

(No Model.)

J. C. RICKETSON.
ELECTRIC SIGNAL FOR ENGINES.

No. 475,066.

Patented May 17, 1892.

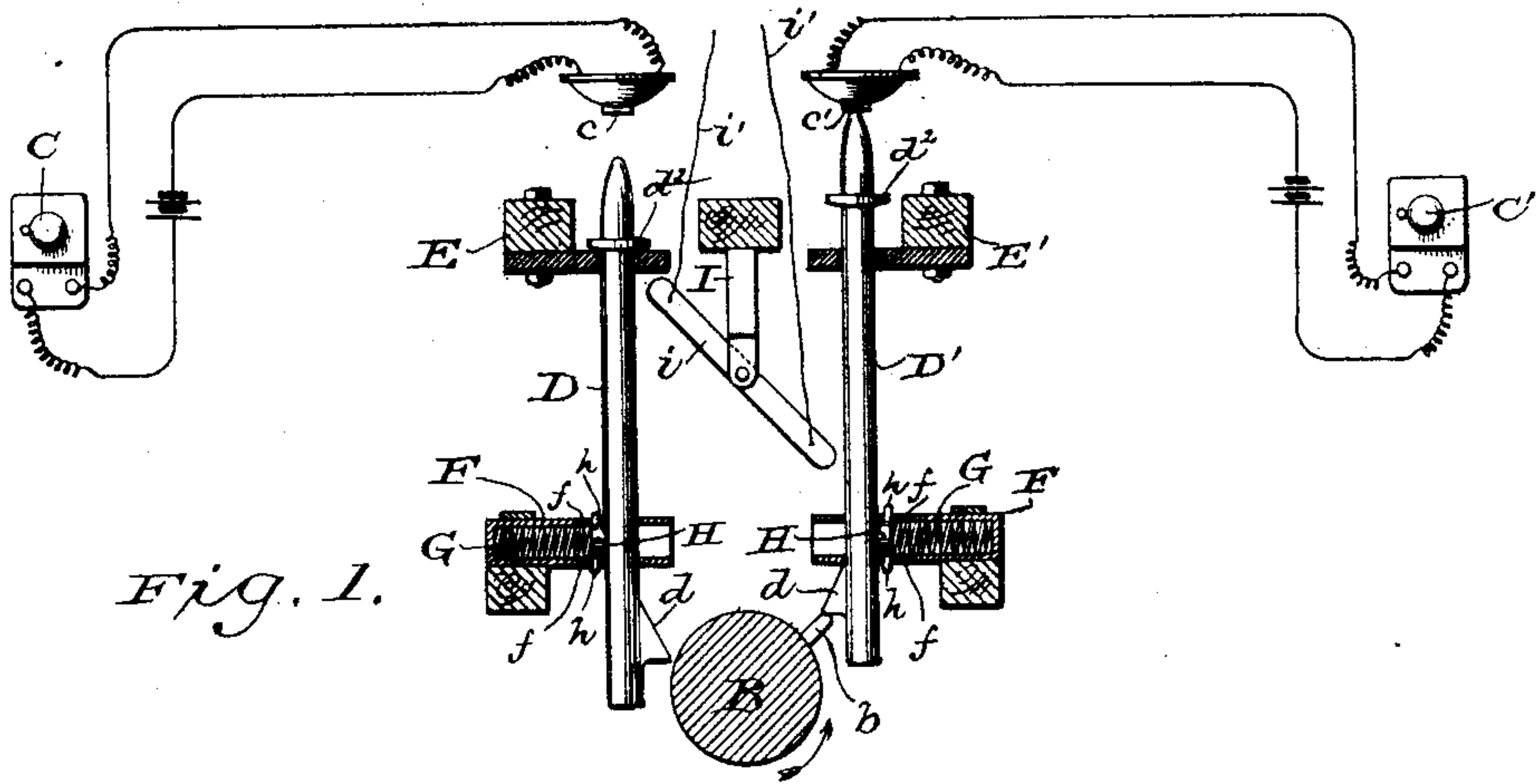


Fig. 1.

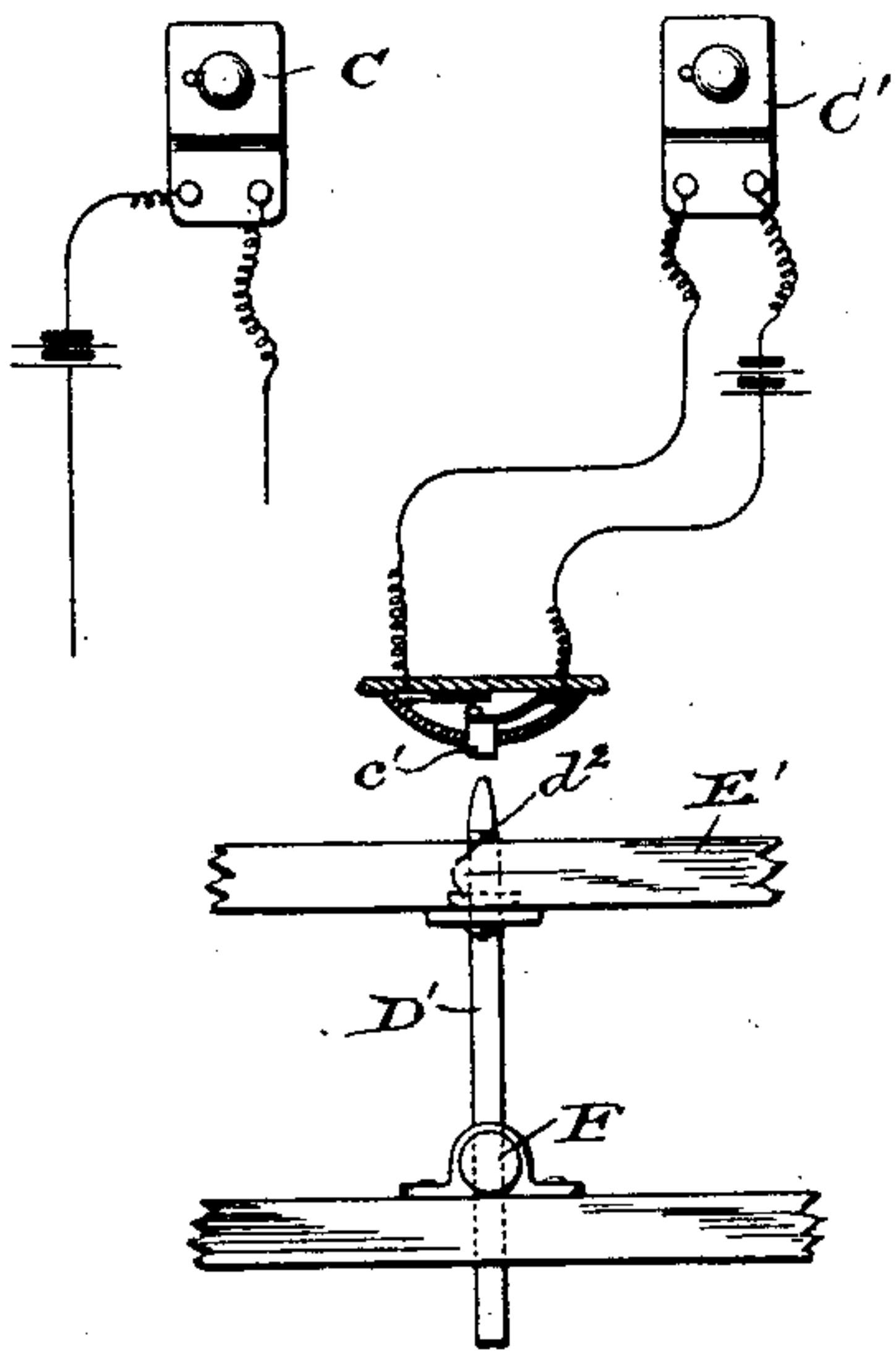


Fig. 2.

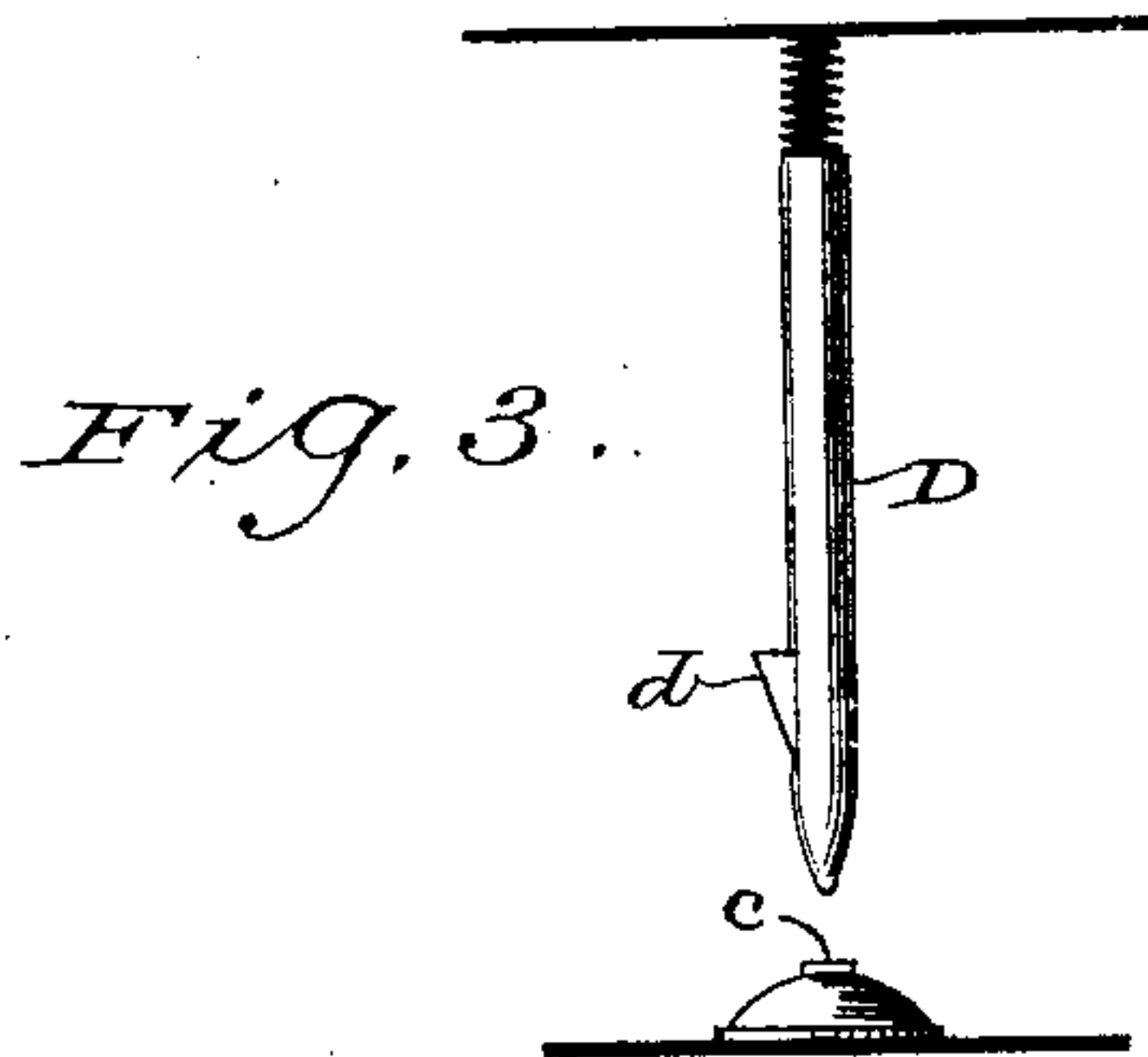


Fig. 3.

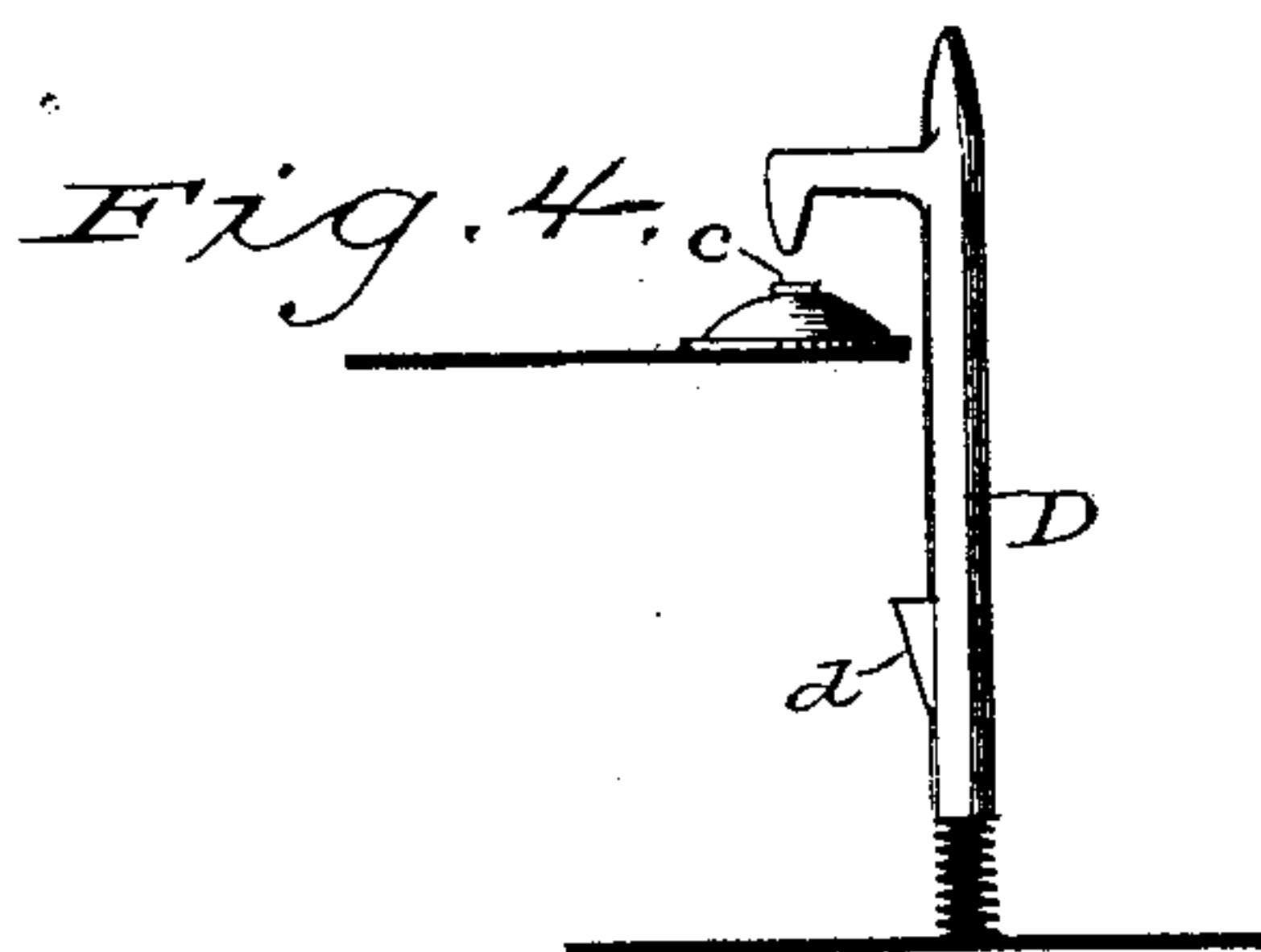


Fig. 4.

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UNITED STATES PATENT OFFICE.

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ELECTRIC SIGNAL FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 475,066, dated May 17, 1892.

Application filed August 31, 1885. Serial No. 175,744. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. RICKETSON, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Electric Signals for Engines, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to devices for indicating at any point distant from an engine or its shaft the direction in which said shaft is revolving, and will be fully described hereinafter, and pointed out in the claims.

In the drawings, Figure 1 is a view of the preferred form of my device in elevation with portions in section to better show the construction. Fig. 2 is a detail view of the same, also partly in section; and Figs. 3 and 4 are detail views showing modified constructions of the actuating-rods.

My invention is adapted for use with a marine or other reversible engine, and B represents its main shaft, and at any convenient point on the latter I attach a spur *b*.

CC' are electric bells, which may be located at any given point desired. For instance, the principal use of my device being on a steamboat, the bells might be located in the pilot-house, so that the person directing the course of the vessel would have instant knowledge, by the ringing of one or the other of the bells C C', as to whether the engine was working ahead or backing, and hence whether his directions were being carried out or not.

D D' are two rods which are suspended in any convenient and suitable manner, (as by the timbers E E' or other beams or braces,) so that one rod shall be on each side of the shaft B. The said rods are preferably formed with shoulders $d^2 d'^2$ to prevent said rods from dropping too far downward, and with inclined lifting lugs or teeth *d* and *d'*, respectively, for engagement with the spur *b* on the shaft B. Just above each rod D D' are two buttons *c* and *c'*, having the ordinary wire connections with their respective bells C and C'. Now, supposing that the shaft is revolved in the direction of the arrow in Fig. 1, the spur *b* on the shaft will be carried under the lug *d'* and raise the rod D' so that its upper end will press the button *c'*, and this will ring the bell C'. As the shaft continues its revolution the

spur *b* will next encounter the inclined surface of the lug *d* and simply push the rod D out of the way, (the under sides of the shoulders d^2 being preferably beveled to enable this to be done with the least resistance,) and then as the said spur again comes against the under side of the lug *d'* the rod D' will be again raised, the button *c'* again pressed, and the bell C' will again ring, and so on, once for each revolution of the shaft in that direction. If the engine is reversed, then the same operation will take place with the other rod D and bell C.

In order to insure that the rods D or D' shall be brought back to position after being pushed aside, as described, I have devised a spring attachment to said rods, which may be made in a variety of ways, one form being shown in Figs. 1 and 2. F is a tube containing a coiled spring G and vertical plate H, the latter having guides *h h* at top and bottom projecting through upper and lower longitudinal slots *ff* in the tube F, the rods D and D' also passing through said slots.

The plates H are useful when the rods D and D' are round rods; but otherwise they may be dispensed with, and, in fact, the springs may be of any preferred construction and secured in any convenient location, so as to yield when the rods are pressed against them, and thus when this pressure (of the spur *b* against the teeth *d d'*) is removed to act in forcing the rods back to place. Ordinarily gravity alone will accomplish this; but the action of the springs will make the working of the device a little more certain. The tubes F may be supported on any convenient timbers, to which they may be clipped, as shown.

Although I have described the specific construction of the preferred form of my invention minutely, I do not wish to be understood as being limited thereto, as the details may be varied in an infinite variety of ways without departing from the spirit of my invention. I may attach two spurs *b* to the main shaft B, for instance, the result of which would be that the signal-bell would be rung at every half-revolution of the shaft instead of once at every complete revolution of the same, and it is obvious that the lugs *d d'* might be disposed on the rods D D' in an inverted posi-

tion, the said rods being supported on or suspended by springs, and with the buttons of the electric bells below said rods (or below projections therefrom) instead of above, as shown in Figs. 3 and 4, in which event the spur *b* would of course operate to draw the rods *D* and *D'* downward instead of raising them. Inasmuch as it is only on certain occasions that need exists for my device, I show in Fig. 1 means for suspending its operation temporarily, the same consisting of a hanger *I*, extending from any convenient timber midway between the rods *D D'* and carrying pivoted to its lower end (which may be forked) a lever *i*, having cords *i' i'* at each end, whereby the said lever may be brought to a horizontal position, when required, thereby forcing the rods *D D'* apart, so that their lugs *d d'* will be beyond the reach of the described spur *b*.

My invention is applicable to all kinds of engines and can be applied to any shafting to indicate the direction of its revolution.

In place of or in addition to the electric bells *C C'* shown I may use annunciators of any form desired—such as those used in telephone exchanges, hotels, &c.—which will drop when the electrical contact has been made, as described.

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

1. The combination of a revolving shaft having a spur attached thereto, a pair of distant signals each electrically connected to push-buttons, a pair of movable push-rods, one located on each side of said shaft adjacent to said push-buttons and bearing lugs

normally located in the path of motion of said spur, a hanger supported midway between said push-rods, and a lever pivoted to said hanger and provided with cords at each end, whereby the said lever may be brought to a horizontal position, when required, so as to force the push-rods apart out of contact with the said spur, substantially as and for the purpose set forth.

2. The combination of a revolving shaft having a spur attached thereto, a pair of distant signals electrically connected to push-buttons, a pair of movable push-rods located on each side of the said shaft adjacent to said push-buttons and bearing lugs with horizontal and inclined surfaces located normally in the path of motion of said spur, and springs bearing against each push-rod, whereby the said spur in its movement will first bear against the horizontal surface of the lug on one push-rod and thereby force said rod against its adjacent push-button to actuate the corresponding signal, and then bear against the inclined surface of the lug on the other push-rod and thus force it out of the way, while the said springs serve to restore the rods to their normal positions after the said spur has passed from contact with their said lugs, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

JAMES C. RICKETSON.

Witnesses:

H. G. UNDERWOOD,
N. E. OLIPHANT.