No. 771,326. PATENTED OCT. 4, 1904.

W. W. ROBLYER.

CHANGE MAKER.

APPLICATION FILED OCT. 26, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

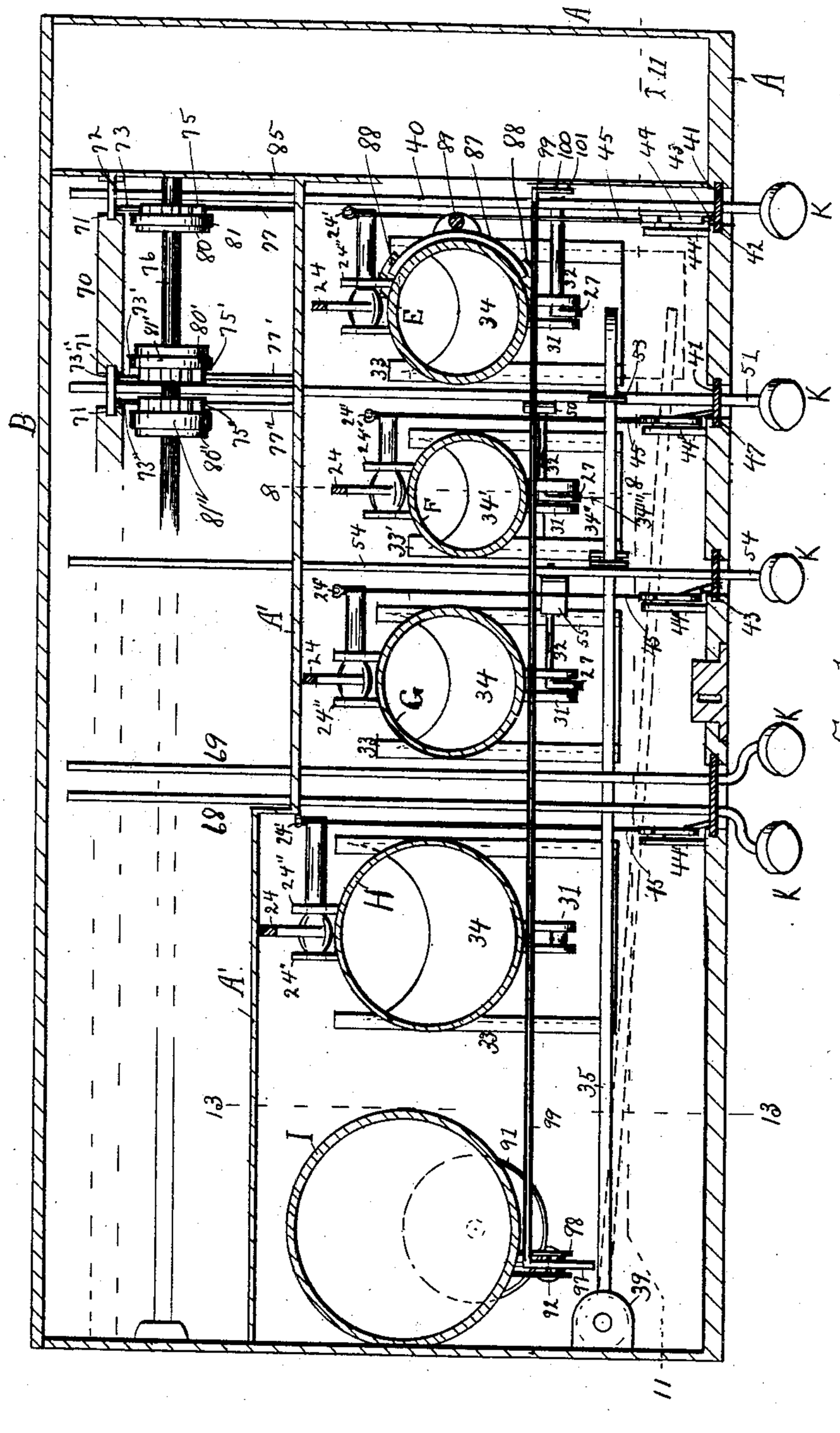

Fig. 1

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R. E. Marlock

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By J. A. Rosen
Attv

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NO MODEL. 4 SHEETS—SHEET 2.

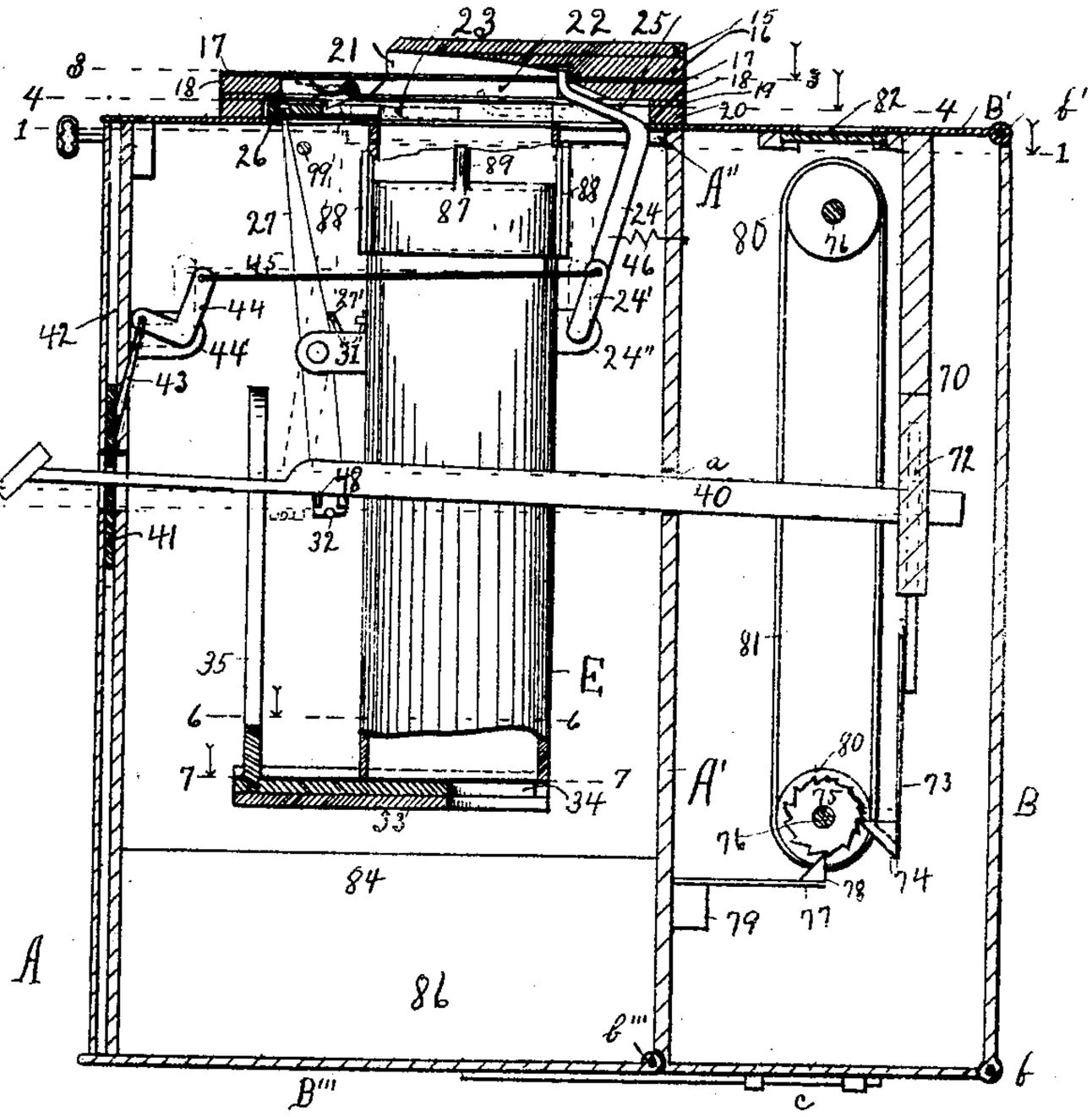

Fig 2

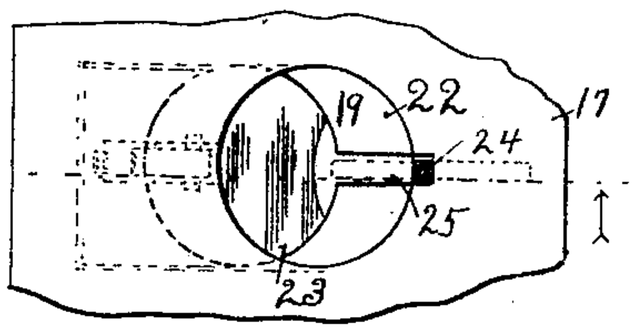

Fig 3

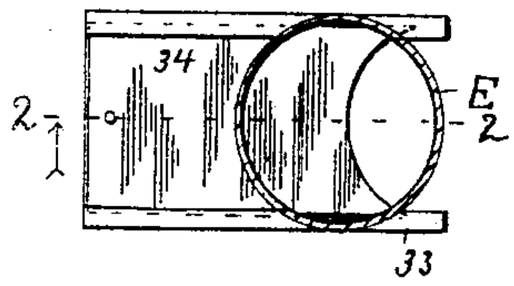

Fig 6

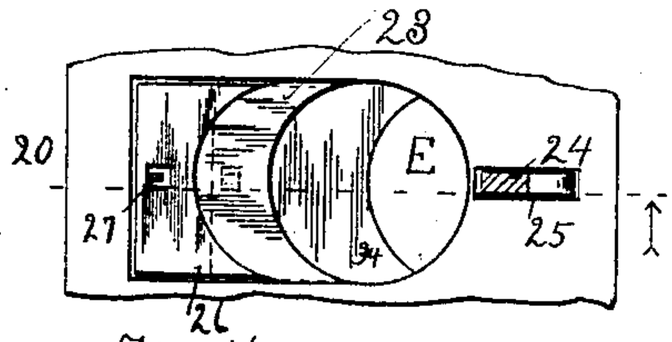

Fig 4

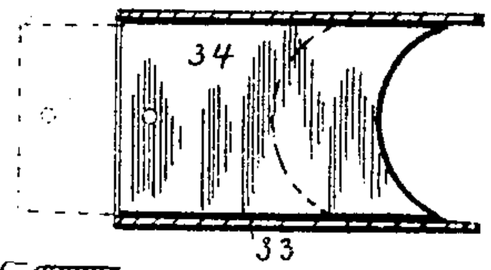

Fig 7

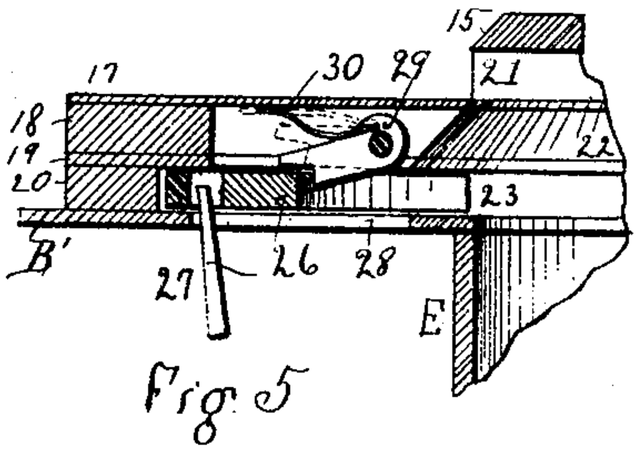

Fig 5

Witnesses
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NO MODEL. 4 SHEETS—SHEET 3.

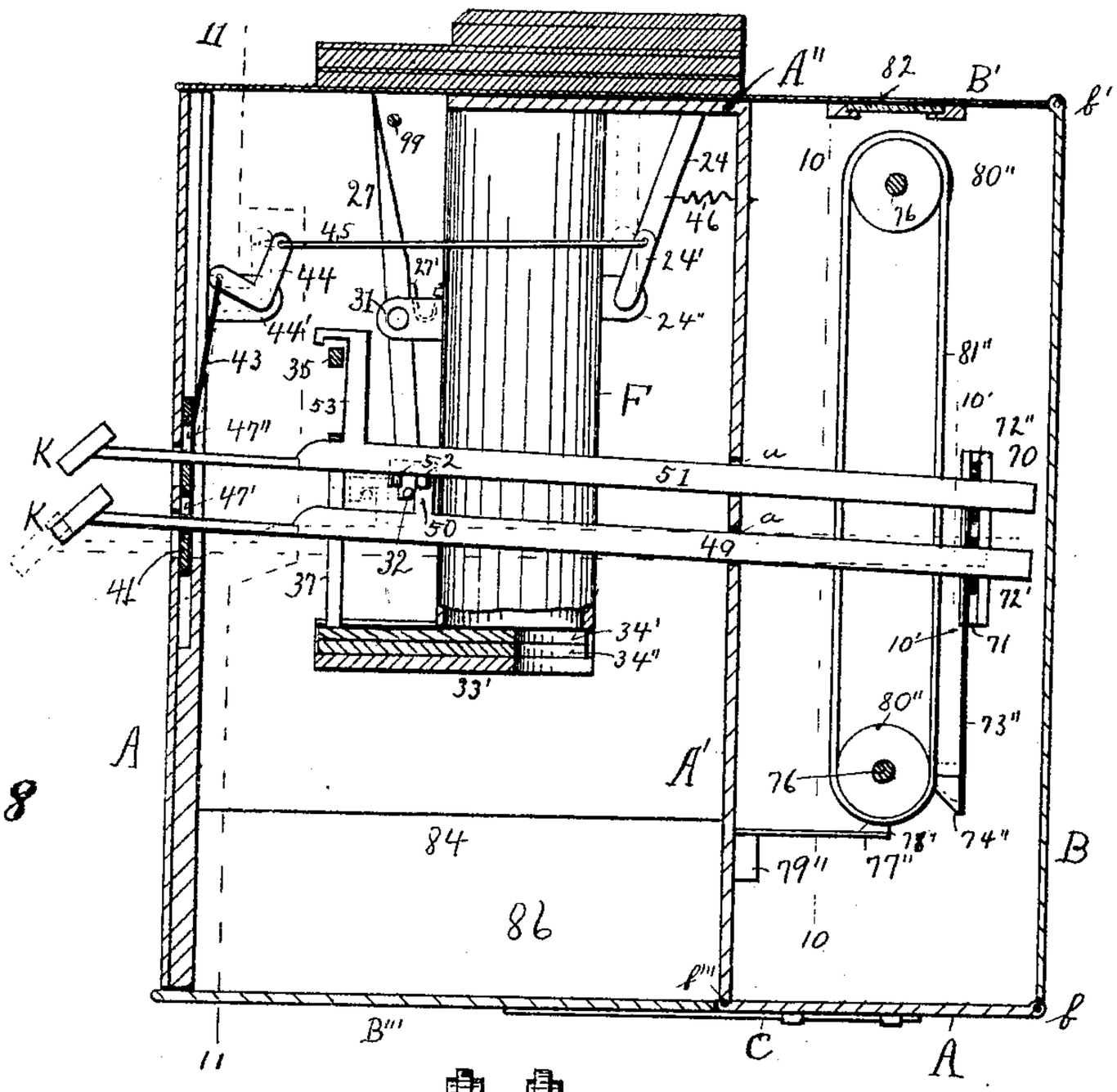

Fig. 8

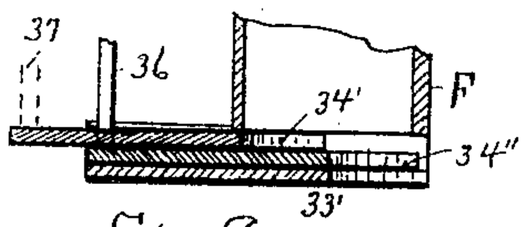

Fig. 9

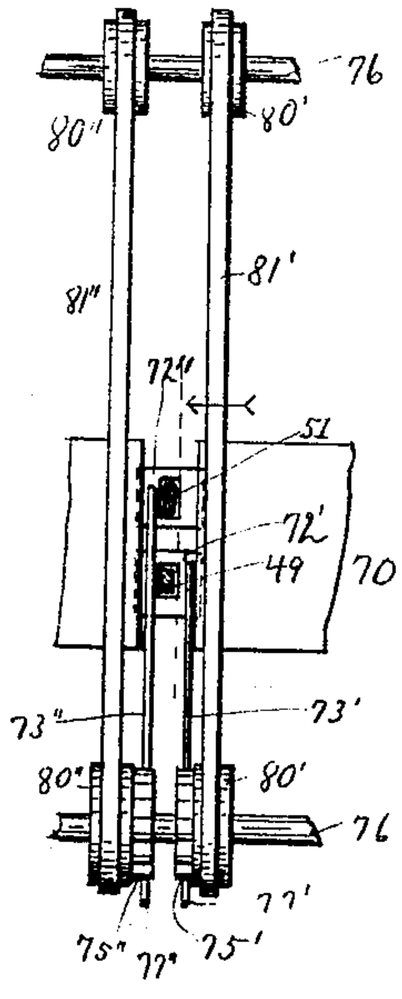

Fig. 10

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No. 771,326. PATENTED OCT. 4, 1904.

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CHANGE MAKER.

APPLICATION FILED OCT. 26, 1903.

NO MODEL. 4 SHEETS—SHEET 4.

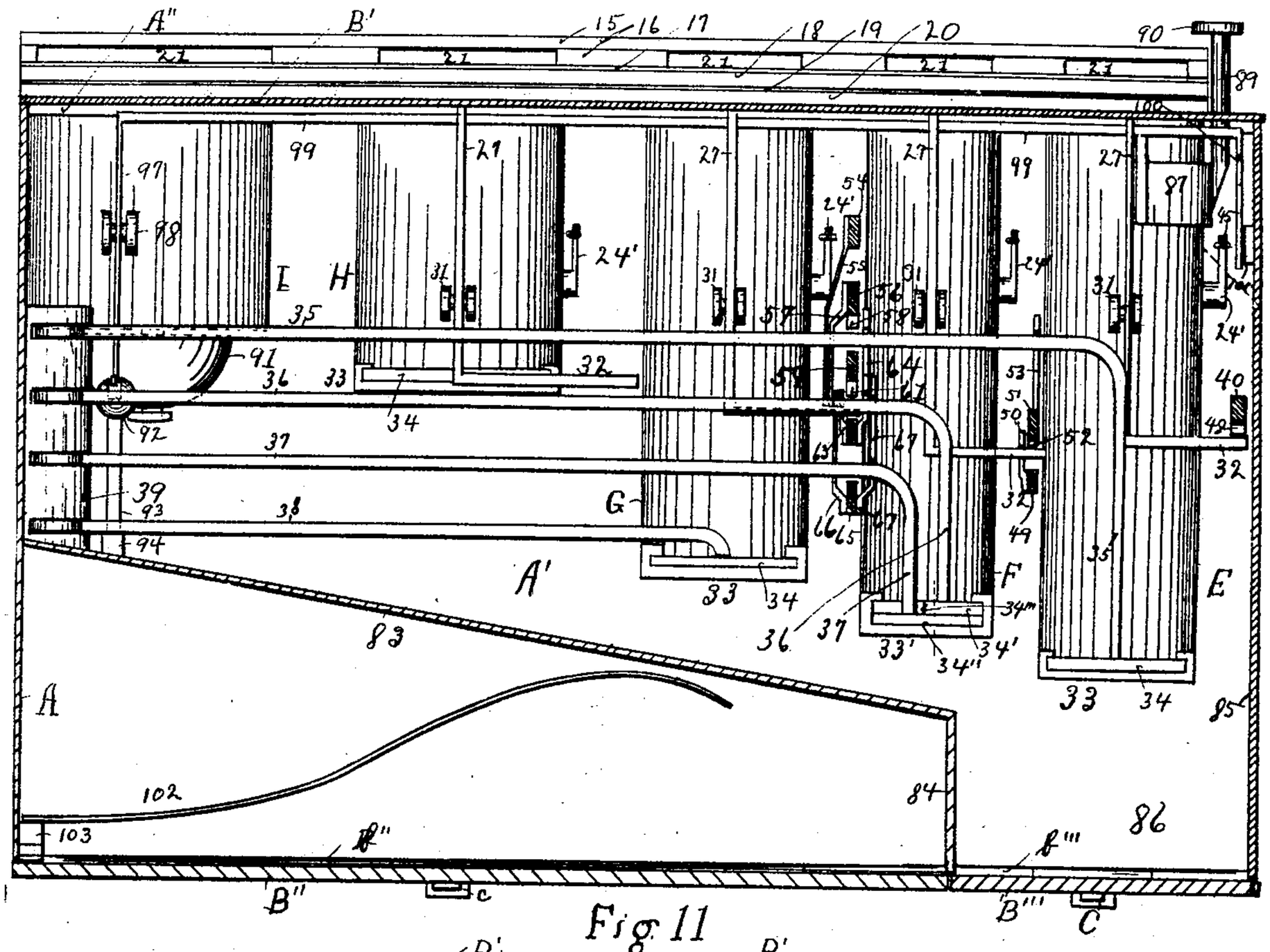

Fig 11

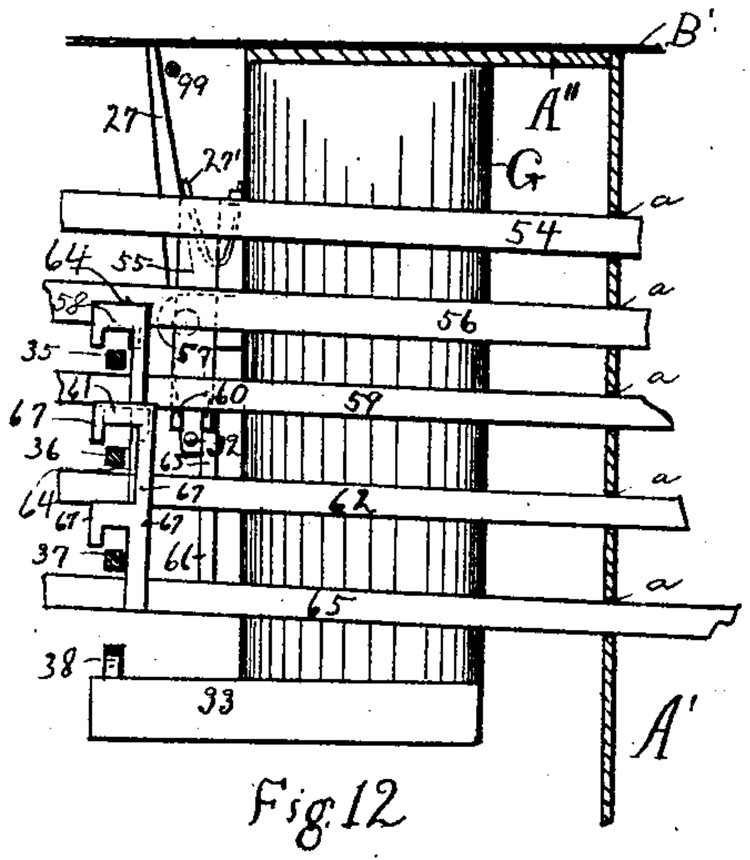

Fig 12

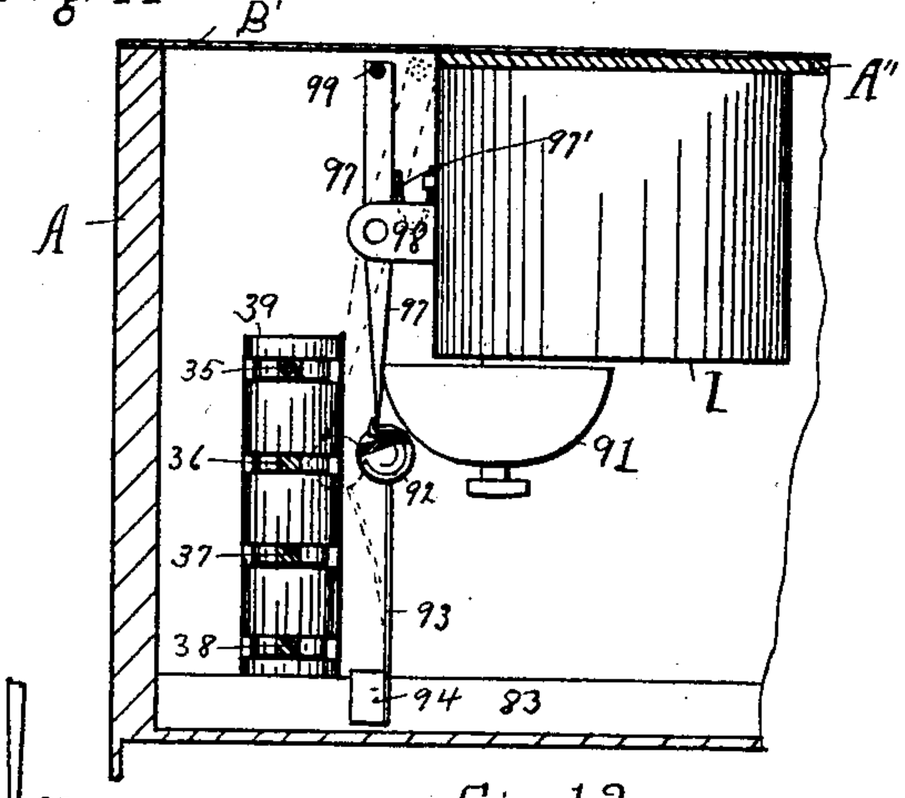

Fig 13

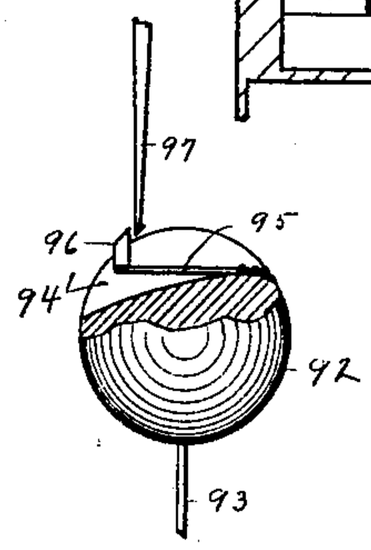

Fig 14

Witnesses
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A. E. Marlock

Inventor
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Atty

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No. 771,326. Patented October 4, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM W. ROBLYER, OF LITTLE RIVER, KANSAS.

CHANGE-MAKER.

SPECIFICATION forming part of Letters Patent No. 771,326, dated October 4, 1904.

Application filed October 26, 1903. Serial No. 178,497. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. ROBLYER, a citizen of the United States of America, residing at Little River, in the county of Rice and State of Kansas, have invented new and useful Improvements in Change-Makers, of which the following is a specification.

The invention relates to coin-handling devices; and it consists of the receptacles for holding the coin, mechanism for receiving the coin, devices for delivering the required change, the latter being normally locked and being adapted to become unlocked by the insertion of the coin into the receiving mechanism.

The objects are to provide a change-maker which is simple and economical in construction, simple in operation, not readily gotten out of order, and which may be adapted for use as a portable device—as, for instance, by street-car conductors or as a stationary apparatus—and to provide the various elements comprising such a machine. In the description following the invention is shown in a form in which it may be adapted to the specific use mentioned; but it will be readily understood that it is not my intention to limit myself to this or any other particular form.

The invention consists of the novel arrangement, disposition, and combination of the parts, one of the forms of the embodiment whereof is described and claimed in this specification and shown in the accompanying drawings, forming part of this specification.

Figure 1 is a longitudinal sectional view taken through the line 1 1, Fig. 2, showing also a plan view of the most of the mechanism. Fig. 2 is a side elevation of the tube farthest to the right in Fig. 1, being in practice when used for street-cars where five-cent fares are collected, the tube containing the nickles, the receiving and delivering mechanism being shown in central section, and the frame and other portions being also shown in transverse section. Fig. 3 is a plan view of the first step of the receiving mechanism as taken through the line 3 3, Fig. 2. Fig. 4 is a plan view of the second step of the receiving mechanism, taken through the line 4 4, Fig. 2, showing also the slide which pushes the coin over into the tube. Fig. 5 is an enlarged view showing more perfectly the details comprising the forward portions of the receiving mechanism, being the same as that shown in Fig. 2. Fig. 6 is a longitudinal section adapted to show the delivering devices as taken through the line 6 6, Fig. 2; and Fig. 7 is the same view taken through the line 7 7, Fig. 2. Fig. 8 is a vertical section of the frame, showing a side elevation of the next tube to the left in Fig. 1, being that which in practice might be used for the dimes with a central section of the delivering devices, which in this case are adapted to deliver either one or two coins at a time, and showing also a section of the slides by which the recording apparatus is operated. Fig. 9 is a central sectional view of the delivering devices, showing one of the slides drawn forward as when in the act of making change. Fig. 9 and the corresponding portion of Fig. 8 are taken through the line 8 8, Fig. 1. Fig. 10 is front view of the recording apparatus, taken through the line 10 10, Fig. 8, the key-levers 49 and 50 being shown as through the line 10′ 10′, Fig. 8. Fig. 11 is a longitudinal vertical sectional view of the machine through the line 11 11, Figs. 1 and 8. Fig. 12 is a side elevation of the tube and levers adapted for the quarter-dollars with sectional views of the frame and delivering-levers. Fig. 13 is a side elevation of the dollar-tube, showing also the bell and ringing-levers and hammer with sectional views of the frame and other portions of the machine, taken through the line 13 13, Fig. 1, and showing also a partial section of the hammer; and Fig. 14 is an enlarged view of the hammer shown partially in section.

Like reference letters and numerals indicate like parts throughout the several views.

A is the frame, which may be of any suitable form, proportions, dimensions, or material. Extending longitudinally of the frame is a partition A′, and at the top thereof is a supporting-plate A″, to which are secured a series of tubes adapted to contain the coins. Of these tubes E is adapted for the nickles, F for the dimes, G for the quarter-dollars,

H for the half-dollars, and I for the dollars. B′ is the top or lid of the frame, and on this lid is mounted the receiving apparatus, or rather the steps through which the coin is passed in entering the tube. These steps may be best constructed by first making the necessary apertures and openings in a number of plates and then securing them together, so that the apertures and openings properly register, which plates are indicated by the numerals 15, 16, 17, 18, 19, and 20, the bottom plate of the series being the top or lid B′ of the frame. The steps may be beveled, as shown, so as to permit the coin to be pushed from one step to the other. These steps may be best described by following the coin, which is inserted at 21 and pushed by the finger to the first step 22, whence it is pushed by the lever 24 to the second step 23, whence it is pushed by the slide 26 over the upper end of the tube E, into which it falls by the force of gravity. The plates are slotted at 25, so as to permit of the movement of the lever 24, which is pivoted in the brackets 24″ and operated by the arm 24′, and the slide 26 is operated by the lever 27, which is pivoted in the brackets 31. Each of the tubes is provided with a similar receiving apparatus, and it is therefore not necessary to further illustrate or describe the same as applied to the several other tubes.

The bottom 33 of the tube is arranged to contain a slide 34, which normally somewhat more than half closes the bottom of the tube, as shown in Figs. 1, 6, 7, but which is adapted to move forward, as shown by the dotted outline in Figs. 1, 7, so as to permit a coin to fall onto the bottom 33 and backward again to its normal position, so as to force the coin out and permitting it to drop through the opening in the bottom of the tube. The slide is operated by the lever 35. The tubes G and H are also provided with deliverers similar to that just described. The tube F for the dimes is also similar in all respects, except that it has two slides in order that two coins may be delivered at the same time when necessary, as when one five-cent fare is paid out of a quarter-dollar. The bottom 33′ has two slides 34′ 34″, the upper slide having an offset 34‴, so that it may be moved by its lever 36 without moving the lower slide 34″, which is provided with a lever 37. The tube I for the dollars has no delivering devices, as it never becomes necessary in a machine of this capacity to deliver a dollar, although, of course, delivering mechanism might be provided, if desired. The slide for the tube G is operated by lever 38. The slide-operating levers 35 36 37 38 are pivoted to the lug 39 and extend, as shown, across the frame from one side to the other, so that the lever operating the slide of a tube for a coin of a lower denomination may be operated by the receiving mechanism of a tube for a coin of higher denomination.

Again, referring more especially to the nickle-tube, 40 is a key-lever pivoted in a slot *a* in the partition A′, so as to be free to move back and forth therein, as well as to oscillate therein. K is the key on which may be represented any desired character—as, for instance, the character "5¢" to indicate that five cents has been put into the machine. The front of the frame A is open and grooved at 42, so as to permit a slide 41 to work up and down therein, the lever 40 extending through said slide, so that said slide is moved up and down by the up-and-down motion of the key K, but is not affected by the forward and backward movement of the key or key-lever. On a bracket 44′, attached to the front of the frame A, is pivoted a bell-crank 44, one of the arms of which is connected to the slide 41 by means of the rod 43, the other arm being connected to the arm 24′ of the lever 24 by the rod 45, so that as the slide 41 is moved upward or downward the lever 24 is rocked back and forth to push the coin from the first step to the second step. A spring 46 holds the lever 24 in its normal position, as shown in Fig. 2, and also serves to bring the connections just described, including the key K and key-lever 40, to their normal positions.

The lower end of the lever 27 is bent to one side, as shown by 32, and the lever 40 is provided with two downwardly-projecting lugs 48 48, which are adapted to engage the opposite sides of the arm 32. These are so arranged that when the lever 40 is up in its normal position the lugs do not engage the arm 32, and said lever may be moved forward or backward without operating the arm 32 or lever 27; but when the lever 40 is pressed downward, as in the act of pushing the coin from the first step to the second step, as described, the lugs engage the arm 32, and when the key and key-lever are drawn forward and backward the arm 32 is also drawn forward and backward to push the coin from its second step into the tube. The spring 27′ serves to return the lever 27 to its normal position, as shown in Fig. 2.

Referring now to the tube and the operative parts in connection therewith used for the dimes, and referring especially to Figs. 1, 8, 9, 11, it will be seen here that instead of one key and key-lever there are two, 51 and 49. These levers extend through the slide 41, just as in the case of the nickle-tube and connections, and the same kind of operative connections are used for operating the receiving mechanism. The openings 47′ and 47″ through the slide 41 extend upwardly, so that said slide may be forced down by either one of the levers 49 or 50 without disturbing the other lever. These two levers may be arranged in any suitable manner; but for compactness

and in an apparatus built for portability, as in case of one to be carried by a street-car conductor, it is thought well to arrange them in vertical alinement. The lower lever 49 has an upwardly and forwardly extending arm 50, which forms a hook adapted to engage the arm 32 when the lever 49 is drawn down, but permitting the arm 32 to be carried forward without it when in its normal position. The lever 51 has the downwardly-extending lugs 52, which correspond to and serve the same purpose as the lugs 48 of the lever 40, heretofore described, and it also has an upwardly and forwardly extending arm 53, which forms a hook adapted to engage the lever 35, which operates the nickle-delivering device when said lever 51 is drawn down, but permitting said lever 35 to move freely when said lever 51 is up in its normal position, as shown in Fig. 8. The purposes of these arrangements are as follows: If the conductor receives a dime and wishes to take one fare out of it, he inserts the dime into the receiving mechanism, and by the operation of the key and key-lever 51—that is, by pushing the said key downward and then outward, from which position it will return to its normal position by springs 46 and 27′—the dime is dropped into the tube F and a nickel is delivered from the tube E by the operation of the slide 33, which is controlled by the lever 35, which is thus drawn forward and backward by the hook 53. Yet the lever 49 is not disturbed; but the arm 32 is permitted to move forward and backward by the like movement of the lever 51. If the conductor wishes to take two fares out of the dime, he operates the key and key-lever 49, whereby the receiving mechanism is operated; but the lever 51 is not disturbed nor is the lever 35 operated. Also it will be seen that when the lever 35 is operated by any other means—as, for instance, by the levers used in connection with the other tubes, as will be hereinafter described—said lever moves freely back and forth without disturbing the lever 51 or hooked arm 53.

It should now be clear that to construct the change-making mechanism for the quarter-dollar tube the same devices must be used as are used in connection with the dime-tube, except that five instead of two levers and keys are used in the case of the quarter-dollar tube, so that one, two, three, four, or five fares may be taken out of the quarter-dollar and the necessary change delivered when one, two, three, or four fares are taken. Thus, referring to Figs. 1, 11, 12, the lever 54, having the pendent arm 55 to engage the arm 32, is operated when the entire quarter-dollar is to be consumed in fares. The lever 56, having the pendent arm 57 to engage the arm 32 and the lugs 58 to engage the lever 35, is operated when four fares are to be taken out of the quarter-dollar, a nickel being delivered by the operation of the lever 35. The lever 59, having the lugs 60 and the lugs 61, is operated when three fares are to be taken out of the quarter-dollar, a dime being delivered by the operation of the lever 36. The lever 62, having the hooked arm 63 and the double-hooked arm 64, is operated when it is desired to take two fares out of the coin, a nickel and a dime being delivered by the operation of the levers 35 and 36, and the lever 65, having the upwardly-extending hooked arm 66 to engage the arm 32 and the upwardly-extending hooked arm 67 to engage the levers 36 and 37, is operated when it is desired to take one fare out of the quarter-dollar, two dimes being returned by the operation of the levers 36 and 37.

Thus it may be seen that the levers 27 27 and the levers 35, 36, 37, and 38 are free to move independent of the levers operated by the keys, but that each key-lever is adapted to operate a selective group of levers or in some cases only the single lever 32. In connection with these key-levers is provided a series of recording devices, one for each lever. These devices are well known, being used in other coin-handling machines, such as cash-registers, and I do not claim any particular form, but have rather graphically illustrated one form of a series of recording devices as follows: At the rear of the frame and extending longitudinally thereof is an upright frame 70, which has openings, grooved, 71 71, in which are the slides 72 72′ 72″, through which extend the rear ends of the levers 40, 49, and 51, respectively, as seen in Figs. 1, 2, 8, 10.

Referring to the device connected with the lever 40, 72 is the slide, to which is attached the spring 73, carrying the beveled lug 74, adapted to engage the ratchet-wheel 75 revolving on the axle or rod 76, which is common to all the recording devices. Another beveled lug, 78, and spring 77, mounted on the lug 79, prevents the motion of the ratchet-wheel 75 in the opposite direction to that in which it is carried by the slide 72. The pulley 80 is secured to the ratchet-wheel 75 and carries a tape 81, which is also carried on the pulley 80, mounted on the axle or rod 76, which is also common to all the recording devices. A glass 82 may be inserted in the top of the frame through which the tape, on which suitable indexes may be inscribed, may be read, or, if desired, no glass may be used, it being left to be read only when the frame is opened by the key. The recording devices for the dime-levers are similar to that described above, consisting of the two slides 72′ and 72″, the two springs 73′ 73″, and the two tapes 81′ 81″, and like connecting mechanism, not necessary to again describe. By these recording devices an accurate account may be kept of the number of fares received. In a like manner the operative parts to be

used in connection with the half-dollar tube and the dollar-tube may be constructed. There may be two or more vertical rows of the key-levers for the higher denomination coin-tubes.

A slanting bottom 83 extends along under the tubes, ending in a pocket 86 between the partitions 84 and 85, and this pocket has a bottom B‴, hinged at *b‴* and held normally closed by a flat spring C, whereby the delivered coins are dropped down into the pocket, from which they may be conveniently removed by opening the bottom B‴. The right-hand end of the frame may be partitioned off by a partition 85, so as to form a receptacle into which the nickles may be allowed to pass when the tube E is full. This is accomplished by raising the slide 87 by means of the rod 89 and key 90, said slide moving in the cleats 88 88.

A bell is provided as an annunciator, as follows: A rod 99, extending the full length behind all of the levers 27 and carried by the levers 97 and 100, pivoted, respectively, to the bracket 98 and the lug 101, is operated by the backward movement of the upper arm of said levers 27 or any of them, and is held in normal position by the spring 97′, as shown in Fig. 13. The bell 91 is secured to the under side of the dollar-tube I. The hammer or ball 92 is mounted on a spring 93, secured to the lug 94. The ball or hammer-head has a recess 94′, in which is mounted a spring 95, carrying a beveled lug 96, which is adapted to come in engagement with the lower end of lever 97, so that as the rod 99 is moved back and forth the ball 95 is carried away from the bell, released from the lever, as indicated by the dotted outline in Fig. 13, and returned against the bell by the spring 93, and as the lever 97 is returned to its normal position the spring 95 permits its engagement with said lug 96. The remaining apartment of the frame may be provided with a long spring 102, mounted on a lug 103, and provided with an opening bottom B″, hinged at *b″* and held normally closed by a flat spring *c*, and may be used for containing transfers or for any other purpose.

The receiving mechanism is locked by means of the pawl 29, (see Fig. 5,) pivoted in the plate 18, engaging the slide 26, and held in place by the spring 30. As the coin is pushed from the first to the second step, however, it forces the pawl 29 up, so as to permit the movement of the slide 26 to push the coin into the tube. The lever 27 can be operated and the bell rung, however, only when a coin is put into the machine, so as to release the slide 26.

In order that the recording devices may be readily accessible, the back B of the frame is hinged at *b* and the lid of the frame B′ is hinged to the back B at *b′*. The frame may be locked by a key to be kept, for instance, at the office into which the cash is to be turned.

To illustrate the use and operation of the change-maker, take the example mentioned. The conductor is given a machine in which are a certain number of coins, sufficient to start in on his run with, the machine being securely locked and nothing being recorded on the recording devices. He cannot get any of the coins out of the machine without inserting a coin into one of the tubes and ringing the bell and making a record. If he first takes in a nickel, he inserts it in the tube E by the operation of the lever 40, which records one fare or makes any other record which may be on the tape. If he receives a dime out of which to take one fare, he inserts the dime into the tube F by the operation of the key-lever 51, which also operates the slide 34 of the tube E, as heretofore described, thus delivering a nickel, which drops into the pocket 86, from which it may be taken by the conductor, the bell is rung, and one fare is recorded on the tape 81″, and in a similar manner if a quarter or half dollar or a dollar be inserted into the machine in the proper place the change will be made, the bell will ring, and the amount will be recorded on the proper tape. When the machine is returned to the home office, the lid and back are opened up, the record read, and the cash counted, and in this way not only is it possible to calculate the number of fares, but also the exact coins which should be found in the various tubes, and it is thought that by this means not only is a ready and convenient machine for quickly making the necessary change provided, but also pilfering by a conductor is reduced to a minimum.

Of course it is understood that the devices herein described and claimed may be arranged in other forms and in connection with any other arrangement of recording or annunciating devices—as, for instance, in the form of the ordinary cash-register, giving the amount of a customer's purchase. A card could be provided for each key showing the denomination of the coin received, the amount of the purchase, and the amount of change.

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

1. In change-makers, the combination of the frame; the series of coin-receptacles; a coin-receiving device for each receptacle, consisting of a series of steps, levers to push the coin from step to step, and a coin-operated device for locking and unlocking said levers; a coin-delivering device for each receptacle; and a series of keys and key-levers and suitable connecting mechanism whereby each key is adapt-

ed to operate a selective group of the receiving and delivering devices.

2. In change-makers, the combination of the frame; the series of coin-tubes therein; the coin-delivering device for each tube; the coin-operated locking and unlocking device for locking and unlocking the delivering devices; and the series of keys and key-levers and suitable connecting mechanism whereby each key is adapted to operate a selective group of coin-delivering devices.

In witness whereof I have hereunto set my name in the presence of witnesses.

WILLIAM W. ROBLYER.

Witnesses:
GEO. G. GREEN,
L. M. WAITT.