

(No Model.)

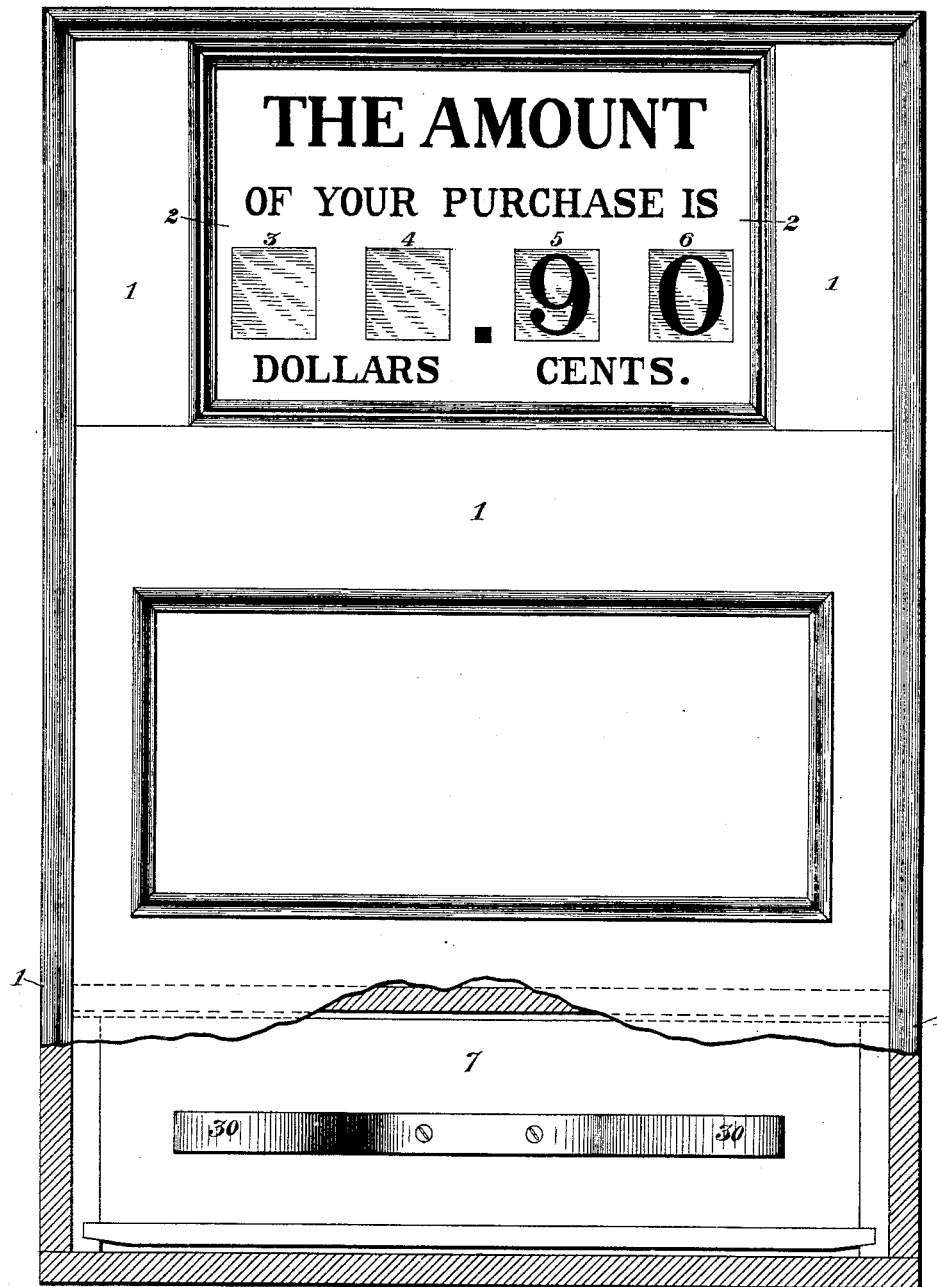
6 Sheets—Sheet 1.

W. W. WYTHER.

CASH REGISTER AND INDICATOR.

No. 384,490.

Patented June 12, 1888.



WITNESSES.

H. L. Gill.

Thomas W. Bancroft.

Fig. 1.

INVENTOR.

William W. Wythe.

(No Model.)

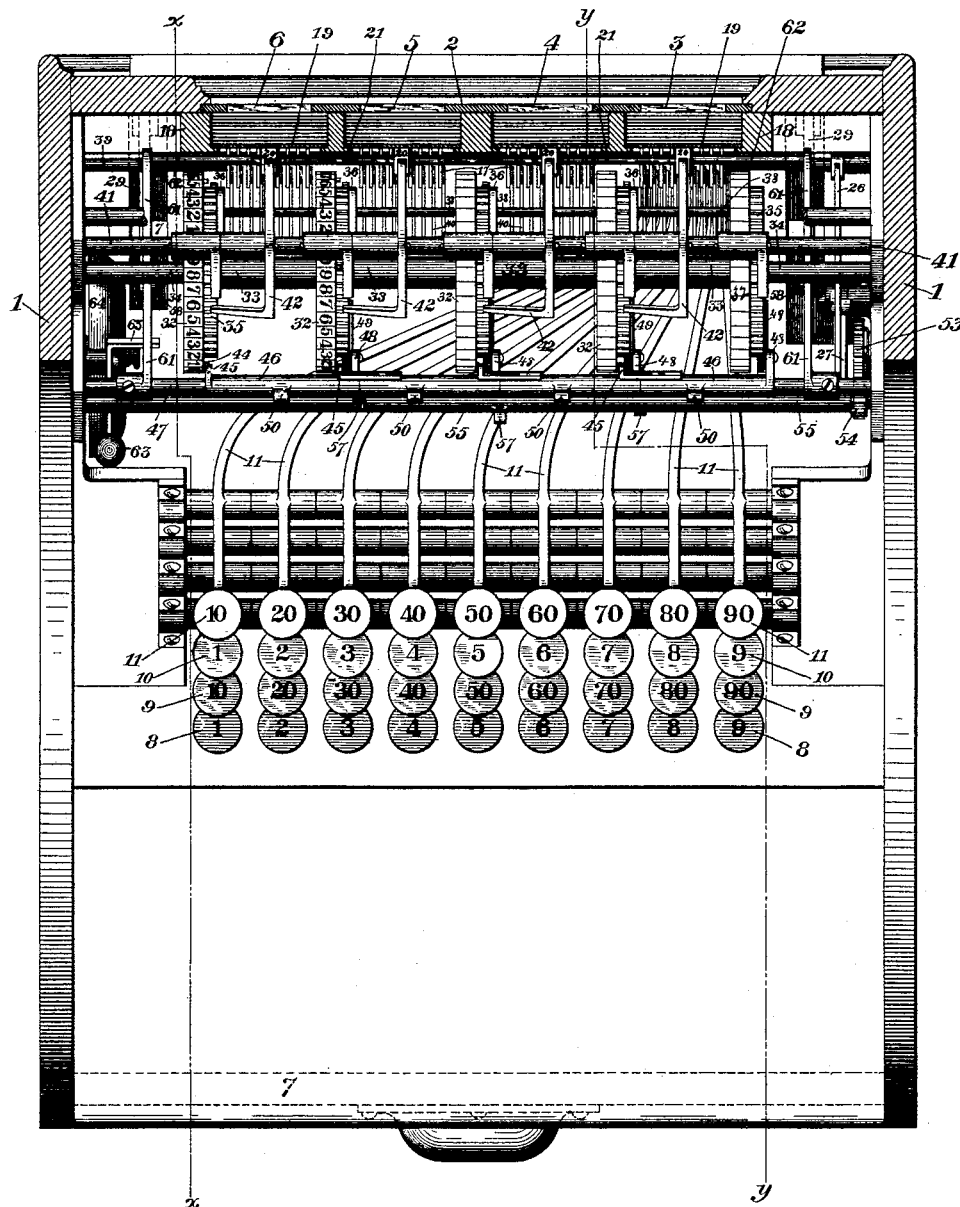
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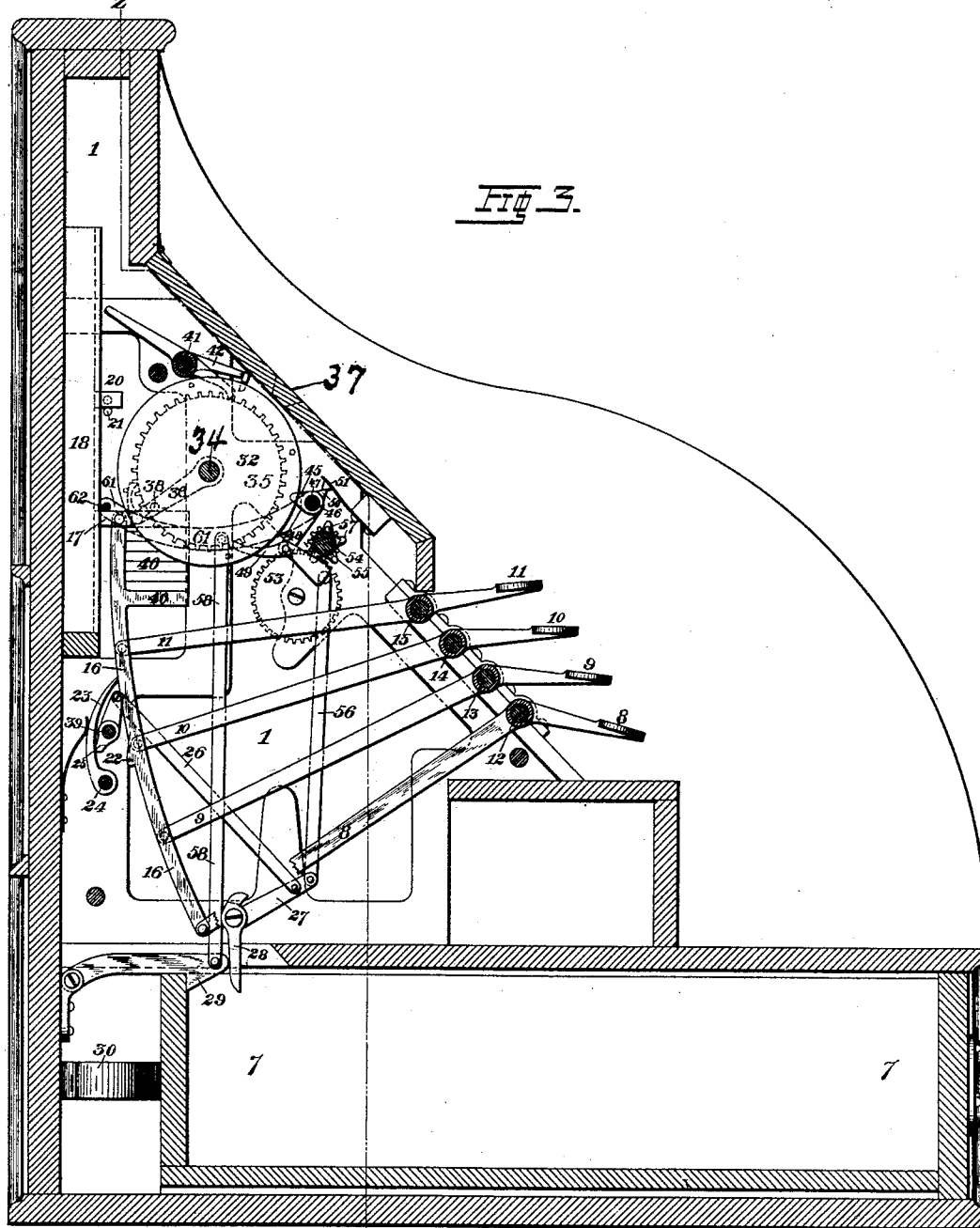
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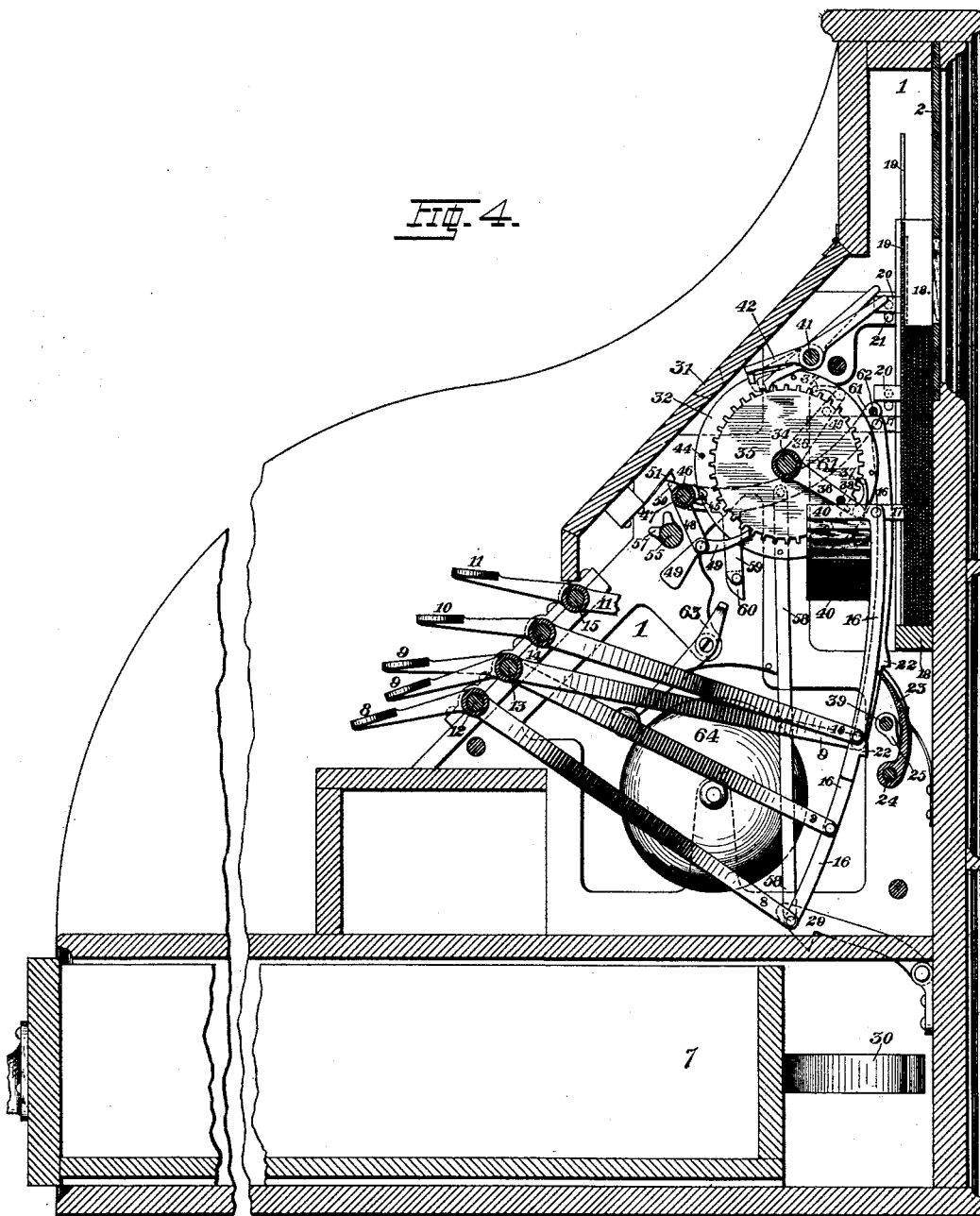
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Fig. 4.



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6 Sheets—Sheet 5.

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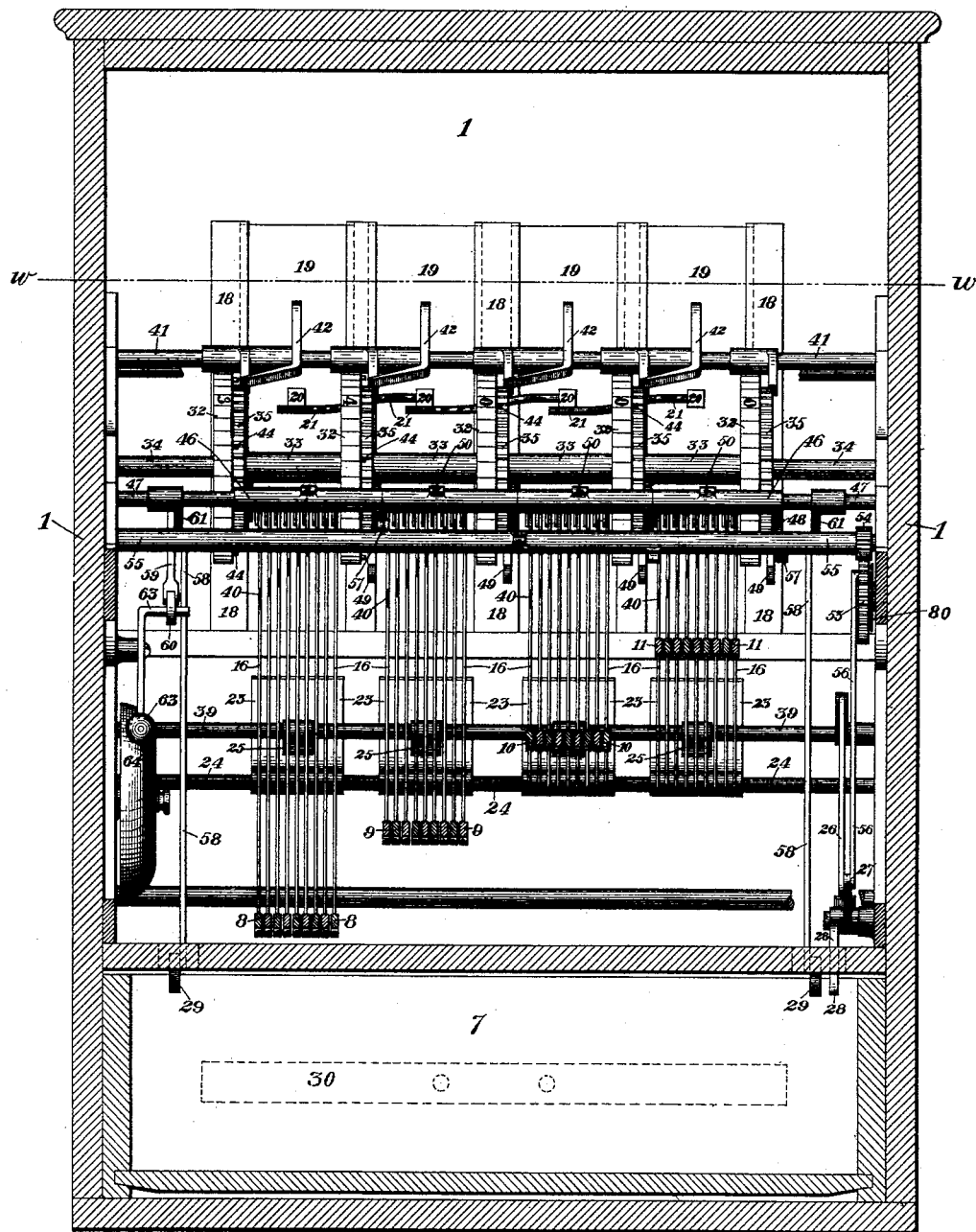


Fig. 5.

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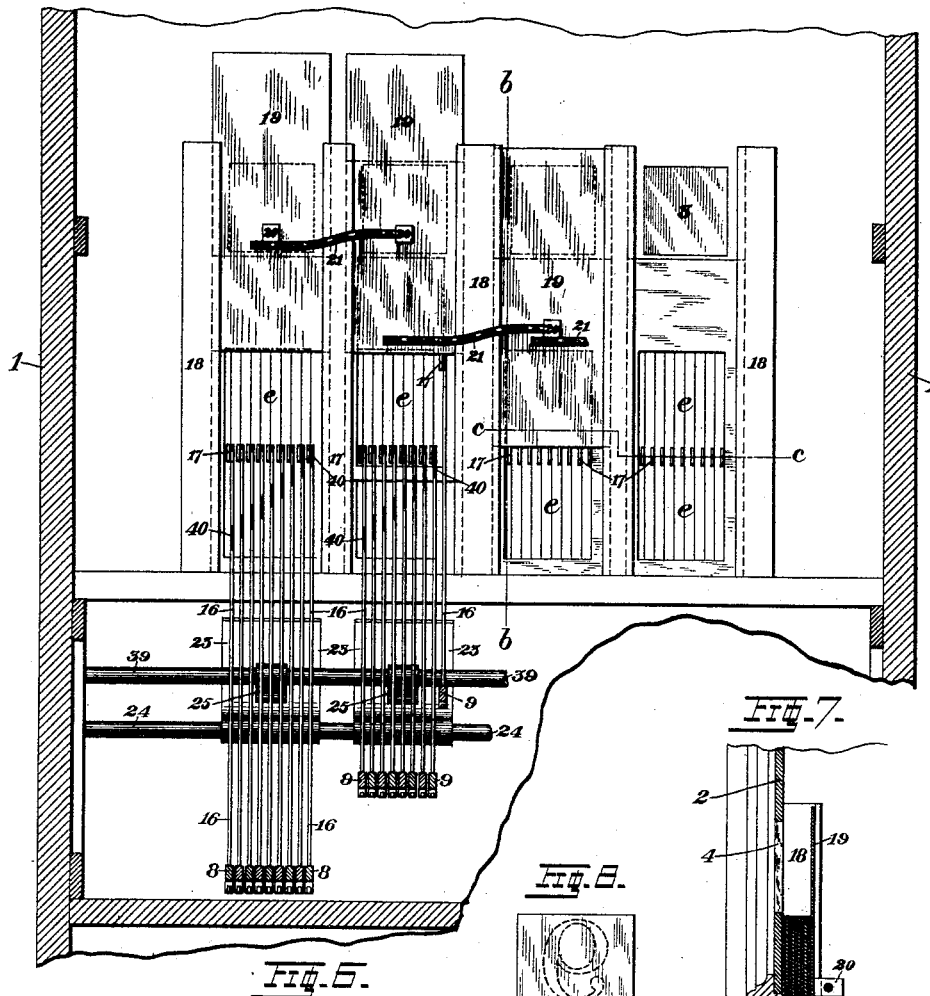


Fig. 6.

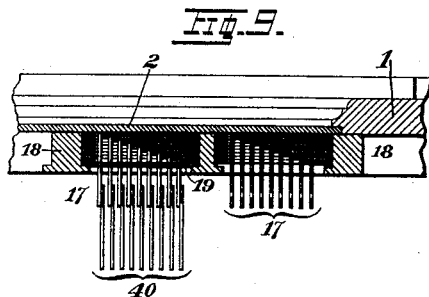


Fig. 9.

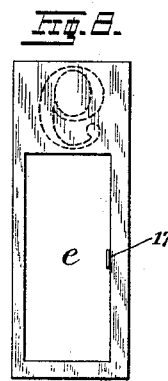


Fig. 8.

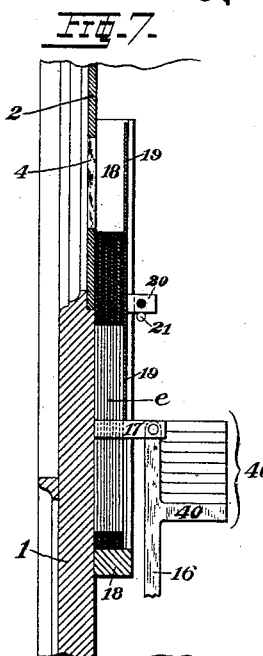


Fig. 7.

WITNESSES.

A. L. Gill

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Wm W. Wythe.

UNITED STATES PATENT OFFICE.

WILLIAM W. WYTHER, OF PARKER'S LANDING, PENNSYLVANIA, ASSIGNOR
TO WILLIAM H. WYTHER, OF CHAUTAUQUA, NEW YORK.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 384,490, dated June 12, 1888.

Application filed May 16, 1887. Serial No. 238,332. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. WYTHER, of Parker's Landing, in the county of Armstrong and State of Pennsylvania, have invented a new and useful Improvement in Cash-Registers; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation, partly broken away, of my improved cash register and indicator. Fig. 2 is a plan view of the interior mechanism, partly in horizontal section, on the line *ww* of Fig. 5. Fig. 3 is a vertical sectional view on the line *xx* of Fig. 2. Fig. 4 is a vertical sectional view on the line *yy* of Fig. 2. Fig. 5 is a vertical sectional view on the line *zz* of Fig. 3. Fig. 6 is a rear view of the case which holds the sliding figured plates. Fig. 7 is a detached sectional view on the line *bb*, Fig. 6. Fig. 8 is a detached rear view of one of the indicator-slides. Fig. 9 is a horizontal sectional view on the line *cc*, Fig. 6.

Like symbols of reference indicate like parts in each.

My invention consists, first, in an improved device for indicating numerals by the movement into view of slides upon which are the figures, and, second, in devices for registering the figures or amounts so exhibited. It is especially designed for indicating and registering the sales in shops and stores.

In the drawings, 1 indicates the case or frame within which the different parts and machinery are mounted and arranged. The front portion of this case is shown in Fig. 1 of the drawings. Near the top of this front face is a panel, 2, upon which may be printed or otherwise formed the device "The amount of your purchase is," below which device are four or more openings, 3, 4, 5, 6, through which the figures on the slide appear when these slides are brought into view, and a period is printed between the openings to represent the decimal point. Below the openings the words "dollars" and "cents" may be printed. In this figure of the drawings the lower portion of the case 1 is broken away, showing the rear portion of the cash-drawer 7, which is arranged

to slide in the lower portion of the case, opening toward the rear.

At the rear face of the case are arranged banks of keys, 8, 9, 10, 11, (shown in Fig. 2,) each bank having nine keys, commencing on the left of the lowest bank, 8, with 1 and ending with the figure 9; on the second bank, 9, commencing with the figure 10, the next key of the bank being 20, and so on by tens to the last, which is numbered 90. The third bank, 10, is numbered like the first, and the fourth bank, 11, like the second. The two lower banks are used to indicate cents in the spaces 5 and 6, (shown in Fig. 1,) and the two upper banks to indicate dollars in the spaces 3 and 4. These keys are secured to the free ends of levers, which are journaled on shafts 12, 13, 14, 15, extending transversely across the case 1 and secured thereto, each bank of keys having its own shaft. To the other end of each of the key-levers is pivoted vertical curved rods 16, the upper ends of which rods are pivoted to horizontal arms 17, extending from the plates carrying the dollar and cent numerals backward at right angles to the rear face of the plates or slides.

Inside of the case 1, back of each of the openings 3, 4, 5, and 6, is a slide-case, 18, for holding the sliding plates, upon which plates the dollar and cent numerals are formed or printed. These cases each contain ten slides numbered on their face from zero to nine, the zero-slide being at the rear, and the unit-slide being next the opening in the case. Extending from the edge of the plates backward at right angles to the rear face of the same are arms 17, to which the rods 16 are pivoted. As shown in Fig. 8, each of the plates is cut away by a slot, *e*, the slot of each plate being wider than the slot of the plate in front of it, and the arms 17 extend from the edges of these slots. The reason of cutting away the plates by successively larger slots is to permit the arms 17 of the front plates to extend back of the rear plates, as is clearly shown in Figs. 6, 7, and 9. The zero-plates, which are the rearmost in the slide-cases, are not cut away, and are not provided with the arms 17, nor are they attached to any of the key-levers, although they are arranged to be actuated thereby. This is accomplished by

means of the arms 17, upon which the lower edges of the zero-plates 19 rest, so that when any one of the plates is raised the zero-plate of that series is also raised, but does not show, being hidden by the plate in front of it, which is raised at the same time. Upon the rear face of each of the zero-plates is a lug, 20, and from both the dollar zero-plates and one of the cent zero-plates, arms 21 extend below the lug 20 of the zero-plate of the next series, as shown in Figs. 5, 6, and 7, so that when one of the slides is raised before the openings 5, 4, or 3, the zero-slide in all of the series to the right of these openings (looking from the front) is also raised at the same time and is exhibited, unless another figured slide in that series is also raised, in which case the zero-slide although raised is hidden from view by the slide in front of it. On each of the rods 16 is a tooth, 22, Figs. 3 and 4, which, when the rod is raised so as to exhibit the plate, engages with spring-pawls 23, which are journaled on the shaft 24, and thereby the plates are held in their elevated position. Extending from the shaft 39, and keyed thereto, are fingers 25, (see Figs. 3, 4, and 5,) and to the end of the shaft 39, a rod, 26, is pivoted. The other end of this rod is pivoted to one end of the lever 27. Pivoted to this lever is a finger, 28, which extends down behind the cash-drawer 7, so that when the drawer is being shut it will come in contact with the finger 28 and push it back so that the upper portion of the finger comes in contact with the arm 27 and draws down the rod 26, so that the fingers 25 push the pawls 23 from the notches or teeth 22, and allow the plates to drop down to their normal position away from the openings 3 4 5 6. Whenever any of the key-levers are depressed, the drawer 7, which is fastened by the hook 29, is released in the manner hereinafter described, and the drawer is forced out by the spring 30. By this arrangement any desired amount may be indicated or exhibited, according to the number of series of plates. In the apparatus shown in the drawings four series of plates are used—two cent series and two dollar series—so that any amount from one cent to ninety-nine dollars and ninety-nine cents may be indicated, as follows: By pressing on the last key of the upper bank of keys the ninety-plate before the opening 3 is raised, and by means of the arm 17 the zero-plate 19 of that series is also raised, which zero-plate, by arms 21 and lugs 20, raises the zero-plate of each of the other series, thereby indicating ninety dollars; but if the nine-dollar key, the ninety-cent key, and the nine-cent key are all pressed at the same time as the ninety-dollar key, the nine-plate is raised in each of the series covering the zero-plates, so that the openings in the front of the case exhibit the figures 99.99, indicating the sum or amount of ninety-nine dollars and ninety-nine cents. To indicate any other amount, the proper keys are depressed, the action being the same, as each slide, except-

ing the zero, moves independently of the others and without interfering with the others.

In the rear face of the case or frame 1 are five or more openings, 31, Figs. 3 and 4, behind each of which is a wheel, 32, the circumferences of which wheels are divided into four equal parts, each of which parts is provided with figures from 0 to 9. These wheels are loosely mounted on the shaft 34, on which shaft are sleeves 33, which are journaled on the shaft, and on one side of each of these wheels 32 are toothed wheels 35. Extending at right angles from the sleeves toward the rods 16 are arms 36, at the end of which arms are pawls 37, which engage with the teeth of the wheels 35. Extending at right angles from the arms 36 are rods or arms 38. Below these arms 38, extending from each of the rods 16, are arms 40, arranged to engage with the arms 38 when the rods 16 are raised by depressing the keys and thereby lifting the arms 36, so that the pawls 37, engaging the teeth of one of the wheels 35, shall cause it and the wheel 32 to turn on their axes a certain distance. In order to regulate this distance according to the number on the plate, the arm 40 on the rod 16, which raises the plate 9, is at the end of the rod 16, so that the movement of the rod shall cause the wheel to make nine-fortieths of a complete revolution and bring the figure 9 on the wheel 32 before the opening 31. The arm 40 on the rod 16, which raises the plate 8, is one step lower down, so as to give the wheel 32 only eight-fortieths of a complete revolution, and so on with the series to the rod which moves the plate 1, which gives the wheel 32 only one-fortieth of a complete revolution, so that the rods cause the wheels 32 to revolve the number of spaces indicated on the plates with which the rods are connected. Journaled on the shaft 41 are pawls 42, one arm of which is provided with a tooth adapted to engage with the teeth of the wheels 35, while the other arm extends to and in the path of the lugs 20 on the back of the zero-plates 19, so that the moment when the zero-plate has completed its upward movement with the rod 16, the tooth of the pawl is thrown into gear with the teeth of the wheel 35 and stops its movement, as is shown in Fig. 4. The purpose of this is to check the movement of the wheel instantaneously and to prevent it from being moved too far under the momentum occasioned by a too sharp or careless striking of the keys. By these devices, when, for example, the amount ninety-nine cents is displayed, the two figured wheels 32, connected with the cent series, also display at the rear openings the amount ninety-nine cents. If, however, the next sum is, say, forty-four cents, the spur-wheels 35 each move four spaces by the devices already described, and in addition to this the ten-wheel of the cents and the unit-wheel of the dollars are each moved one space by the completion of a quarter-revolution of the wheel next below in the series, so as to display the figures

1.43, the sum of ninety-nine and forty-four. This is done by the following devices: On each of the five wheels 32, excepting the last, are four pins, 44, which, when the wheels make a quarter-revolution, engage with lugs 45, extending from the sleeves 46, which are journaled on the shaft 47. Extending from each of the sleeves 46, excepting the first, is an arm, 48, to the end of which is pivoted a pawl, 49, one end of which engages with the teeth of the wheel 35, and the other end of the pawl is weighted so as to keep the pawl in contact with the teeth. On each of the sleeves 46 is a lug, 50, against which a spring, 51, bears and acts as a stop on the lug at each end of the stroke of the arm 48. When the pins 44 strike the lugs 45 and draw them down, the pawl 49 is drawn back one tooth on the wheels 35. Journaled to the side of the case 1 is a toothed wheel, 53, which is controlled by a spiral spring, 80, (shown in Fig. 5,) and gearing with the teeth of this wheel is a pinion, 54, which is keyed to the shaft 55. Pivoted to the wheel 53 is an arm, 56, the lower end of which is pivoted to the arm 27, which arm is operated by the finger 28 when the cash drawer 7 is closed, as already described. This movement of the arm 27 draws down the arm 56 and gives a partial revolution to the wheel 53, which in turn gives a complete revolution to the gear-wheel 54 and shaft 55. Spirally on the shaft 55 are lugs 57, which, when the shaft revolves, bear against the arms 48 and push the pawl 49, which has been drawn back by the sleeve 46 to its normal position, giving the wheels 32 and 35 of the next higher series a partial rotation of one space. When the pawls 49 and arms 48 are in their normal position, they are out of the path of the lugs 57. By these devices, whenever any of the wheels 32 pass the nine-space to the zero the pawl is retracted, thus being prepared to move the next wheel in the series at the proper time, which is accomplished by the closing of the drawer, as already described, so that while the register-wheels are in motion there is no action of the carrying device, but it comes into action when the machine is not employed in registering, so that the movements not being combined a false movement of the wheels is prevented, and at the same time all the banks of keys may be operated simultaneously without error in the result, and the wheel of the next higher series is given a partial revolution of one space, so that the sum of the amounts which have been registered by striking the keys is at all times in view at the rear face of the machine, and by referring to these wheels 32, as shown, through the openings 31, the salesman can tell at any time during the day what is the amount of the sales which have been registered before that time. At the beginning of each day the machine should be set by turning each wheel until the zero-point is exhibited at the opening 31.

I shall now describe the mechanism by

which the drawer 7 is unlatched and a bell is sounded at each striking of the keys, the purpose of this arrangement being to call the attention of the proprietor or floor-walker and of the customer to the use of the machine. It thus serves the purpose of a check on the salesman and as an indicator to attract the attention of the customer.

Two arms, 61, are journaled loosely at the ends of the machine on the shaft 47. These arms are connected by a horizontal rod, 62, which rests on the arms 17, and is therefore raised when any one of the figured slides is raised. The arms 61 are connected by vertical rods 58 with the drawer-latches 29, which hold the drawer when closed. Also connected with one of the arms 61 is a projection, 59, having at the end a pawl, 60, which in its upward stroke engages and turns a bell-hammer, 63, the pawl being jointed in the usual way, so as to be rigid in this direction, but it turns on its pivot and passes the hammer on its return stroke. Thus whenever any of the keys is depressed, so as to lift one or more of the figured slides, it raises the rod 62, and, through the levers 61 and connecting-rod 58, disengages the latch 29 and permits the springs 30 to throw the cash-drawer 7 open, and at the same time, through the upward motion of the arm 59 and pawl 60, the hammer 63 is dropped and sounds the bell 64.

I claim—

1. In a cash indicator and register, the combination of the weighted pawl 49, arm 48, pin 44, lugs 57, keyed to the shaft 55, a finger, 28, situate in the path of the cash-drawer, arms 27 and 56, and wheels 53 and 54, whereby the pawl is brought into action only when the computing mechanism is at rest, substantially as and for the purpose specified.

2. The combination of the shaft 55 and devices, substantially as described, for operating the same, lugs 57, arranged spirally on the shaft, arms 48 and pawls 49, and registering-wheels 32 35, substantially as and for the purposes specified.

3. The numbered slides arranged in series from front to back, said slides having the arms 17 projecting therefrom and arranged in the same horizontal plane, and also having slots or openings of successively greater width, so that the arms 17 shall not interfere with each other, substantially as and for the purposes described.

4. The numbered slides arranged in series expressing the different digits, the zero-slides of each series being loosely connected with the zero-slide of the series below, whereby the rise of one of the zero-slides shall carry with it the zero-slides of each of the lower series, substantially as and for the purposes described.

5. In a cash register and indicator having a series of figured slides, the combination of retaining-pawls 23, rods 16, the cash-drawer 7, pivoted arms 25, 26, and 27, and finger 28, substantially as and for the purpose specified.

6. In a cash indicator and register, the combination of two or more series of figured slides representing units, tens, &c., key-levers connected with said slides, graded arms 40, connected with said levers, arms 38, arms 36,
5 pawls 37, and wheels 32 and 35, substantially as and for the purpose specified.

7. In a cash-register, the combination of a series of figured register-wheels representing
10 units, tens, &c., pawls engaging with the second and succeeding register-wheels, pins 44,

and lugs 45, a shaft, 55, having lugs 57 arranged spirally thereon, spring gear-wheel 53, and pinion 54, pivoted arms 56 and 27, and finger 28, and cash-drawer 7, substantially as
15 and for the purposes specified.

In testimony whereof I have hereunto set my hand this 11th day of May, A. D. 1887.

WILLIAM W. WYTHE.

Witnesses:

W. B. CORWIN,
THOMAS W. BAKEWELL.