

(No Model.)

F. H. TREACY.

COMPENSATING DEVICE FOR SIGNALING APPARATUS.

No. 369,821.

Patented Sept. 13, 1887.

Fig-1-

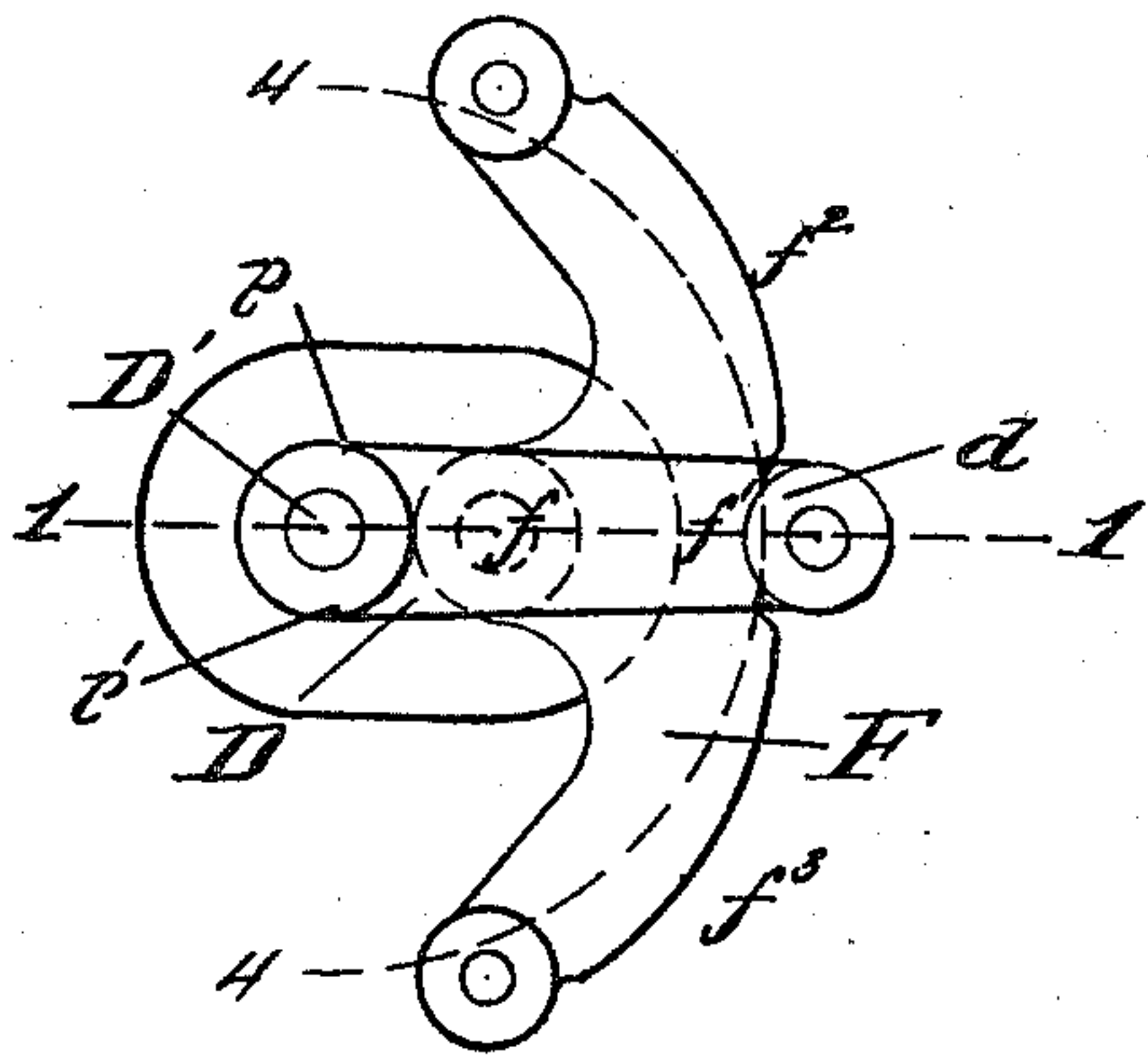


Fig-2-

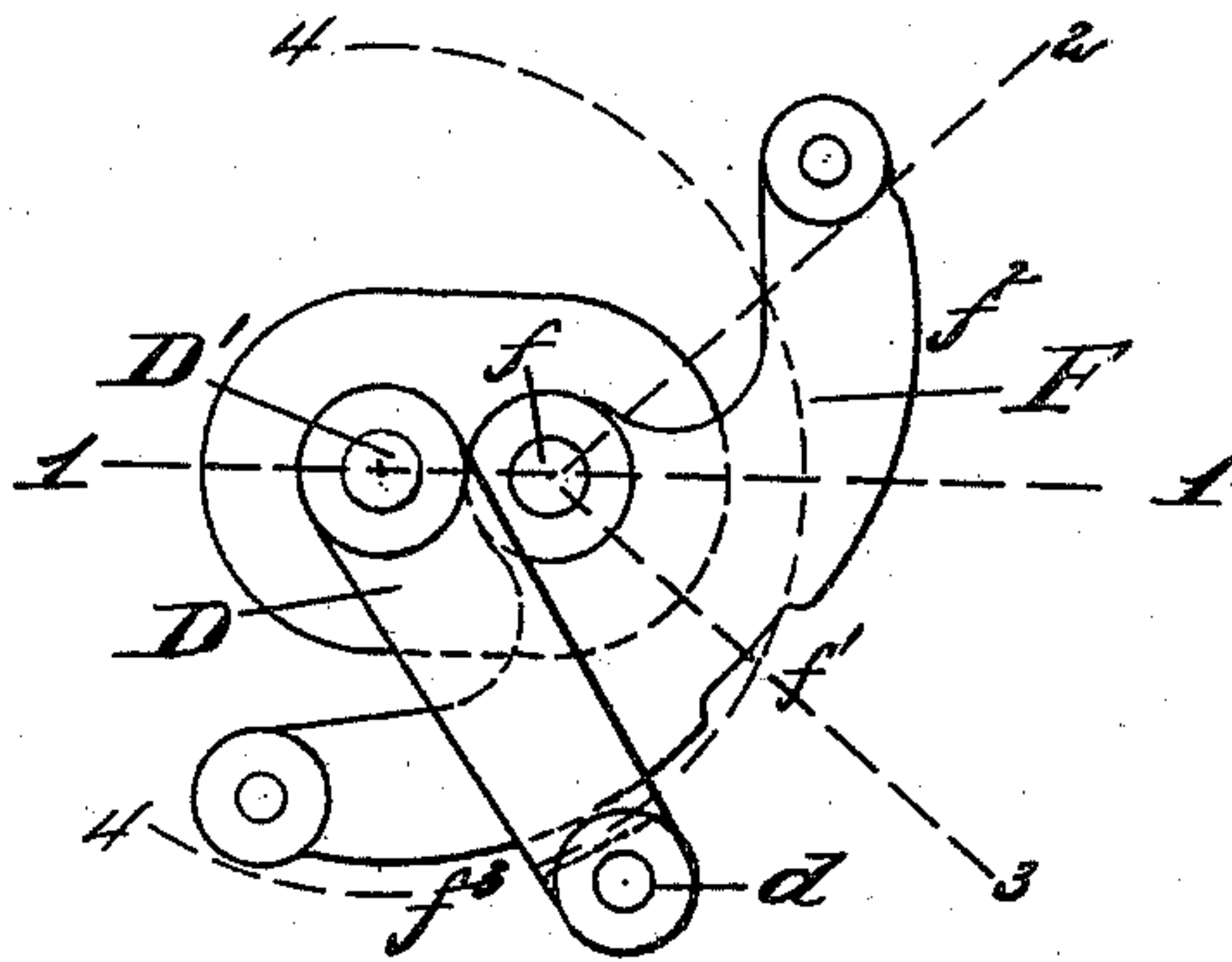


Fig-3-

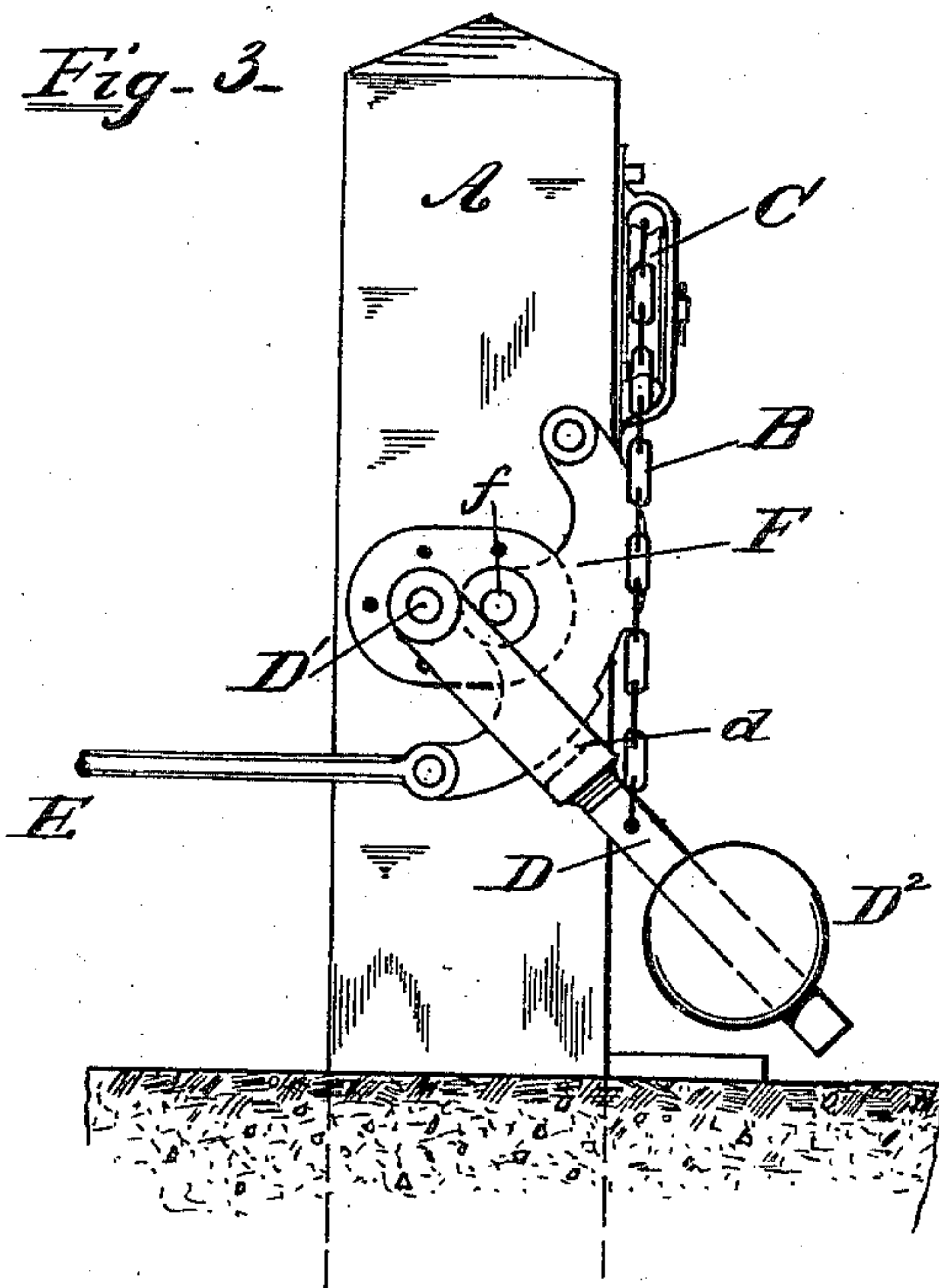
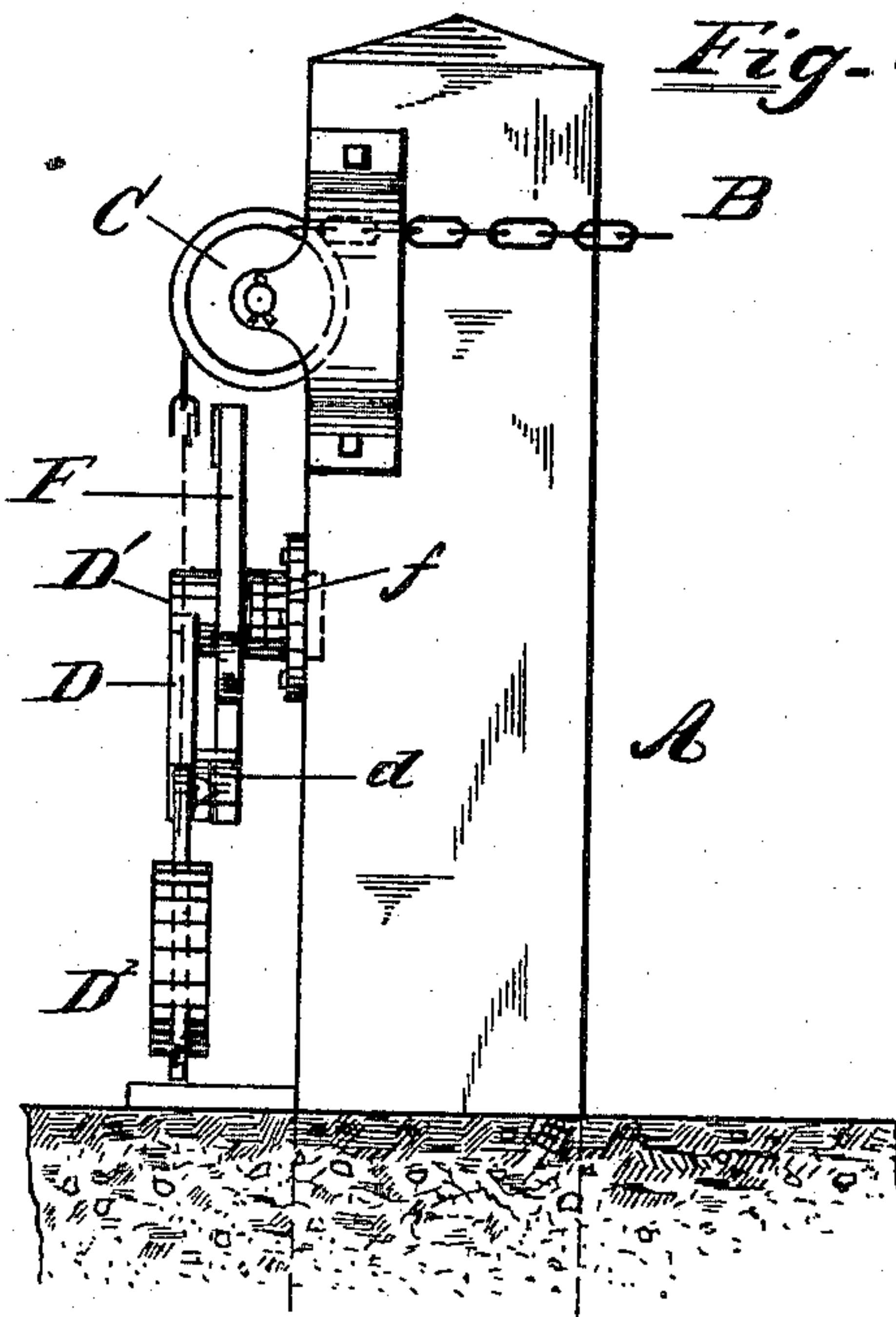


Fig-4-



Witnesses

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UNITED STATES PATENT OFFICE.

FRANK H. TREACY, OF POUGHKEEPSIE, ASSIGNOR TO JAMES H. SWIFT, OF AMENIA, AND EDWIN THORNE, OF MILLBROOK, NEW YORK.

COMPENSATING DEVICE FOR SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 369,821, dated September 13, 1887.

Application filed December 10, 1886. Serial No. 221,218. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. TREACY, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a certain new and useful Improved Compensating Device for Signaling Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to signaling apparatus, and more particularly to improved means for actuating the same. For instance, in order to secure the proper operation of a torpedo-machine like that shown in Patent No. 310,717 to Timothy G. Parmer, which is the kind I prefer to use, it is necessary that the operating-rod be drawn out or pushed in a certain unvarying length every time the machine is used. It has been found difficult to accomplish this when the machine was placed at a distance from the station, by reason of always keeping the connections in the same condition. Under the influence of changing temperature expansion and contraction occurs, while the play of joints, the wear of parts, &c., all combine to render it very difficult to make sure of a proper actuation of the machine. So, also, in the case of other signaling devices—such as a semaphore, target, or the like—it is desirable that the motion transmitted to its mechanism shall be constant and unvarying, since an unreliable signaling device is worse than none at all, and I have therefore devised a compensating device for overcoming these difficulties.

This device consists of a double-faced cam suitably pivoted and engaged by a lug on a swinging arm pivoted eccentrically to the cam, the proportions and arrangements of the parts being such that the swinging of the arm either way from a central position to any extent up to or beyond a normal range of movement will only turn the cam through a predetermined arc, and no more.

My invention further consists in certain combination and arrangement of parts, as herein-

after set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figures 1 and 2 are plan views of the cam and arm, illustrating their relative movements. Fig. 3 is a front elevation of a post carrying my improved compensating device, with means for transmitting motion through it to a signaling device. Fig. 4 is a side elevation of the same.

Similar letters refer to like parts in all the figures.

The post A is firmly planted near the railway-track at any desired distance from the station. Between the station and the post A is laid a rod, chain, or other suitable connection, B, which passes over a pulley, C, suitably journaled on the post A. The end of the chain B is fastened to a lever, D, which is pivoted to the post A at D'. A weight, D², is adjustably secured upon the lever D. It is obvious that a pull upon the chain will lift the lever, and that the weight will bring it down again when the chain is let go.

One end of the rod E is attached to a torpedo-machine. (Not shown.) In order to communicate the motion of the lever D to the rod E, I use the following contrivance: Pivoted to the post A at f is a cam, F, which has a central notch, f', and two curved faces, f² f³, extending each way from said notch. On the lever D is a lug, d, projecting at right angles therefrom, the distance from the pivot D' to the lug d being the same as that from said pivot to the bottom of the notch f', when said notch lies in the line 1 1 drawn through the pivots D' f. Each of the faces f² f³ is an arc of a circle, with a radius equal to D' d, the face f² being struck from the point p, Fig. 1, and the face f³ from the point p'.

The operation of the cam and arm is as follows: When the cam is raised, the lug d strikes the upper side of the notch f', and the continual movement of the arm turns the cam on its pivot until the curved face f² coincides with the circle 4 4, with the notch f' lying in the line f². At this point the lug d leaves the notch f' and slides along the curved face f². The lug may therefore move to any point along

said face f^2 without turning the cam F any farther, and at the same time the lug locks the cam from turning back again. So, too, when the lever D is dropped the lug strikes the lower side of the notch and carries the cam to the position shown in Fig. 3.

It will be seen that the movement of the cam is restricted to the arc 2 3, Fig. 2, provided the lever D is swung to or beyond the points 2 3, and that any further movement of the lever has no effect whatever on the cam. Any stretching of the chain or expansion or contraction of the parts which operate to vary the position of the lever F does not interfere with the accurate and unvarying movement of the cam. The official at the station can therefore be sure that the operating rod E of the torpedo-machine has been properly actuated without fail.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the pivoted lever

D, having a lug, d , of the pivoted cam F, having the notch f' , and the curved faces $f^2 f^3$, means for operating the lever F, and means for transmitting the movement of the cam, substantially as described.

2. The combination, with the lever D, pivoted at D' and having the lug d , of the cam F, pivoted eccentrically to the lever D at f and having a notch, f' , and the curved faces $f^2 f^3$, each face being an arc of a circle having a radius, D' d , and struck from a point at one side of line drawn through the pivot f and the notch f' , means for communicating motion to the lever D, and means for transmitting motion from the cam F, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

FRANK H. TREACY.

Witnesses:

O. E. DUFFY,
C. M. WERLE.