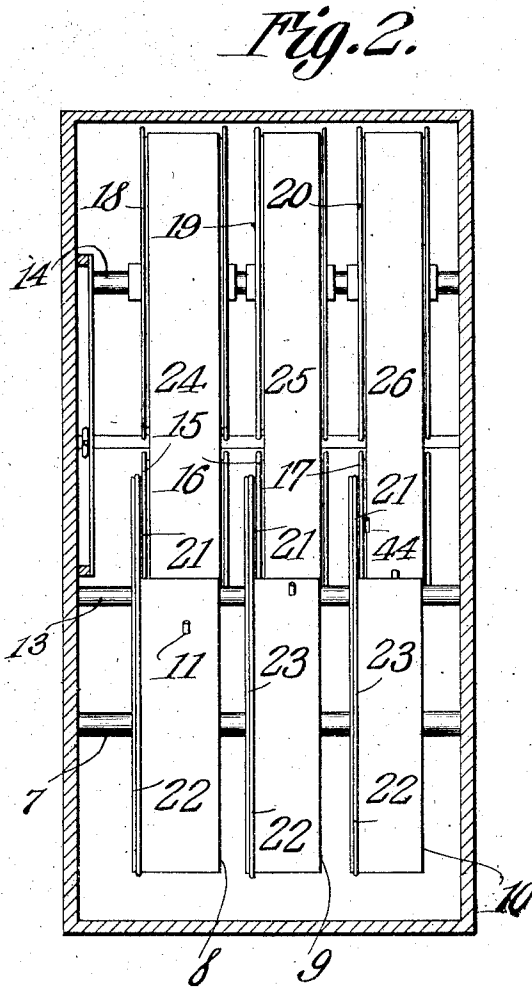
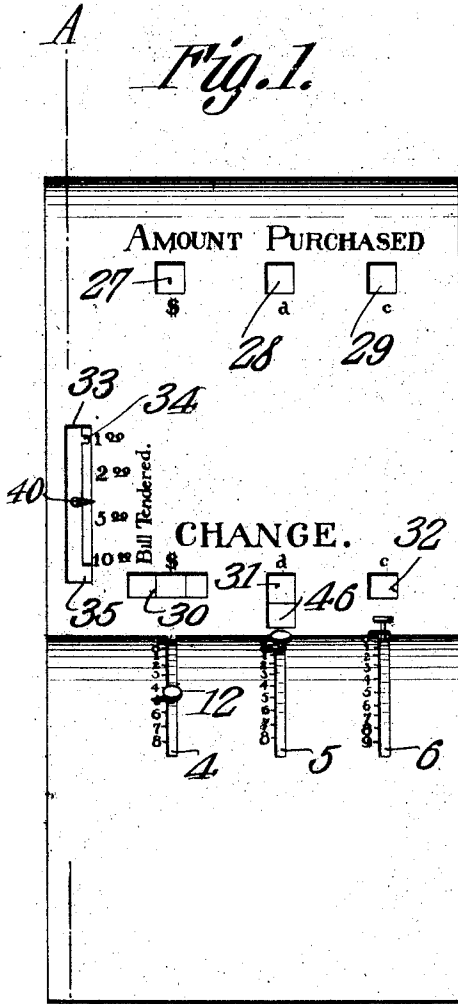


994,716.

Patented June 13, 1911.

3 SHEETS—SHEET 1.



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Witnesses

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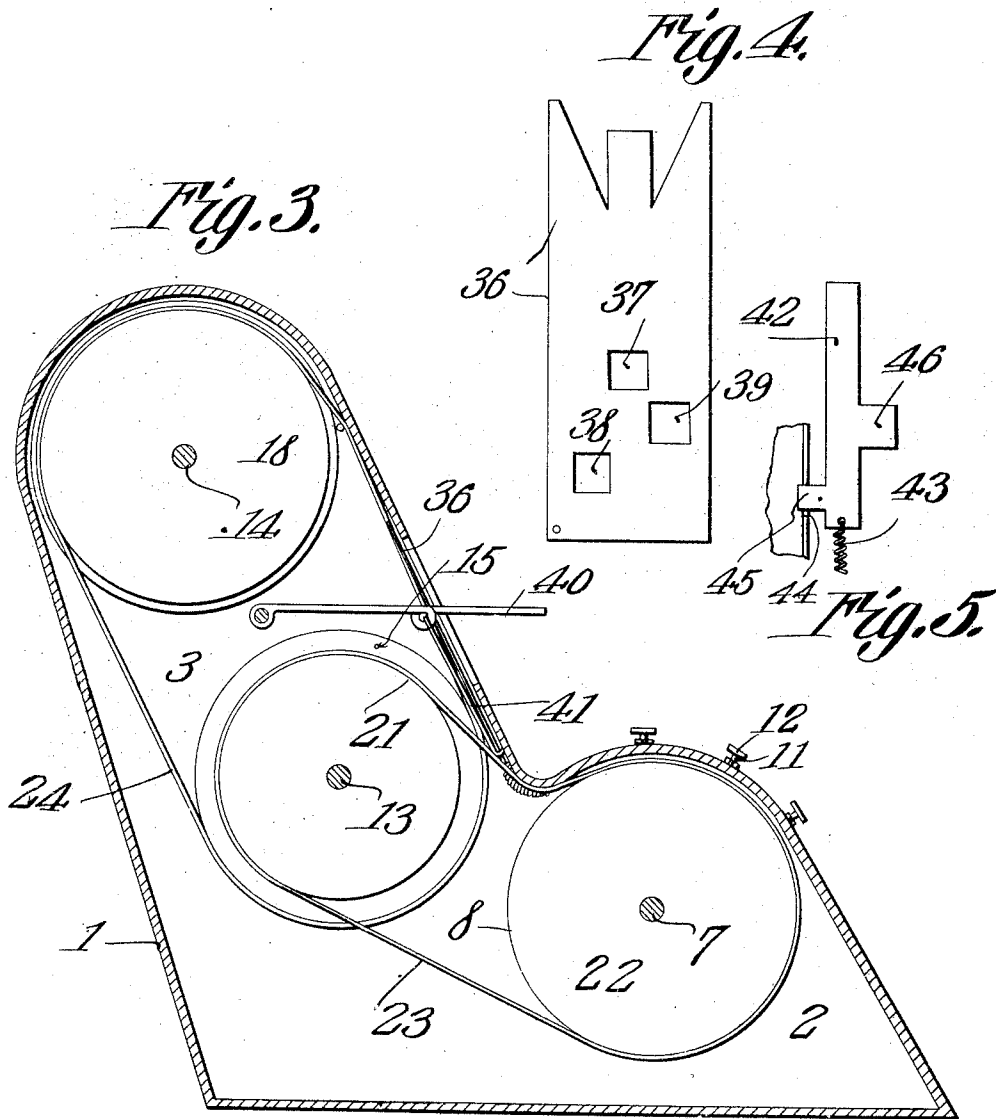
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COMPUTING MACHINE.
APPLICATION FILED JAN. 25, 1910.

994,716.

Patented June 13, 1911.

3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

994,716.

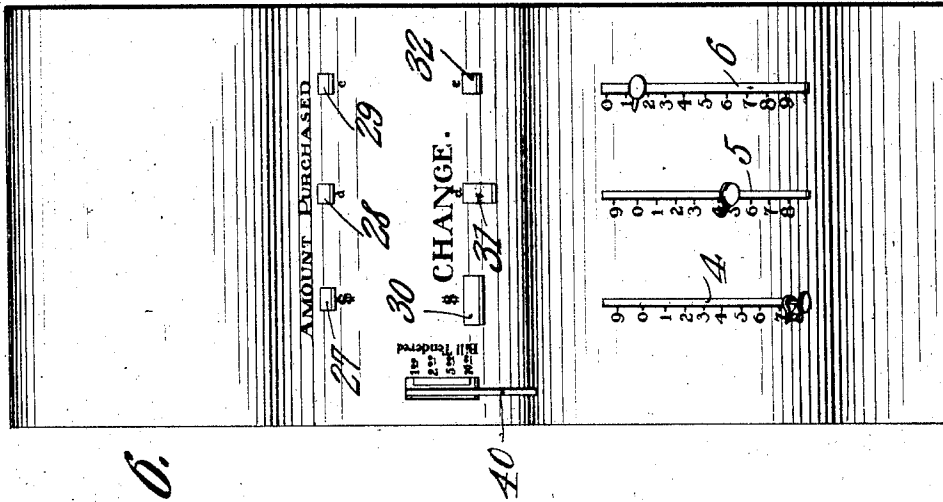
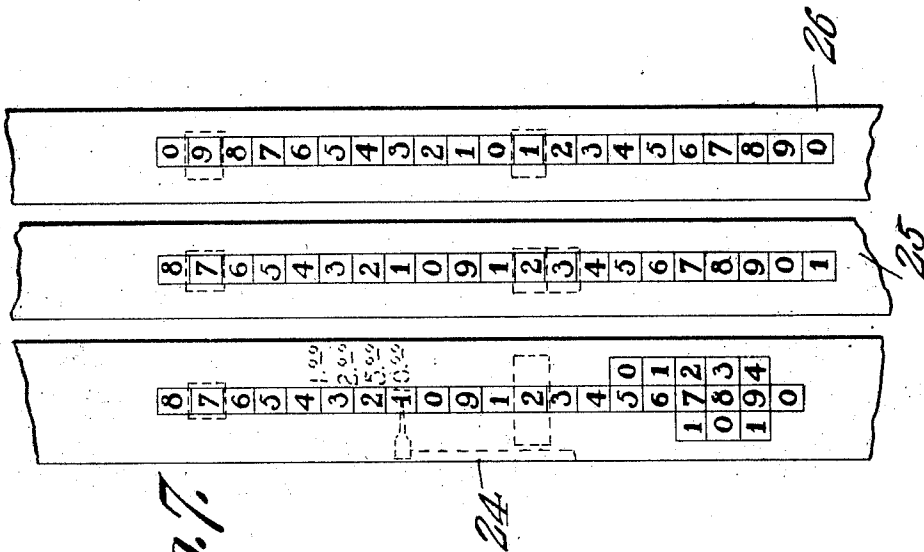


Fig. 6.



J. B. 7

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UNITED STATES PATENT OFFICE

WILLIAM A. BRYANT, OF WETUMPKA, ALABAMA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO JOHN L. ROUMILLAT AND ONE-HALF TO CHRIS J. BELGAU, BOTH OF TAMPA, FLORIDA.

COMPUTING-MACHINE.

994,716.

Specification of Letters Patent, Patented June 13, 1911.

Application filed January 25, 1910. Serial No. 539,991.

To all whom it may concern:

Be it known that I, WILLIAM A. BRYANT, a citizen of the United States, residing at Wetumpka, in the county of Elmore and State of Alabama, have invented a new and useful Computing-Machine, of which the following is a specification.

This invention has reference to improvements in computing machines and is designed more particularly for designating the amount of change due a customer who tenders a bill in excess of the cost of a purchase.

The invention comprises essentially a series of tapes or flexible bands upon which are produced longitudinal series of figures with means for moving the bands or tapes and for permitting the display of certain of the figures so that there is exposed to the view of the customer the amount of the purchase, the amount tendered by the customer and the change due.

The invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming a part of this specification, in which drawings,

Figure 1 is a front view of a structure constructed in accordance with the present invention, Fig. 2 is a similar view of the interior of the casing of the machine, the said casing being shown in section. Fig. 3 is a section on the line A—B of Fig. 1. Figs. 4 and 5 are detail views of slides used on the interior of the machine. Fig. 6 is a top plan view of the machine. Fig. 7 is a displayed view of the bands or tapes showing the disposition of the numerals thereon, and also showing in dotted lines the relative positions of the openings therethrough.

Referring to the drawings there is shown a casing 1 shaped to house the various operating parts of the mechanism, the casing being formed to provide a front compartment 2 and a rear compartment 3 higher than the front compartment which latter is rounded on top and preferably slanting rearwardly away from the front compartment. The rounded top of the front compartment is provided with three parallel slots 4—5—6 having numerals displayed on one side of each slot. The numerals displayed adjacent to the slots 4 and 5, reading toward the

observer, are as follows: 9, 0, 1, 2, 3, 4, 5, 6, 7, 8. The numerals displayed alongside the slot 6 read as follows: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Within the compartment 2 and extending laterally across the same is an arbor 7 upon which are mounted three rollers 8—9—10 and each of these rollers is provided with a projecting pin 11 extending through the respective slot and exterior to the casing provided with a manipulating knob or handle 12.

Within the casing 3 and at higher points than the arbor 7 are other arbors 13 and 14, the arbor 13 carrying rollers 15—16—17 and the arbor 14 carrying rollers 18 and 19 and 20. Each roller 15, 16 and 17 has fast on one side thereof a pulley 21 and each roller 8—9 and 10 has a similar pulley 22. A flexible belt 23 connects each pulley 21 with a pulley 22. The pulley 22 of the rollers 8—9 and 10 may be simply in the form of a circumferential groove on one side of the corresponding roller.

Extending around the peripheries of the pulleys of the rollers 15 and 18 is an endless band 24. Extending around the peripheries of the pulleys of the rollers 16 and 19 is an endless band 25, and extending around the peripheries of the pulleys of the rollers 17 and 20 is an endless band 26. These bands are secured to or so engage the respective pulleys that they always maintain the same relative position one to the other and to the respective rollers. The same is true of the belts 23.

The band 24 has upon it a main series of numbers which reading from the top downward are as follows: 8, 7, 6, 5, 4, 3, 2, 1, 0, 9, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0. On the same band are two other series of figures one to the left-hand side of the main series of figures and the other to the right-hand side. The left-hand side series begins opposite the lower number 7 of the main series and reads as follows: 1, 0, 1. The right-hand series begins opposite the lower numeral 5 of the main series and reads as follows: 0, 1, 2, 3, 4.

The series of figures upon the band 25 is a single column extending longitudinally of the band and reading from the top downward as follows: 8, 7, 6, 5, 4, 3, 2, 1, 0, 9, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

The series of figures on the band 26 is a

single series of the band and reading from above downward as follows: 0, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

The front portion of the casing inclosing the chamber 3 is formed with two sets of openings or windows, one set being designated in the drawings by the numerals 27—28 and 29 and the other set by the numerals 30, 31 and 32. The openings 27 and 30 are in the same vertical plane and numbers on the band 24 are visible therethrough. The openings 28 and 31 are in the same vertical plane and numbers on the band 25 are visible therethrough. The openings 29 and 32 are in the same vertical plane and numbers on the band 26 are visible therethrough. The openings 27, 28 and 29 are all the same size and are each sufficient for the display of a single numeral on the respective band. The opening 30 is of such height as to display a single numeral on the band 24 but of such width as to display all three columns of numerals on this band 24, but provision is made for the display of but one of the three columns at one time as will hereinafter appear. The opening 31 is of sufficient height to display two numerals one above the other of the band 25, but as will hereinafter appear provision is made for the display of but one of these numerals at a time. The opening 32 is of such height and width as to display but one numeral of the band 26 at one time. The openings 27, 28 and 29 are all in the same horizontal plane and the openings 30, 31 and 32 are in the same horizontal plane but displaced below the openings 27, 28 and 29 to exhibit the tenth numeral of any one of the bands below the one displayed in the upper opening 27, 28 or 29 as the case may be. The lower part of the opening 31 will display the eleventh numeral below the one displayed in the opening 28. At one side of the front of the casing inclosing the compartment 3, that side being to the left of the band 24 as viewed in Fig. 1, there is formed through the casing an elongated slot 33 having locking notches 34 and 35 near the respective ends.

On the inner face of the casing back of the opening 30 is a slide 36 shown separately in Fig. 4, and this slide is provided with three openings 37, 38 and 39 in the vertical planes of the three columns of figures displayed on the strip 24, but the openings are in different horizontal planes. The opening 37 corresponds to the long column of figures on the strip 24, the opening 38 corresponds to the left-hand short column of figures on the same strip and the opening 39 corresponds to the right-hand column of figures on the same strip. A lever 40 hinged to one side of the casing and projecting through the slot 33 is connected by a link 41 to the slide 36 so that when this lever 40 is moved up or down the slide 36 will participate in this

movement and the lever may be sufficiently elastic to snap into the notches 34 or 35 or be forced out therefrom into the main portion of the slot so that this slide may be moved up or down and locked in either extreme position but will be held in intermediate positions by frictional engagement. Arranged to slide along the back face of the front of the casing adjacent to the opening 31 is another sliding member 42 normally held in the depressed position by a spring 43 and movable against the spring by a pin 44 on the roller 17 engaging a projection 45 on the slide. This slide is provided with a laterally projecting blind 46 movable along the opening 31 and of sufficient height to close half the opening and thus hide one or the other of the numerals which would otherwise be visible through the opening 31.

Let it be assumed that the machine is designed to show the change due from the proprietor on a purchase amounting to less than ten dollars, then at different points along the slot 33 the amounts \$1.00, \$2.00, \$5.00, \$10.00 will be displayed, these being ordinary bill denominations. By way of illustration let it be supposed that the purchase amounts to \$7.79 and that a \$10.00 bill is tendered in payment thereof. The lever 40 is moved downward until the slide 36 has participated in the downward movement so that the opening 37 in the slide 36 is centralized in the opening 30 thus displaying the central column of figures of the band 24 and hiding the other columns. The rollers 8, 9 and 10 are moved by the knobs 12 of the pins 11 until these pins or pointers carried by the pins are opposite the respective numbers, 7—7—9. This will cause the display of these three figures in the respective openings 27, 28 and 29 by the movement of the bands 24, 25 and 26 caused by the movement of the rollers 8—9 and 10 transmitted through the belt 23 to the pulleys on the rollers 15—16 and 17, thus causing a corresponding movement of the bands, the rollers 18, 19 and 20 being simply idler rollers. The tenth numbers below the numbers displayed through the upper set of openings will be seen through the lower set of openings, and these numbers will be 2—2—1. This last named set of numbers will be found to represent the change due the customer from a \$10.00 bill tendered for a purchase amounting to \$7.79.

Suppose for instance that the amount of the purchase came to \$1.36 and that a \$2.00 bill was tendered in payment of this amount. The lever 40 is moved until opposite the designation \$2.00 by the side of the slot 33. This will expose the left-hand column of figures on the band 24 through the opening 38. The band 26 is moved until the numeral 6 is displayed through the opening 29 when the tenth number below the opening 29 will

be found to be the numeral 4 seen through the opening 32. The band 25 is moved until the numeral 3 appears through the opening 28 and the tenth number therebelow, namely the numeral 6 will be found displayed through the opening 31. The numeral 1 of the band 24 is caused to be displayed through the opening 27 and were it not for the slide 36 the numeral 8 would be displayed through the opening 30 but because of the slide 36 this numeral is hidden but the left-hand column is displayed and this will be found to be the numeral 0 so the change shown by the machine is 64¢ which is the proper amount of change due out of the \$2.00 tendered.

Suppose the purchase amounted to \$2.40 and that a five dollar bill is tendered in payment, then the lever 40 is moved until opposite the designation \$5.00 which will bring the opening 39 of the slide 36 into coincidence with the opening 30 blanking the central and left-hand columns and displaying the right-hand column of the band 24. Since there are no cents, the roller 10 is allowed to remain at zero, or if not at such designation, is moved to the zero point thus causing the display of zero or naught at both the openings 29 and 32. This will cause the engagement of the pin 44 of the roller 10 with the slide 42 and thus cause the display of the lower portion of the opening 31, thus when the index of the roller 9 is moved to 4, such numeral 4 will be displayed through the opening 28 but the tenth numeral below the same on the band 25 is 5 and consequently it is necessary to display the next lower number, namely 6, to compensate for the zero designation of the column representing cents. By the proper movement of the roller 8 there is caused to be displayed through the opening 27 the numeral 2 and the same numeral will be found displayed through the opening 39, visible through the right-hand end of the opening 30.

These several examples will be sufficient to show the operation of the machine.

What is claimed is:—

1. In a machine of the character described, independently movable members having columns of figures in predetermined order thereon representing units, means for moving said members independently to chosen extents, a casing housing the members, and having openings for the display of related portions of the columns of figures, and means for partly closing certain openings so that the exposed figures shall indicate the amount purchased and the amount of change due.

2. In a machine of the character described, a movable member having a column of figures in predetermined order thereon representing cents, another movable member having a column of figures thereon in predetermined order representing dimes, and a third movable member having a column of figures thereon representing dollars and other flanking columns of figures also representing dollars, means for causing the movement of said members to a chosen extent, a casing housing the members and having openings for displaying related portions of the units and dimes columns of figures and a slide adjustable over this third opening and itself having openings for closing two and exposing the third column of dollar figures to indicate the amount purchased and the amount of change due.

3. In a machine of the character described, a movable member containing a column of figures reading in reverse order from the central portion toward the ends and representing cents, another movable member containing a column of figures also reading from the central portion toward the ends and representing dimes or tenths of dollars, another movable member having a column of figures reading like the second column of figures and provided with flanking columns of figures, a casing housing the figure-containing members and provided with spaced openings through which related portions of the columns of figures are visible, and adjustable means for rendering different related portions of the second and third columns of figures visible.

4. In a machine of the character described, a movable band containing a column of figures containing the numerals one to nine in such order that the eleventh numeral from any numeral shall represent the difference between the first named numeral and ten, another movable band containing a like arrangement of numerals, and a third band containing a like arrangement of numerals and having flanking columns of numerals, a casing inclosing the figure containing members, means for moving the bands independently, and means for displaying related portions of the columns of figures to indicate the amount purchased and the amount of change due.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM A. BRYANT.

Witnesses:

F. LOYD TATE,
J. F. TATE.