(No Model.)

E. KNOOP.

TICKET REEL.

No. 457,854. Patented Aug. 18, 1891.

Fig 2.

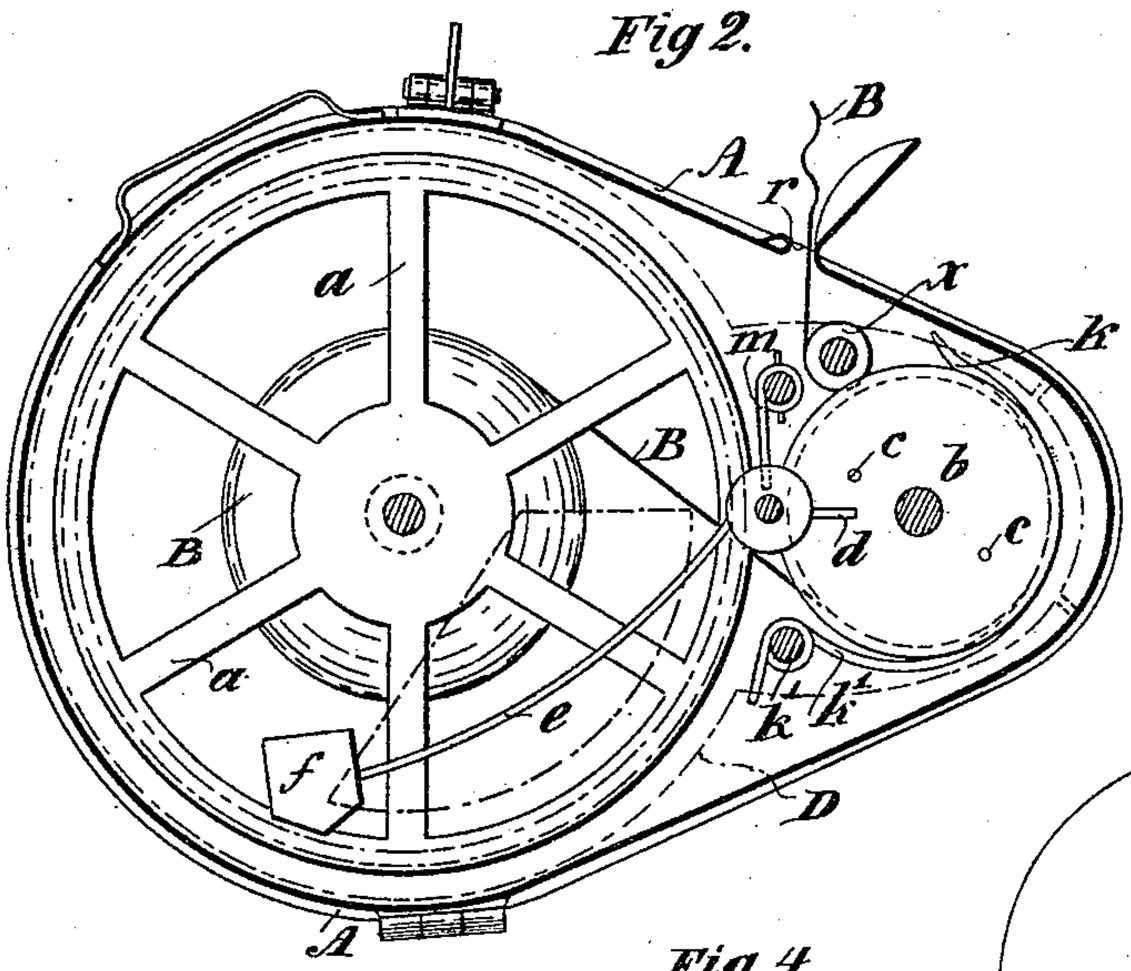


Fig. 3.

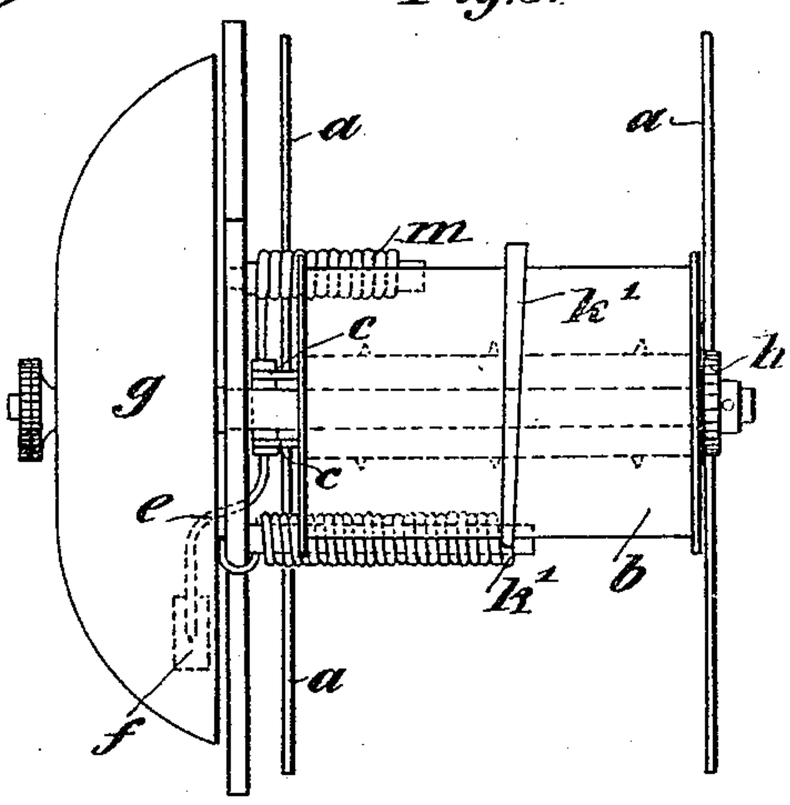


Fig. 4.

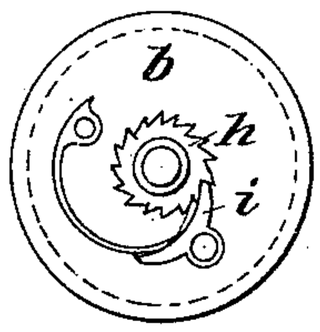
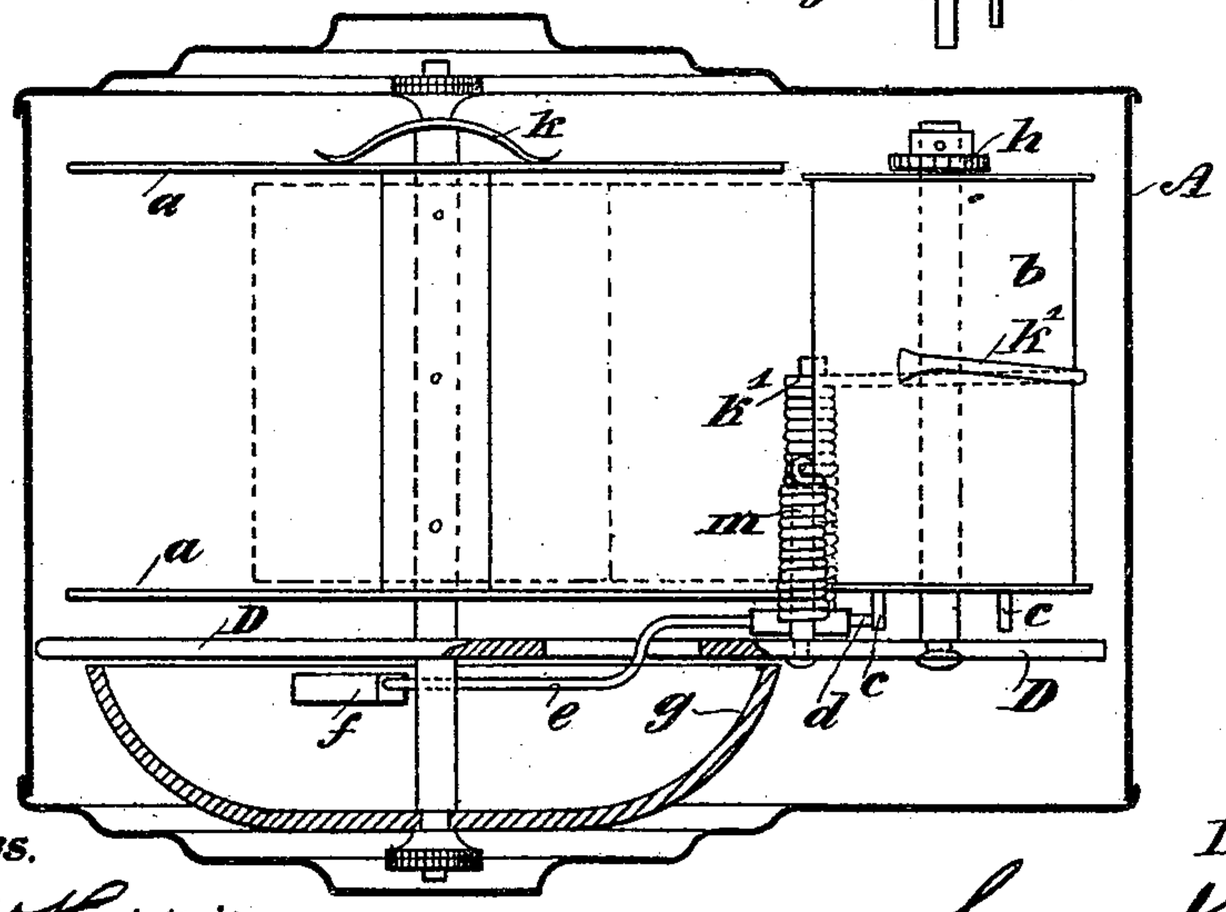


Fig. 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

ERNST KNOOP, OF ST. PETERSBURG, RUSSIA.

TICKET-REEL.

SPECIFICATION forming part of Letters Patent No. 457,854, dated August 18, 1891.

Application filed December 10, 1890. Serial No. 374,209. (No model.)

To all whom it may concern:

Be it known that I, ERNST KNOOP, a subject of the Emperor of Russia, and a resident of St. Petersburg, in the Russian Empire, have invented certain new and useful Improvements in Controlling Apparatus with Bell for Tramways, Omnibuses, and the like, of which the following is a full, clear, and exact description.

My invention relates to that class of controlling apparatus which cause a bell to be struck as soon as a ticket is drawn out and in position to be torn off from the continuous roll, so that a certain control may be exercised, not only by the officials but also by the public.

In order to make my invention more clear I refer to the accompanying drawings, which form part of this specification, and in which similar letters denote similar parts throughout the several views.

Figure 1 is a sectional plan of the apparatus, the supporting-plate being shown partly in section, the bell and casing cut through the middle. Fig. 2 is a side elevation seen from the direction of the arrow in Fig. 1, with the bell and plate D removed. Fig. 3 is an end elevation of the mechanism without the casing. Fig. 4 is a detail view of the ratchet device for preventing the roll from being turned backward.

a is a rotary drum for the reception of the paper B, arranged in the casing A, the cylinder of which drum is provided with small spikes for gripping the paper end in winding the same onto the roll. A second roll *b*, revolving round a pivot, riveted or in any other convenient manner affixed to the plate D, has a circumference equal to the length of two tickets. This roll or drum has a rough surface, so that the paper on being pulled out of the casing at *r* revolves the drum *b*. In the end of drum or roll *b*, Fig. 2, are two pins *c c*, which, as the drum revolves, strike a projection *d* in the boss of the bell-hammer *f*. This hammer *f* is pivoted to the plate *d* and is under the influence of a spring *m* tending to retain it in the position shown in Fig. 2. The pivot on which the drum *a* revolves projects through the plate D, and is formed to receive the bell *g*, which is screwed onto it. The hammer *e f*, as shown in Fig. 1, also extends through a slit in the plate D, said slit being shown in dotted lines in Fig. 4. The drum *a* is allowed a small lateral play on its pivot by means of the spring *k*, to prevent the same from being stopped by any unevenness in the breadth of the paper or manner in which the same is wound on the drum. The ratchet and wheel *i h* prevent the drum *b* from being turned backward, the ratchet-wheel *h* being fixed on the pivot of roll or drum *b*, while the ratchet with its spring revolves with the drum.

The paper B is wound on the drum *a*, as shown in Fig. 2, then passes under and round roll *b*, onto which it is held by a spring-holder *k'*, under a pressure-roll *x*, Fig. 2, and out of the casing at *r*. On pulling the end of the paper out of the apparatus, the roll *b* will be revolved, and one of its pins will strike the projection *d* on the hammer-boss, pressing it downward against the influence of the spring *m*. As, however, the drum continues to revolve, the pin *c* will run off the projection *d*, releasing the same, when the bell will be struck and the ticket may be torn off.

It is obvious that I can make the drum *b* of any size, and provide it with as many pins to actuate the bell, two or more times per revolution, if so desired, without departing from the nature of my invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim and desire to secure by Letters Patent, is—

1. In combination with the drum *a*, arranged on its pivot with a spring *k*, as specified, and a bell *g*, a hammer *e f*, pivoted to the frame-plate D and having a spring *m* and projection *d*, said hammer actuated by the pins *c c* in the revolving drum *b*, substantially as described.

2. In combination with the drums *a* and *b*, bell *g*, and hammer *e f*, the casing A, having

outlet *r*, the pressure-roll *x*, and spring-holder *k'*, in the manner and for the purpose substantially as described.

3. In combination with the drums *a* and *b*, hammer *e f*, and bell *g*, the ratchet device *h i*, consisting of the fixed tooth-wheel *h* and the pawl *l*, having a spring and attached to the revolving drum *b*, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ERNST KNOOP.

Witnesses:
NICOLAI FROSTERUS,
Merchant.
THEODOR KONDRATJEFF,
Merchant.