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PATENTED JUNE 21, 1904.

C. G. HEYNE.  
CASH REGISTER.

APPLICATION FILED MAR. 4, 1904.

NO MODEL.

3 SHEETS—SHEET 1.

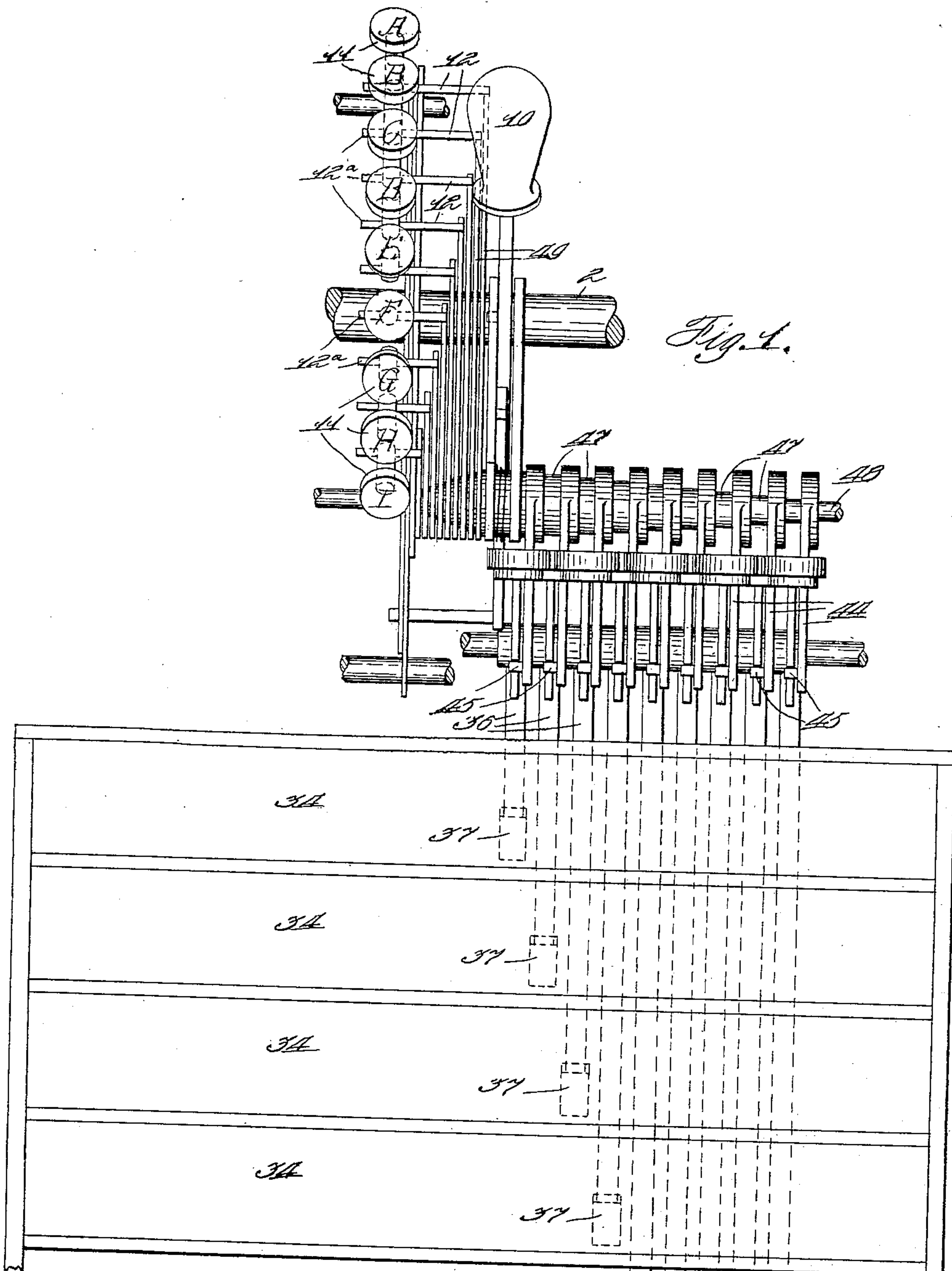


Fig. 1.

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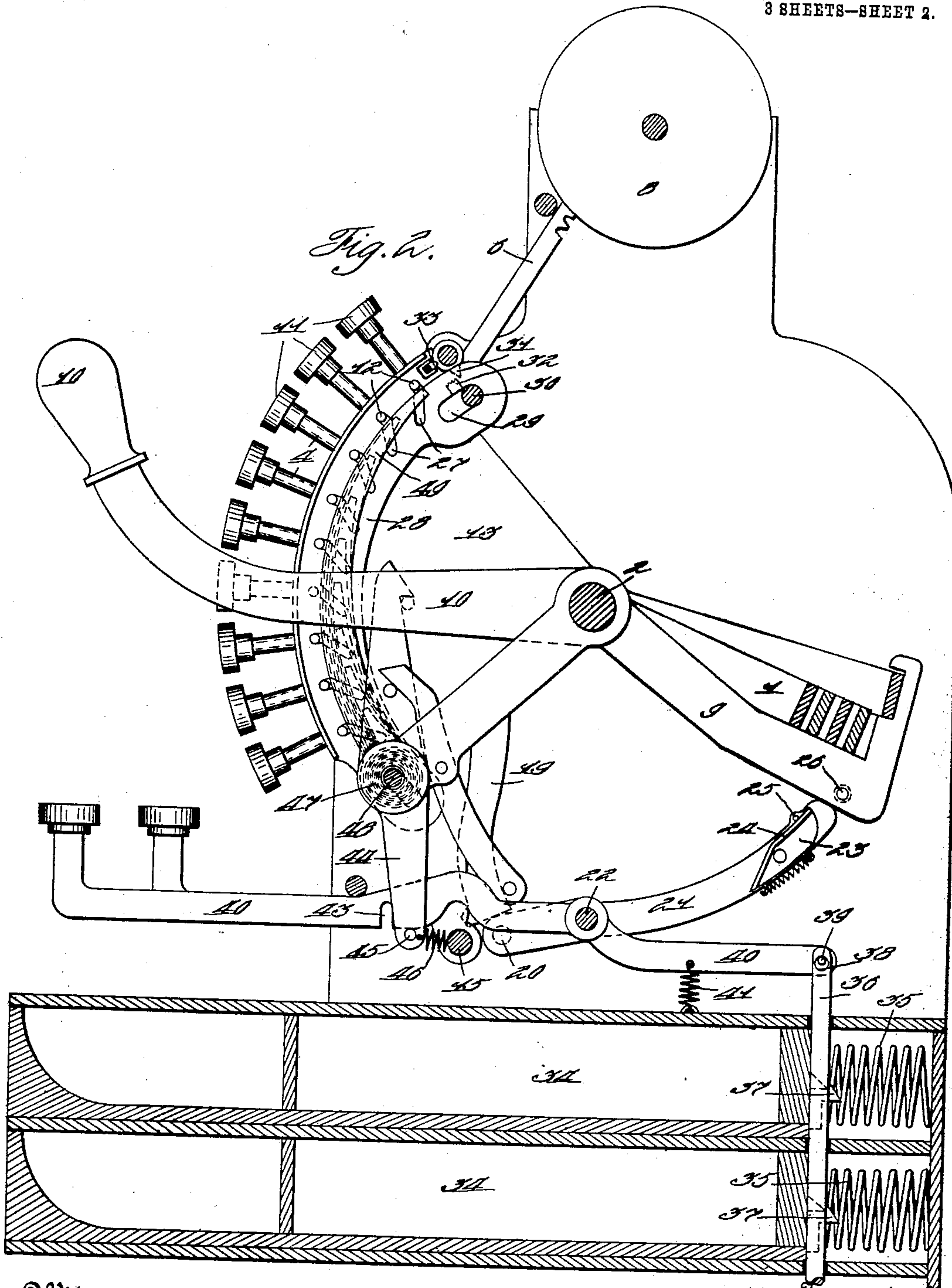
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3 SHEETS—SHEET 2.



Witnesses  
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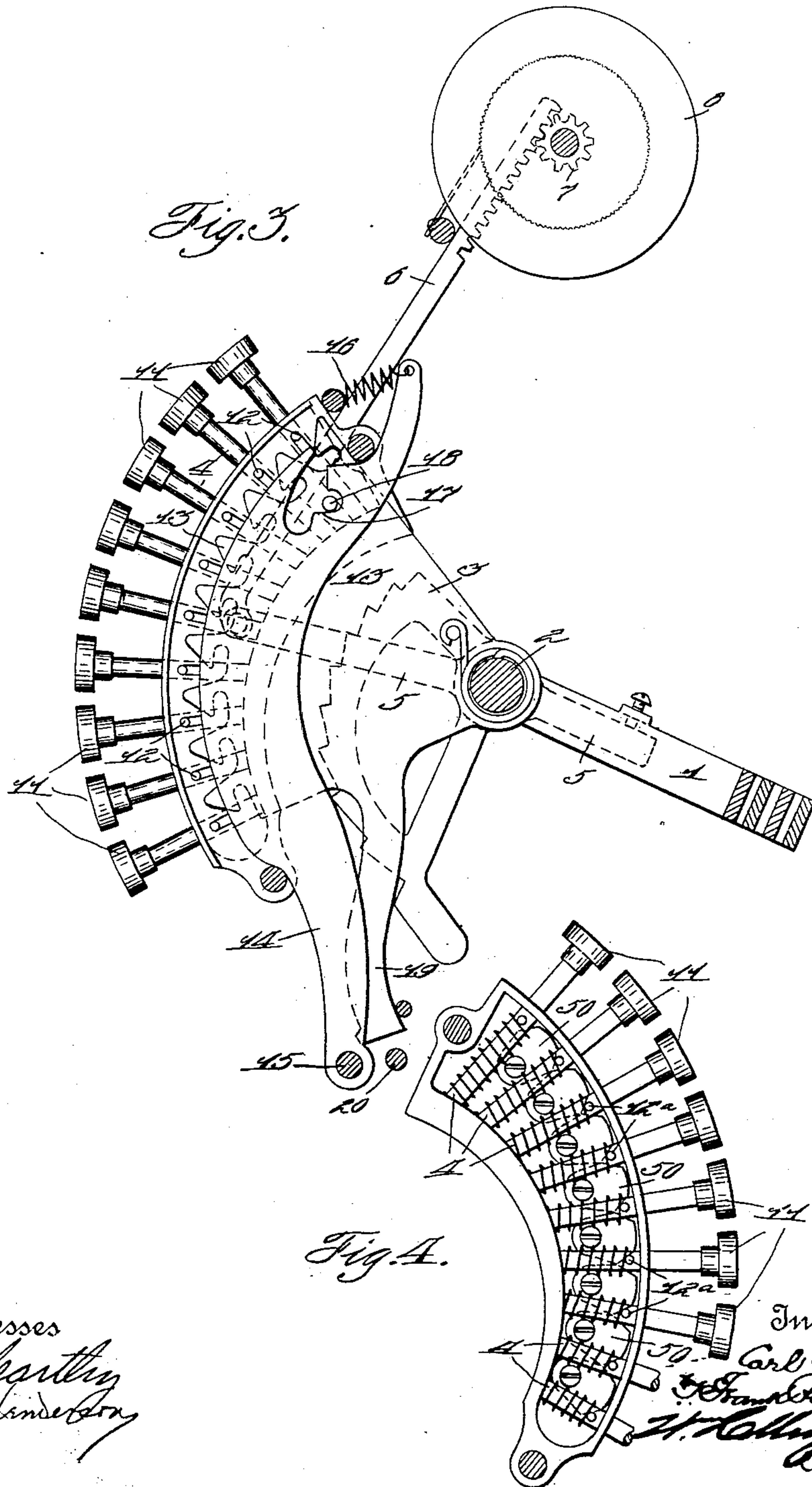
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3 SHEETS—SHEET 3.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 762,903, dated June 21, 1904.

Application filed March 4, 1904. Serial No. 196,498. (No model.)

*To all whom it may concern:*

Be it known that I, CARL G. HEYNE, a subject of the Emperor of Germany, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which I declare the following to be a full, clear, and exact description.

This invention relates to improvements in cash-registers, and has more particular relation to improvements in registers of the multiple drawer or receptacle type.

One of the several objects of the present invention is to provide improved interlocking means between the clerks' controlling elements of a cash-register and independent drawer or receptacle controlling elements whereby the receptacle-controlling element corresponding to the clerk's controlling element operated must be actuated.

With these and incidental objects in view the invention consists in certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims and a preferred form of embodiment of which is hereinafter specifically described, with reference to the drawings which accompany and form part of this specification.

Of said drawings, Figure 1 represents a front elevation of the devices embodying my invention applied to the type of machine shown in H. S. Hallwood's English Patent No. 4,543 of 1903, a great many parts being omitted for clearness. Fig. 2 represents a vertical section taken from front to rear with more parts of the machine showing than in Fig. 1, but still with many parts omitted. Fig. 3 represents a detail side elevation, partly in section, of the clerk's key-bank of the register proper and parts cooperating therewith, including the special indicator; and Fig. 4 represents a detail side elevation of the clerk's key-bank, showing the locking-stops between the respective keys.

As a large number of parts shown in the present drawings are fully shown and described in the aforesaid patent, I will refer to

said patent for any detail description desired of such parts. Described in general terms, however, the machine of the type mentioned may be said to comprise a series of pivoted elements or yokes mounted upon a common supporting-shaft 2 and each of the same provided with a graduated-step frame 3, which cooperates with the lower ends of key-shanks 4 to arrest the controlling-yokes 1 in positions corresponding to the keys depressed. The auxiliary yokes 1 operate suitably-pivoted levers 5, which are connected to rack-bars 6, which mesh with pinions 7 of rotary indicators 8 for setting the indicators according to the movements of the auxiliary yokes. After said auxiliary yokes have been released and allowed to drop until arrested by the keys operated they are again returned to their normal positions by a main operating-lever 9, which is in turn actuated by a hand-lever 10, also journaled on the shaft 2. The above-described yoke construction is old and well known in the art and is fully described and shown in the aforesaid patent.

Each of the clerks' keys 11, as more clearly shown in Fig. 3, is provided with a laterally-projecting pin 12, which cooperates with a hook detent-plate 13, pivoted upon the shaft 2, to latch any depressed key in its operated position. The detent 13, however, is normally held elevated out of latching position by a pivoted lever 14, mounted at its lower end upon a shaft 15. The upper end of this lever is normally drawn forward by a coil-spring 16, whereby a shoulder 17, formed thereon, is brought under a stud 18, mounted upon the detent 13. The forward edge of the lever 14 lies in proximity to the studs or pins 12 of the respective clerks' keys. Whenever one of the clerks' keys is depressed, the lever 14 is forced rearward, whereby the shoulder 17 is moved from under the stud 18 and the detent 13 thus allowed to descend into this latching position. This detent 13 is subsequently raised to again relatch it and also release the depressed key by means of an arm 19, pendent therefrom and operated by a stud 20, mounted in the forward end of the lever



21, which is pivoted upon a transverse shaft 22. This lever is provided near its rear end with a pivoted spring-drawn pawl 23, formed with an angular flange 24 and held in its normal position (shown in Fig. 2) by a stop-pin 25. An antifriction-roller 26, mounted upon the operating-lever 9, is arranged to pass under the flange 24 when said lever 9 descends—rocking the pawl 23 upon its pivot. After the roller 26 passes free of the flange 24 the pawl 23 automatically resumes its normal position, whereby the flange 24 is brought into the return-path of the roller 26. When the lever 9 is then elevated, the roller 26 engages the upper surface of the flange 24, and as the pawl is not free to rock in this direction the lever 21 is actuated to release the depressed key. Each of the key-pins 12, as best shown in Fig. 2, projects over the open end of one of a series of diagonal slots 27, formed in a segmental sliding plate 28, which also has elongated slots 29 accommodating suitable supporting-rods 30. It will be seen from the above that when one of the clerks' keys is depressed the plate 28 will be elevated. The movement of this plate is controlled by a pivoted full-stroke pawl 31, suitably mounted upon the main frame and arranged to engage a rack 32, secured to the said plate 28. A spring-pressed pawl 33 tends to normally return the pawl 31 to the position shown in Fig. 2 whenever the pawl passes free of the plate. Such a construction of full-stroke device as above described is old and well known in the art. With the above devices any partial depression of a key is prevented, and after the movement of any key is commenced it must be entirely completed. This construction prevents the keys being partially forced in without latching them in an attempt to manipulate the locking device for the drawer-keys, which will be now described.

Any desired number of cash-drawers 34 may be used in connection with these devices; but for the sake of illustration I have shown controlling connections for nine drawers, corresponding to the nine clerks' keys 11. These drawers are suitably mounted in the casing so that when they are released they will be projected therefrom by suitable springs 35, interposed between their rear walls and the walls of the casing. The drawers are normally latched in their closed positions by vertically-movable latching-plungers 36, which are suitably mounted in the containing-casing and engage at their lower ends with latch brackets or catches 37 on the respective drawers. The upper ends of the plungers 36 are formed with apertures 38, into which project pins 39, mounted upon the rear ends of drawer-keys 40. The pins 39 are of less diameter than the apertures 38, thereby allowing free independent movement of the latch-plungers 36 when a cash-drawer is closed. The drawer-keys 40 are mounted upon the

shaft 22 and are connected to the main frame by coil-springs 41. The forward ends of levers 40 are provided with suitably-marked finger-buttons corresponding to the keys 11. Each of the keys 40 is formed near its forward end with a vertical slot 43 for a purpose hereinafter described. All of the keys 40 are normally locked by a series of levers 44, provided with pins 45, which project under the lower edges of said keys and are held in their normal position (shown in Fig. 2) by coil-springs 46, which connect them to the shaft 15. The levers 44 are mounted upon a series of nested sleeves 47 and a shaft 48, which supports said sleeves, all of which is clearly shown in Fig. 1. The opposite ends of the sleeves 47 and the shaft 48 are provided with vertically-extending curved arms 49 of varying lengths, as shown in both Figs. 1 and 2. By reference to Fig. 1 it will be seen that the pins 12 of the respective clerks' keys are also of varying lengths and cooperate individually with the corresponding arms 49. By this means each key 11 when depressed will operate one, and one only, of the arms 49 and will thus rock its corresponding sleeve 47 or shaft 48 and move the arm 44, connected thereto, forward to such an extent that its locking-pin 45 will be brought immediately beneath the vertical slot 43 of its respective drawer-key.

As best shown in Fig. 4, I provide a series of pivoted stops 50 between pins 12<sup>a</sup>, which project from the sides of respective clerks' key-shanks. By this means no two of the clerks' keys can be actuated at the same time.

From the above description it will be seen that when a clerk depresses his particular key 11 he will unlock his corresponding drawer-release key; but all the remaining drawer-release keys will remain locked and the cash-drawers controlled thereby inaccessible. Thus no one of the cash-drawers can be opened until after some one of the clerks' keys 11 has been depressed. If one of the clerks' keys is struck a sudden blow in an endeavor to throw the corresponding lever 44 forward under its slot 43, the operated key will be caught and held in its partially-depressed position and can only be again released by being fully depressed. It will of course be understood that the cash drawers or receptacles are provided with suitably-distinguishable signals.

I do not care to limit my invention to any particular devices intermediate the clerks' keys or controlling elements and the drawer-keys whereby the operation of a key in one bank will unlock a corresponding key in the remaining bank, as I believe I am the first to employ any interlocking means between clerks' keys or elements and drawer keys or elements.

While the form of mechanism here shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that I do not care to confine myself to



any one form of embodiment of the invention here disclosed, for it is susceptible of embodiment in various forms, all coming within the scope of the claims which follow.

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

1. In a cash-register, the combination with an operating mechanism, of a series of clerks' 10 keys for controlling the same, a series of independent cash-safes, a series of manipulative safe-releasing devices, and interlocking means between the respective clerks' keys and the corresponding safe-releasing devices.

15 2. In a cash-register, the combination with an operating mechanism, of a series of clerks' selecting elements controlling the same, a series of cash-receptacles, a series of manipulative controlling devices for said receptacles, 20 and interlocking means between the clerk's controlling device and the receptacle-controlling devices.

3. In a cash-register, the combination with an operating mechanism, of a series of clerks' 25 keys for controlling the same, a series of cash-drawers, a series of drawer-keys, and interlocking means between the clerks' keys and the drawer-keys.

4. In a cash-register the combination with 30 an operating mechanism, of a series of clerks' keys for controlling the same, a series of cash-drawers, a series of drawer-release keys, intermediate locking devices between the clerks' keys and drawer-keys, and means for preventing a partial operation of any one of the clerks' 35 keys.

5. In a cash-register the combination with an operating mechanism, of a series of clerks' 40 keys for controlling the same, a series of cash-drawers, means independent of the machine proper for releasing the cash-drawers, and devices intermediate said releasing means and the clerks' keys for preventing the opening of any cash-drawer except that corresponding 45 to the clerk's key operated.

6. In a cash-register the combination with an operating mechanism, of a series of clerks' 50 keys for controlling the same, a series of cash-drawers, a series of drawer-release keys, interlocking means between the clerks' keys and the drawer-release keys, and a full-stroke device common to all the clerks' keys for compelling their full operation after they have unlocked their corresponding drawer-keys.

55 7. In a cash-register the combination with an operating mechanism, of a series of clerks'

keys for controlling the same, a series of cash-drawers, a series of drawer-release keys, and independent locking devices for the respective drawer-keys constructed to be operated 60 by individual clerks' keys.

8. In a cash-register, the combination with an operating mechanism, of a series of clerks' keys controlling the same, a series of cash-drawers, a series of drawer-release keys, and 65 a series of independent pivoted locking elements intermediate the respective clerks' keys and drawer-keys.

9. In a cash-register, the combination with an operating mechanism, of a series of clerks' 70 keys controlling the same, a series of cash-drawers, a series of drawer-releasing keys, and a series of independent spring-drawn locking-levers intermediate the respective clerks' keys and drawer-keys. 75

10. In a cash-register, the combination with an operating mechanism, of a clerk's setting means controlling the same, a series of cash-receptacles, manipulative means for releasing a desired receptacle, and interlocking means 80 intermediate the clerk's setting means and the receptacle-releasing means whereby the opening of any cash-receptacle must correspond to the operation of the clerk's setting means.

11. In a cash-register, the combination with 85 an operating mechanism, of a series of clerks' keys for controlling the same, a series of cash-drawers, latches for said cash-drawers, a series of drawer-keys for actuating said latches, and locking means intermediate the clerks' 90 keys and the drawer-keys.

12. In a cash-register, the combination of an operating mechanism; a bank of clerks' keys controlling the same; a plurality of cash-drawers one for each of said keys; latches for 95 the separate drawers; a set of key-levers coupled to said latches respectively and manipulative separately from the clerks' keys, said key-levers being notched on the under sides; and swinging spring-drawn levers hav- 100 ing arms which extend in the paths of projections of the clerks' keys respectively and having arms with projections which extend under the notched sides of the drawer-key levers respectively. 105

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

CARL G. HEYNE.

Witnesses:

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FRANK PARKER DAVIS.