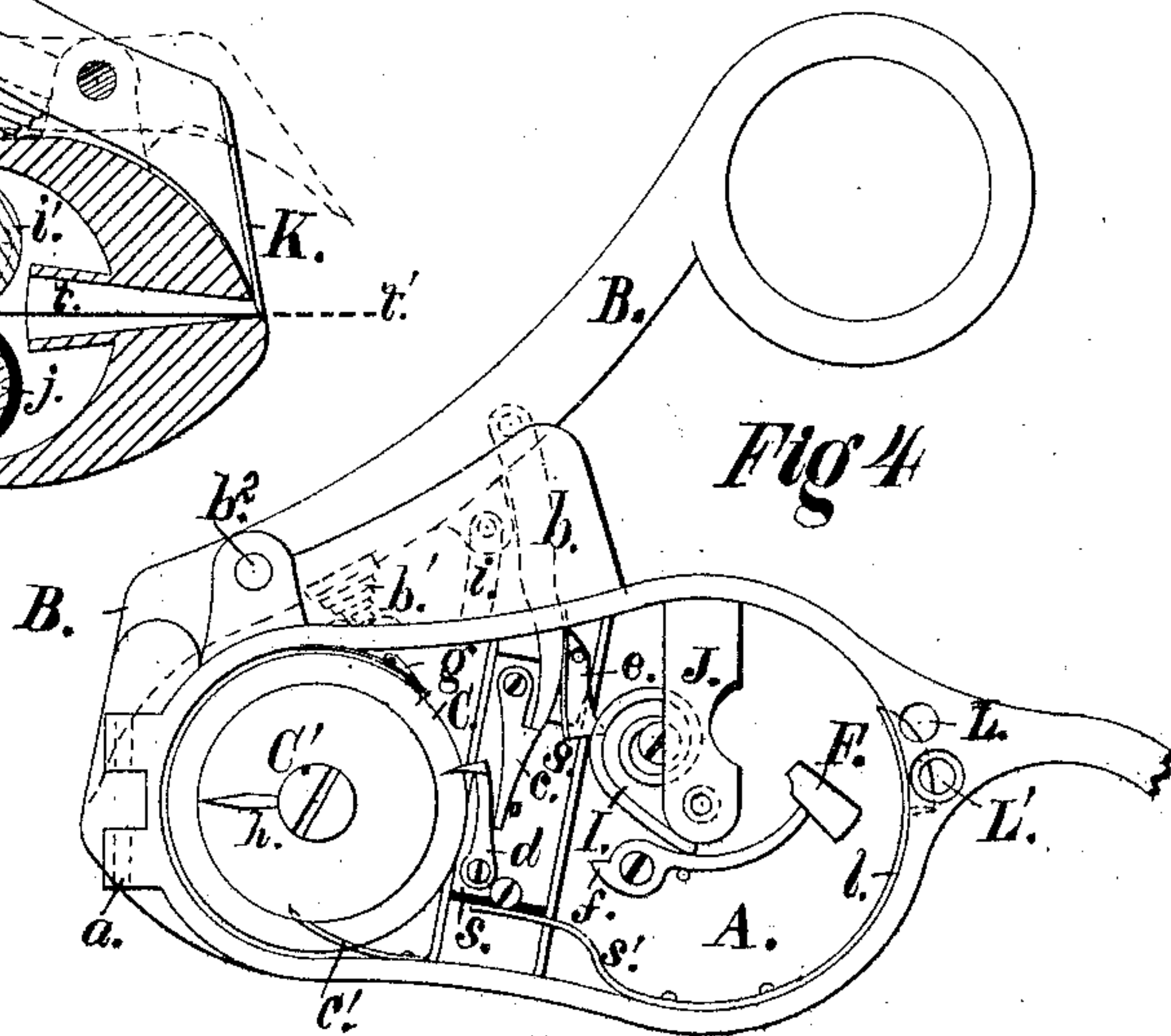
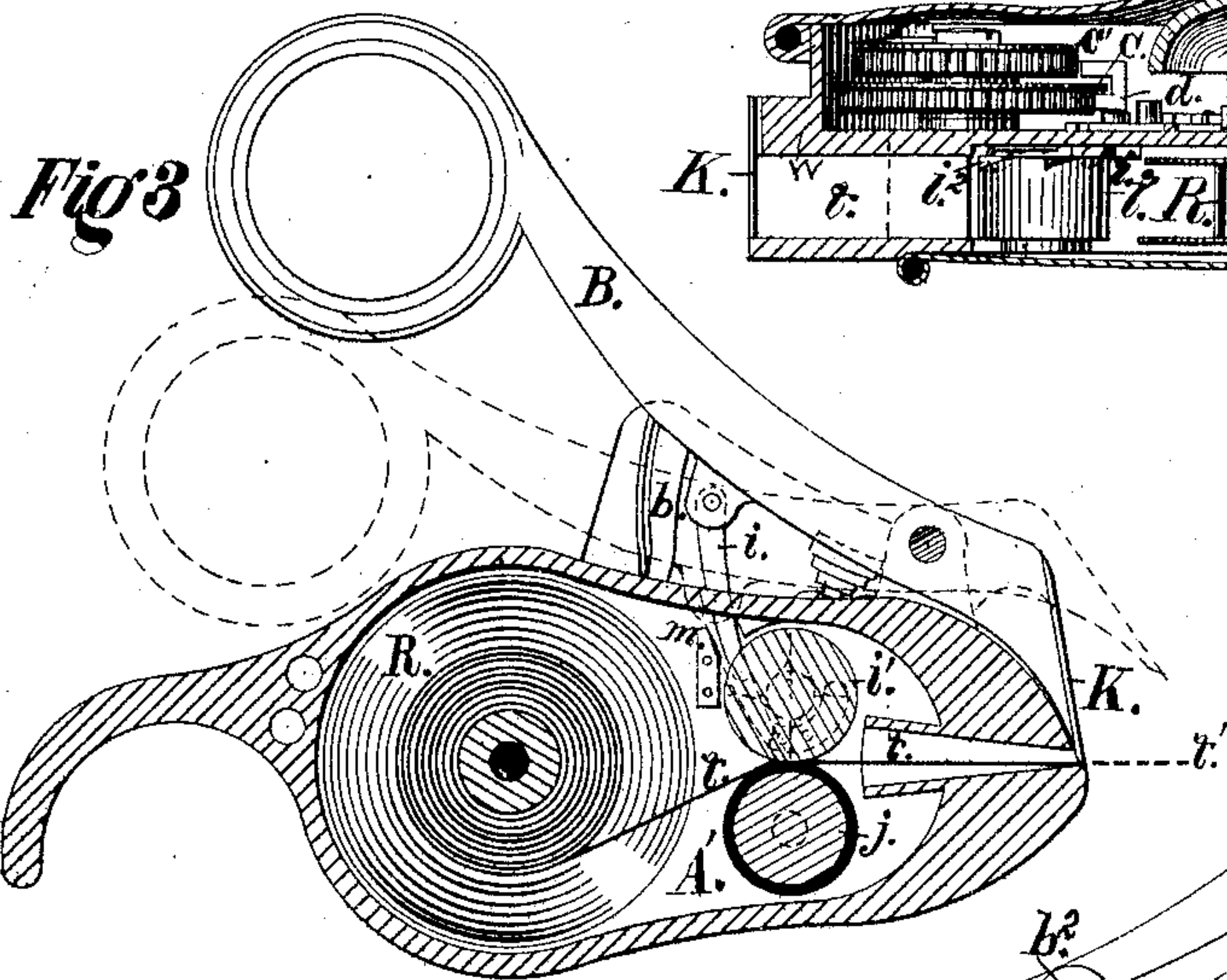
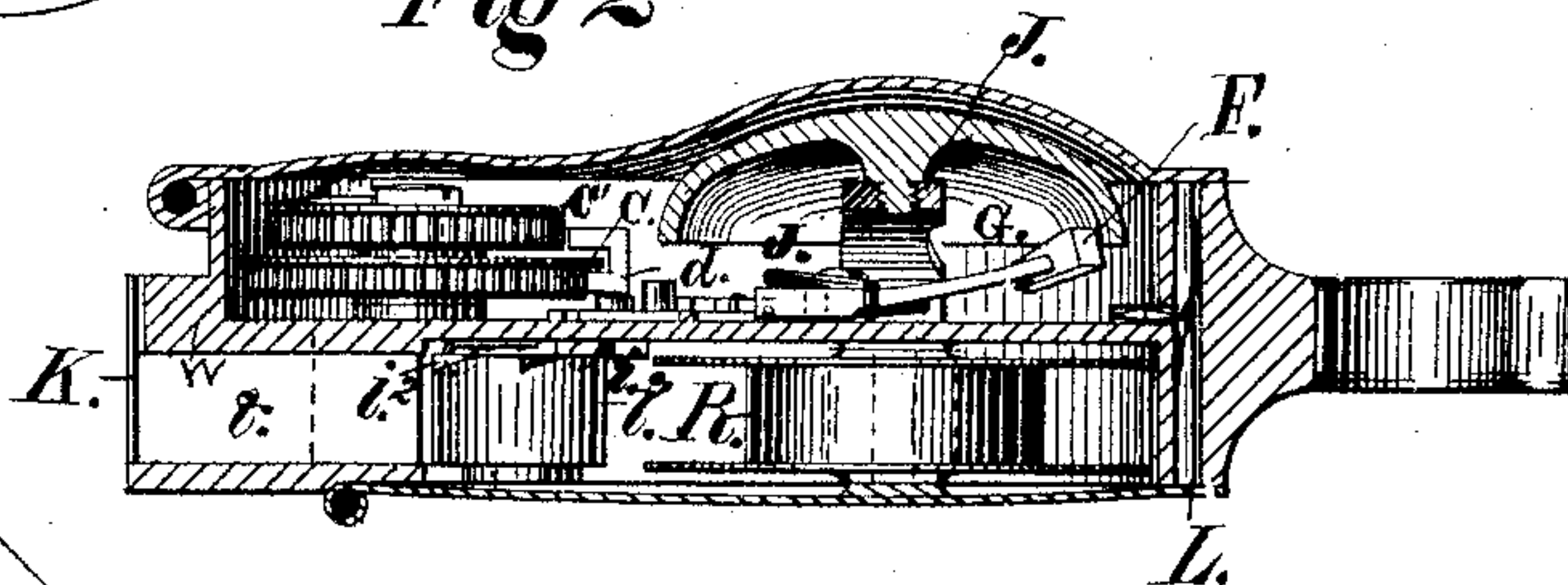
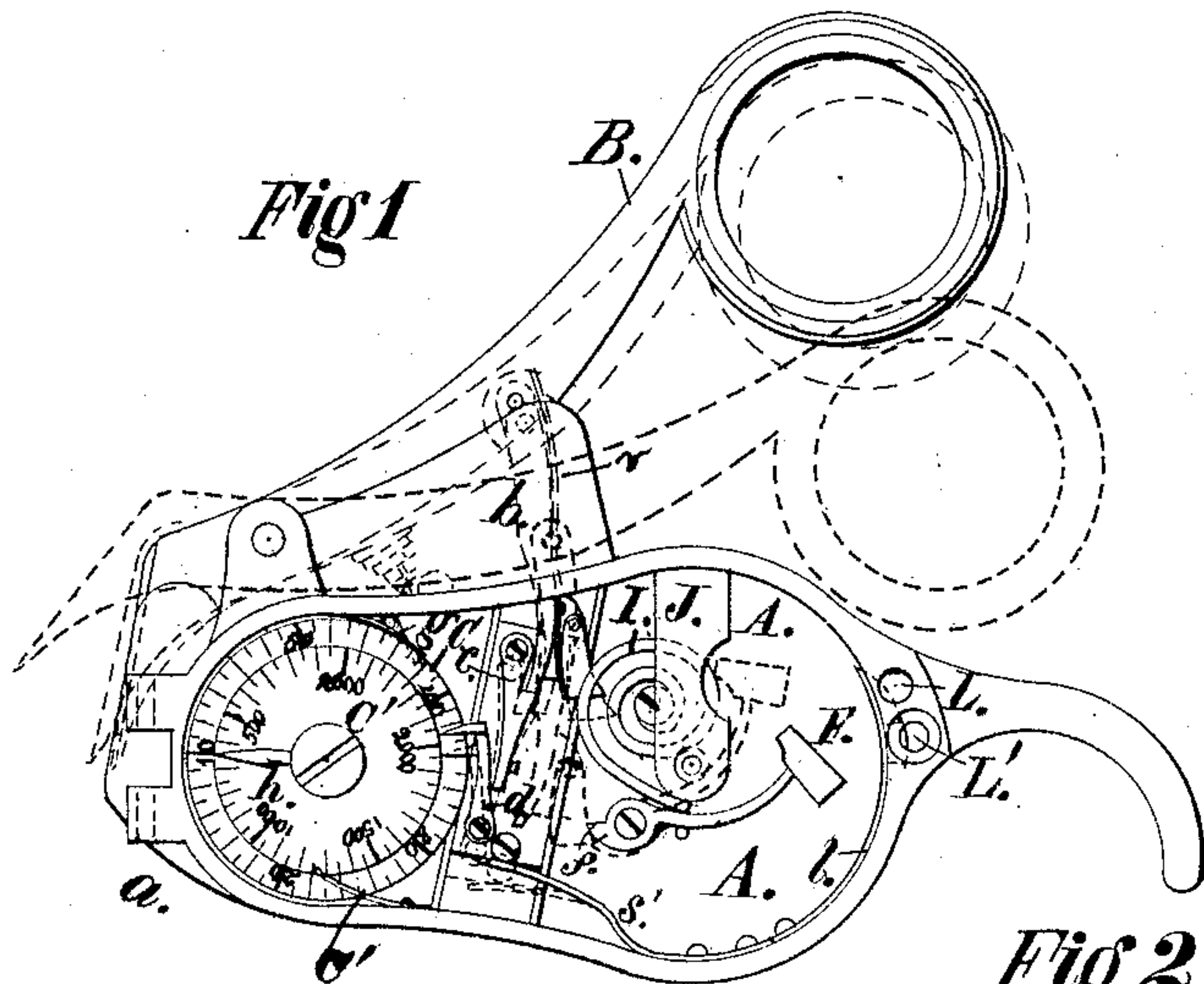


**R. McCULLY.**

## Conductors' Registering Ticket Punches.

No. 152,857.

Patented July 7, 1874.



*Witnesses:*

A. M. Stout  
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*Inventor:*

Robert M. Culley



# UNITED STATES PATENT OFFICE.

ROBERT McCULLY, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN CONDUCTORS' REGISTERING TICKET-PUNCHES.

Specification forming part of Letters Patent No. **152,857**, dated July 7, 1874; application filed March 14, 1874.

*To all whom it may concern:*

Be it known that I, ROBERT McCULLY, of Philadelphia, county of Philadelphia and State of Pennsylvania, have invented an Improved Registering and Receipt-Delivering Machine, of which the following is a specification:

My invention relates to the construction of some of the parts, and their combination with other parts, of a machine to be used upon street-railroad cars, the object of which is to enable the conductor, by simply operating a handle-lever, to extend from the interior thereof either a half-fare or whole-fare ticket or receipt for each passenger, register the same, and sound an alarm, and to do this while the case containing the ticket or receipt-paper, the registering apparatus, and alarm-bell is closed up and locked and the key out of his possession, so that it will be impossible for him to deliver a ticket therefrom without registering the act and also sounding the alarm.

My said invention will be further specified and described with reference to the accompanying drawings, in which—

Figure 1 represents an inner-side view of the machine when held in the right hand in position for use, the hinged cover or lid having been removed in order to expose to view the registering and alarm devices; Fig. 2, a bottom-edge view of the same, the case having been cut away for the purpose of displaying the interior parts; Fig. 3, a view from the right-hand side of a longitudinal vertical section of the same; and Fig. 4, a similar view to that of Fig. 1, except that some of the broken lines are omitted for the sake of greater clearness.

The containing-box is provided with two hinged lids or doors, one upon each side, and these are locked by the spring-catch *l*, and cannot be opened except with a suitable key. The registering devices are partially shown in each of the Figs. 1, 2, and 4. Cross-sectional views of the reel *R* and feed-rollers *i* and *j* are shown in Fig. 3. The handle-lever *B* works within two vertical guard-plates extending up from the top edge of the box, and the pin *b*<sup>2</sup> is its fulcrum, and its forward end is bent down, as shown, and is provided either

with a cutting-edge or with teeth, to either cut or perforate the ticket-paper as it issues from the reel and between the feed-rollers. The case is provided with a partition-plate extending lengthwise and vertically, so as to divide it into two compartments, and in and upon this plate nearly all of the operative parts are mounted. The registering apparatus consists of two dial-plates, *C* and *C'*, each of which has its own regular series of ratchet-teeth, as shown in Fig. 2, and both plates are caused to revolve by the action of the pawl *d*, which is bifurcated, one fork of which—that is, the lower one—acts upon the teeth of dial-plate *C*, and revolves it one notch at each impulse upon the handle-lever *B*. This pawl, however, performs another important function, for between two of the ratchet-teeth of the plate *C* is made one notch much deeper than the rest, and once in every revolution of this dial-plate *C* the lower fork of the pawl *d* enters this deep notch, and, being impelled by the auxiliary pawl *e* behind it, penetrates so deeply that the other or upper fork enters a notch between two of the ratchet-teeth of dial-plate *C'*, and so both plates are revolved one notch by the same impulse from the handle, and so the upper dial, *C'*, indicates by the hand *h* the number of revolutions made by the lower one, *C*, which itself indicates the number of half-fares or whole fares issued. I do not, however, confine myself to this peculiar construction, as, by the use of hollow spindles, hands or indicators might be made to move like those of a clock. By the application of force to the handle the whole machine is put in operation by means of the pawls *i* and *b*. The pawl *b* passes down into the case, through a mortise therein, and its foot strikes a step or shoulder on the back of auxiliary pawl *e*, and the foot of the last-named pawl impinges against the back of the bifurcated pawl *d* before mentioned. These two last-mentioned pawls are pivoted upon the face of the sliding plate *S*, which has vertical play in a suitable groove in the partition-plate before described, and, in the absence of any force applied to the handle, is held up in the position occupied by it in Fig. 4 by the spring *S'* seated upon the inside of the case, and lifting the sliding plate by having its free end



under the lower end of it, or under a pin, as shown in Fig. 1. Now, when force is applied to the handle the pawl *b* drives downward the plate *S* and the two pawls *c* and *d*, and thus the dial-plate *C* is revolved one notch, and by the time this movement has been completed a forward curve of the pawl *b* impinges upon the mortise, which throws the foot of the pawl back off the step or shoulder of pawl *c*, and then it continues downward, and then another pawl, *e*, pivoted to it in its rear, and held out by a spring, as shown in Figs. 1 and 4, strikes the trip *f* and forces the handle of hammer *F* up against the spring *I*, and so compresses it that when the pawl slips off the trip the rebound of the spring throws the hammer back against the bell *G* and rings it. In the absence of force upon the handle the spring *b'* holds it up in the position it occupies in Fig. 4. By the same movement of the handle which actuates the register and rings the bell, the pawl *i* which engages with a regular series of notches in the ratchet on the end of the feed-roller *i'*, drives that roller around a certain distance, and it, by means of the web of ticket-paper interposed between them, drives the roller *j* also. Both the feed-rollers may be made of steel or other hard material, but the roller *j* should be covered with soft rubber, or other soft and elastic material, so that they may feed out paper of different thicknesses without changing the rollers. They unwind the ticket-paper *t* from the reel *R*, and force it out through the aperture under the jaw *K*, as shown in Fig. 3. In order that the pawl *b* shall always follow the front end of its mortise as its guide in action, the spring *v*, seated as shown, is provided, and its force keeps the front edge of the pawl in constant contact with the front end of its mortise. *c'* is the retaining-pawl for the dial-plate *C'*, and *g* is the retaining-pawl for the dial-plate *C*, and *l* is the spring-catch by which both lids of the case are locked, which is done by simply pressing the lids down upon the case. The key-hole *L'* in the box itself is counter-

sunk, in order that any suitable seal may be placed in the recess at the time of so locking up the case, so that any attempt to open the box by any unauthorized person may be detected. The bell *G* is screwed upon the bracket *J*, which supports the bell out of the way of the spring *I* and hammer *F*, and thus economizes space.

What I claim as my invention is—

1. The combination of the handle *B*, the pawl *i*, the feed-rollers *i'* and *j*, and the reel *R*, all constructed and arranged substantially as shown and described, for the purpose set forth.

2. The combination of the handle *B*, the pawl *b*, and its auxiliary pawl *c* pivoted thereto, and its spring, the trip *f*, the spring *I*, hammer *F*, and bell *G*, all constructed and arranged substantially as shown and described, for the purpose set forth.

3. The combination of the handle *B* and the pawl *b* curved forward and working in its mortise in the case, as shown and described, the auxiliary pawl *c*, bifurcated register-pawl *d*, and the dial-plates *C* and *C'*, with their respective series of ratchet-teeth, all constructed and arranged substantially as and for the purpose set forth and described.

4. The combination of the sliding plate *S* having vertical play in a groove in partition, plate *W*, the spring *S'*, and one or more pawls pivoted to said plate, substantially as shown and described, for the purpose set forth.

5. The combination of the sliding plate *S*, the partition-plate *W*, the spring *S'*, and pawls *c* and *d*, substantially as shown and described, for the purpose set forth.

6. The combination and arrangement in the containing-box of the bell and hammer, the sliding plate, and the dial-plates on one side of the partition, and the feed-rollers and reel on the other, substantially as set forth.

ROBERT McCULLY.

Witnesses:

P. O'DONNELL,  
F. L. ROEPKE.