No. 676,386. Patented June 11, 1901.

E. H. JAHNZ.

CASH REGISTER.

(Application filed Mar. 23, 1901.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

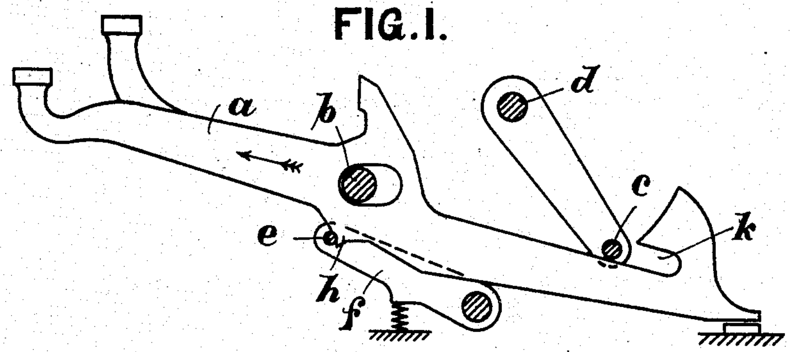
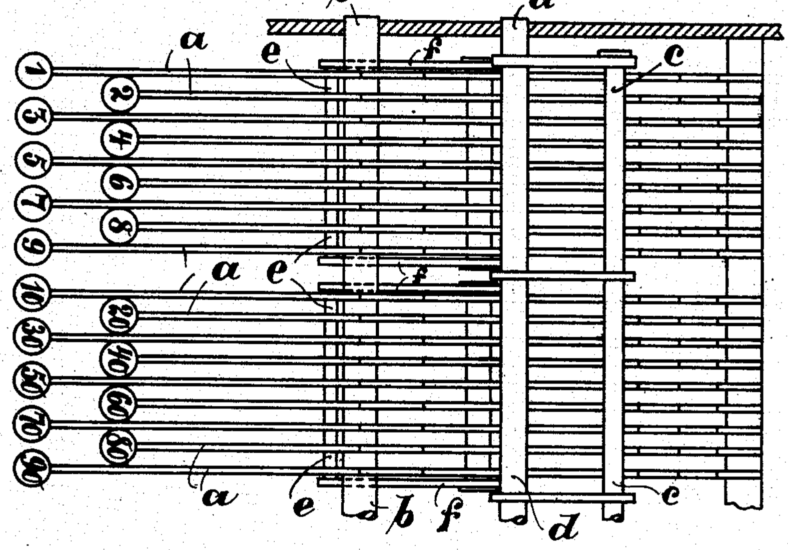


FIG. 2.



WITNESSES:
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[signature]

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FIG. 3.

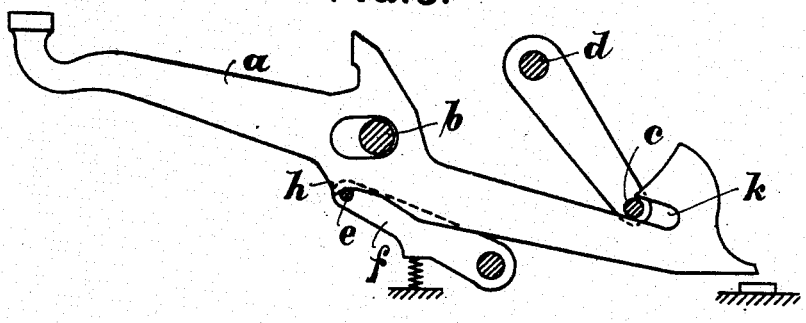


FIG. 4.

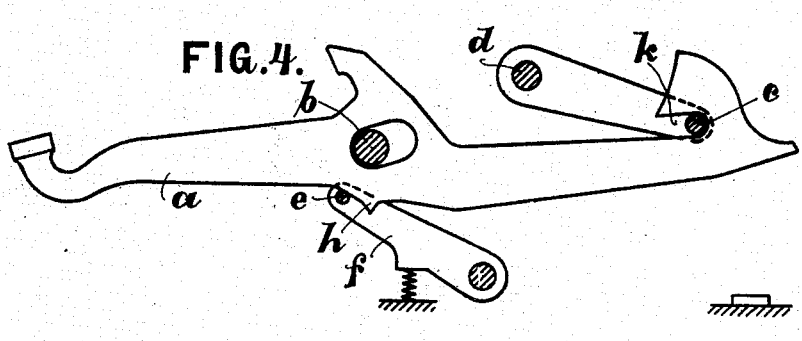
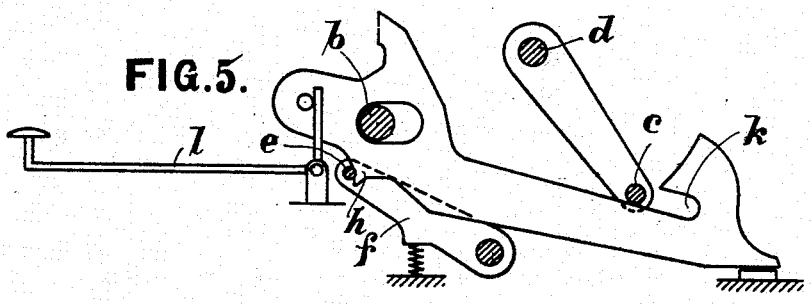


FIG. 5.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ERWIN HERMANN JAHNZ, OF WESTEND, GERMANY, ASSIGNOR OF ONE-HALF TO DR. PAUL MEYER ACTIENGESELLSCHAFT, OF BERLIN, GERMANY.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 676,386, dated June 11, 1901.

Application filed March 23, 1901. Serial No. 52,540. (No model.)

To all whom it may concern:

Be it known that I, ERWIN HERMANN JAHNZ, engineer, a subject of the King of Prussia, German Emperor, residing at Westend, near Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Coupling Mechanisms for Cash-Registers, Addition and Calculating Machine, and the Like; and I do hereby declare that the following is a full, clear, and exact description.

The present invention relates to the coupling of the key-levers with the so-called "coupler" which is used in cash-registers, addition and calculating machines, and the like in order that a key once pressed down can only return to its original position when its stroke is completed.

In the present invention the key-levers are to be coupled with the key-coupler by means of a longitudinal displacement in their plane of rotation before the key is pressed down. The key-lever is firmly held by a spring in each of the two opposite positions. On pressing down the key it will, owing to the different radii of rotation of the coupling places, return into the position of rest.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 shows in elevation and partial section the arrangement of the keys and the key-coupler. Fig. 2 is a plan view of Fig. 1. Figs. 3 and 4 show different positions of the moving parts. Fig. 5 illustrates a modification.

The key-levers *a*, each representing a given money value, are arranged in a row on a shaft *b*. The key-coupler consists of the cross-bar *c* and two swinging arms pivoted on the shaft *d*. The cross-bar *c* is placed transversely over all the keys. As soon as a key is pressed down, the key-coupler bar, owing to the different radius of rotation of the places of contact, engages under a projection on the end of the key. Only when the key is returned to its original position is the key-coupler bar released from the said projection.

The key-coupler *c* is provided, as usual, with a ratchet mechanism which prevents its return before the swinging movement has been completed. Consequently each key coupled with the key-coupler must also complete its corresponding movement before it on its part can return to the initial position.

It is well known that several keys are used for registering larger amounts in cash-registers. These keys, however, must be pressed down simultaneously, because if one were to first press one key slightly and then afterward the rest the key-coupler *c* would of course be raised by the first key. The projections of the other keys could consequently no longer engage with it, but rather be jammed fast by the key-coupler. The simultaneous pressing down of several keys, however, is very difficult, especially with figures the corresponding keys of which are far apart. For this reason the keys required are in the present invention first coupled with the key-coupler and the latter then raised by pressing any one of the said keys. The key-coupler thus takes with it into its higher position all the keys coupled with it.

The coupling of the keys with the key-coupler is effected by pivoting each separate key on the common shaft *b* by means of a longish slot, so that each key can be moved in its plane of oscillation. In order to support the keys in their two terminal positions, they are controlled by the arms *f*, bearing the bar *e*. These arms are held by springs in their highest position, in which the bar *e* comes on one or the other side of a suitable projection *h*. When the key *a* is pulled out in the direction of the arrow, the projection over the recessed part *k* engages over the key-coupler *c*. The key *a* is firmly held in this position, Fig. 3, by means of the bar *e* in a manner easily understood. When after that by pressing down any one key the key-coupler is swung for operating the register, it will take with it into the upper position all the keys coupled with it. During this movement the key-coupler pushes farther and farther into the recess *k* and touches the back of the recess. The key *a* is thus pushed back in the contrary direction to the arrow, Fig. 4. When the key has moved back, all the moving parts are once more in the position shown in Fig. 1.

Instead of effecting the automatic return

of the key into the first position by means of the differently-curved radii stops or the like could be used for this purpose which would come into operation when the key has nearly been pressed down.

Instead of drawing out the key *a* the device could be arranged so that it must be pushed in for the purpose of coupling.

The drawing out of the key may also, if preferred, be effected by aid of an angle-lever *l*, as shown in Fig. 5. In this case, of course, the key-coupler is swung by other means than by moving the keys.

There is no substantial alteration in the present invention if instead of the shaft *b* and the longish slot of the key-levers a suitable means of suspension by toggle-arms or the like is adopted.

The essential part of the invention is that the key-levers are able to assume a second position in the plane of their rocking movement opposite to that of their position of rest, in which they are coupled before being pressed down with the key-coupler.

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

In coupling mechanisms for cash-registers, addition and calculating machines and the like the combination of keys, each having a longish slot for the common shaft, with the key-coupler, consisting of a cross-bar and two swinging arms, a slot of the key being coupled with said cross-bar, when the key is pulled out and being released automatically, when the key has moved back in its position of rest, substantially as set forth and described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ERWIN HERMANN JAHNZ.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.