

(No Model.)

F. E. FISHER.
ELECTRICAL ANNUNCIATOR.

No. 258,735.

Patented May 30, 1882.

Fig. 1.

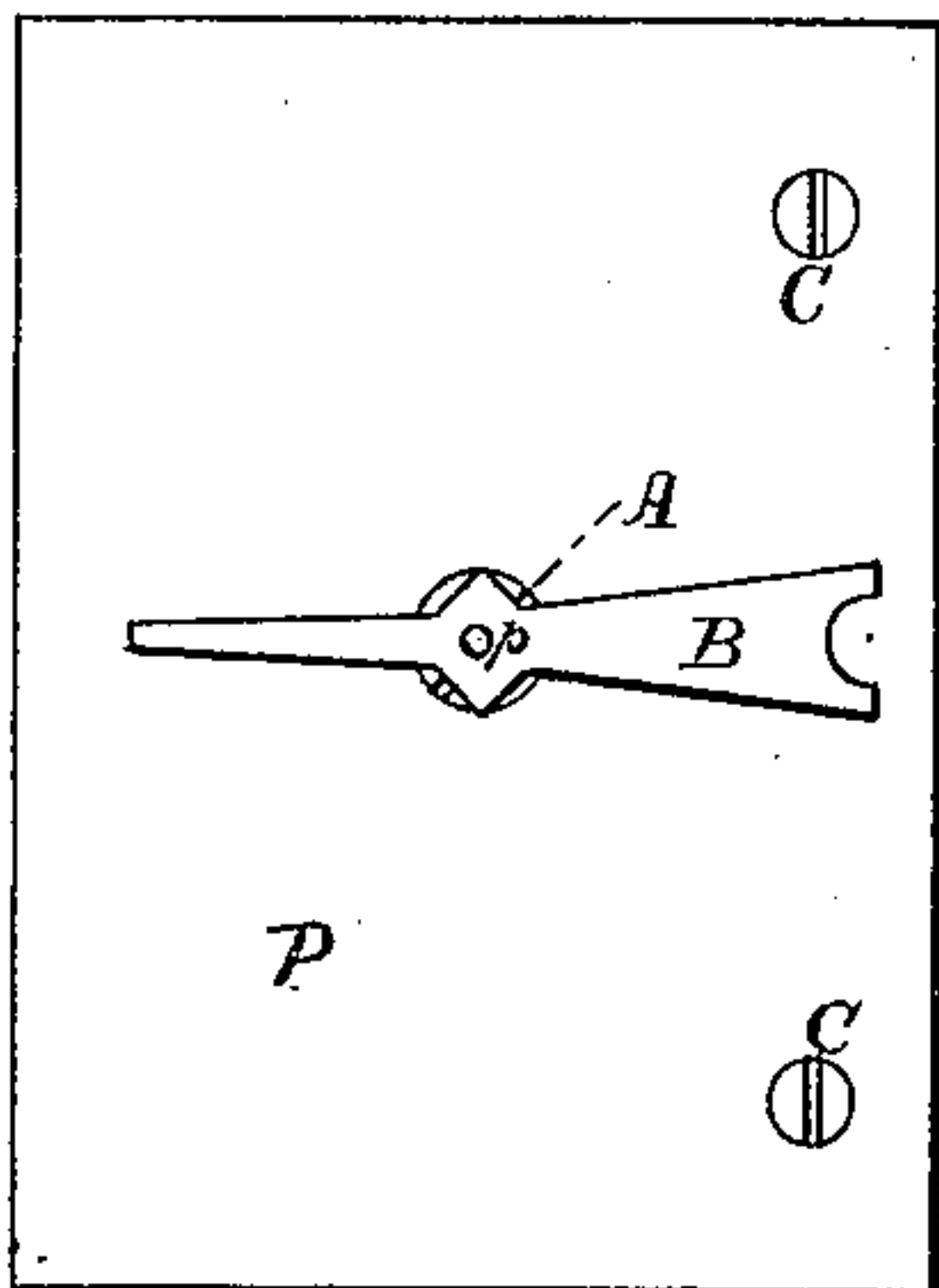


Fig. 2.

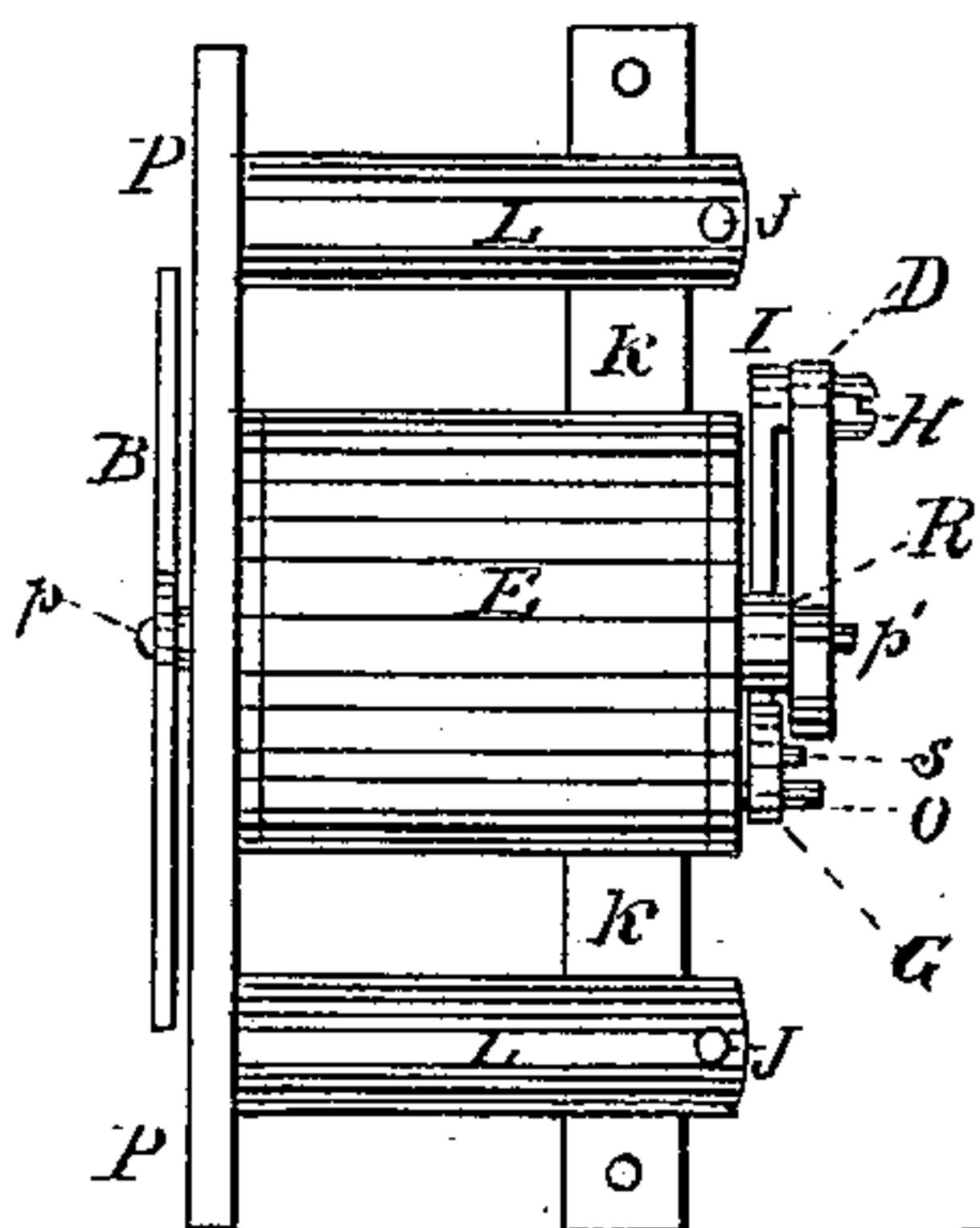
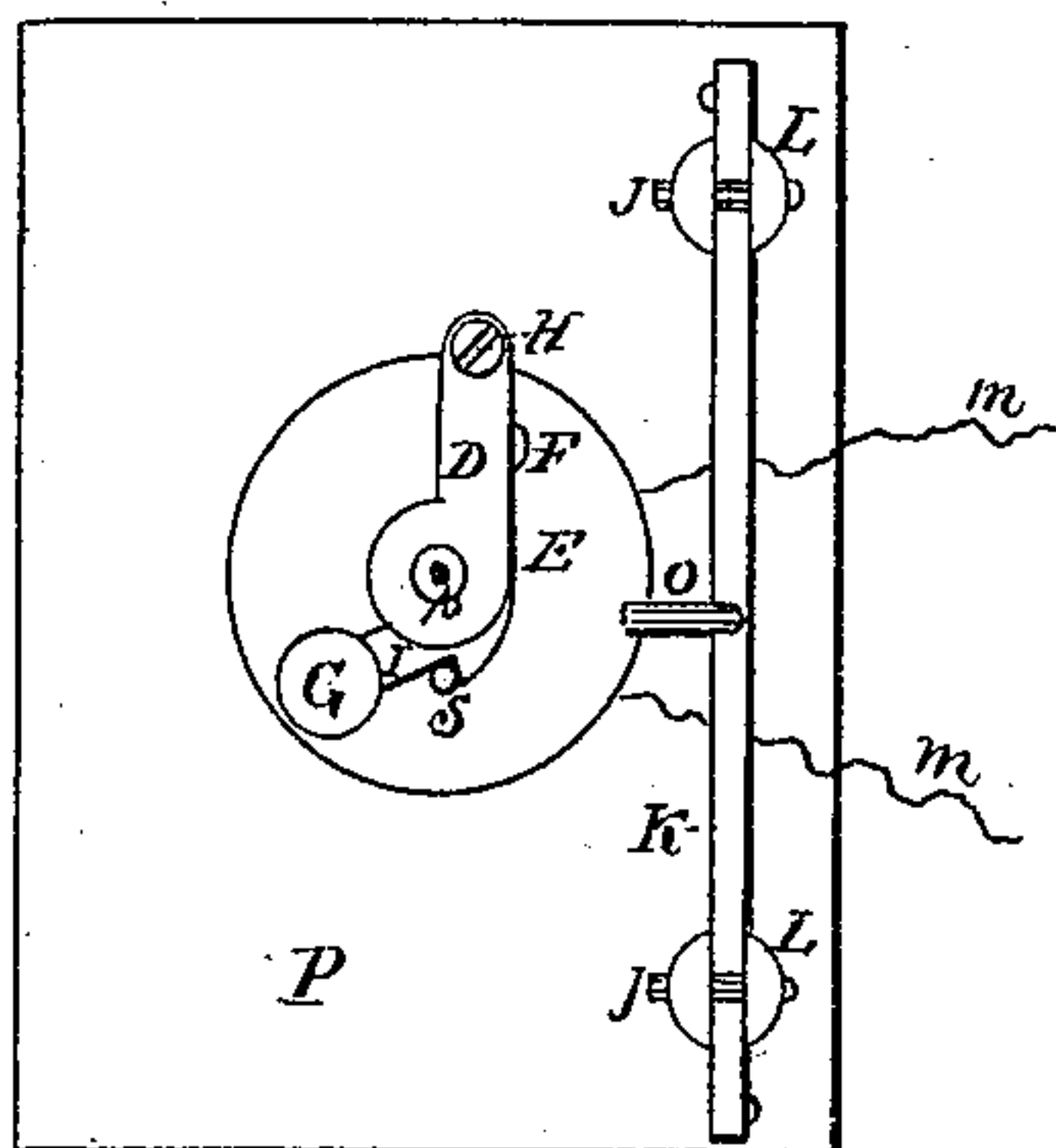


Fig. 3.

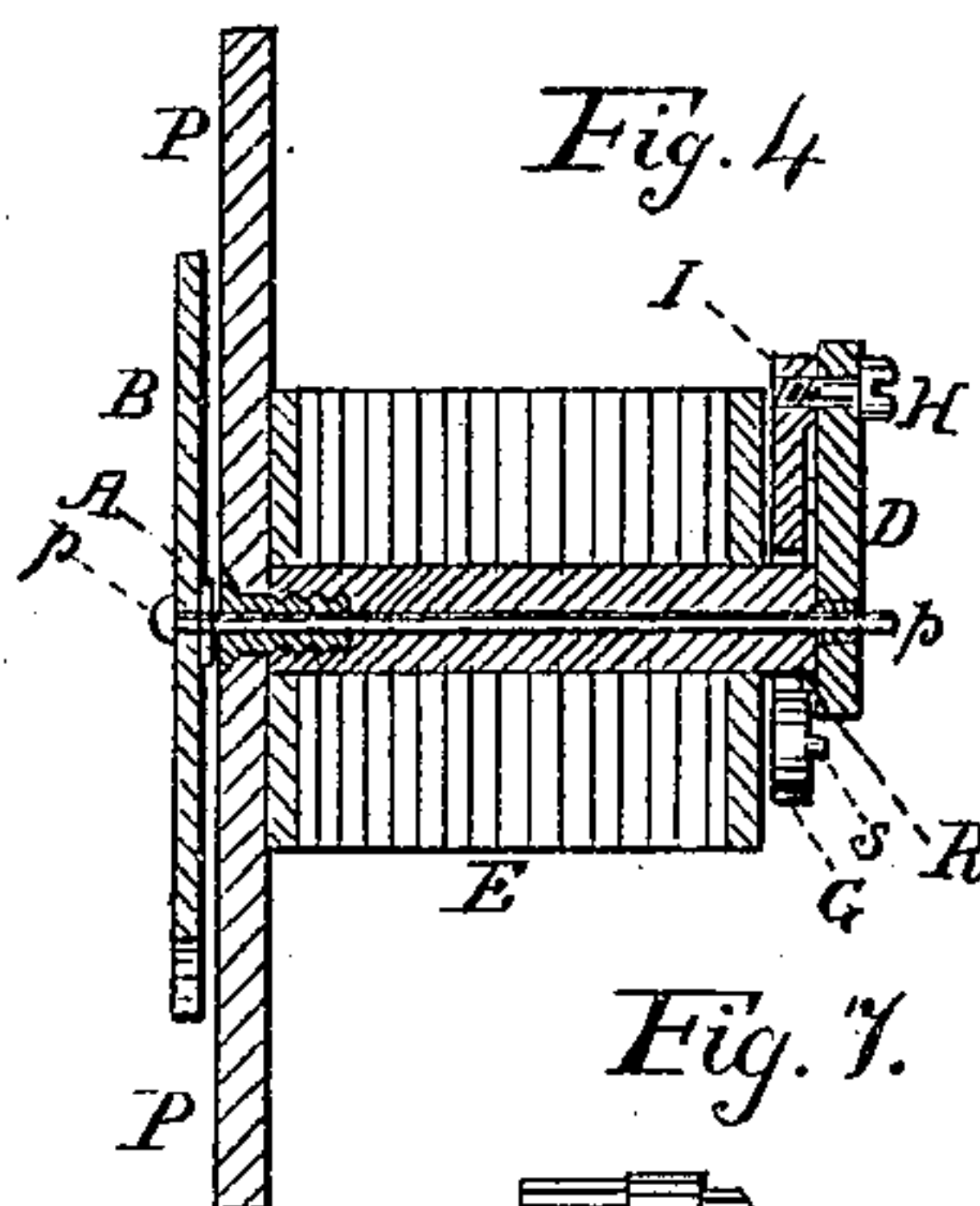


Fig. 4.

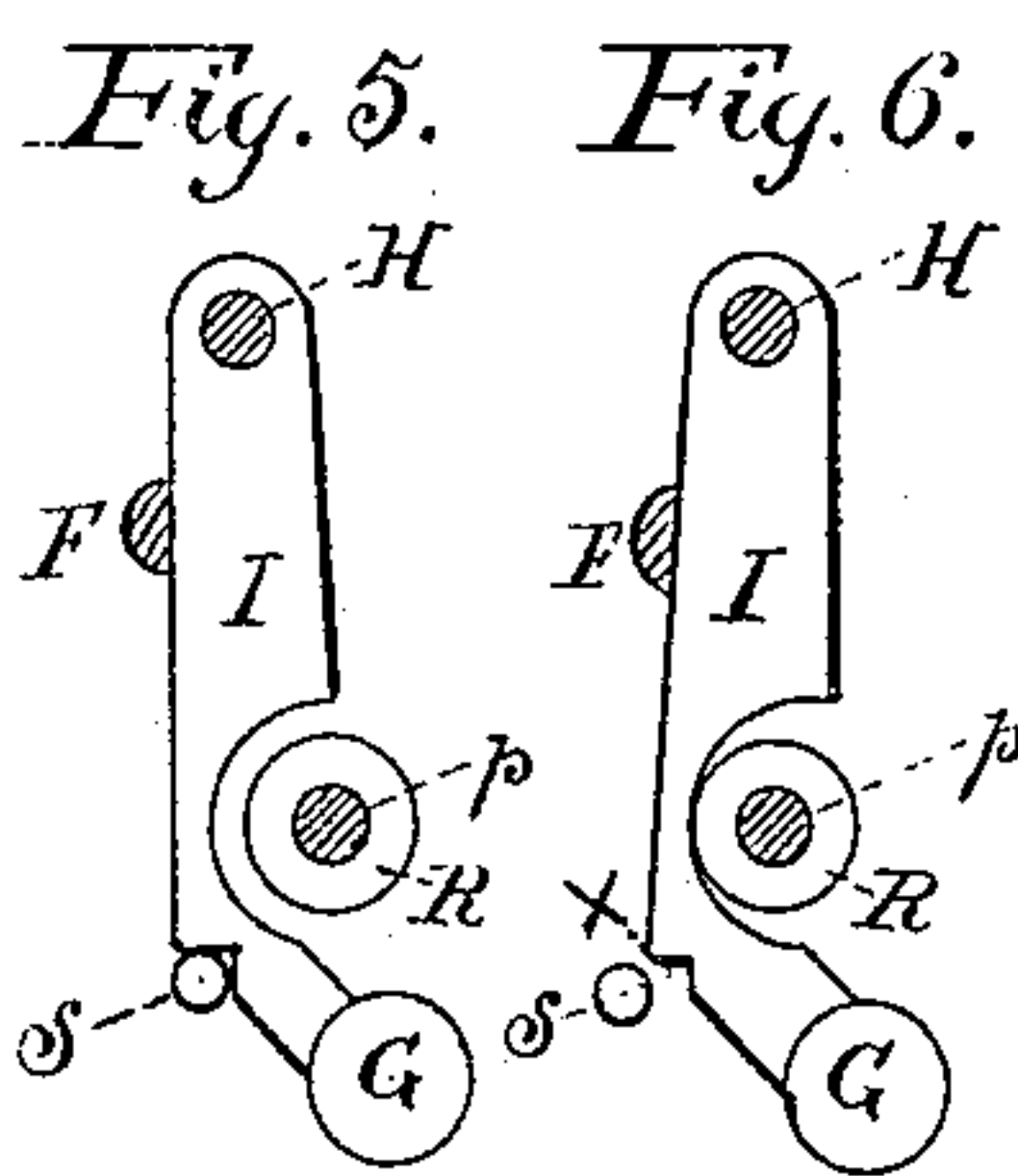


Fig. 5.

Fig. 6.

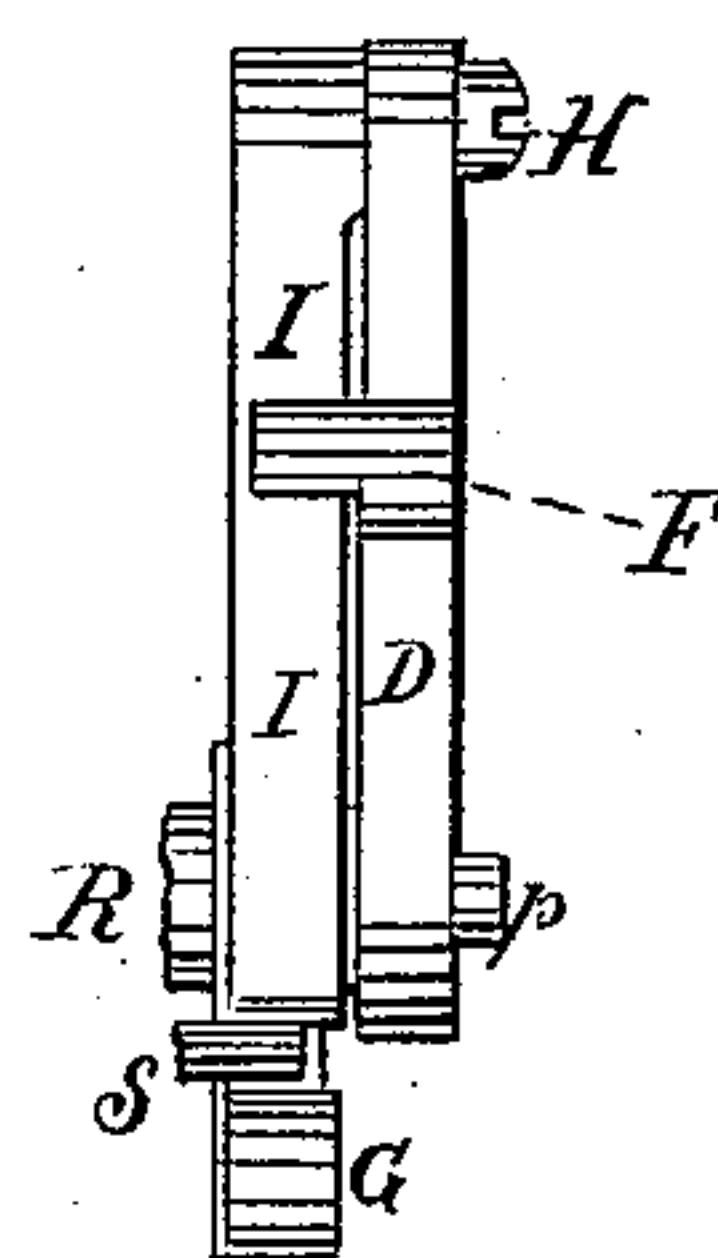


Fig. 7.

Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK E. FISHER, OF DETROIT, MICHIGAN.

ELECTRICAL ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 258,735, dated May 30, 1882.

Application filed March 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. FISHER, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Electrical Annunciators, of which the following is a specification.

Figure 1 is a front elevation, Fig. 2 is a rear elevation, and Fig. 3 is a side elevation, of my invention. Fig. 4 is a vertical section through the longitudinal center of the electro-magnet. Figs. 5 and 6 are detached views of the armature. Fig. 7 is a view showing the connection of the armature with the crank which actuates the pointer.

My invention consists, first, in an armature pivoted to a crank which actuates the pointer, having its lower end weighted, and a shoulder thereon adapted to engage with a suitable stop; second, in an electro-magnet having a hollow core which forms a bearing for a shaft which carries the pointer; third, in attaching the electro-magnet to its supporting-plate by a hollow screw passing through said plate and into the core of the electro-magnet.

P represents a brass supporting-plate. E represents an electro-magnet, of which R is the core, *mm* being the ends of the wire. The core R is hollow, and the electro-magnet is fastened to plate P by a hollow screw, A, which passes through plate P and screws into core R.

p is a diamagnetic rod, (brass,) which passes through the hollow core R and hollow screw A, and to which is fastened the needle or pointer B. The end of core R projects beyond the inner end of magnet E, and at the end of said core R a brass crank-arm, D, is rigidly fastened to rod *p*.

Pivoted to the outer end of crank-arm D, by a pin or screw, H, and lying between said crank-arm and the end of magnet E, is an armature, I, which has a depression therein to partly surround the core R, Figs. 5 and 6, the lower end of said armature being counter-weighted, G, in such manner that when the crank-arm D stands vertical, or nearly so, the armature tends to swing away from the core R.

F is a stop fastened to crank-arm D and extending partly over one edge of armature I, so that said armature is in a measure controlled by crank-arm D.

S is a stop fastened in a brass plate set on the end of magnet E, and so placed that when

crank-arm D and armature I are brought into a position nearly but not quite vertical a shoulder in the lower portion of armature I, X, Fig. 6, will drop behind said stop S and hold said crank-arm and armature fixed until shoulder X is disengaged from stop S.

K is a rod sliding in grooves in posts L L, and having thereon a finger, O, which will raise crank-arm D and armature I when rod K is forced upward.

In actual practice magnets E are placed in vertical rows on a large plate, rod K has as many fingers O as there are magnets in each vertical row, and there are as many rods K as there are vertical rows of magnets.

The operation of my invention is as follows: When an electric current is sent through the electro-magnet E core R becomes magnetized and attracts armature I until shoulder X on said armature is freed from stop S, when crank-arm D and armature I, by the influence of gravitation, swing to the right, around rod *p* as a center, until they fall through a quarter of a circle, when they are stopped by finger O, and by this the needle or pointer B is turned from a horizontal to a vertical position, thus indicating the number placed above said pointer. When the current through magnet E ceases, armature I is no longer attracted by core R and drops away from said core until its motion is arrested by stop F on crank-arm D. On raising rod K finger O lifts crank-arm D to a nearly-vertical position, carrying with it armature I until the shoulder X on armature I passes stop S and engages therewith, thus holding said armature and crank-arm D in a nearly-vertical position and said pointer B in a horizontal position.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, substantially as hereinbefore described, of the supporting-plate, the electro magnet having a hollow core provided at one end with an interior screw-thread, the hollow screw extending through the supporting-plate and engaging the interior screw-threaded end of the core of the magnet, and the crank-rod having its bearing in the hollow screw.

2. In an electric annunciator, an electro-magnet having its inner end faced with a diamagnetic substance, a hollow core projecting be-

yond the inner end of the electro-magnet, a
diamagnetic rod passing through the hollow
core, and having at its inner end a diamagnetic
crank-arm rigidly fastened thereto, and an
5 armature pivoted to the free end of said crank-
arm, and having therein a shoulder adapted
to engage with a suitable stop fastened in the
facing of the inner end of the electro-magnet,
substantially as herein shown and described.
10 3. The combination of the electro-magnet E,
core R, rod *p*, pointer B, crank-arm D, having
stop F, armature I, having shoulder X and
weighted end G, and stop S, substantially as
herein shown and described.

4. The combination of crank-arm D, rigidly 15
fastened to rod *p*, and having stop F, arma-
ture I, having weighted end G and shoulder X,
and pivot H, connecting said crank-arm and
armature, all constructed, arranged, and op-
erating substantially as herein shown and de- 20
scribed.

FRANK E. FISHER.

Witnesses:

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