No. 747,597. PATENTED DEC. 22, 1903.

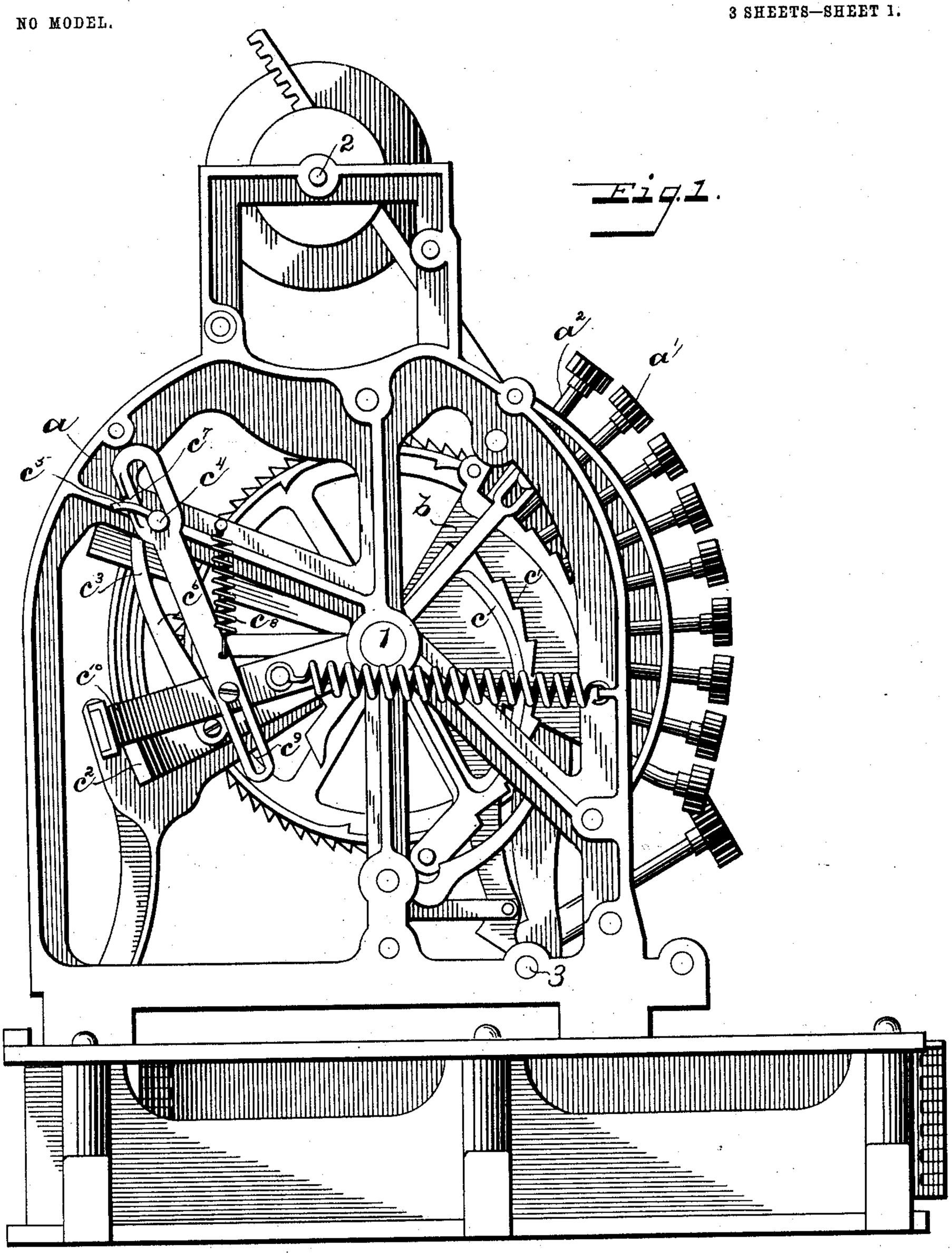
A. DE VILBISS, Jr. & N. M. HANSEN.

CASH REGISTER AND INDICATOR.

APPLICATION FILED DEC. 5, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



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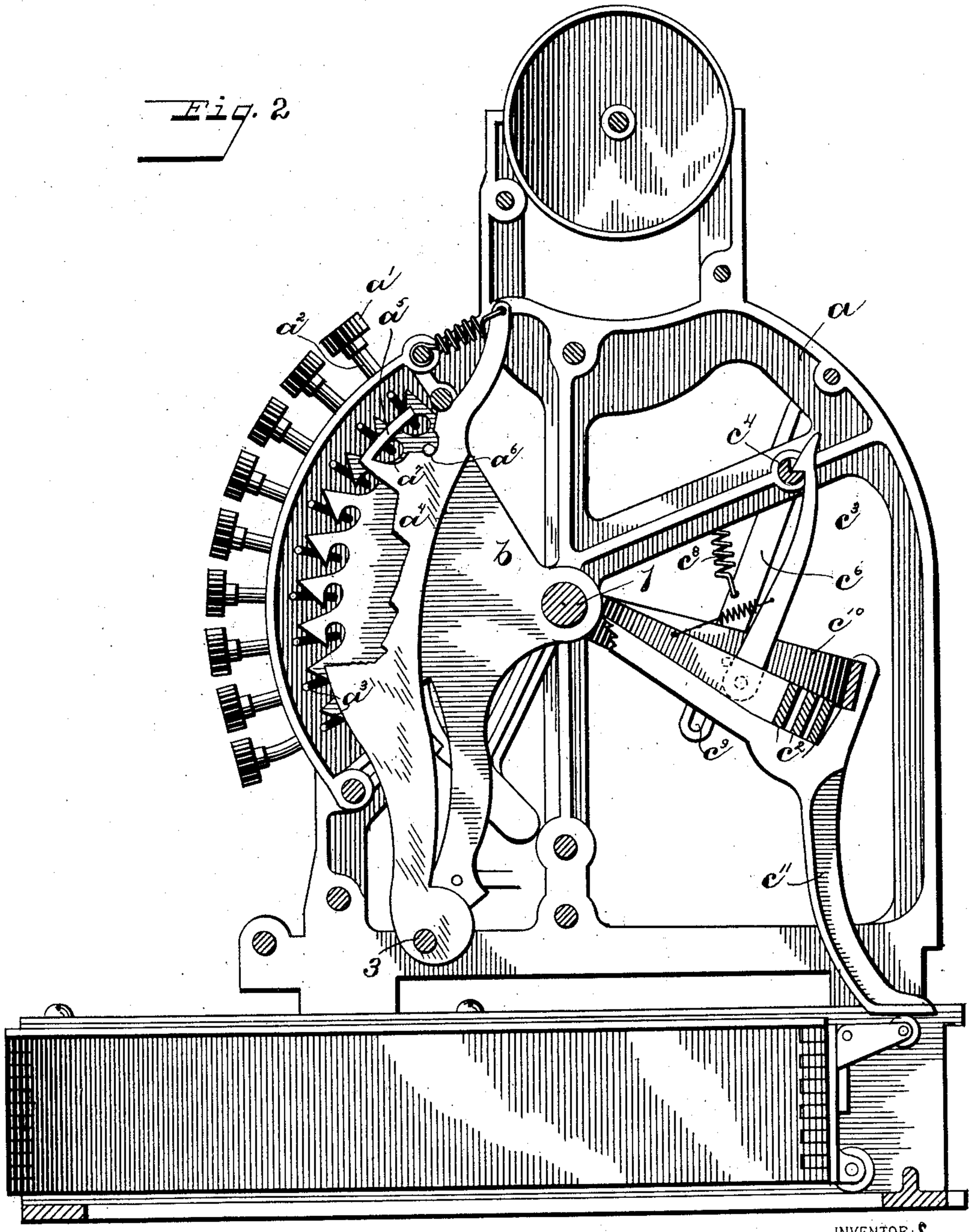
NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2



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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 3.

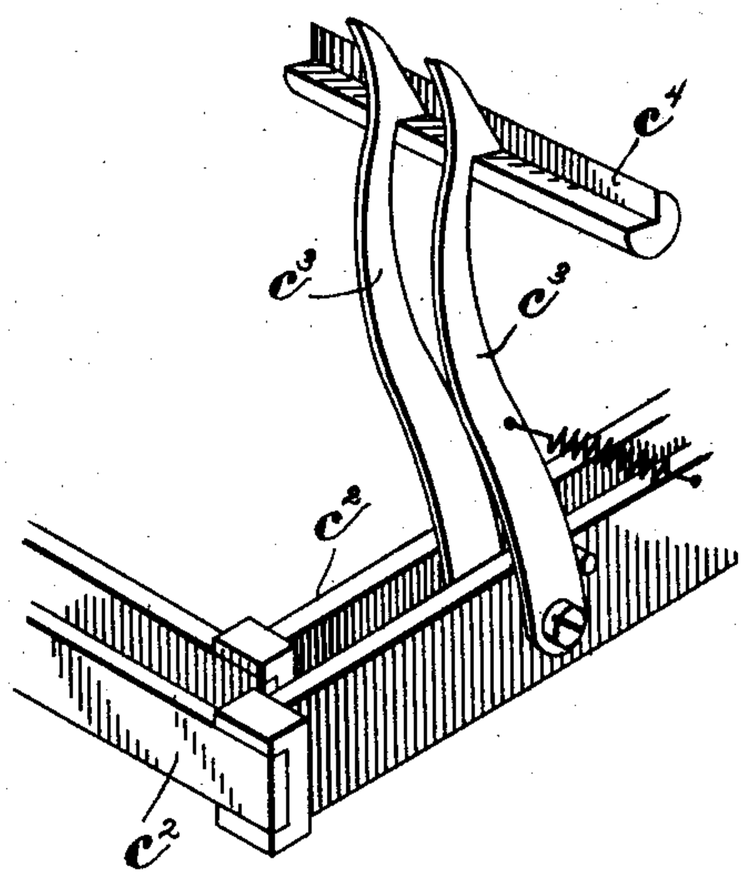
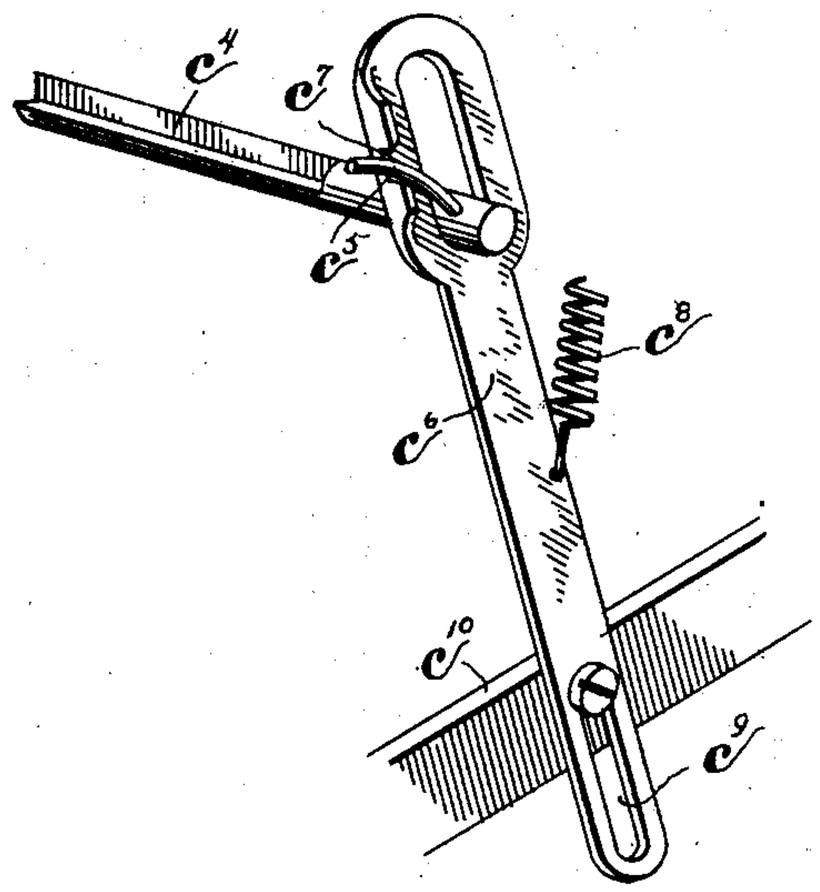


Fig. 4.



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No. 747,597. Patented December 22, 1903.

UNITED STATES PATENT OFFICE.

ALLEN DE VILBISS, JR., AND NEILS MARTIN HANSEN, OF COLUMBUS, OHIO, ASSIGNORS TO HALLWOOD CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 747,597, dated December 22, 1903.

Application filed December 5, 1902. Serial No. 134,050. (No model.)

To all whom it may concern:

Be it known that we, ALLEN DE VILBISS, Jr., and NEILS MARTIN HANSEN, citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Cash Registers and Indicators, of which the following is a specification.

Our invention relates to improvements in cash registers and indicators; and it relates more particularly to cash-registers having a series of value-keys for registering the amounts of transactions and a series of initial or department keys for registering the nature of the transaction and the clerk making the transaction. In machines of this character there are a series of keys and series of registering devices and indicating devices for each series of keys.

The object of our invention is to improve the accuracy and regularity in the operation of the machine by a construction of the registering and indicating devices such that the devices for the different series will operate simultaneously. In machines of this character the registering and indicating devices are set for a particular operation by the depression of any key in a particular series, and the extent of movement of said devices depends upon the key operated, said keys being located in parallel rows such that each key will permit a different movement of the registering and indicating devices. After a key of any series has been depressed and the drawer opened the registering and indicating devices will in the prior machines at once begin to move; but in the improvement which we have devised no one of the different series of registering and indicating devices will begin to move until a predetermined time, at which time all the devices will operate simultaneously and in unison.

In the drawings, Figure 1 is an end view taken from the left side of the machine. Fig. 2 is a cross-sectional view with parts broken away. Figs. 3 and 4 are detail views of devices for holding the registering and indicating mechanism.

Like parts are represented by similar characters of reference in the several views.

In the drawings, *a* represents the frame of the machine, and the registering-wheels, as illustrated in the machine shown herein, are journaled on the shaft 1. The indicating-wheels are journaled on the shaft 2. As in machines of this character, which are illustrated and fully described in Letters Patent to J. H. McCormick, No. 570,141, of October 26, 1896, and Nos. 610,365 and 610,366, of September 6, 1898, and also in Letters Patent to H. S. Hallwood, Nos. 704,795 and 704,796, of July 15, 1902, keys a', having extending stems a^2, are supported by the keyboard, as more fully described in said patents, and the keys operate in the same manner as in said patents. Pins a^3 upon the stems of the keys contact with curved or convex outer edge portions a^5 of a latch-plate a^4, which is pivoted upon the shaft 3, said pivoted latch-plate being spring-pressed normally by a spring at the upper edge of said plate (shown in Fig. 2) toward the front of the machine. There are latch-plates for each series of keys, and in each latch-plate there is an upper end portion provided with a recessed part with upper and lower offsets, as shown at a^6 and a^7, and the pin projecting from the lock-segment *b*, which is pivoted on the shaft 1, projects into said offset portion of said latch-plate a^4, and the recesses a^6 and a^7 form pin-seats therefor, said latch-plate and lock-segments being operated in the manner described in said patent to H. S. Hallwood, No. 704,796, dated July 15, 1902.

Whenever a key in the series is depressed, the stem of said key coöperates with the frame *c* and by reason of the notches c' limits the movement of said frame by said notch contacting with the end of the stem of the key, as more fully described in said patents referred to. Transverse bars c^2, (part of the frame *c*,) which extend across the machine, form supports for the corresponding registering pawl-levers and pawls and constitute what has been called the "auxiliary yoke" of the machine. To each auxiliary yoke there is pivoted a latch c^3, (shown in Fig. 3,) extending upwardly, and said latches are held by a groove and shaft c^4. Until the shaft c^4 is operated the auxiliary frames are held by

said spring-pressed latches, which in turn prevent the auxiliary yokes being moved out of the position shown in Fig. 1. The shaft c^4 is moved at a predetermined time by connections with the main yoke of the machine. There is an upwardly-extending arm c^6, slotted at its upper and rear ends, the upper slotted end of said arm fitting over the shaft c^4, and a curved pin c^5, extending up from said shaft c^4, fits within a groove c^7, formed by the lugs projecting from the upper end of said arm c^6. The arm c^6 and shaft c^4 are operated by the main yoke against the tension of a spring c^8. The lower slotted end of the arm c^6 fits over a pin projecting from the side of the main yoke c^{10}, and a slot c^9 is formed so that the main yoke of the machine will move without operating the shaft c^4 until the pin projecting from the main yoke contacts with the lower edge of the slotted portion c^9. Further movement of the main operating-yoke thereupon causes the shaft c^4 to rotate, and the latches c^3 are thereupon released from the groove of the shaft c^4, and the auxiliary yokes of the machine are thereupon allowed to drop and the pawl-levers and pawls thereupon set for the operation of the machine.

In the machine to which we have applied our invention the registering and indicating mechanism is operated by the return movement of the drawer, and the main operating-yoke c^{10} is held by the movement of the leg c^{11} contacting with the rollers extending from the drawer, and the same cannot be moved until the drawer is opened. So soon as the drawer begins to open the main operating-yoke will move therewith. In machines of this character there has been devised locking mechanism which requires one or more of the series of value and department keys to be operated before the drawer-operating keys can be operated. When a key of the series of value or department keys is depressed, the drawer can be opened by the operation of the drawer-key; but the corresponding auxiliary yoke for said value or department keys cannot be operated until the main operating-yoke has reached a predetermined position such in the machine which we have illustrated that the pin projecting from the main yoke will contact with the lower edge of the slot c^9 to cause the shaft c^4 to rotate. The parts are so arranged that this will not happen until the main yoke has dropped below the position that the auxiliary yokes will assume when given their greatest movement. Consequently all the auxiliary devices will operate simultaneously, and the movement of said auxiliary devices will not be interfered with in any way by the main operating-yoke. It might be well to add that in the machine to which we have applied our invention the main operating-yoke upon the return movement of the drawer contacts with the auxiliary yokes, raising the same, and thereby operating the pawl-levers and pawls which are supported by said auxiliary yokes. For this reason it is desirable to have the slotted end of the upwardly-extending arm c^6 so proportioned that the main operating-yoke will have dropped sufficiently in the initial movement of the same as to not interfere with the setting of the auxiliary yokes when same are released from the shaft c^4.

Having thus described our invention, we claim—

1. In a registering-machine, a main operating device, a series of auxiliary operating devices adapted to move varying distances from a common starting-point when released, locking devices for normally holding said auxiliary devices, and means for causing said auxiliary devices to be released and move simultaneously-predetermined distances after the main operating device has been partially operated, for the purpose specified.

2. In a registering-machine, a main operating device, a series of auxiliary operating devices, means independent of said main operating device for permitting said auxiliary devices to move varying distances from a common starting-point when released, locking devices for normally holding said auxiliary devices until the main operating device has moved a predetermined distance, and means for operating the locking devices to release the auxiliary devices and to permit them to move simultaneously from a common starting-point after the main auxiliary device has moved a predetermined distance, for the purpose specified.

3. In a registering-machine, the main operating-yoke, a series of auxiliary operating-yokes adapted to move varying distances from a common starting-point independent of said main yoke, locking devices for the auxiliary yokes adapted to hold said yokes in their normal positions until the main yoke has moved a predetermined distance, and means connected with the main operating-yoke for releasing the auxiliary yokes at a time when said auxiliary yokes will be permitted to complete their movement through different distances.

4. In a registering-machine, a series of keys, a main operating-yoke adapted to operate when any key is depressed, a series of auxiliary operating-yokes adapted to move varying distances from a common starting-point, locking devices for said auxiliary yokes adapted to hold the same in their normal positions until the main yoke has reached a predetermined position, means for operating said locking devices to release said auxiliary yokes and permit the same to move simultaneously from a common starting-point a distance corresponding to the series of keys depressed after the main yoke has reached a predetermined position.

5. In a registering-machine, a series of keys, a main operating device adapted to operate when any key in any series is depressed, a series of auxiliary operating devices, one for each series of keys, a locking device for holding said auxiliary operating devices normally locked during the first part of the movement

of said main operating device, and means connected with said main operating device for moving said locking mechanism after a partial movement of said main operating device to permit the simultaneous movement of the auxiliary operating devices corresponding to the series of keys depressed from a common starting-point and after the main operating device has reached a predetermined position.

6. In a registering-machine, a series of keys, a main operating device, a drawer, a series of auxiliary operating devices, locking means for the auxiliary operating devices adapted to hold the same in their normal positions until the main operating device has moved a predetermined distance, means connected with the main operating device for releasing said auxiliary devices from said locking devices to permit said auxiliary devices to start their movement in unison and to move different distances corresponding to the keys depressed, and means connected with the drawer for throwing said auxiliary devices into engagement with the locking devices after a complete operation of the main operating device.

7. In a registering-machine, a series of keys, a main operating device, a series of auxiliary operating devices adapted to move independently of the main operating device different distances from a common starting-point corresponding to the keys depressed, locking devices for holding said auxiliary devices in their normal positions after the main operating device has started to operate, a drawer for operating said main operating device, means controlled by the main operating device for moving said locking devices after the main operating device has moved a predetermined distance, whereby the auxiliary operating devices are permitted to move simultaneously from a common starting-point different distances determined by the keys, after the main operating device has reached its predetermined position, and means connected with the drawer for throwing said auxiliary devices into locking position with said locking devices, for the purpose specified.

In testimony whereof we have hereunto set our hands this 24th day of November, A. D. 1902.

ALLEN DE VILBISS, JR.
NEILS MARTIN HANSEN.

Witnesses:
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D. D. BYERS.