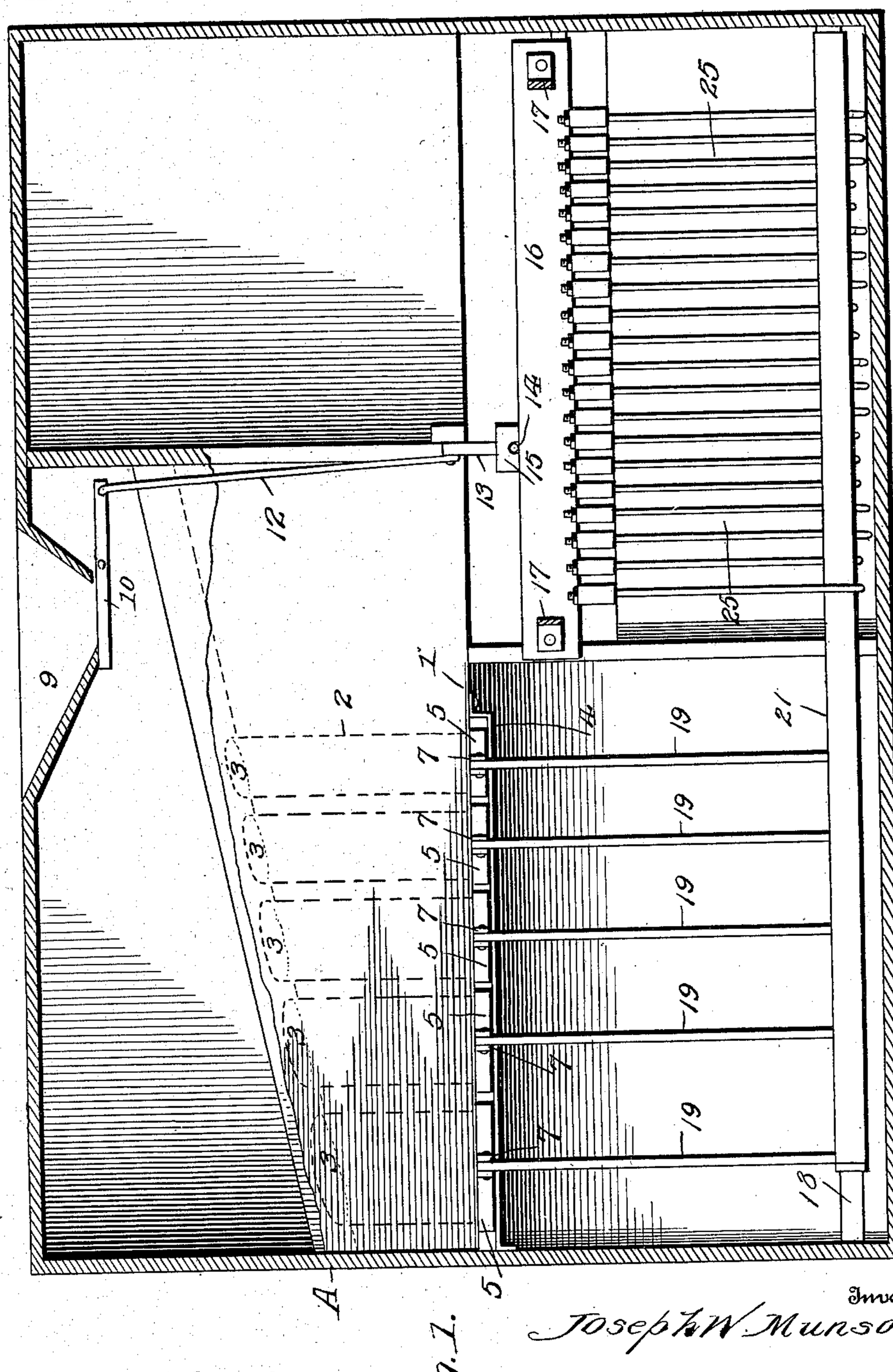
No. 736,133. PATENTED AUG. 11, 1903.

J. W. MUNSON.

CHANGE MAKING APPARATUS.

APPLICATION FILED JUNE 17, 1902.

NO MODEL. 3 SHEETS—SHEET 1.



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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.

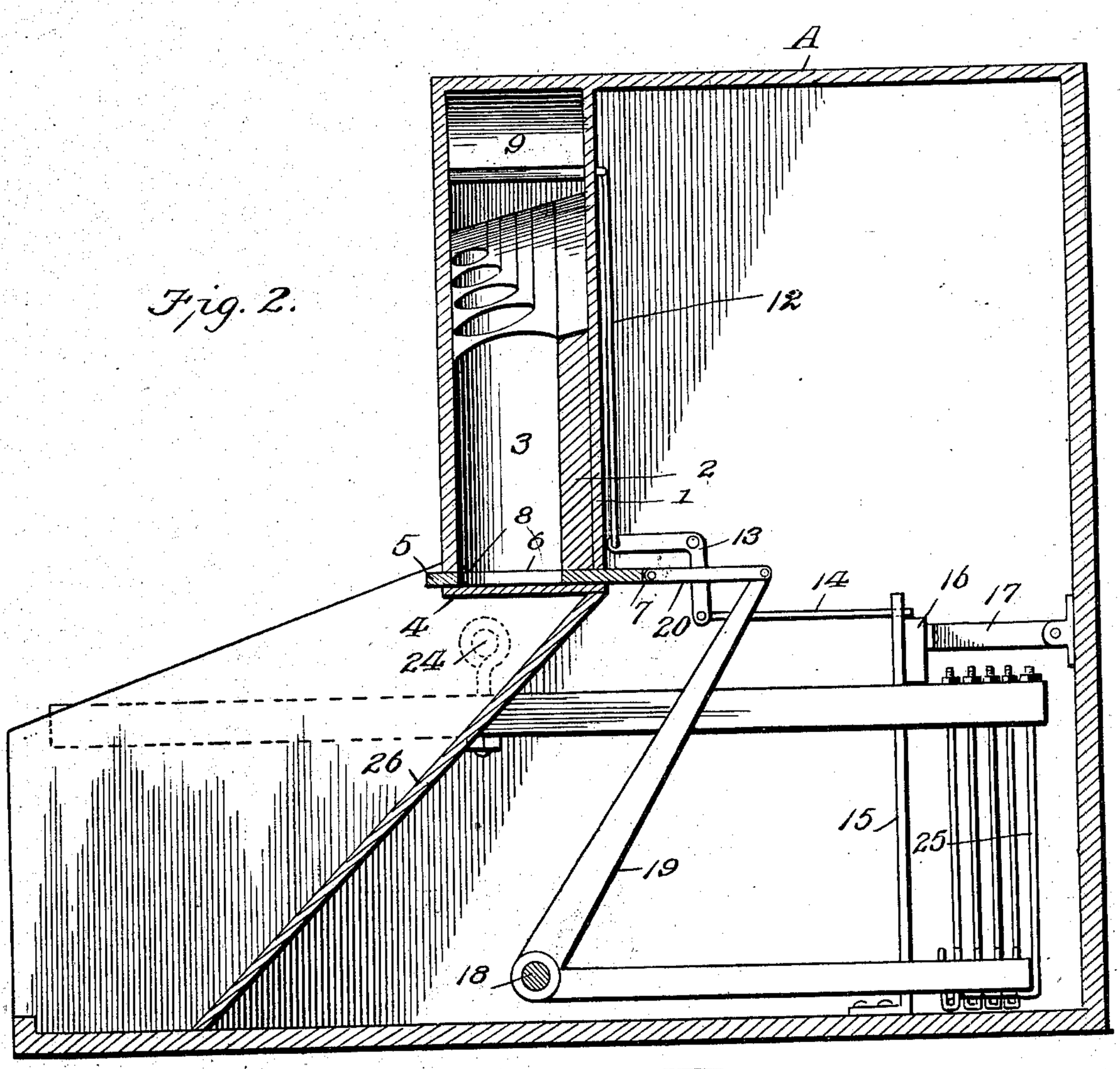


Fig. 5.

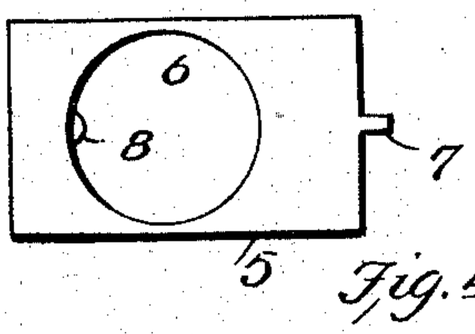


Fig. 4.

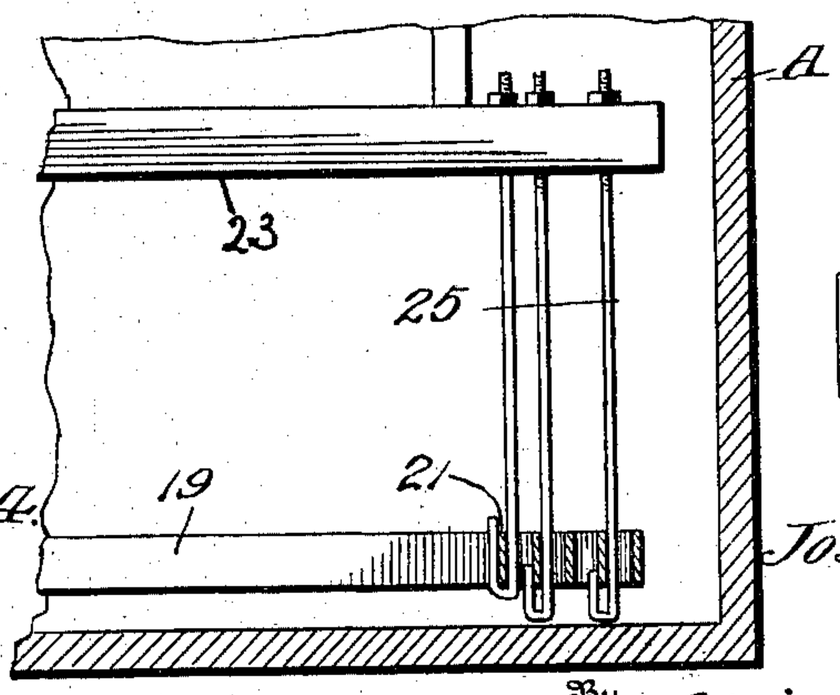
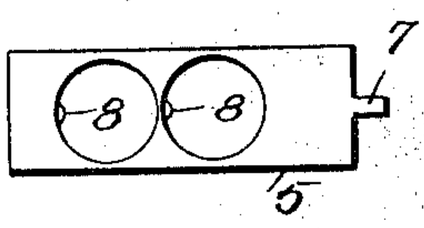


Fig. 6.



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J. W. MUNSON.

CHANGE MAKING APPARATUS.

APPLICATION FILED JUNE 17, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

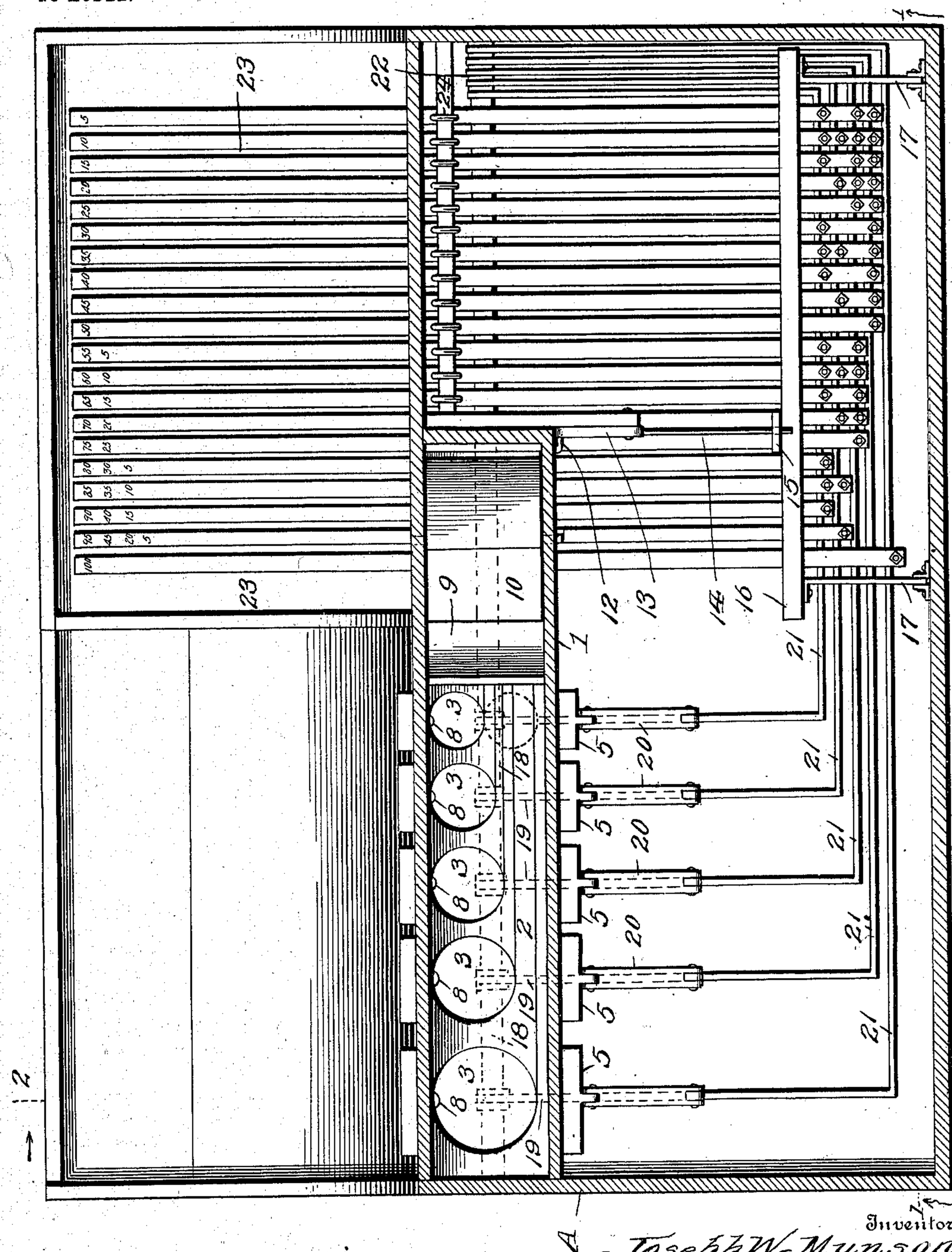

Fig. 3.

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No. 736,133. Patented August 11, 1903.

UNITED STATES PATENT OFFICE.

JOSEPH W. MUNSON, OF CARTHAGE, MISSOURI.

CHANGE-MAKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 736,133, dated August 11, 1903.

Application filed June 17, 1902. Serial No. 112,086. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. MUNSON, a citizen of the United States, residing at Carthage, in the county of Jasper and State of Missouri, have invented new and useful Improvements in Change-Making Apparatus, of which the following is a specification.

My invention has relation to improvements in change-making apparatus; and the object is to provide a mechanism of improved and simplified construction whereby the correct change may be readily ascertained, made, and delivered to the customer.

With this object in view my invention consists in the novel construction of parts and their assemblage or aggroupment in operative combination, as will be hereinafter fully specified and the novelty claimed particularly and distinctly pointed out.

I have fully and clearly illustrated the means by which I accomplish the objects of my invention in the accompanying drawings, forming a part of this specification, and reference being made thereto.

Figure 1 is a vertical longitudinal section through the apparatus, taken on line 1 1 of Fig. 3. Fig. 2 is a vertical cross-section of the apparatus, taken on the line 2 2 of Fig. 3, showing the lever system for operating the slides in the coin-chambers. Fig. 3 is a horizontal section through the apparatus, showing the arrangement of the change-designating levers and their connection to the slide-actuating levers. Fig. 4 is a detail view of one of the change-designating levers and its connections to the slide-actuating lever. Fig. 5 is a detail plan view of one of the coin-slides removed from the coin-chamber. Fig. 6 is a detail plan view of the double ten-cent slide.

A designates a suitable casing of such dimensions and capacity as may suit it for supporting and containing the elements and mechanism constituting the apparatus. Within the inclosing casing, approximately at the middle thereof, is secured a rectangular box or case 1, wherein is placed a block 2, formed with a plurality of tubular depositories 3 of such number as may be required to accommodate the deposition of coins of different diameters and values. In the illustrations I have shown five tubes intended to take in ten, five, twenty-five, fifty, and one-dollar coins, the series being arranged to start with the coin of smallest diameter and ending with the largest. It is apparent that depositories may be provided which take in coins of other denominations; but for purposes in general business the demand will be supplied by five tubes. The upper surface of the coin-block 2 is given an incline lengthwise sufficient to permit the coins to slide down until they reach the proper tube or depository, when they will drop therein. The surface of the coin-block is also inclined laterally or transversely, as shown in Fig. 2 of the drawings, so that the coins will slide laterally and be guided by the wall of the box, the edges of the depositories on that side being in alinement, as shown. The face of the coin-block is also provided with longitudinal grooves leading up from one edge of each depository, as shown, to permit the coin matching the size of the hole to drop below the surface of the block sufficiently to strike the opposite wall of the hole, and thus being arrested drop therein.

To the bottom of the coin block or receptacle is arranged and secured a plate 4, spaced from the bottom of the coin-block sufficiently to admit of the passage of the coin-slides 5 between the bottom and the plate, as indicated in the drawings. These coin-slides consist of flat rectangular plates fitted to slide in the space at the bottoms of the coin-receptacles and are provided with circular coin-openings 6 to receive a designated coin of the diameter of the receptacle.

The coin-slide intended for the ten-cent coins is made with two openings, because at times change must be made involving two ten-cent pieces, and by making two coin-openings in the slide they may be discharged by the continuous movement of the slide.

At the end of each coin-slide is an ear 7 to connect with a link, as hereinafter stated. In the wall of each coin-opening 6 in the coin-slides, at the lower edge thereof, is made a thin inwardly-extending projection 8, on which the edge of the coin rests and by which it is prevented from tilting or dropping before completely free.

In the top plate or cover of the casing A is constructed a hopper 9, having an opening

in its bottom large enough to permit a coin of the largest dimensions used to pass through. The opening in the bottom of the hopper is closed by a tilting plate 10, pivotally supported and substantially balanced on its support, and at the inner end of the tilting plate is pivotally connected the upper end of a vertically-disposed rod 12, having its lower end pivotally connected to an arm of a bell-crank lever 13, fulcrumed to the wall of the casing. To the end of the other arm of the bell-crank lever is connected a horizontally-arranged arm 14, the free end of which is slidingly placed in an aperture in the upper end of a support 15 and projects normally over the upper face of a vertically-vibratory bar 16, secured to the ends of arms 17, the other ends of the arms being pivotally secured to the inner face of the side of the casing. The bar 16 extends across and rests upon the series of levers which operate the levers connected to the coin-slides.

It will be perceived that when a coin is placed on the tilting plate 10, to the rear end of which the rod 12 is connected, the rod will be moved upward lengthwise and rock the bell-crank lever 13, which action will pull the rod 14 from engagement with the bar 16 and permit the change-designating levers free to be operated.

Mounted lengthwise of the casing adjacent to the bottom is a fixed shaft 18, constituting the support for the levers which operate the coin-slides.

19 designates the levers which operate the coin-slides and are loosely fulcrumed on the shaft 18. There are five of these levers, one being used to operate each of the five coin-slides, and are of the same construction, being of the elbow style. The upwardly-extending arms of the levers have their upper ends pivotally connected to the outer ends of links 20, which have their other ends pivotally connected to the lugs or ears 7 on the ends of the coin-slides. The ends of the horizontal arms of the elbow-levers are suitably secured to the ends of bars 21, arranged lengthwise of the casing and in alinement with each other, as indicated, and at their outer ends are bent at right angles to the parts or bars 21 and carried inward and pivotally secured to the shaft 18, as at 22.

23 designates a series of twenty keys or levers, each pivotally hung to a shaft 24 in any suitable manner and at their inner ends have one or more adjustable connections to vertical rods 25, which rods have their lower ends loosely hooked under the bars 21, as shown and indicated in the drawings, thus permitting the operation of the bars 21 by one of the rods 25 without changing the position of the other rods 25 and keys 23.

It will be perceived, Fig. 4, that two or more of the depending rods 25 may be connected to the inner end of a single lever 23 and engage different bars 21, being adjusted in length to make such engagements in succession and operate two or more coin-slides, as may be desired.

26 designates an incline slide arranged and secured to extend under the coin-tubes and upon which the change falls when discharged from the coin-slides. On the face ends of the key-levers are designated figures indicating the amount of purchases made and which bear a relation to one dollar, so that when the purchase is known the manipulation of the lever bearing the amount of purchase and the relation of the amount received to the amount of change to be made and returned the right lever can be readily selected which will work the proper slide or slides to discharge the correct change. It will now be perceived that when the bar 16 has been released, as heretofore specified, any one of the finger-levers can be operated to actuate the elbow-levers and move the coin-slides accordingly.

The mode of operation, manipulation, and practical utilization of the apparatus may be stated as follows: The purchase having been made and the money delivered, the amount is placed on the tilting plate of the hopper, whereupon the money actuates the tilting plate and slides down the coin-block until it reaches the correct depository, into which it falls. At the same time the movement of the tilting plate through the connections therewith withdraws the bar 14 from engagement with the locking-bar 16 and leaves the changing mechanism in operative condition. Now suppose the amount received was one dollar and the purchase amounted to fifty-five cents. The key-lever bearing the figures designating the amount of purchase is selected and the finger end depressed. The other end of this lever is connected to the twenty-five-cent and to the ten-cent coin-slide and actuates both simultaneously, moving the ten-cent slide so that it delivers two pieces, and the combined amount discharged is the correct change. Again, suppose a fifty-cent coin is received and the purchase is thirty-five cents. Then by depressing the lever carrying the number "35" in second line of numerals the ten-cent and five-cent coin-slides are moved and the correct change delivered. Again, should the purchase be five cents and twenty-five cents received then recourse is had to the lever bearing the figure "5" in third line of numerals which has connection to the ten-cent coin-slides, which discharges the two coins of that denomination, which is the correct change. Again, suppose a five-dollar bill is received and the purchase amounts to two dollars and fifty cents. Then the lever 23, bearing the one-dollar designation, is depressed twice and the lever bearing the fifty-cent designation is depressed once and the correct change delivered. While change for bills may be made, they are not placed in the depositories. Take a final example. Suppose the purchase is five cents value and a dime is given in payment. Then recourse is had to the fourth row of fig-

ures, and the lever bearing the "5" is manipulated, and being connected to the five-cent slide that amount is discharged.

The first row of figures on the levers 23 is indicative of the amount of a purchase, and the sum received is one dollar, from which the change between the amount of purchase and the amount received is to be returned to the customer. The next row indicates the levers used when a fifty-cent piece has been received and the change to be made therefrom. The next row indicates the levers used when a twenty-five-cent piece has been received and the change is to be made therefrom, and the innermost row of figures shows the levers used when a ten-cent piece has been received and five cents change is to be delivered.

The double ten-cent slide is made to accomplish the required movement of dropping two ten-cent pieces by adjusting the length of the connecting-rod 25 through the medium of the nut on its upper end bearing on the upper face of the proper lever 25.

A key or lever for a one-cent coin-receptacle may be provided, and a separate coin-block and system of levers, &c., may be provided for gold coins.

Having described my invention, what I claim is—

1. In a money-changing apparatus, a casing, a hopper in the casing, a tilting plate to close the bottom of the hopper, a series of levers connected to actuating-levers, a locking-bar across the levers, and a locking means actuated by the tilting plate to release the locking-bar.

2. In a money-changing apparatus, a casing, a hopper in the casing, a tilting plate to close the bottom of the hopper, a rod connected to the inner end of the tilting plate, a bell-crank lever having one arm pivotally connected to said rod, a sliding bar connected to the bell-crank lever, a vibratory bar locked by the sliding bar against upward movement, and a plurality of levers held by the vibratory bar.

3. In a money-changing apparatus, a series of levers having value-designations thereon, depending rods connected to the inner ends of said levers, elbow-levers having one arm connected to the said rods, links connected to the other arm of the elbow-levers, slides, having a coin-opening therein, connected to said links, coin-receptacles, a tiltable plate to carry coins to the coin-receptacle, and means actuated by the tilting plate to lock and release the series of levers.

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

JOSEPH W. MUNSON.

Witnesses:

V. L. CHESTER,

H. TYREE.