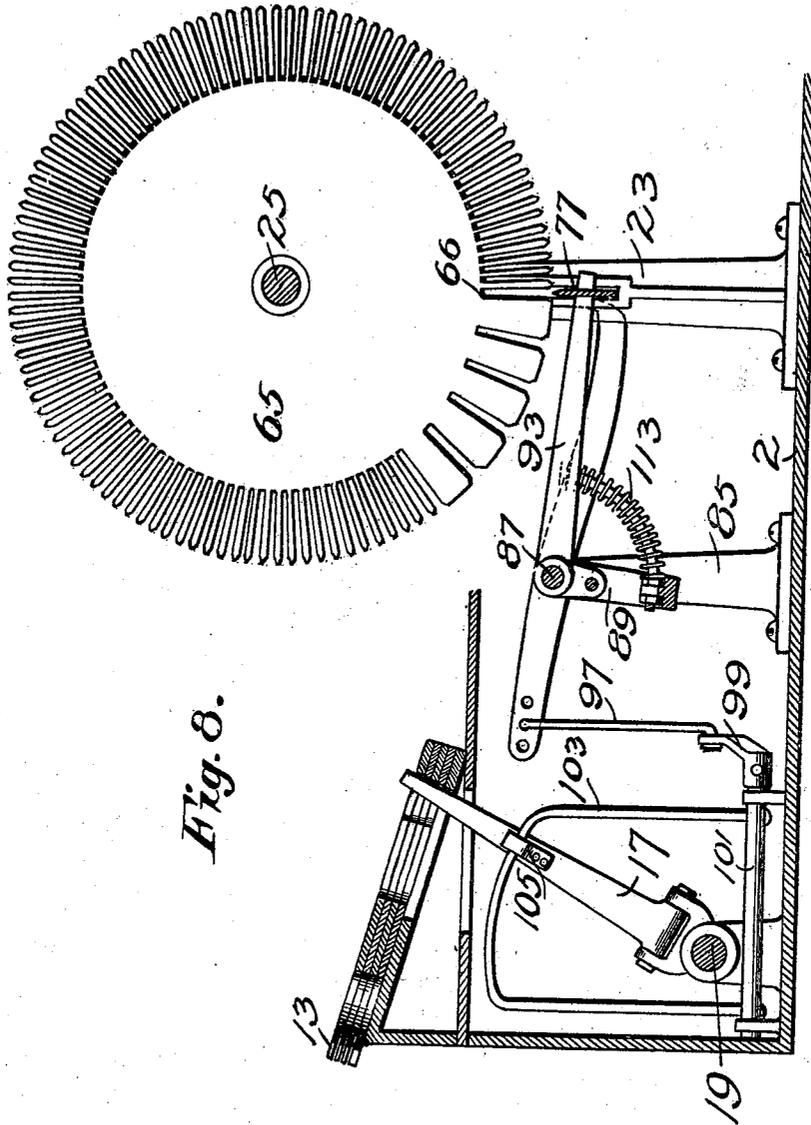


Fig. 8.

Witnesses.
Chas. E. Van Doren.
[Signature]

Inventor,
Charles L. Travis.
By Paul Merwin
his Attorneys.

(No Model.)

12 Sheets—Sheet 7.

C. L. TRAVIS.
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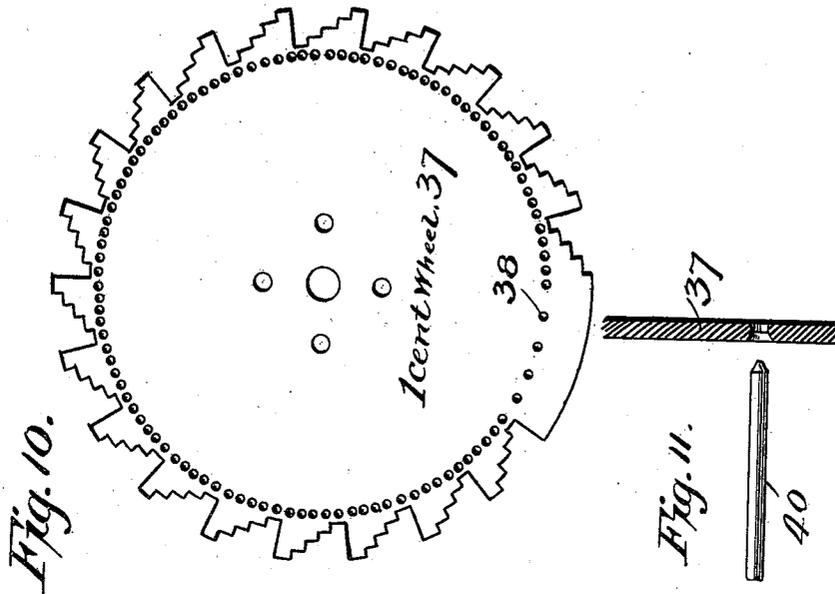


Fig. 10.

Fig. 11.

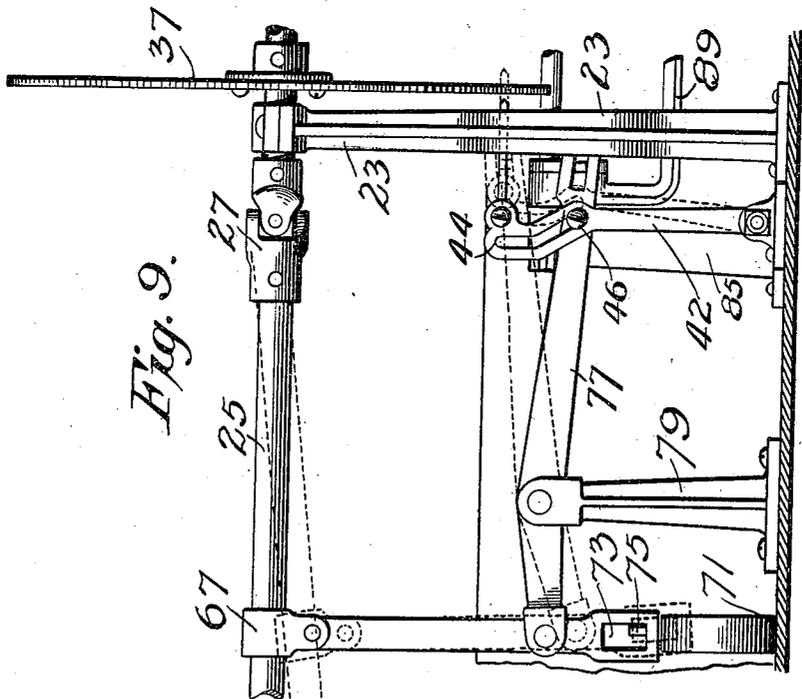


Fig. 9.

Witnesses,
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J. H. You

Inventor,
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By Paul & Merwin
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(No Model.)

12 Sheets—Sheet 8.

C. L. TRAVIS.

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Patented July 25, 1893

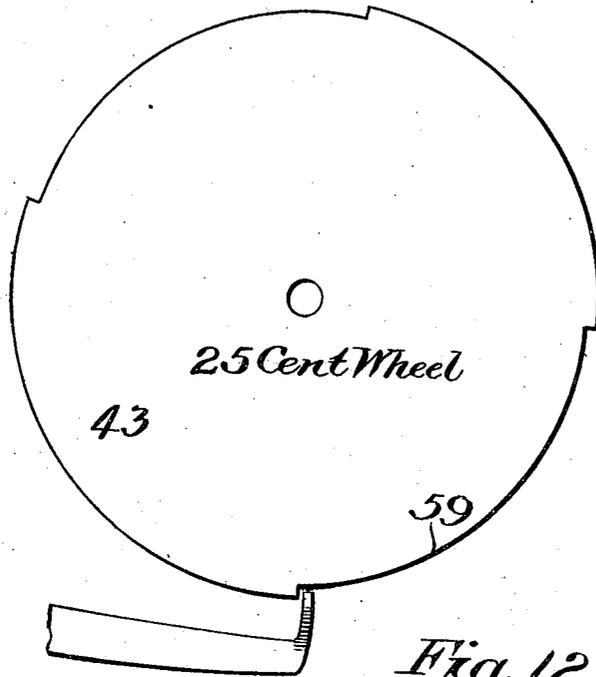


Fig. 12.

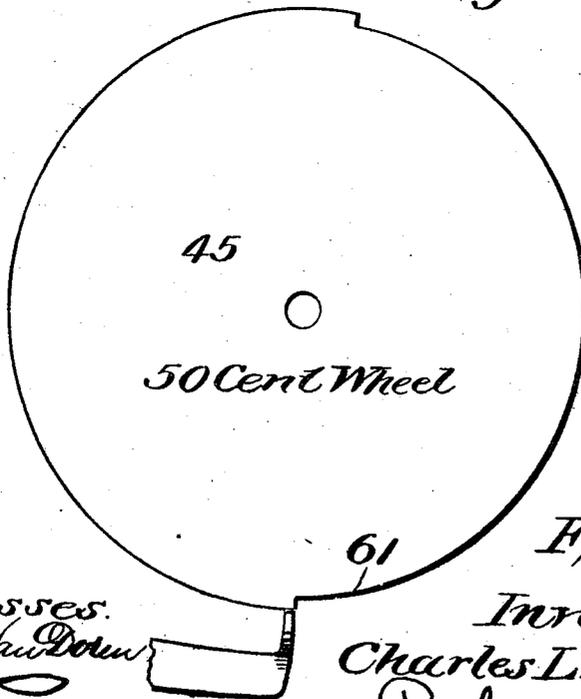


Fig. 13.

Witnesses:
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H. Lyon

Inventor:
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(No Model.)

12 Sheets—Sheet 9.

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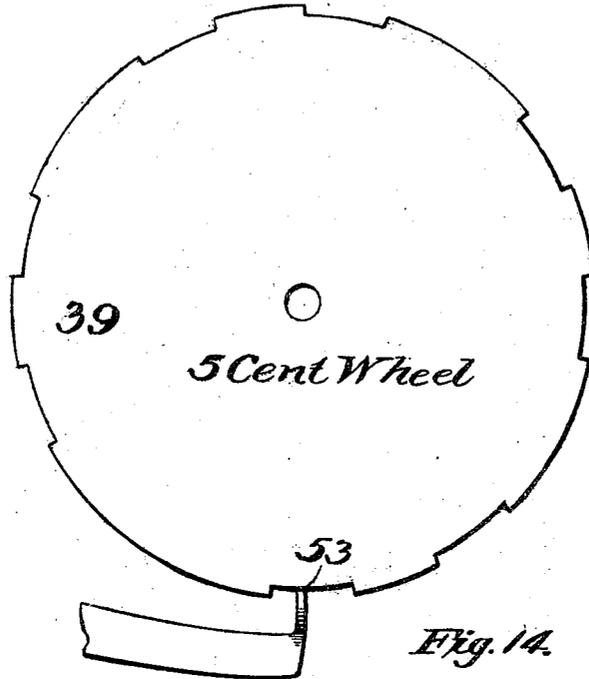


Fig. 14.

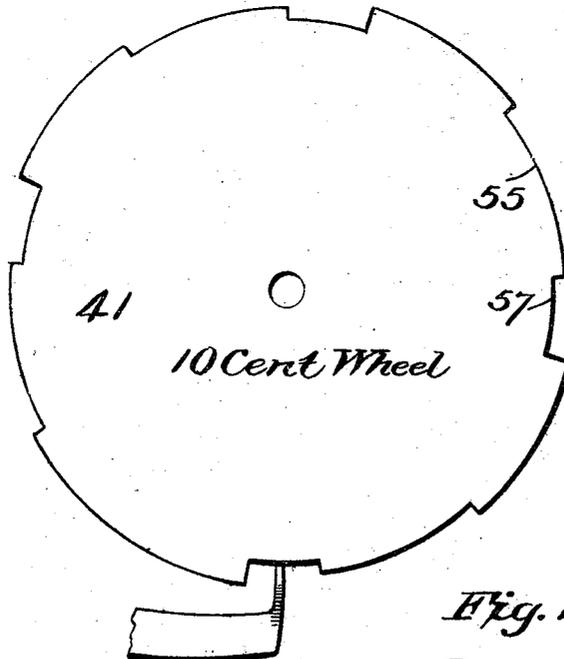


Fig. 15.

Witnesses,
Chas. O. Van Dorn
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[Signature]

Inventor,
Charles L. Travis.
By Paul & Merwin
his Attorneys.

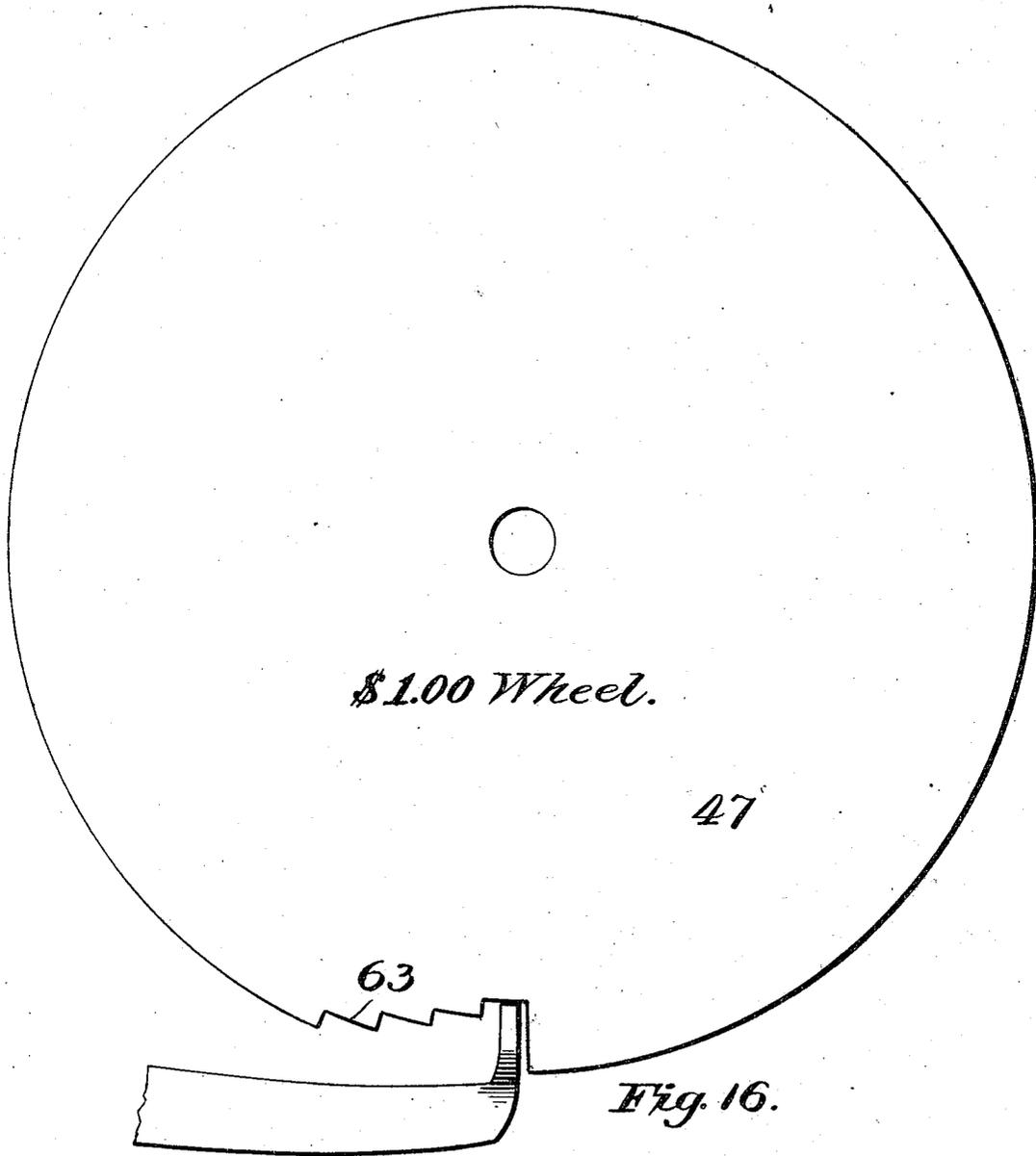
(No Model.)

12 Sheets—Sheet 10.

C. L. TRAVIS.
CHANGE MAKING AND DELIVERING DEVICE.

No. 502,242.

Patented July 25, 1893.



Witnesses.

Chas E. Van Dorn

[Signature]

Inventor,

Charles L. Travis.

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his Attorneys.

C. L. TRAVIS.
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No. 502,242.

Patented July 25, 1893.

	1cent	5cts.	10cts.	25cts.	50cts.	\$1.00
1	1					
2	2					
3	3					
4	4					
5		5				
6	1	5				
7	2	5				
8	3	5				
9	4	5				
10			10			
11	1		10			
12	2		10			
13	3		10			
14	4		10			
15		5	10			
16	1	5	10			
17	2	5	10			
18	3	5	10			
19	4	5	10			
20			10	2		
21	1		10	2		
22	2		10	2		
23	3		10	2		
24	4		10	2		
25			10	2		
26	1		10	2		
27	2		10	2		
28	3		10	2		
29	4		10	2		
30		5	10	2		
31	1	5	10	2		
32	2	5	10	2		
33	3	5	10	2		
34	4	5	10	2		
35			10	2		
36	1		10	2		
37	2		10	2		
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39	4		10	2		
40		5	10	2		
41	1	5	10	2		
42	2	5	10	2		
43	3	5	10	2		
44	4	5	10	2		
45			10	2		
46	1		10	2		
47	2		10	2		
48	3		10	2		
49	4		10	2		
50					50	
51	1				50	
52	2				50	
53	3				50	

	1cent	5cts.	10cts.	25cts.	50cts.	\$1.00
54	4					
55		5				
56	1	5				
57	2	5				
58	3	5				
59	4	5				
60			10			
61	1		10			
62	2		10			
63	3		10			
64	4		10			
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89	4		10	2		
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91	1	5	10	2		
92	2	5	10	2		
93	3	5	10	2		
94	4	5	10	2		
95			10	2		
96	1		10	2		
97	2		10	2		
98	3		10	2		
99	4		10	2		
100						50
200						50
300						50
400						50

Fig. 17.

Witnesses,
Chas. O. Van Doren
[Signature]

Inventor,
Charles L. Travis.
By Paul Merwin his Attys.

(No Model.)

12 Sheets—Sheet 12.

C. L. TRAVIS.

CHANGE MAKING AND DELIVERING DEVICE.

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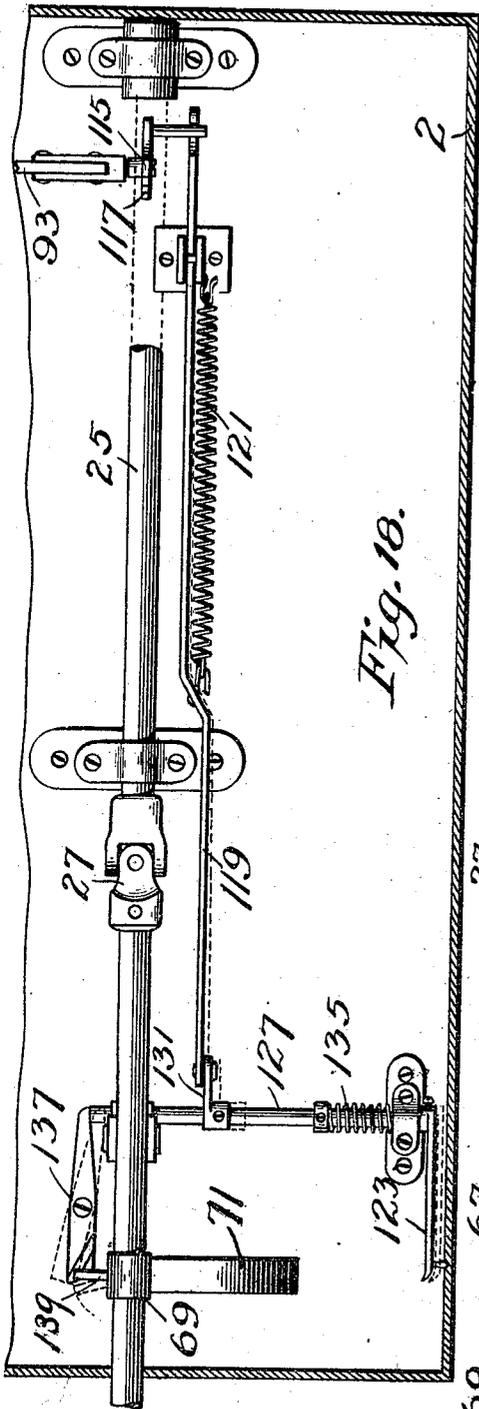


Fig. 18.

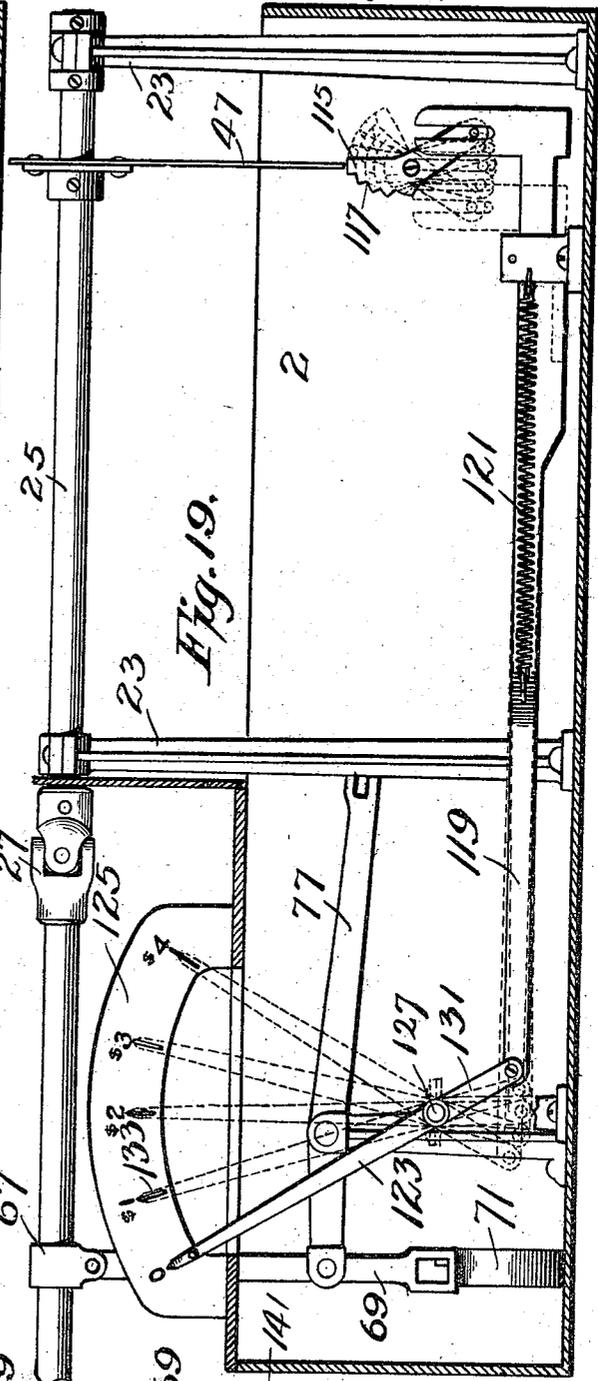


Fig. 19.

Witnesses.
 Chas. E. Van Dorn
[Signature]

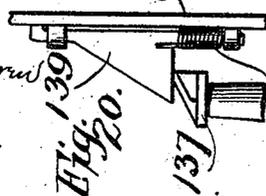


Fig. 20.

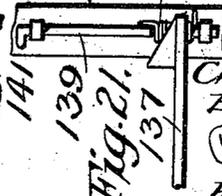


Fig. 21.

Inventor:
 Charles L. Travis.
 By
 Paul & Merwin
 his Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES LESLIE TRAVIS, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO THE AMERICAN CHANGE AND REGISTER COMPANY, OF CHICAGO, ILLINOIS.

CHANGE MAKING AND DELIVERING DEVICE.

SPECIFICATION forming part of Letters Patent No. 502,242, dated July 25, 1893.

Application filed February 4, 1893. Serial No. 460,982. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LESLIE TRAVIS, of Minneapolis, county of Hennepin, State of Minnesota, have invented a certain new and useful Change-Maker, of which the following is a specification.

This invention relates to improvements in machines designed for delivering any desired amount of change from suitable receptacles containing the various coins, and the objects I have in view are to provide a machine that will be simple in construction and easy of operation, and which may be made to deliver, at one operation, any amount of change from one cent to one dollar, or from one cent to four dollars and ninety-nine cents, or which will deliver one, two, three or four dollars separately, and which may also be provided with an attachment for delivering five, ten, or twenty dollars.

Another object of the invention is to provide a machine which will show the amount of change to be delivered when any coin is received in payment for a purchase or payment less than the amount of the coin.

Other objects of the invention will appear from the following detailed description, taken in connection with the accompanying drawings, in which—

Figure 1 is a front elevation, in partial section, of a machine embodying my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a partial plan section. Fig. 4 is a side elevation showing the location and arrangement of the coin receptacles, with the pocket or receiving trough in section. Fig. 5 is a detail elevation and section showing the cents-disk, the penny or cents-receptacle, the delivering slides, and the mechanism for governing said slides from the disk. Fig. 6 is a detail, in perspective, of the slides for delivering the cents. Fig. 7 is a perspective detail and section of the same, showing the operating lever, and showing in dotted lines the positions through which the operating lever is moved under the control of the governing disk when it is desired to deliver one, two, three or four cents. Fig. 8 is a detail elevation showing one form of device for locking the governing disks after they have been brought to the desired position while the slides are

being operated, and showing also one series of slides and the mechanism for operating said slides. Figs. 9, 10 and 11 are detail views showing another form of locking device for the governing disks, said locking device being arranged in connection with the disk that governs the cents-slides. Figs. 12, 13, 14, 15 and 16 are views of the twenty-five-cent disk, the fifty-cent disk, the five cent disk, the ten cent disk, and the dollar disk, respectively, together with portions of the levers by means of which the slides are controlled from said disks. Fig. 17 is a diagram showing the slides that are brought into operation by the governing disk in every operation performed by the machine in making any amount of change from one cent to four dollars. Figs. 18, 19, 20 and 21 are details of an attachment to the lever controlled by the dollar disk so that the amount of change delivered by the machine will be any amount less than one dollar for which the dial is set, together with the number of dollars represented by the position of the handle or pointer of the attachment. Fig. 22 is a detail showing a locking device that is applied, where more than one slide is used in connection with any coin receptacle, for the purpose of preventing any of the slides from being moved by frictional contact with another.

In all of the drawings, 2 represents a suitable casing that incloses the main parts of the machine.

Arranged along one side of the machine is a series of coin receptacles 3, preferably made in the form of inclined open cells or pockets, of suitable size to receive and hold the various coins.

It will be seen by reference to the diagram (Fig. 17) that in making any amount of change from one cent to ninety-nine cents, it will be necessary to deliver from the machine one, two, three, or four cents, at one time, and that it will be necessary in several instances to deliver at the same time two dimes or ten-cent pieces. It will also be necessary in order to deliver two, three or four dollars, at one operation, to provide means for ejecting the corresponding number of coins from the dollar-receptacle. It will also be observed that it is not necessary to deliver at one time more

than one coin of any other denomination. I therefore provide means in connection with the coin-receptacles to deliver one, two, three, or four coins, simultaneously, from the receptacle containing cents and one or two coins from the receptacle containing the dimes or ten-cent pieces, and one, two, three or four coins from the receptacle containing dollars.

The coin receptacles or cells 3 are all preferably formed in an independent piece or casting that is supported upon an inclined plate 6, the surface of the plate preferably forming the bottom of the coin receptacles. In front of the coin receptacles I preferably arrange a coin-chute or trough 7 having an opening through which all of the coins will be discharged, and this chute is preferably provided with a lining 9 formed of rubber, leather or other suitable material. A suitable slot or opening is formed at the lower end of each coin receptacle extending through its rear wall, and suitable coin slides 11 are arranged so as to rest upon the plate 6 and be capable of moving back and forth through the openings in the lower part of the coin receptacles. Each slide is formed at its forward end with a recess that is arranged to fit upon and partially surround the lower coin in the receptacle.

The slides for the five-cent piece, the twenty-five cent piece, and the fifty-cent piece are single; that is to say, there is but a single slide for each of these receptacles, as it is never necessary to eject more than one coin at a time from any one of these receptacles. The forward ends of these slides are therefore preferably made as shown in Fig. 3 with a substantially semicircular recess which fits against the rear side of the coin. In connection with each of these receptacles I provide, preferably, the stationary guard 15 that is secured to the wall of the receptacle and projects partially around the front or outer side of the coin just above the upper surface of the lower coin. This guard is, preferably, located at such point as not to interfere with the movement of the lower coin no matter whether it may be of full thickness or not while it prevents the outward movement of the coin, not engaged by the slide. If this guard were omitted one or more of the coins resting upon the lower one might be moved out by their frictional contact with the lower coin. A similar stationary guard is also placed upon the coin receptacles containing the cents, dimes, and dollars, but in the case of the cents-receptacle it is placed above the fourth coin, and in the case of the dimes-receptacle above the second coin, and in the case of the dollars-receptacle above the fourth coin.

I also provide receptacles for containing five-dollar gold pieces, ten-dollar gold pieces and twenty-dollar gold pieces, and in connection with each of these receptacles I provide a slide 11 and a guard 15; these guards being similar to those already described and located at a point near the lower end of the receptacle

so as to permit only the lower coin to be thrown out by the slide. The forward end of each of these slides is similar to that of the slides already described and these slides are operated by independent keys as hereinafter described.

The slides that are used in connection with the cent, the dime, and the dollar receptacles are similar to those already described, with the exception that each of said slides is provided with a curved guard or lip 13 that extends partially around the front side of the coin inclosed by the end of the slide and prevents its being moved out by frictional contact with the coin below, and serves the same purpose when any of the lower slides are to be used, as does the guard 15 when all the slides are used.

It will be observed that the upper surface of the plate 6 forms a ledge upon which the coins rest, this ledge constituting, as before stated, the bottoms of the receptacles 3. It will also be noted that these receptacles are so located in reference to the edge of the ledge that the coins project for about one-third of their diameter beyond the front of the ledge. It will also be noted that the guards 15 and the lips 13 extend only about half way around the front of the coin. With this construction and arrangement, when it is desired to remove all of the coins from the receptacles, the stack of coins in any receptacle may be grasped between the thumb and finger of the operator and lifted upward in the receptacle until they are above the top of the guard 15 and then they may be removed altogether from the receptacle, and by a reversal of this movement the coins are put in.

By again referring to Fig. 17 it will be seen that by a proper movement of a sufficient number of the slides any desired amount of money from one cent to ninety-nine cents or from one cent to four dollars and ninety-nine cents, may be thrown out from the coin-receptacles. It will also be seen that if the slides are moved properly it will be impossible for the machine to deliver any other than the correct amount. I provide means by which the slides may be independently or simultaneously operated for this purpose. Each of the said slides 11 is provided with a slot into which projects an operating lever 17. These slots 19 are of L-shape in each of the slides except those that are operated by the independent keys, and in those cases where two or more slides are provided, arranged one above another, the part of the slot corresponding to the perpendicular portion of the L is successively wider in the slide above the lower one. The operating lever 17 projects into these slots and said levers are so arranged as to be simultaneously moved back and forth by being turned on their axes as hereinafter described. When the lever moves back and forth in the long part of the slot the slide remains stationary; when the lever is moved into the transverse or short part of the slot

before being given a forward movement it engages the slide and moves it also, and upon the return of the lever one slide is returned to its normal position. This lateral movement of the lever takes place prior to its forward movement, and whether it has any lateral movement or not is determined by the governing disk hereinafter described. Where there are several slides arranged one above the other, if the lever is given a certain amount of lateral movement the lower slide only is used; if it is given a greater amount of lateral movement both the lower and the second slide are moved; and so on in reference to the third and fourth slides, the position of the lever laterally prior to its forward movement determining whether no slide, one slide or more will be moved. The levers 17 are all secured upon a rock-shaft 19 and the forward and back movement of the lever is produced by the rocking of this shaft, each of said levers being formed in two parts, said parts being joined together by a pivot pin 21 arranged at right angles to the axes of the shaft 19, whereby said levers 17 are capable of a lateral movement as before stated independently of each other while all have a simultaneous and equal forward and back movement, longitudinally of the slides, which is imparted to them by the rocking of the shaft 19.

Mounted in suitable bearings in standards 23 is a shaft 25, formed in two parts connected together by a universal joint 27, the forward end of the shaft passing through a slot in a standard 29 and being provided with a handle 31 and carrying a dial 33. The forward part of the shaft is normally held, by means hereinafter described, in line with the rear part thereof but is capable of being depressed or moved down into the position indicated in dotted lines in Fig. 2. This shaft is arranged to rotate freely in either direction and for the purpose of rotating it and for depressing its forward part the operator grasps the handle 31. The standard 29 preferably extends to the top of the disk 33 and it is provided with a suitable point 35. The disk 33 is preferably provided at or near its circumference with a series of spaces marked successively from one cent to ninety-nine cents and from one dollar to four dollars as shown. A second series of figures from one cent to ninety-nine cents is arranged inside the outer series but in the reverse direction; a third series of figures from one cent to forty-nine cents is arranged inside the second series running in the same direction but beginning opposite the number "51." A fourth series running from one cent to twenty-four cents is arranged inside the third series and running in the same direction but beginning opposite the number "26." The first and second series of numbers preferably do not extend entirely around the dial, the remaining space being occupied by the numbers 1 to 4, each preferably provided with the dollar sign. I do not, however, wish to be understood as limiting

myself to the use of any particular arrangement of numbers or characters on this dial, as the same may be varied to suit the inclination or convenience of the user and the denomination and character of the coins with which the machine is to be used. I consider this arrangement, however, preferable for use in connection with coins of the United States. With this dial the outer row of numbers indicates the amount of money that will be delivered by the machine when the dial has been turned so as to bring any number of this outer circle opposite the pointer, and the handle is depressed as hereinafter described. The purpose of providing the other series of numbers will be hereinafter described.

Mounted upon the shaft 25 in the rear of the universal joint is a series of governing disks 37, 39, 41, 43, 45 and 47, and these disks govern respectively the lateral positions of the levers connected with the cent-slides, the five-cent slide, the ten-cent slides, the twenty-five cent slide, the fifty-cent slide and the dollar slides. The outline of the cent-disk 37 is shown in Figs. 5 and 10, and as will be seen this disk is provided with one blank space and with a series of progressively deeper notches 51, each of said notches being formed with a succession of steps, four in number, extending from the outer circumference of the disk toward its center, the opposite wall of the notch being straight and extending on a radial line from the deepest notch or recess to the circumference of the disk. The five-cent disk, (shown in Fig. 14,) is provided with a series of recesses 53 all of the same depth alternating with spaces that are of the same size as the disk. The ten-cent disk, (shown in Fig. 15,) is provided with a series of recesses 55 and 57, the recesses 57 being of greater depth than the recesses 55. The twenty-five cent disk, (shown in Fig. 12,) is provided with the two recesses 59, and the fifty-cent disk (shown in Fig. 13), is provided with a single recess 61 extending nearly half around its circumference. The dollar disk, (shown in Fig. 16) is provided with one recess 63, one wall of which is formed in four steps similar to those on the cent disk.

As shown in Fig. 2, the shaft 25 is also provided with the locking disk 65, said disk being also shown in Fig. 8. This disk however may be dispensed with and the lock applied to the cents-disk as hereinafter described. The outer end of the shaft 25 passes through a collar 67, to which is pivoted the upper end of a standard 69, the lower end of said standard resting upon a spring 71 and being provided with a slot 73 into which projects a pivoted lever 75. To this standard is also pivoted the end of a lever 77, said lever being pivotally supported upon a suitable standard 79. The opposite end of the lever 75 is connected preferably by a pin 81 and yoke 83 with the rock shaft 19 so that at each downward movement of the forward part of the shaft 25 and the handle 31 the rock shaft 19

is turned in its bearings and all of the levers 17 are simultaneously thrown forward. As soon as the handle 31 is released the spring 71 raises the standard 69 and the shaft 25 and turns the rock-shaft 19, and the levers 17 are carried thereby back to their normal positions.

Mounted in standards 85 is a shaft 87 extending preferably parallel to the shaft 25. A yoke 89 is secured upon this shaft so as to turn therewith, the ends of the yoke being arranged near the opposite ends of the shaft. An arm 91 is connected to this yoke and shaft and engages the end of the lever 77.

Mounted upon the shaft 87 is a series of independent levers 93, there being one of said levers for each of said governing disks hereinbefore described, said levers being preferably provided with the upturned ends 95 which when the levers are in their normal positions stand at a short distance from the peripheries of the governing disks. The opposite ends of the levers 93 are connected by links 97 with the crank arms 99 on the short shafts 101, the said shafts extending at right angles to the axis of the rock shaft 19 and being provided with the loops or bails 103, the upper portions of which are engaged by a clasp 105 on the lever 17.

The yoke or bail 89 is provided with the series of curved rods 107 which pass freely through loops 109 on the levers 93 and have their opposite ends secured to said yoke by means of the nuts 111. A spring 113 surrounds each of said rods bearing at one end upon one of said nuts 111 and at its opposite end upon the loop 109 on the lever 93. It will be seen that by this means when the handle 31 is depressed, the yoke 89 through the lever 77 and the arm 91 will be turned, the lower end of the yoke being swung toward the governing disks. This movement of the yoke through the springs 113 tends also to move the upturned ends 95 of the levers 93 toward said disks and this movement rocks the bail 103 and gives the lever 17 a lateral movement. If, however, the end of any lever is opposite the part of the corresponding disk that is of the greatest radius the levers will encounter the periphery of the disk and no material amount of movement can be given to it, in which case the spring 113 will be compressed and the end of the rod 107 will project through the loop 109 and the corresponding lever 17 will be given no lateral movement; hence as the shaft 19 is rocked this lever will move forward in the long portion of the slot in the coin-slide and the slide will remain stationary. If, however, referring to the cent-disk 37, (shown in Fig. 5,) the disk is in such position that one part of one of its notches or recesses is opposite the end of the lever 95 said lever will be free to move with the yoke 89 until the end of the lever strikes the edge of the disk and the extent of its movement will be determined by the position of the disk. This will also determine the amount

of lateral movement given by the lever 17, and this lateral movement will in like manner determine the number of slides that will be moved by the lever and the number of coins that will be thrown out of the cents receptacle. The operation is exactly similar in relation to each of the other disks and the slides are controlled in exactly the same way. The outlines of the governing disks are shown in the various figures hereinbefore referred to and the positions of the recesses in respect to one another on the various disks and the relation of the disks to the dial is illustrated by the diagram Fig. 17. It will be noticed that the standard 69 is slotted where it is connected with the lever 75, and that the said slot 73 is of sufficient length to allow considerable movement to said standard 69 before the lever 75 begins to move. The object of this is to permit the first downward movement of the shaft and handle 25 and 31, to lock the disks and to give the levers 17 the proper lateral movement, through the governing disks and the levers controlled by them, before any movement is given to the rock shaft 19 and before any upward movement is given to the lever 17. This is accomplished by means of the lost movement permitted between the standard 69 and the lever 75.

For the purpose of locking the disks at the beginning of the downward movement of the handle 31 I have provided, as shown in Fig. 2, a disk 65 having a series of notches 66, arranged so that the first movement of the lever 77 will be to engage one of these notches and as this disk is fastened to the shaft 25 it will immediately lock said shaft, the dial, and all of the disks carried by the shaft. As an equivalent of this construction I may provide one of the disks, for example the disk 37, (as shown in Figs. 9, 10, and 11) with a series of holes 38, preferably beveled at one side, with a pin 40 arranged in an opening in the standard 23, this pin being connected to a pivoted plate 42 having an inclined slot 44 engaged by a screw or stud 46 on the lever 77. The first movement of the lever 77 will project the pin 40 through the hole 38 that may be opposite the said pin and thereby the shaft 25 will be locked as hereinbefore stated. I prefer, also, to provide each of the slides 11 with a notch 12 in its rear end and to arrange a stop pin 14 in position to engage this notch when the slide is returned to its normal position, thereby insuring the stopping of the slide at the same point. I also prefer to provide a locking device that will lock all of the slides and thus prevent any slide from being moved by frictional contact with another slide. This device I have omitted from Fig. 3, and the other general figures of the drawings for greater clearness but have shown it in detail in Fig. 22. As there shown each of the slides is provided upon its upper surface with a pin 16. A plate 18 is pivoted above the slide and is provided with a slot 20 adapted to engage all of said pins and thereby to lock them all.

A spring 22 is connected to this plate and engages the lever 17. This spring does not interfere with the longitudinal movement of the lever but it causes the plate 18 to move laterally with said lever thereby releasing one or more of the slides as may be required by the extent of the lateral movement of said lever.

While I do not consider it necessary to apply the locking device to the lower slide of a series or to a single slide where but one is used it could of course be applied to these also and I have thus shown it applied to all of the slides in Fig. 22.

It will be understood from the foregoing description that the machine is primarily designed to deliver any amount of change from one cent up to and including ninety-nine cents, and that it will also deliver one dollar, two dollars, three dollars or four dollars, but that when it delivers one or more coins from the dollar receptacle it does not deliver any coins from any of the other receptacles. With this arrangement for instance, if a two-dollar bill or five-dollar coin were tendered in payment, to the user of the machine, of an amount less than one dollar it would be necessary to operate the machine twice, by one operation delivering from the machine the fractional change less than one dollar, whatever the amount might be, and by another operation delivering the necessary coin or coins from the dollar receptacle. It would be convenient however, in such instance to deliver the full amount of change at once and for this purpose, I prefer to provide means by which the machine may be made to simultaneously deliver the fractional change plus one, two, three or four coins from the dollar receptacle, so that any amount of change less than five dollars may at one operation be delivered from the machine. For this purpose I provide the lever 93 that operates in connection with the dollar disks with a swinging plate 115 that takes the place of the upturned end of the lever as ordinarily constructed. This plate is provided with a series of steps 117 as shown in Fig. 19 and it is connected by a pin and slot to a sliding rod 119. A spring 121 tends to hold this rod normally in position with the highest point of the plate 115 under the disk 47 and when this plate is in this position the operation is the same as it would be if the lever 93 were provided with the upturned end corresponding with the upturned ends of the other levers, the connection of the plate 115 to the rod 119 by the pin and slot not interfering with the movement of the lever 93. A lever 123 is connected to the rod 119 and it extends to a point outside the casing and moves over a plate 125 provided with a series of numbers, as shown, indicating 0, \$1, \$2, \$3, \$4. The lever or handle 123 is connected to a shaft 127 and this shaft is connected to the rod 119 by means of the crank arm 131. The shaft 127 is capable of a slight longitudinal movement and

the handle 123 is arranged to engage either one of a series of notches 133 upon the plate 125. A spring 135 on the shaft 127 tends to hold the handle 123 in engagement with one of the notches 133 and thereby prevent the rod 119 from returning to its normal position under the tension of the spring 121. A short lever 137 is arranged with its end bearing against the end of the shaft 127. The spring 135 tends to hold the shaft 127 and the lever 137 in the position shown by full lines in Fig. 18. Upon the side of the standard 69 is a swinging lug 139 having a beveled upper surface and an abrupt under surface. A spring 141 tends to hold this lug in position at right angles to the side of the standard 69 as shown in full lines in Fig. 18 and in the detail Figs. 20 and 21. The end of the lever 137 is also inclined as shown in Figs. 18, 20 and 21. Upon a downward movement of the standard 69 the abrupt lower end of the lug 139 strikes the inclined upper surface of the lever 137 and said lug is swung into the position shown by dotted lines in Fig. 18 and passes said lever without moving it. Upon the upward movement of said standard the inclined upper surface of the lug 139 engages the under side of the lever 137, which is not inclined, and turns said lever into the position shown in dotted lines in the same figure. This gives a movement to the shaft 137 longitudinally in its bearings, releases the handle 123 from the notch 133 and permits the rod 119 to be returned to its normal position and to turn the plate 115 so as to bring its highest point under the disk 47. If therefore before a downward movement of the operating handle, the handle 123 is moved to indicate \$1, \$2, \$3, or \$4 the machine will, when it is operated, deliver the corresponding coin or coins from the dollar receptacle plus the amount delivered from the other receptacles. It will thus be seen that the machine is capable of making change from one cent to four dollars and ninety-nine cents by a single operation.

The levers 17 that are connected to the independent slides for delivering the gold coins are mounted loosely upon the shaft 19 and are provided with the horizontally projecting bell-crank arms 18' to which are connected the springs 20. Independent key-levers 22 properly marked, are arranged so as to project from the front of the machine and these levers extend under the corresponding arms 18' so that by operating any one of the levers 22 the corresponding slide is moved and the proper coin is delivered.

As before stated the dial is provided with the several series of numbers arranged as shown in Fig. 1. The outer circle of numbers indicates the amount of money that will be delivered by the machine. The other series of numbers show respectively the amount of a purchase or the amount that is to be retained from a dollar, a fifty-cent piece or a twenty-five cent piece when the machine delivers the amount of change represented by

the opposite number in the outer circle. For example, if a dollar is tendered in payment of a purchase of forty-one cents the user of the machine may turn the dial so as to bring the number 41 in the second row of figures opposite the pointer, when the number 59 in the outer row of figures, will show the amount of change that is to be returned and the amount that the machine will deliver, and in a similar way the machine may be used to make change as well as to deliver the change when a fifty-cent piece or twenty-five cent piece is presented in payment for an amount less than the amount of either of those coins.

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

1. The combination in a change maker, of a series of coin receptacles, a series of slides for ejecting the coins therefrom, means for operating said slides, a series of governing disks each of said disks controlling the movement of the slide or slides, for one receptacle and means for setting said disks so as to cause any desired combination of slides to be operated.

2. The combination in a change maker with a series of coin receptacles, a series of slides therefor, operating levers for moving said slides, means for operating said levers, a series of governing disks controlling the engagement of said levers with said slides, and means for setting said disks to cause any desired combination of slides to be operated, substantially as described.

3. In a change maker, the combination with a rotary shaft provided with a series of governing disks, a series of coin receptacles, each disk controlling the movement of the slide or slides for one receptacle, slides for said receptacle, and means controlled by said disks for operating said slides, substantially as described.

4. The combination in a change maker, of a series of coin receptacles, coin ejecting slides therefor, operating levers for moving said slides, means for removing said levers, and a series of governing disks for causing one or more of said levers to engage said slides, substantially as described.

5. The combination in a change maker with a series of coin receptacles, of slides for ejecting coins therefrom, operating levers, means for operating said levers, and governing disks for causing the levers of the slides that are to be moved to be brought into engagement with the slides, and those of the slides that are not to be moved to be held out of engagement therewith, substantially as described.

6. In a change maker, the combination, with a series of coin receptacles, and a series of slides therefor, a series of operating levers, means for simultaneously moving all of said levers, and a series of governing disks, and connecting means for engaging one or more of said levers with the corresponding slide or slides, substantially as described.

7. The combination in a change maker, of a series of coin receptacles, a series of slides therefor, a rotary shaft provided with a governing disk for the slide or slides of each receptacle and with an indicating dial, operating means connecting said shaft with said slides, and governing devices between said disks and said slides, substantially as described.

8. The combination with a series of coin receptacles, the slides therefor, a rotary shaft provided with a series of governing disks, a series of levers for operating said slides, means connected with said disks for governing the position of said levers, and means for simultaneously moving all of said disks, substantially as described.

9. The combination with the coin receptacle 3 and slides 11, provided with the L-shaped slot, the operating lever 17 engaging said slide in said slot, means for giving a longitudinal movement to said lever, and means for giving a lateral movement to said lever to cause it when desired to move into the short part of the slot and thereby cause said slide to move with it in its longitudinal movement, substantially as described.

10. The combination with the coin receptacle 3 and the coin ejecting slide 11, provided with the L-shaped slot, of the lever 17 projecting into said slot and capable of both a longitudinal and lateral movement, means whereby the said lever may be given a lateral movement to bring it into the short part of the slot, and means for giving a longitudinal movement to the lever, whereby, when the lever moves in the long part of the slot, the slide remains stationary, and when the lever is in the short part of the slot the slide moves with it, substantially as described.

11. The combination with the coin receptacle 3 and the slide 11, of the operating lever 17 adapted to move without engaging said slide, or to engage said slide and move it with it, a governing disk connected with said lever so as to govern its engagement with said slide, and means for operating said lever, substantially as described.

12. The combination with the coin receptacles, provided with a series of slides 11 having L-shaped slots therein the operating levers 17 projecting into said slots, a rotary shaft consisting of two parts joined together, one of said parts being capable of a downward movement in addition to its rotary movement, a series of governing disks mounted upon the stationary part of said shaft, an indicating dial mounted upon the movable part, means connecting said disks with said levers 17 for causing said levers to be simultaneously moved when said shaft is depressed, substantially as described.

13. The combination with the coin slides and the operating levers, of the series of governing disks provided with recesses or notches in their peripheries, means for giving said levers 17 a lateral movement, and means for

giving said levers a longitudinal movement, the lateral movement of said levers being governed by said disks, substantially as described.

5 14. The combination with the coin receptacle provided with a suitable slide, of the operating lever 17 secured upon the rock-shaft 19 and capable of a lateral and a longitudinal movement, a governing disk provided
10 with one or more recesses in its periphery, means for turning said shaft 19, and means governed by said disk for giving a lateral movement to said lever 17, substantially as described.

15 15. The combination with the coin slide, of the operating lever 17 arranged to move longitudinally and laterally in respect to said slide, the rock shaft 19 for imparting a longitudinal movement to said slide, the lever 93,
20 means for moving said lever into engagement with the periphery of said disk, and means connecting said lever with said lever 17 for the purpose set forth.

16. The combination with the coin slide
25 and its operating lever 17, of the governing disk, the lever 93 arranged to engage the periphery of said disk and have its movement limited thereby, the yoke 89 provided with a rod passing through a loop on said lever, the
30 spring 113 engaging said lever and said yoke, the bail 103 engaging the lever 17, and a connection between said lever 93 and said bail, for the purpose set forth.

17. The combination with a coin receptacle,
35 of two or more slides 11 connected therewith and provided with L-shaped slots, the long part of said slots being successively withdrawn in the upper slides, an operating lever
40 projecting into said slot and capable of moving laterally or longitudinally in respect to the slide, and means governing the lateral movement of the slide, whereby it is caused to move without moving either slide or to move
45 one or more of the slides as may be desired, substantially as described.

18. The combination with the ledge or plate 6, of the series of coin receptacles 3 having open fronts and arranged upon said plate so
50 as to cause the coins resting thereon to partially project over the front edge of the ledge, whereby the coins may be removed by grasping the upper and lower coins substantially as described.

19. The combination with the coin receptacle 3, of the slide 11 provided with the guard 13 projecting partially around the front end
55 of the slide, for the purpose set forth.

20. The combination, with the ledge or plate 6, of a series of coin-receptacles having open
60 fronts and arranged upon said plate so as to cause the coins resting thereon to partially project over the front edge of the plate, the slides 11, and the guards 15 secured upon said receptacles and projecting partially around
65 the front thereof directly above said slides, substantially as and for the purpose set forth.

21. The combination with the coin recepta-

cle 3, of the slide 11 provided with the guard 13 projecting partially around the front end
70 of the slide, and the guard 15 secured upon the receptacle 3 and projecting partially around its front directly above said slide, for the purpose set forth.

22. The combination with the coin receptacle and the series of slides 11 provided with
75 the L-shaped slot, the operating lever 17 projecting into said slot, means for moving said lever both laterally and longitudinally in said slot, the locking plate 18 arranged to engage
80 one or more of said slides and adapted to partake of the lateral movement of said lever, for the purpose set forth.

23. The combination with the coin receptacle arranged with an open front and adapted
85 to hold the coins so that they project beyond the bottom of the receptacle, of the guard 15 secured upon said receptacle and projecting partially around the front of the receptacle, and the slide 11 arranged below said guard,
90 substantially as described.

24. The combination with the rotary shaft
25, formed in two parts, connected by a universal joint, one part of said shaft being mounted in standards 23 and provided with a series of governing disks, the other part of said shaft
95 being mounted in a yielding standard and provided with an indicating dial and an operating handle, a series of coin receptacles, coin slides connected therewith, means controlled
100 by said disks for determining the slides that are to be moved, and means operated by the movable part of said shaft for moving said slides, substantially as described.

25. The combination with a rotary shaft,
105 provided with a series of governing disks and an indicating dial, of a series of coin receptacles, and a corresponding series of coin slides, each of said disks controlling the movement of the slide or slides for one receptacle and
110 means for operating said slides whereby the slides will be moved to eject from the coin receptacles the amount of money indicated by the position of said dial, substantially as described.

26. The combination with the rotary shaft
115 provided with a series of governing disks and with an indicating dial, of a series of coin receptacles and a corresponding series of coin slides, a series of operating levers for moving
120 said slides, and means for first, locking said disks after the dial has been turned to indicate the amount of change wanted; second, moving the operating levers into position to engage the slides that must be moved to give
125 the amount of change indicated by the dial; and third, moving said levers and the slides that they engage to eject the necessary coins, substantially as described.

27. The combination with the shaft 25,
130 formed in two parts, connected together by a universal joint, one part of said shaft being mounted in standards 23 and provided with a series of governing disks, and a locking device for engaging one of said disks, ar-

ranged to be operated by the downward movement of the other part of the shaft, substantially as described.

28. The combination with the shaft 25 and the series of disks mounted thereon, one of said disks being provided with a series of holes 38, the locking pin 40 arranged to engage any one of said holes, the movable standard 69 connected to said shaft, the lever 77 connected to said standard, the slotted plate 42 connected to said lever and also connected to said pin, whereby, as said lever is moved the pin is projected into engagement with said disk, substantially as described.

29. The combination with the coin receptacles and their slides, of the rotary shaft provided with the series of governing disks, means controlling said slides from said disks, and the indicating or index dial provided with two series of oppositely arranged figures or numbers, and operatively connected with said disks for the purpose set forth.

30. The combination with the coin receptacles and the operating slides, and means for operating said slides, and the governing disks of the indicating or index dial operatively connected with the governing means and provided with an outer series of numbers running from 1 to 99, and an inner series of oppositely arranged figures running from 1 to 99, substantially as described.

31. The combination with the coin receptacles and slides and means for governing and operating said slides, of the indicating or index dial operatively connected with the governing means and provided with a series of figures or numbers running from 1 to 99 and arranged near the edge of the disk, a series of numbers running from 1 to 99, arranged opposite said outer series of figures, the lowest figure in one series being arranged opposite the highest figure in the other, a third series of figures running from 1 to 49 arranged with

its lowest number opposite the 49 in the outer series, and its highest number opposite the 1 in the outer series, and a fourth series of numbers running from 1 to 24, arranged with its highest number opposite the lowest number of the outer series, and its lowest number opposite the 24 in the outer series, substantially as described.

32. The combination with the series of coin receptacles, their slides, and the governing disks, and means controlling said slides from said disks of means for independently changing the connection between the governing disk and one of said slides, for the purpose set forth.

33. The combination with the coin receptacles, the slides, the governing disks, and operating means for said slides controlled by said disks, and means for independently changing the connection between the dollar slide and the dollar disk, so as to cause the dollar slide to be operated to eject one or more coins therefrom in addition to those that are ejected from the other receptacles, substantially as described.

34. The combination with the coin receptacle, the slide and the operating lever, of the governing disk 47, the lever 93 connected with the operating mechanism and having its movement controlled by said disk 47, the movable plate 115 provided with the series of steps 117, arranged upon said lever and adapted to be brought into contact with the periphery of the disk, and means for changing the adjustment of said plate 115, for the purpose set forth.

In testimony whereof I have hereunto set my hand this 30th day January, 1893.

CHARLES LESLIE TRAVIS.

In presence of—
C. G. HAWLEY,
F. S. LYON.