

(No Model.)

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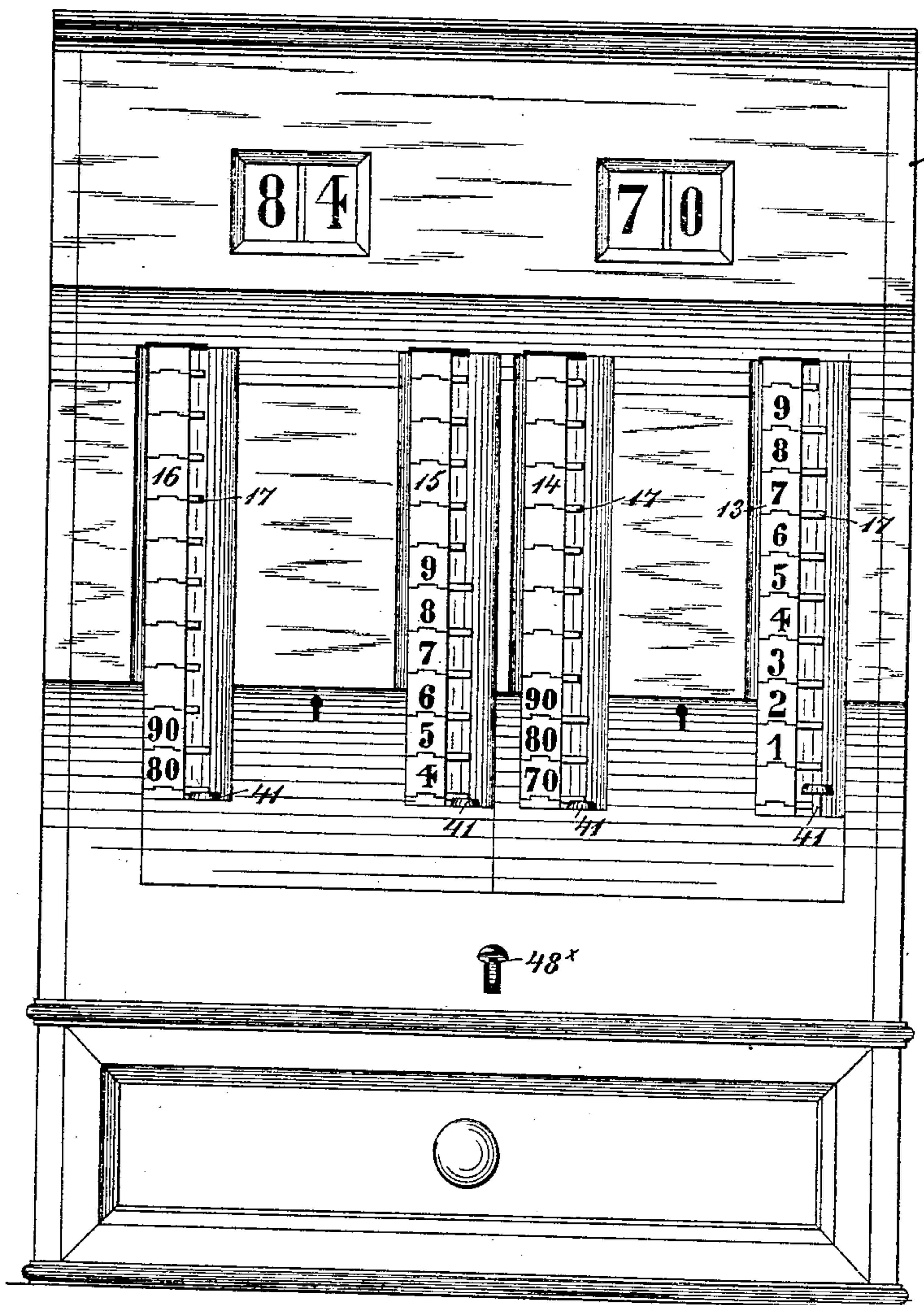
G. F. KOLB.

CASH INDICATOR AND REGISTER.

No. 395,570.

Patented Jan. 1, 1889.

Fig. 1.



WITNESSES:

Theo. Rolli.
Wm. A. Moore

INVENTOR:

George F. Kolb
BY *W. B. Sherman & Kimball*

ATTORNEYS.

(No Model.)

4 Sheets—Sheet 2.

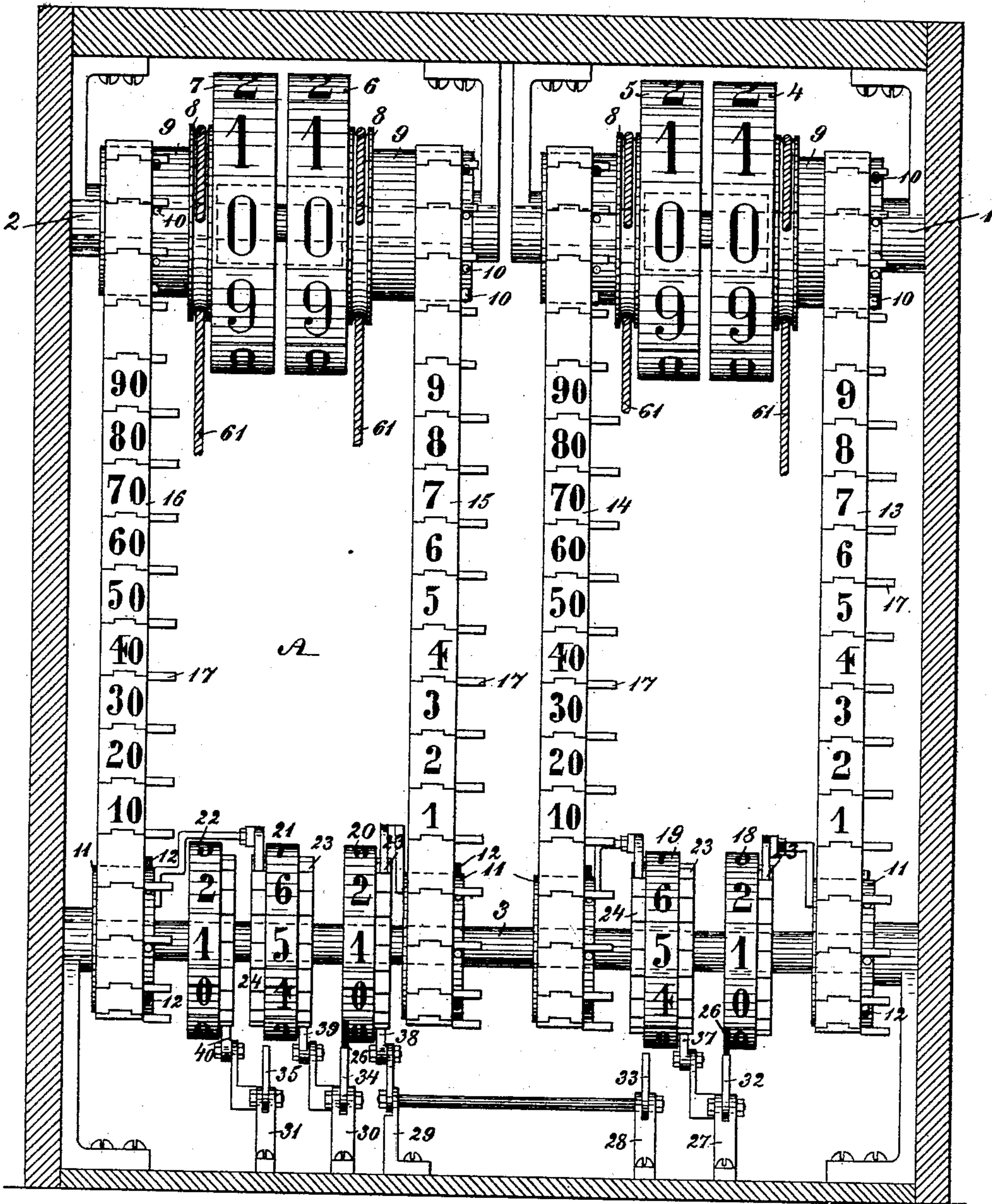
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Fig. 2.



WITNESSES:

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George F. Kolb
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(No Model.)

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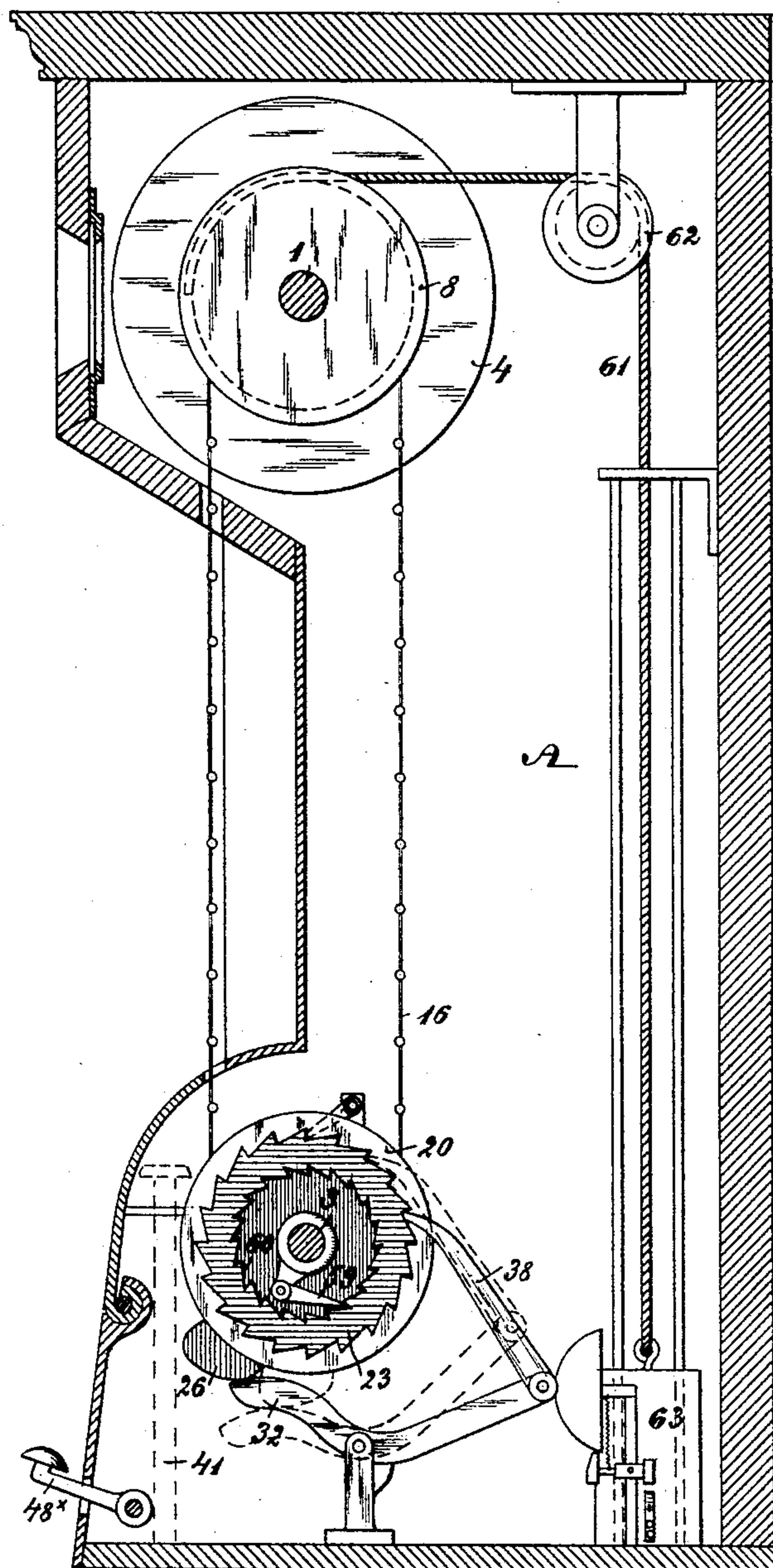
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Patented Jan. 1, 1889.

Fig. 3.



WITNESSES:

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(No Model.)

4 Sheets—Sheet 4.

G. F. KOLB.

CASH INDICATOR AND REGISTER.

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Fig. 4.

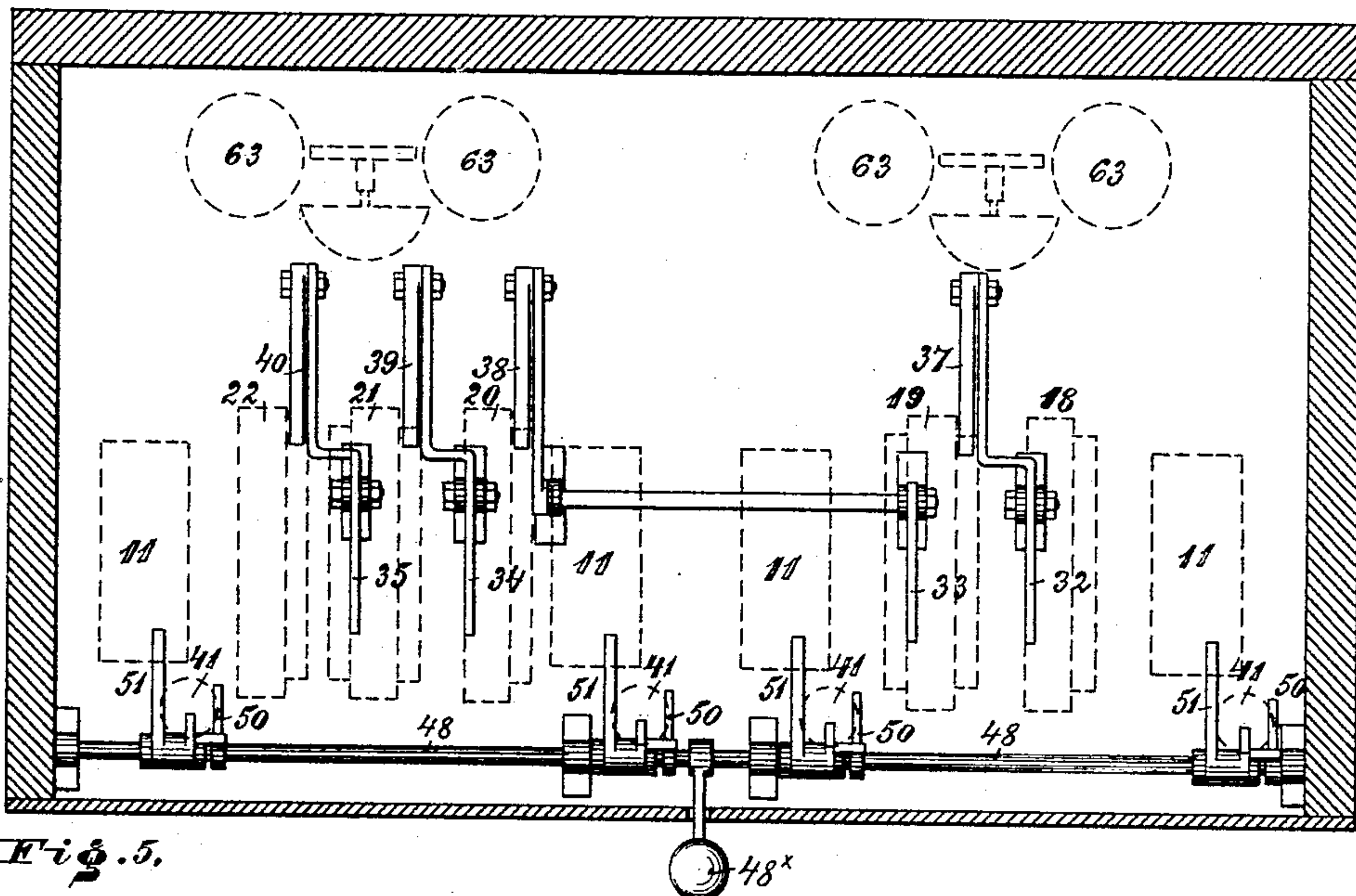
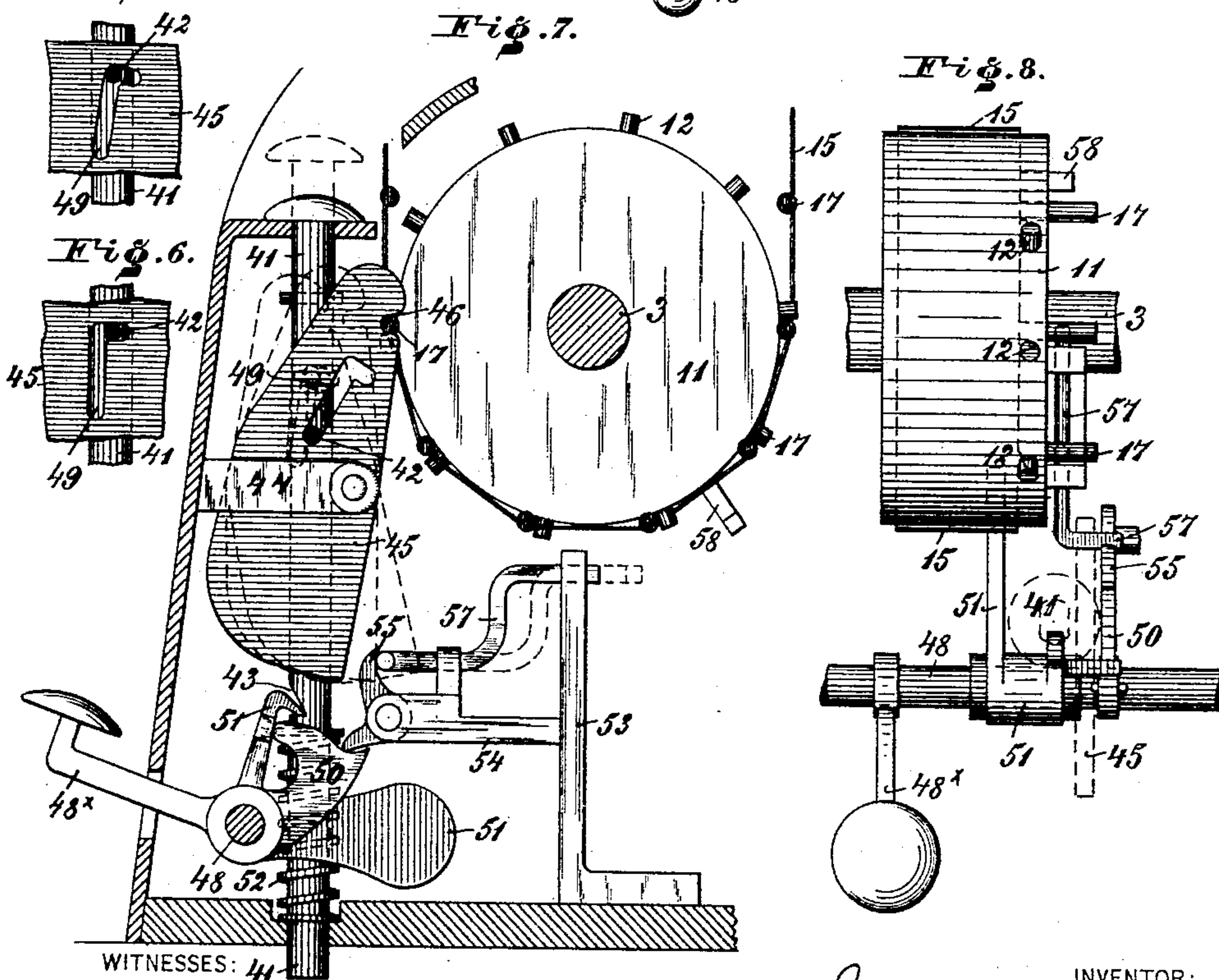


Fig. 5.

Fig. 7.

Fig. 8.



WITNESSES: 44

Theo. Rolle!
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INVENTOR:
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UNITED STATES PATENT OFFICE.

GEORGE F. KOLB, OF PHILADELPHIA, PENNSYLVANIA.

CASH INDICATOR AND REGISTER.

SPECIFICATION forming part of Letters Patent No. 395,570, dated January 1, 1889.

Application filed February 29, 1888. Serial No. 265,650. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. KOLB, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Cash Registers and Indicators, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in cash registers and indicators; and its objects are to provide improved mechanism for indicating cents and dollars; further, to provide improved mechanism for indicating the amount and for registering the same; further, to provide improved mechanism for registering the amount and preventing the accounted or registered amount being changed; and, further, the object of the invention is to provide simple, effective, and inexpensive mechanism for attaining the desired objects.

For these purposes the invention consists, first, in the mechanism herein described and claimed for operating the indicating and the registering wheels; second, in the particular mechanism herein set forth for retaining the operating-wheels and designating-belt in fixed position; third, in the mechanism for releasing said retaining mechanism whereby the device is in readiness for additional registry, and, finally, in the combination and arrangement of parts, as herein set forth and claimed.

Figure 1 represents a front view of a cash register and indicator embodying my invention. Fig. 2 represents a front view of the mechanism contained in the casing, said casing being shown in section. Fig. 3 represents a vertical transverse sectional view thereof. Fig. 4 represents a horizontal sectional view thereof. Figs. 5, 6, 7, and 8 represent detail views to more clearly illustrate the construction of certain parts or elements of the machine.

Similar numerals of reference indicate corresponding parts in the several figures.

In describing the machine I shall employ the term "indicating-wheels" with reference to the wheels which indicate the amount, and "registering-wheels" with those which register or add the amount indicated.

Referring to the drawings, A designates the

casing containing the mechanism comprising the machine, which is of a suitable shape and size for the purpose. In the upper portion of the case are shafts 1 and 2, and in the lower portion thereof a shaft, 3.

On the shafts 1 and 2 are loosely mounted the indicating-wheels 4, 5, 6, and 7, which are used to indicate cents, dimes, dollars, and tens of dollars, and have each the numbers 0 to 9 on their peripheries. The wheels have formed on one side or secured thereto grooved wheels 8 and drums or rollers 9, having projections 10. The drums or rollers 9, having the projections or pins 10, I will term "pin-rollers."

On the shaft 3 are journaled rollers or wheels 11, having projections 12, four of which rollers are employed, and which projections are on a line with the projections 10 of the upper pin-rollers, and the rollers 11, I will also term "pin-rollers."

13, 14, 15, and 16 designate endless belts formed of plates or sections flexibly secured together by means of pins 17, the ends of which project. These belts pass over the pin-rollers on the upper and lower shafts and have their projections engage the projections on the said pin-rollers. These endless belts have on them numbers for designating cents, dimes, dollars, and tens of dollars, and for that reason will be termed "designating-belts."

From the foregoing it will be understood that when the belts are moved they turn the pin-rollers over which they pass, and consequently the indicating-wheels.

18, 19, 20, 21, and 22 designate the registering-wheels, which are loosely mounted on the shaft 3 and have the numbers 0 to 9 on their peripheries, the wheels registering cents, dimes, dollars, tens of dollars, and hundreds of dollars, although I may use more wheels and register thousands of dollars, if desired.

The wheels 18, 19, 20, 21, and 22 are provided with ratchet-wheels 23 on one side, and the wheels 19 and 21 are provided with ratchet-wheels 24 as well as ratchet-wheels 23, the purpose of which will presently appear. The first and third of the pin-rollers 11 have pawls on their left-hand side engaging the ratchet-wheels 23, and the second and fourth have

pawls on their right-hand side engaging the ratchet-wheels 24, as clearly shown in Fig. 2 of the drawings. The said registering-wheels are each provided at the number 9 on their 5 periphery with lugs or extensions 26.

27, 28, 30, and 31 designate standards or uprights, in the upper ends of which are pivoted levers 32, 33, 34, and 35, the outer ends 10 of which levers are in the path of movement of the lugs 26 on registering-wheels, and the inner ends of said levers have pawls or dogs 37, 38, 39, and 40, the said dogs or pawls being at all times in engagement with the ratchet-wheels 23 of the registering-wheels 19, 15 20, 21, and 22. The standard 29 supports the extended axle of the lever 33, so that its pawl 38 may engage the ratchet 23 of the wheel 20.

From the foregoing description, taken in connection with Fig. 2 of the drawings, the 20 operation of registering and indicating will be readily understood.

The following is the mechanism for retaining the indicating-wheels and designating-belts at the proper and desired place, one of 25 the described devices being used for each wheel and belt.

41 designates vertical rods or plungers passing through openings in the casing, having the pins or studs 42 and notches 43.

30 44 designates arms, to which are pivoted retaining-arms 45, having the engaging portions 46 adapted to engage the projections or pins 17 of the designating-belts. These retaining-arms 45 are provided with bayonet-slots 49, adapted to receive the pins or studs 35 42, whereby when the plungers are pressed down the engaging portions 46 of retaining-arms will catch on the pins 17 and retain the belt in position.

40 48 designates a shaft having the key 48^x therein and arms 50 on said shaft, engaging projections on the weighted catches 51, which engage the notches 43 of the plungers for holding the same. The plungers have springs 45 52 coiled around them, the purpose of which is to return the said plungers to their original position. From this construction it is evident that when the plunger is depressed the arm 45 is caused to engage one of the pins 17 on 50 the designating-belt, and the catch 51 will engage the cut-out portion or notch 43 in the plunger, the arm 45 thus retaining the designating-belt at the proper place and the catch 51 retaining the plunger. By reason of the 55 peculiar shape of the slot in the retaining-arm when it is returned to its proper position by the plunger and the action of the spring the stud or pin on said plunger lies in the slot in the position shown in Fig. 6, and the 60 plunger could not operate said engaging-arm when in this position, but must have the pin in the slot, as shown in Fig. 5, before it can operate, and to bring the slot in the engaging-arms in said position I employ the following 65 mechanism:

53 designates standards or uprights having formed integral therewith the horizontal arms

54, in the outer ends of which are pivoted catches 55, one end of which is adapted to rest 70 on the arms 50 on the shaft 48 and the other end against one end of the curved bars 57, passing through openings in the standard and horizontal arm, and the other end of said curved bars 57 is adapted to be struck by an 75 extension or lug, 58, so placed on each of the designating-belts that it is in contact with the end of said bar 57 when the bar is in the position shown in full lines, Fig. 7, and the belt is in the position shown in Fig. 2. The 80 positions of the bar 57 before the return of the belt and the action of the lug 58 are shown in dotted lines in Fig. 7. The different positions of the arm 45 when the plunger is in its normal position, and also when the arm has been engaged by the bar 57 due to the con- 85 tact therewith of the lug 58, are also shown in dotted lines in said Fig. 7.

The mechanism for retaining the registering-wheels at the proper point consists of the pawls 59, carried by the shaft 3 and engaging 90 the ratchet-wheels 60 on each of the registering-wheels, as clearly shown in Fig. 3 of the drawings.

The mechanism for returning the indicating-wheels to their normal position comprises 95 the cords 61, attached at one end to the grooved wheels passing over pulleys 62 and at their other ends attached to weights 63, as shown in Fig. 3 of the drawings.

From the foregoing description, taken in 100 connection with the drawings, the operation of my invention will be readily understood. When it is desired to register an amount—say nine cents—the designating-belt for cents is 105 drawn down by means of the pin 17 below the number until the number 9 on the cents-indicating wheel appears at the opening in the casing opposite that wheel. The right-hand wheel 11 is rotated by the movement of the belt, and by means of the pawl connected 110 to said wheel the ratchet 23 on the side of the register-wheel 18 is moved, and with it the said register-wheel 18, registering the cents. The plunger is then depressed, and, owing to the action of its pin 42 on the arm 45, the engag- 115 ing portion 46 thereof engages one of the pins 17, thereby holding the said wheel 11 in place. The plunger is then released by depressing the key 48^x, whereby the catch is removed from the notch 43, the plunger rising, due to 120 the action of the spring 52, and the arm 45 assuming the position shown in Fig. 6. At the same time the catch 55 is tilted or raised by the arm 50, so as to move the bar into the position shown in dotted lines, Fig. 7, where- 125 upon the belt, having been released from the arm 45, is rotated by the weight 63, so as to bring the lug 58 in contact with one end of said bars 57, forcing the other end against the lower end of the arm 45, thereby plac- 130 ing the said arm in the position shown in Fig. 5, so that the plunger can be depressed, the registering-wheel 18 being held in position by the pawl 59 on the shaft 3. The parts

are now in position for another registry. When 9 has been registered and it is desired to indicate 10, the designating-belt for dimes is pushed down, which moves the registering-wheel by means of the pawl on second drum 11 engaging the ratchet-wheel 24 on wheel 19, moving said wheel to the numeral 1, and as 9 has been registered and 10 also the number on the dime-wheel will be 1 and on the cents 9 to show that 19 cents has been indicated, registered, and added, as will be readily understood.

It will also be understood that when a number either of units, dimes, or dollars has been registered and it is desired to register an additional number of either the designating-belt of the denomination desired is operated, as before described, whereby the wheel 11 is rotated the number of spaces, and thereby the registering-wheel the additional spaces. If the added number causes the wheel to rotate so that the lug or projection 26 on the said wheel comes in contact with the lever below the wheel, it thereby causes the pawl connected with said lever to actuate the register-wheel of the next higher denomination, causing it to rotate one space, thereby registering an additional unit of that denomination.

It is evident that the amounts are indicated, registered, and added from cents to dimes, dimes to dollars, dollars to tens of dollars, tens of dollars to hundreds of dollars, and so on in the same manner. It will thus be observed that as each amount is indicated it is registered, and the indicating wheel and belt always return to their normal position ready for the next operation; also, that levers and pawls are operated by the lugs on the registering-wheels to compute or add the amount of all that has been indicated in order that the proprietor can at once ascertain from the registering-wheels the amount of cash received, and should fraud have been practiced discover it.

It will also be seen that as each amount is indicated by the belt and wheel the plunger carrying the retaining-arm which operates to hold the belt at the proper place is released by the key and returns to its initial position ready for the next operation, the curved bar and pivoted dog operating as described and shown in Fig. 7 to contact with the engaging-arm and set it in the proper position.

It will be seen that I provide means for indicating and registering amounts from cents to dollars, which mechanism is simple in construction, thoroughly efficient in operation, and inexpensive of production.

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

1. A cash-register having a shaft with indicating-wheel loosely mounted thereon, a drum connected to said wheel and having pins on its periphery, a second shaft with a wheel rotatable thereon, said wheel having pins on its

periphery, and an endless belt on said drum and last-mentioned wheel, said belt having pins projecting from its side and adapted to engage the peripheral pins of the said drum and wheel, said parts being combined substantially as and for the purpose set forth.

2. A cash-register having the shaft 1, with indicating-wheel 4, having drum 9 secured thereto, and with pins 10 on the periphery thereof, the endless belt 13, with pins 17 projecting at the side thereof, the shaft 3, with wheel 11, having peripheral pins 12 thereon, a pawl connected to wheel 11, and registering-wheel 18, with ratchet-wheel 23 secured thereto, said parts being combined substantially as and for the purpose set forth.

3. A cash-register having a shaft with an indicating-wheel having a grooved pulley and a drum with peripheral pins secured thereto, the said wheel, pulley, and drum mounted on said shaft, a second shaft with wheel having peripheral pins thereon, an endless belt with pins projecting therefrom and engaging the peripheral pins of said drum and wheel, and a cord with weight, said cord secured to said grooved pulley, said parts being combined substantially as and for the purpose set forth.

4. A cash-register having the shafts 1 and 3, indicating-wheel 4, the drum 9, secured to said wheel, the wheel 11, with pins 12 and a pawl, the endless belt operating said drum and wheel 11, the pawl 59 and shaft 3, and the wheel 18, with ratchet 60 thereon, said parts being combined substantially as described.

5. In a cash-register, the shafts 1 and 3, the drum 10 on shaft 1, and wheel 11, with pawl, on shaft 3, the endless belt 13, with projecting pins operating said drum and wheel 11, the wheel 18, mounted on said shaft 3 and provided with lug 26, the wheel 19, mounted on shaft 3 and having ratchet-wheel secured thereto, and the pivoted lever 32, with pawl 37, the latter adapted to engage said ratchet-wheel, said parts being combined substantially as and for the purpose set forth.

6. In a cash-register, an endless belt with lug 58 thereon, the shaft 3, with wheel 11, operated by said belt, a plunger with a pin thereon, the pivoted arm 45, with the bayonet-slot 49 therein, and the sliding bar 57, said parts being combined substantially as and for the purpose set forth.

7. In a cash-register, the casing having the shafts therein bearing the indicating and registering wheels, the endless belts having the pins for operating the said wheels, and plungers carrying retaining-arms to engage the pins to retain the belts at the desired points, and devices for retaining and releasing the plungers, substantially as described.

8. In a cash-register, the shafts having the indicating-wheels thereon carrying pin-rollers, the shaft carrying the registering-wheels and pin-rollers, devices carried by the endless belts passing over said pin-rollers and engaging the pins or projections thereon to operate

the indicating and registering wheels, the plungers operating the retaining-arms to cause them to engage the endless belts, and devices for releasing the plungers and returning them to their original position, substantially as described.

9. In a cash-register, the combination, with the endless designating-belts having the pins for operating the indicating and registering wheels, of the plungers, the retaining-arms operated by said plungers for engaging the pins on the belts, and the mechanism for holding and releasing the plungers, substantially as and for the purpose described.

10. In a cash-register, the shaft 48, with key 48^x, the arm 50 on said shaft, the standard 53, with arm 54, having the catch 55 pivoted thereto, and the sliding bar 57, said parts being combined substantially as and for the purpose set forth.

11. In a cash-register, the combination, with the endless designating-belts having pins for operating the indicating and registering wheels, of the spring-plungers having pins, retaining-arms having slots engaged by said pins to cause the retaining-arms to engage the pins on the belts, and mechanism for re-

leasing the retaining-arms and allowing the plungers to return to their normal position, substantially as and for the purpose described.

12. In a cash-register, a designating-belt with pins, a wheel mounted on a shaft and operated by said belt, a pivoted arm, 48, with bayonet-slot 49 and engaging portion 46, a plunger with pin working in said bayonet-slot and the notch 43, and a rocking shaft with catch connected thereto and provided with a weighted arm, said parts being combined substantially as described.

13. In a cash-register, a designating-belt with projecting pins and lugs 58, a rotary wheel operated by said belt, a pivoted arm with the bayonet-slot 49, a plunger with the pin 42, a horizontal sliding bar with support, a rocking shaft with arm 50, and a pivoted catch resting on said arm 50 and in contact with said sliding bar, said parts being combined substantially as and for the purpose set forth.

GEORGE F. KOLB.

Witnesses:

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JOHN A. WIEDERSHEIM.