

F. W. GRISWOLD.

Annunciator for Fire Alarm Telegraphs.

No. 232,707.

Patented Sept. 28, 1880.

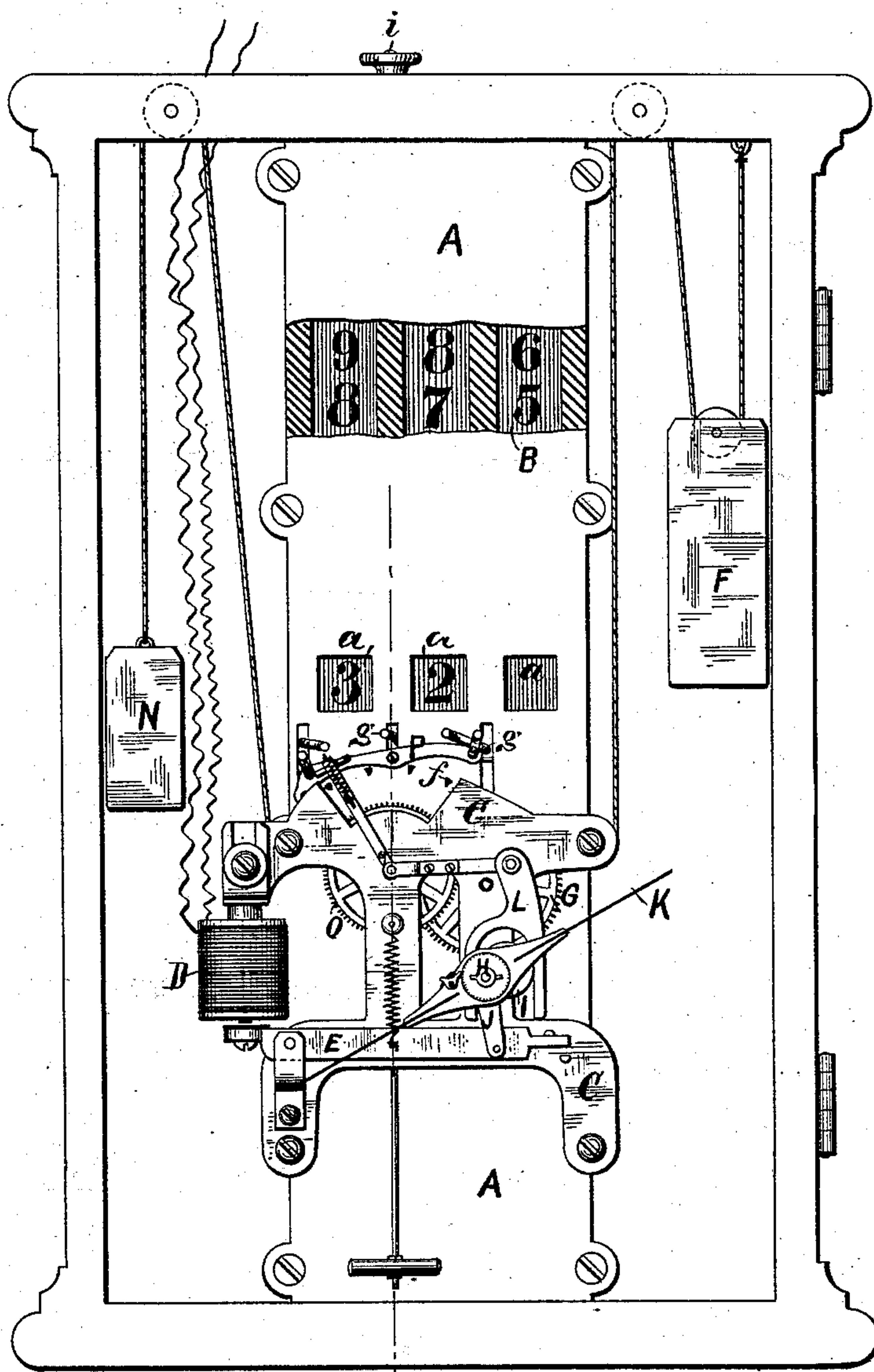


FIG. 1.

WITNESSES.

INVENTOR.

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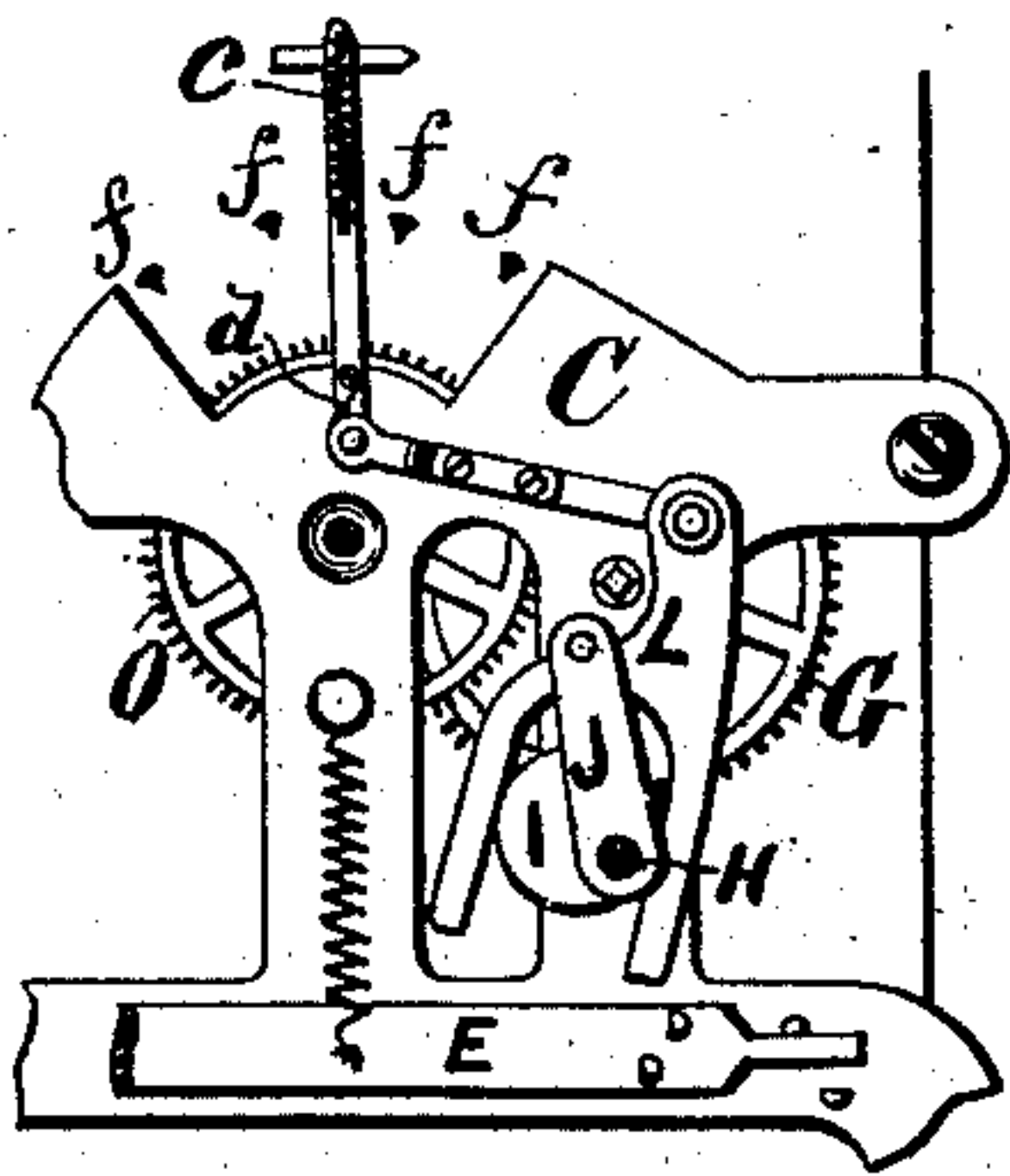


FIG. 3.

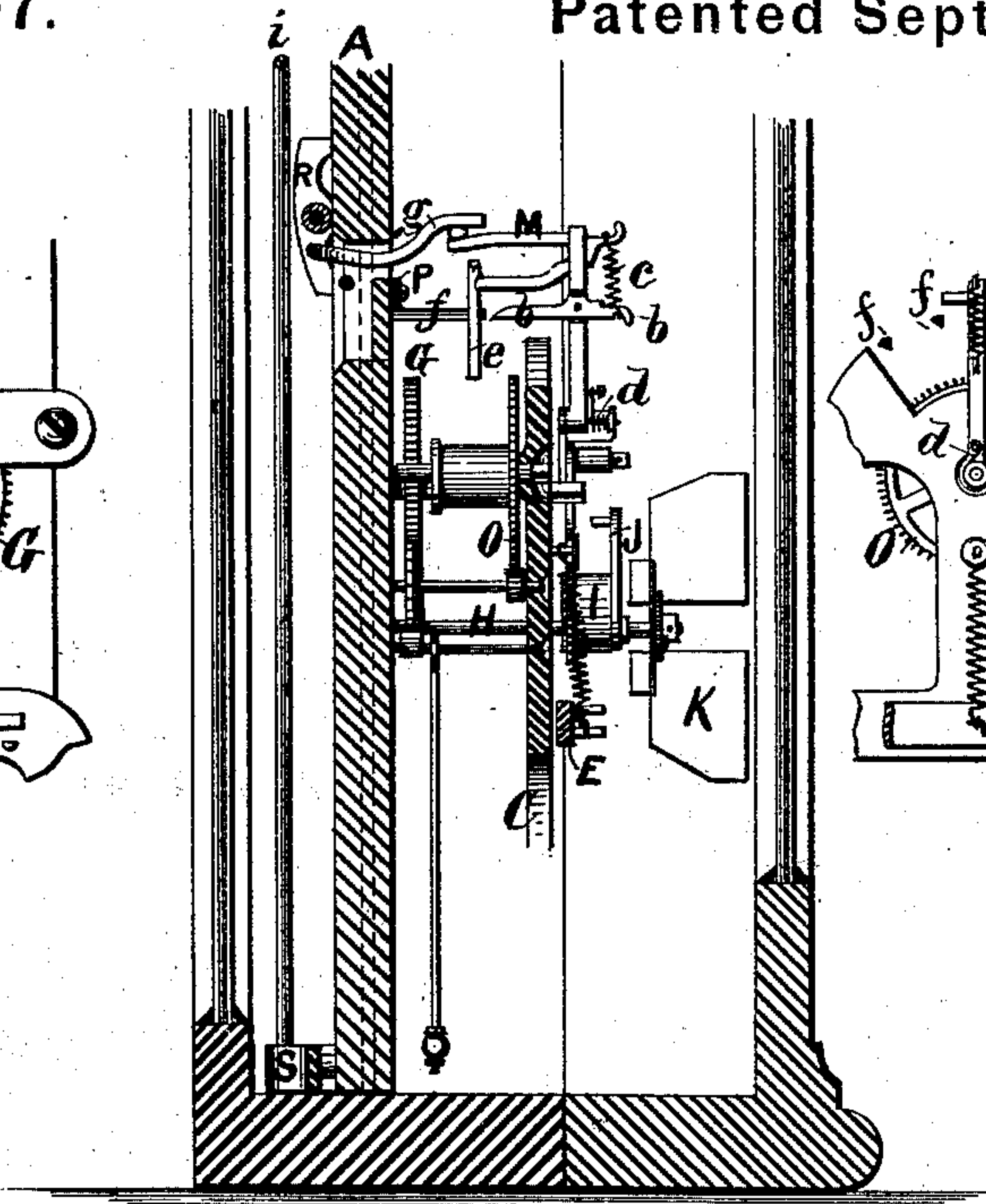


FIG. 2.

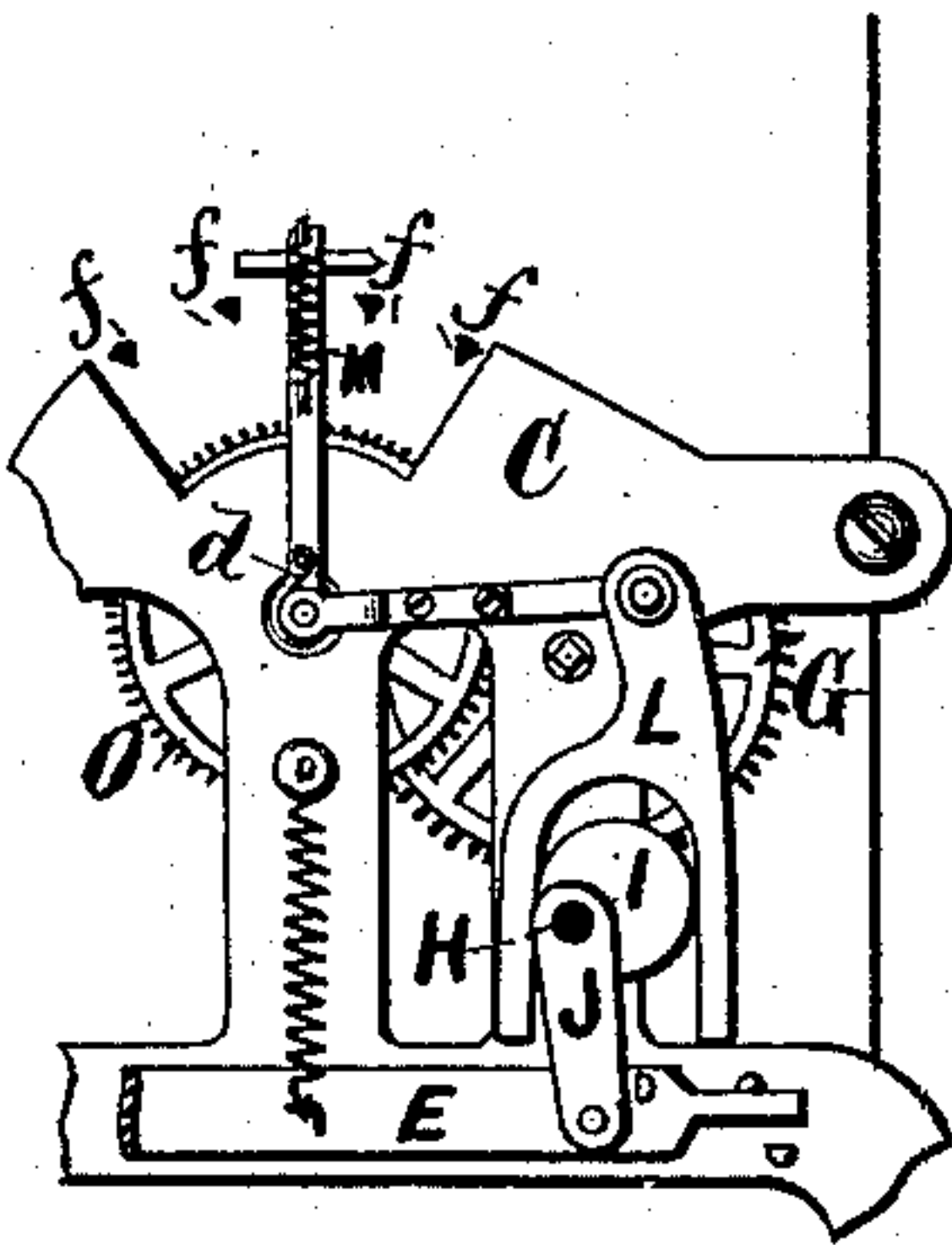


FIG. 4.

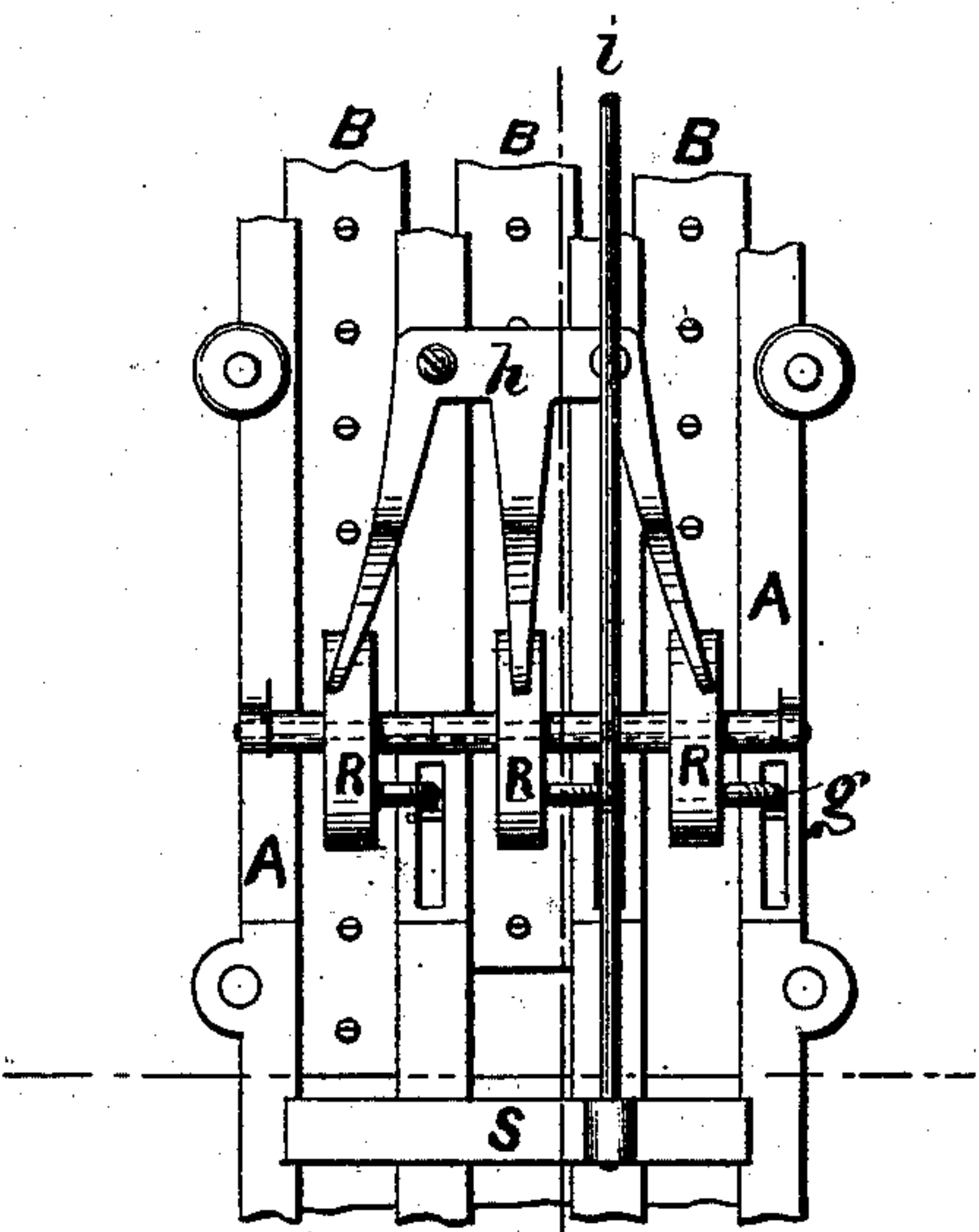


FIG. 5.

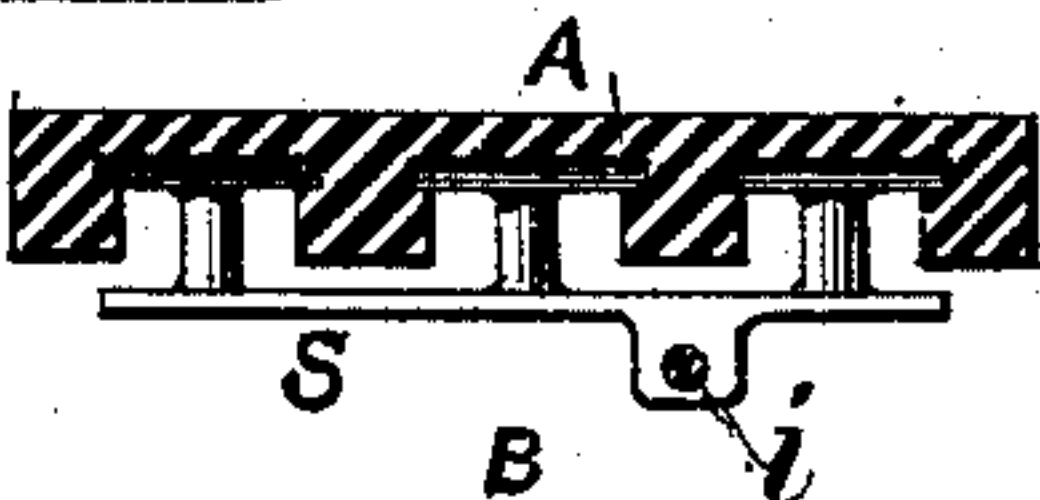


FIG. 7.

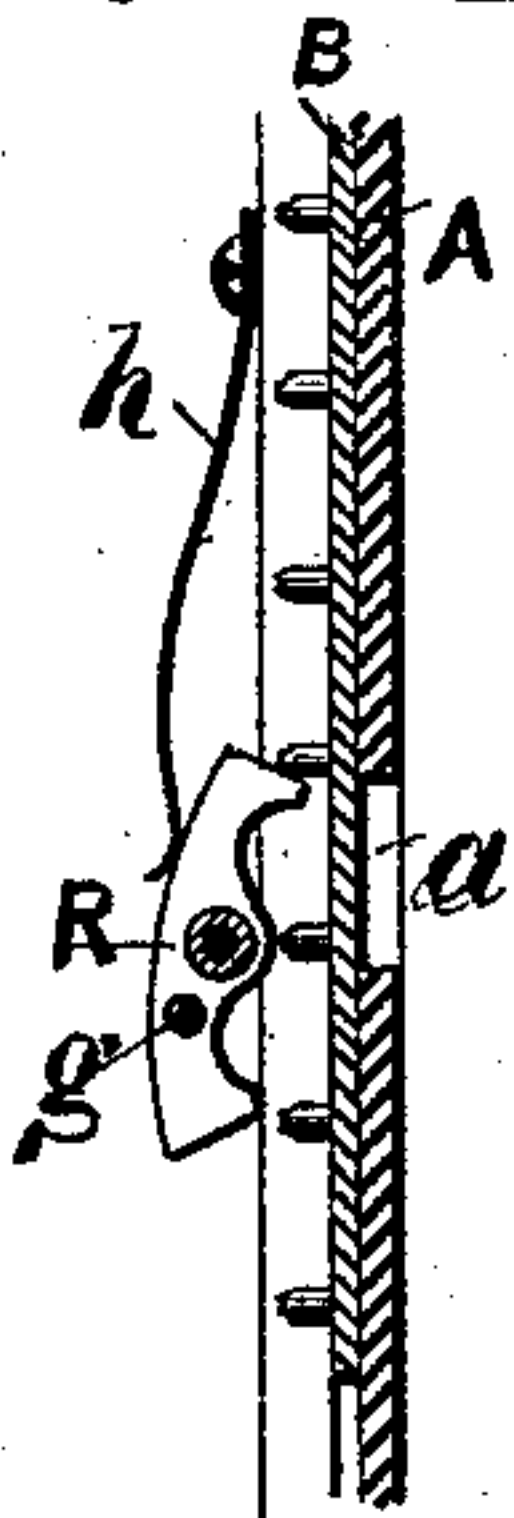


FIG. 6.

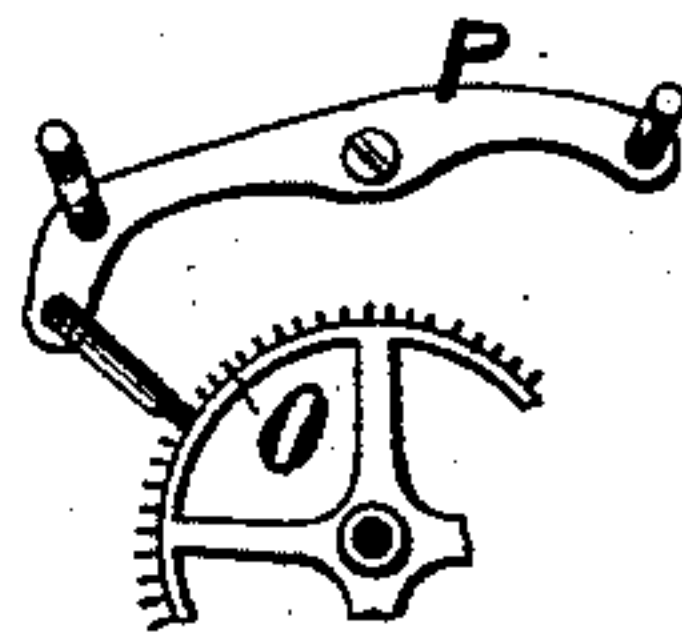


FIG. 8.

WITNESSES.

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FRANK W. GRISWOLD, OF PROVIDENCE, RHODE ISLAND.

ANNUNCIATOR FOR FIRE-ALARM TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 232,707, dated September 28, 1880.

Application filed February 18, 1880.

To all whom it may concern:

Be it known that I, FRANK W. GRISWOLD, of Providence, county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Electro-Magnetic Registering Apparatus for Fire-Alarm and other Signals, of which the following is a specification.

The invention consists of an improved mechanism for registering fire-alarm and other signals, hereinafter described, and pointed out in the claims.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a front elevation of my invention, giving a general view of the same. Fig. 2 is a side view, and Fig. 5 is a back view, of the same, showing slides and escapement. Figs. 3, 6, 7, and 8 are detailed parts.

A is the main plate or frame, with openings *a* for showing numbers, and in the back of which are grooves or scores for guiding the strips or slides B. Said slides drop by their own weight and are individually numbered from one to nine. The lower part of the main plate is provided with posts and a front plate, C, for the purpose of holding clock-work.

The magnet D is rigidly, and the armature-bar E is movably, attached to the plate C.

The working or driving train receives its power from the weight F, and consists of the wheel G, provided with arbor and spool for weight-cord. The wheel G engages with the pinion H, causing said pinion to revolve when the circuit is broken.

The pinion H extends through the plate C, and to it are fastened an eccentric or cam, I, and the locking-arm J. To the end of the pinion H is also attached the fan K, with its ratch and pawl. The object of this fan is to steady or regulate the movement of the clock-work.

A bell-crank lever, L, is pivoted in its center to the plate C. One arm of this lever is made in the form of a fork and straddles the cam I. To the other arm is hinged or pivoted a lifting-foot, M. The lifting-foot is provided with a latch, *b*, springs *c* and *d*, and guide-rod *e*.

The regulating-train receives power from the weight N, and consists of the wheel O, with spool for cord, pinion, and escapement for regulating its motion.

To the plate A are fastened knife-edge guide-pins *f*. Also to it is pivoted a stop-lever, P.

Referring to Figs. 5 and 6, the slides B are provided with pins set at equal distance, said distance corresponding with the size of the openings *a* in the plate A. The verges R, provided with levers *g*, are loosely fitted on a rod which passes through ears on the back of the plate A. The upper arms of these verges are pressed toward the slides by the springs *h*, and engage with the pins in slides, as shown in Fig. 6. The verge-levers *g* extend through slots in the plate A, and are shaped so as to receive motion from the lifting-foot M, as shown in Fig. 2.

A follower, S, is used to raise the slides B when the apparatus is set for use, and is shown in Figs. 2, 5, and 7. This follower is provided with a rod, *i*, which extends upward through the case.

The operation of the mechanism is as follows: Supposing the slides to be at blank, and the number to be registered 213. The opening of the circuit causes the vibration of the armature-bar E, and releases the locking-arm J, which revolves through the action of the weighted wheel G, and communicates motion, through the cam I, to the lever L and lifting-foot M. The first half-revolution of the pinion H disengages the latch *b* and stop-lever P from the cog-wheel O, and also lifts the verge-lever *g*. The lifting of the verge-lever frees the lower pin of the first slide from the top arm of the verge, and the slide drops until the pin rests on the bottom or lower arm of said verge; the second half-revolution withdraws the lifting-foot from the verge-lever, when the spring *h* forces the top arm of the verge into its former position, and the next pin in the slide engages it, as shown in Fig. 6. By this operation the first slide has dropped one pin, and figure 1 is presented at the opening *a* in plate A. Upon disengaging the latch *b* and stop P in the first half-revolution the regulating-train commences to revolve through the action of the weight N. When the revolution of the pinion H is completed the latch *b* drops into and is carried forward (together with the lifting-foot M) with the cog-wheel O. Upon again breaking the circuit, before the lifting-foot, with its guide-rod *e*, has passed the

second guide-pin *f*, the spring *d* causes the lifting-foot, with its guide-rod *e*, to recoil against the first guide-pin *f*, and the first slide drops another pin, as before described, and figure 2 is shown. After a pause, during which the guide-rod and lifting-foot have been carried past the second guide-pin *f*, Fig. 4, the circuit is again broken, whereupon the lifting-foot, with its guide-rod, recoils against the second guide-pin *f*, operating the second verge and showing figure 1 of the second slide. The revolution being completed, the latch *b* engages, as before stated, with the wheel *O*, and is carried forward during a pause past the third guide-pin *f*. The circuit is now thrice broken in quick succession, and as the lifting-foot with its guide-rod has passed the third guide-pin *f*, the revolutions of the parts as before cause figures 1, 2, and 3 of the third slide to be successively shown, thus registering the number 213. During another pause the lifting-foot and latch are carried past the fourth guide-pin *f*, and rest against an angled shoulder in plate *C*, thus stopping the regulating-train. Upon breaking the circuit for the first signal of the second sound the lifting-foot recoils against the fourth guide-pin *f* and stops the regulating-train by causing the stop-lever *P* to engage with the cog-wheel *O*, as shown in Fig. 8. The lifting-foot is now held in check by

the stop-lever *P*, and the cam and pinion are prevented from making a complete revolution.

To set the apparatus for another alarm, turn the driving-train back by revolving the fan until the pins on armature-bar *E* lock with the arm *J*, depress the latch *b*, and allow the spring *d* to carry the lifting-foot with its attachments back to original position, as shown in Fig. 1; raise the rod *i*, thereby lifting the slides *B* until blanks are shown in openings *a*.

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

1. In an electro-magnetic registering apparatus for fire-alarms, consisting of numbered slides and mechanism for operating the same, the cam *I*, locking-arm *J*, lever *L*, and lifting-foot *M*, in combination with the pinion *H*, armature-bar *E*, and magnet *D*, substantially as and for the purpose specified.

2. In combination with the lifting-foot *M*, regulating-train *O*, verges *R*, levers *g*, and slides *A*, the latch *b*, springs *c* and *d*, guide-rod *e*, stop-lever *P*, and guide-pins *f*, substantially as and for the purpose specified.

FRANK W. GRISWOLD.

Witnesses:

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WM. R. DUTEMPLE.