

(No Model.)

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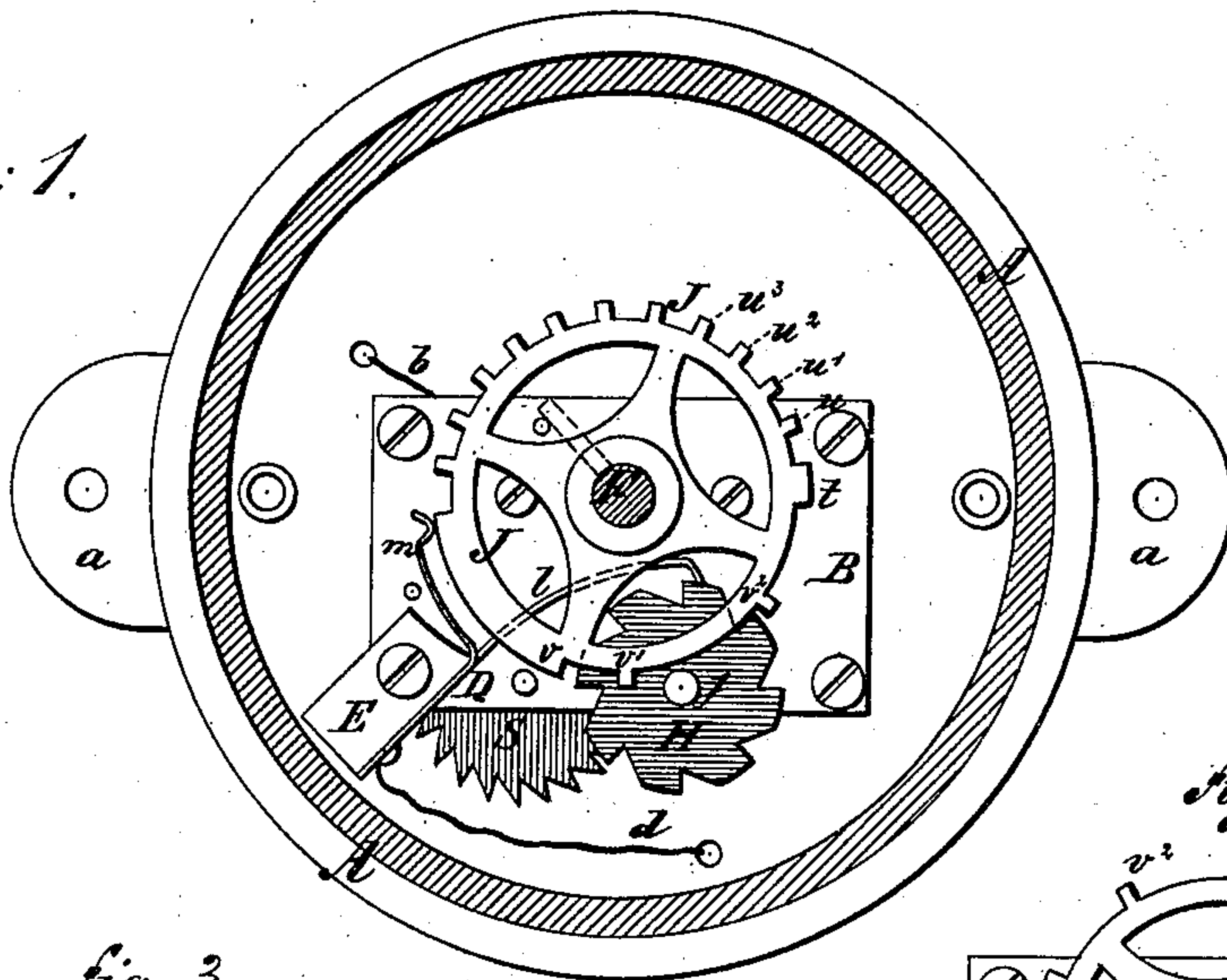
F. B. WOOD.

TELEGRAPHIC CALL INSTRUMENT.

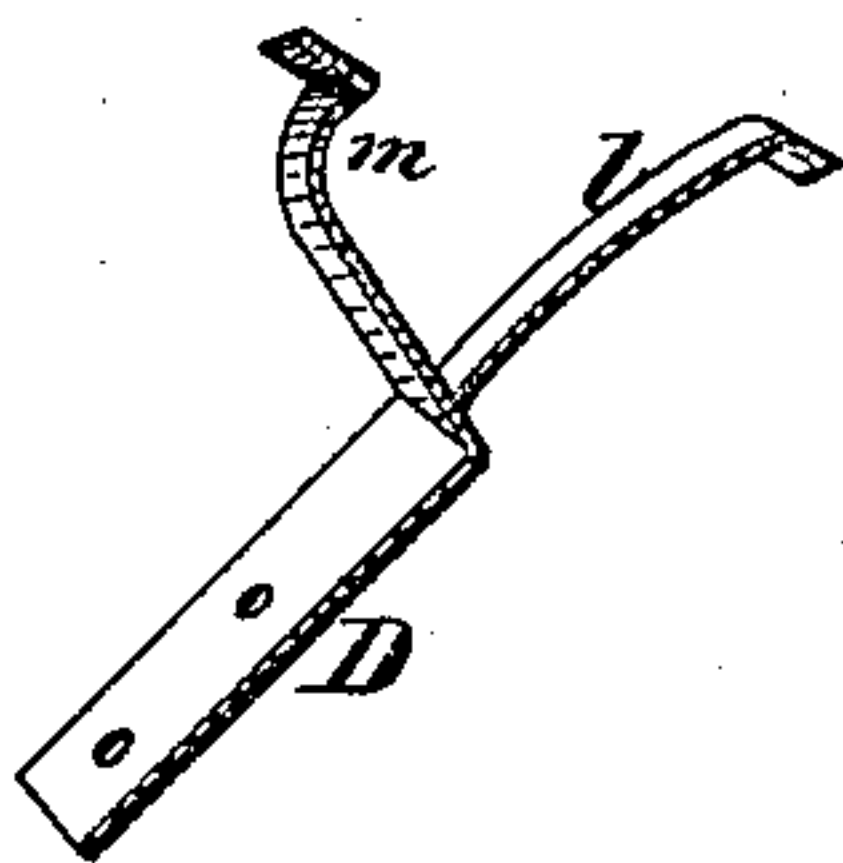
No. 321,073.

Patented June 30, 1885.

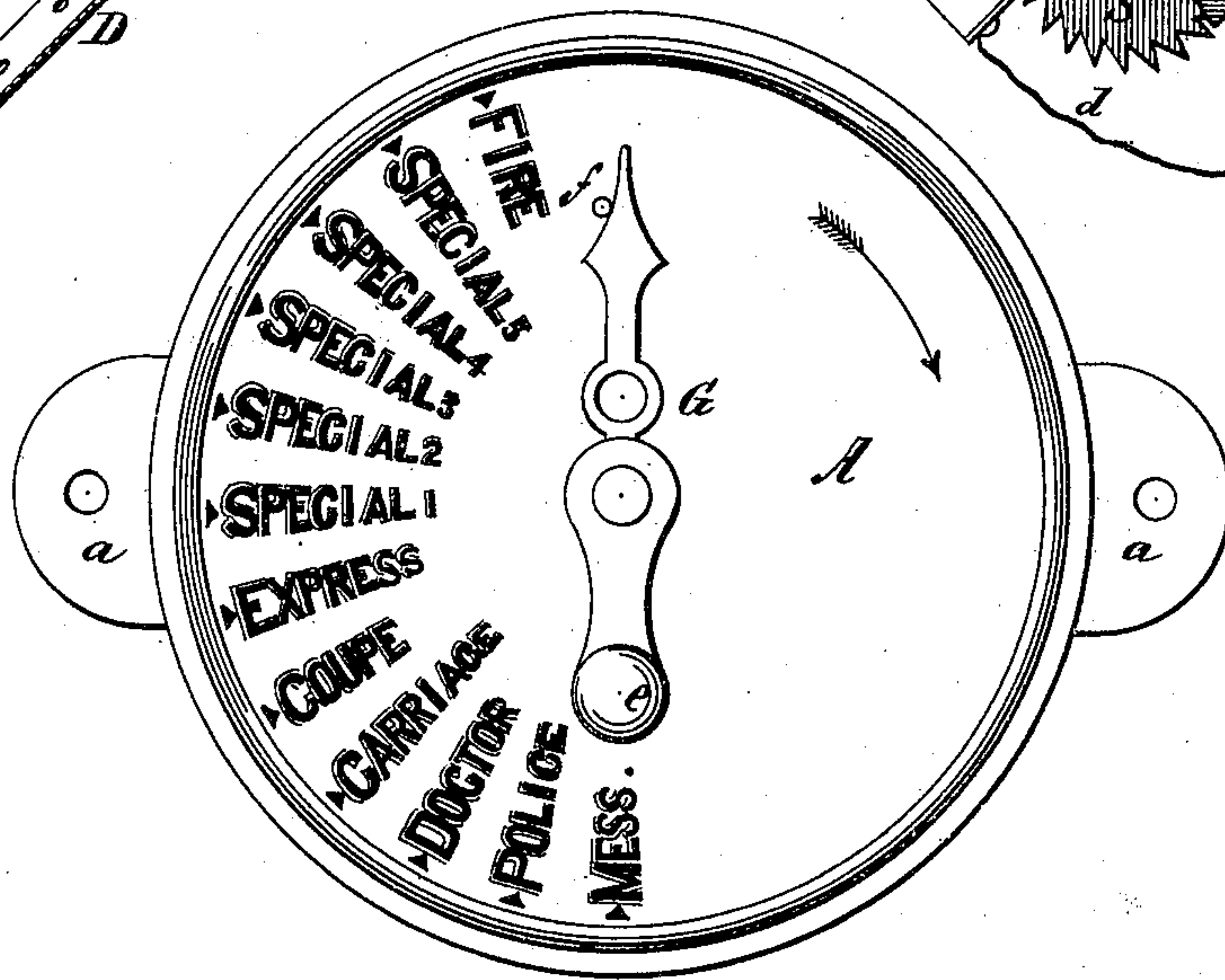
*Fig. 1.*



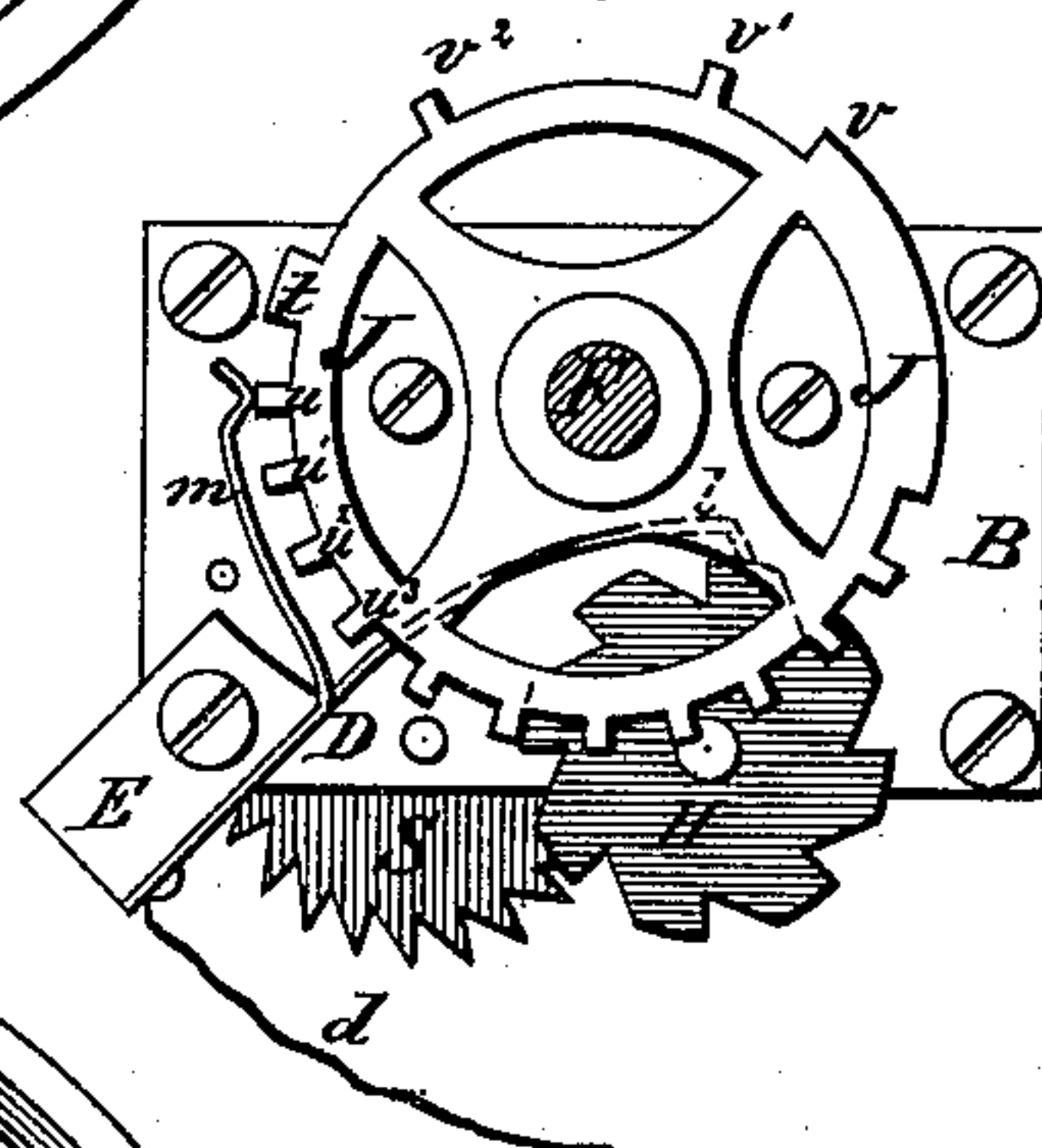
*Fig. 3.*



*Fig. 2.*



*Fig. 4.*



Witnesses:  
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Harrison M. B.

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his Attorneys.

(No Model.)

2 Sheets—Sheet 2.

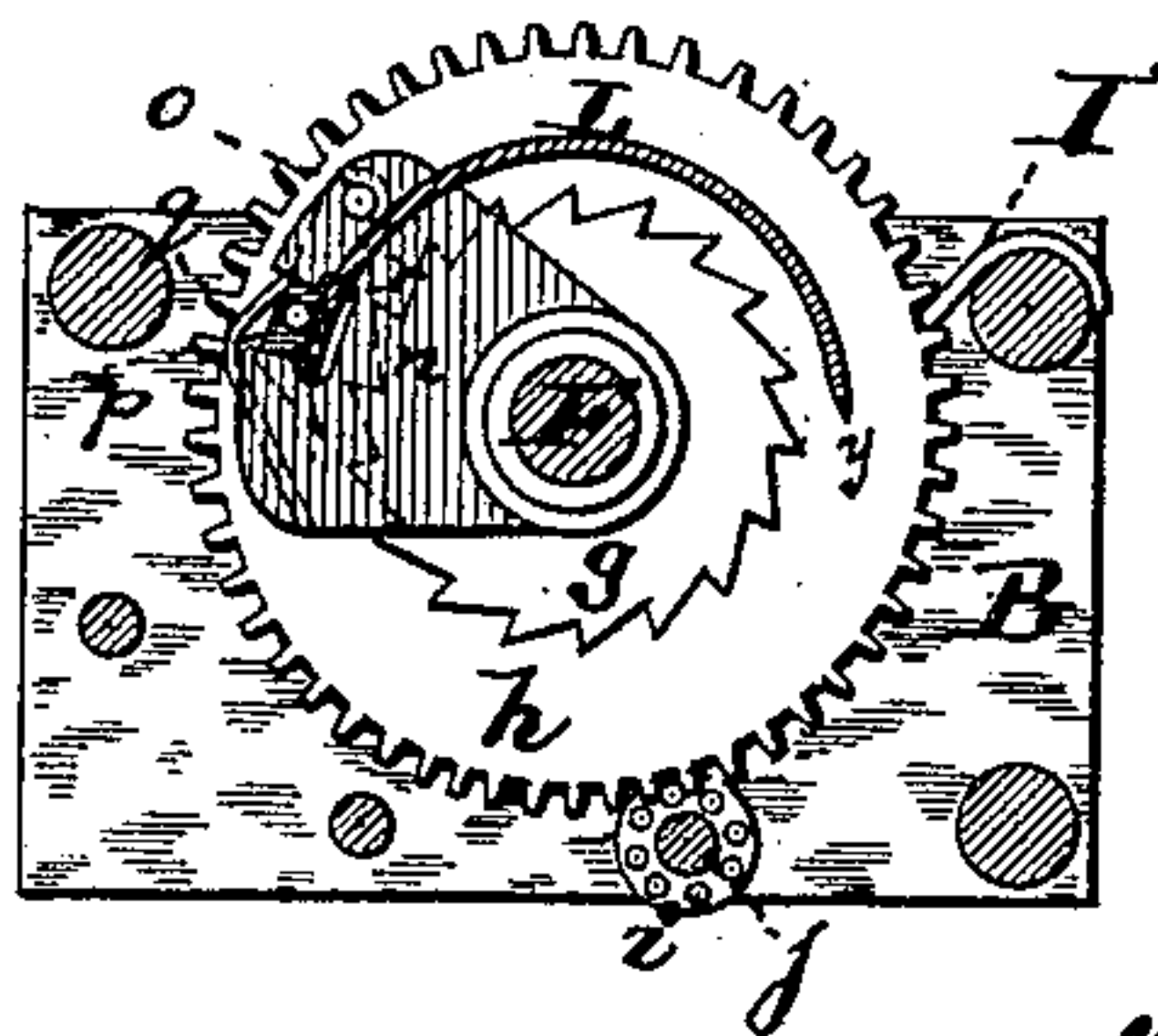
F. B. WOOD.

TELEGRAPHIC CALL INSTRUMENT.

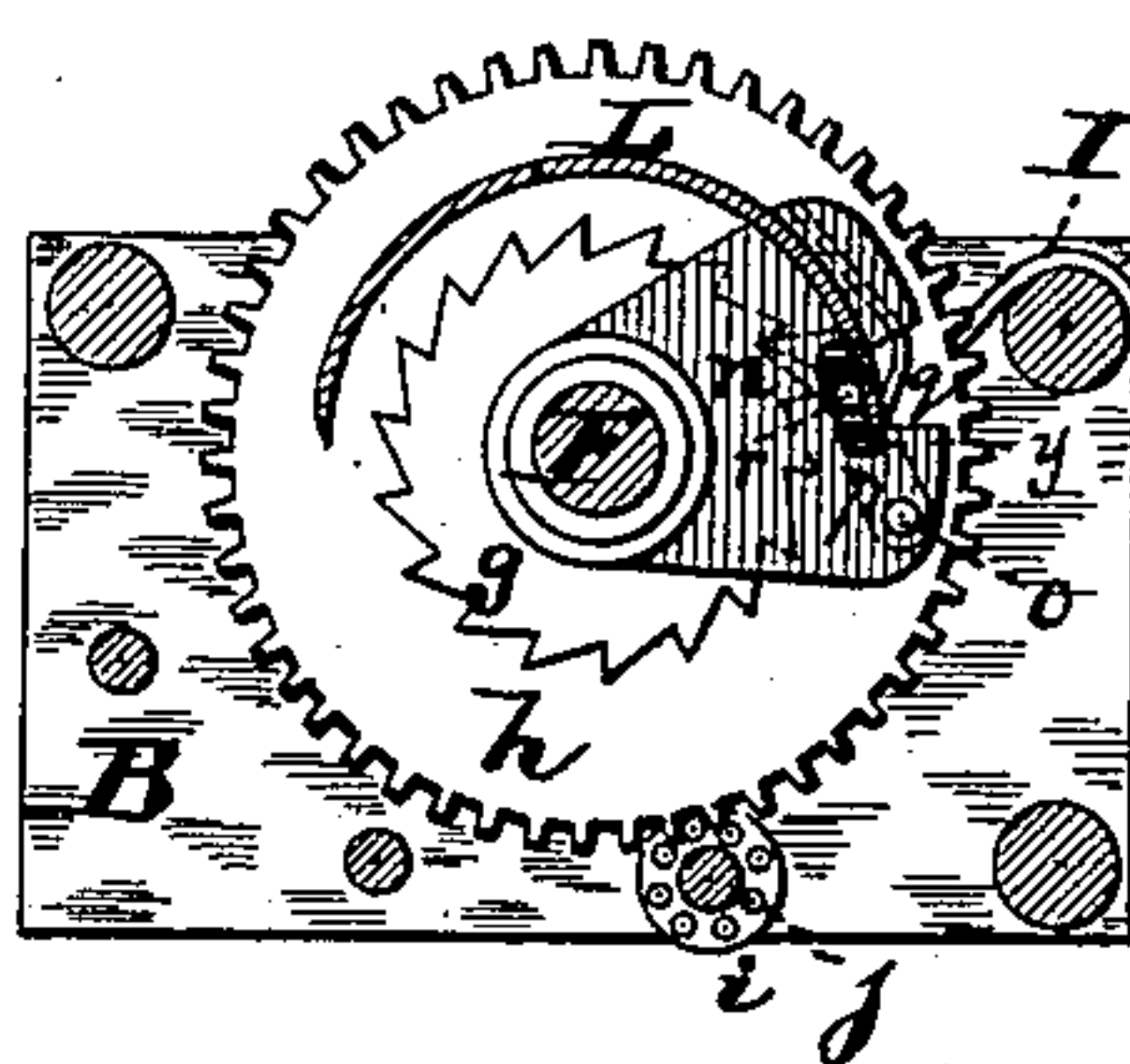
No. 321,073.

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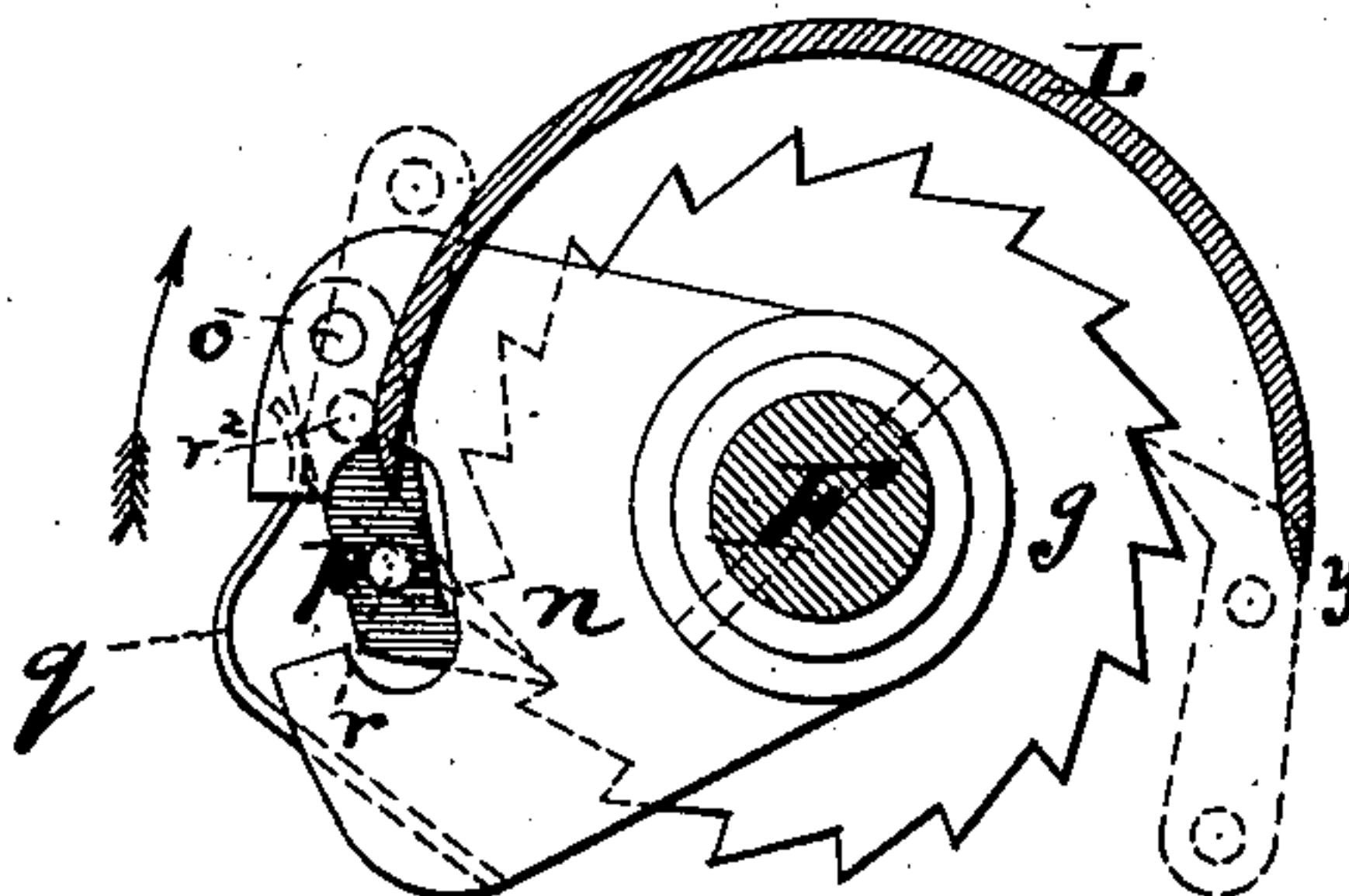
*fig: 5.*



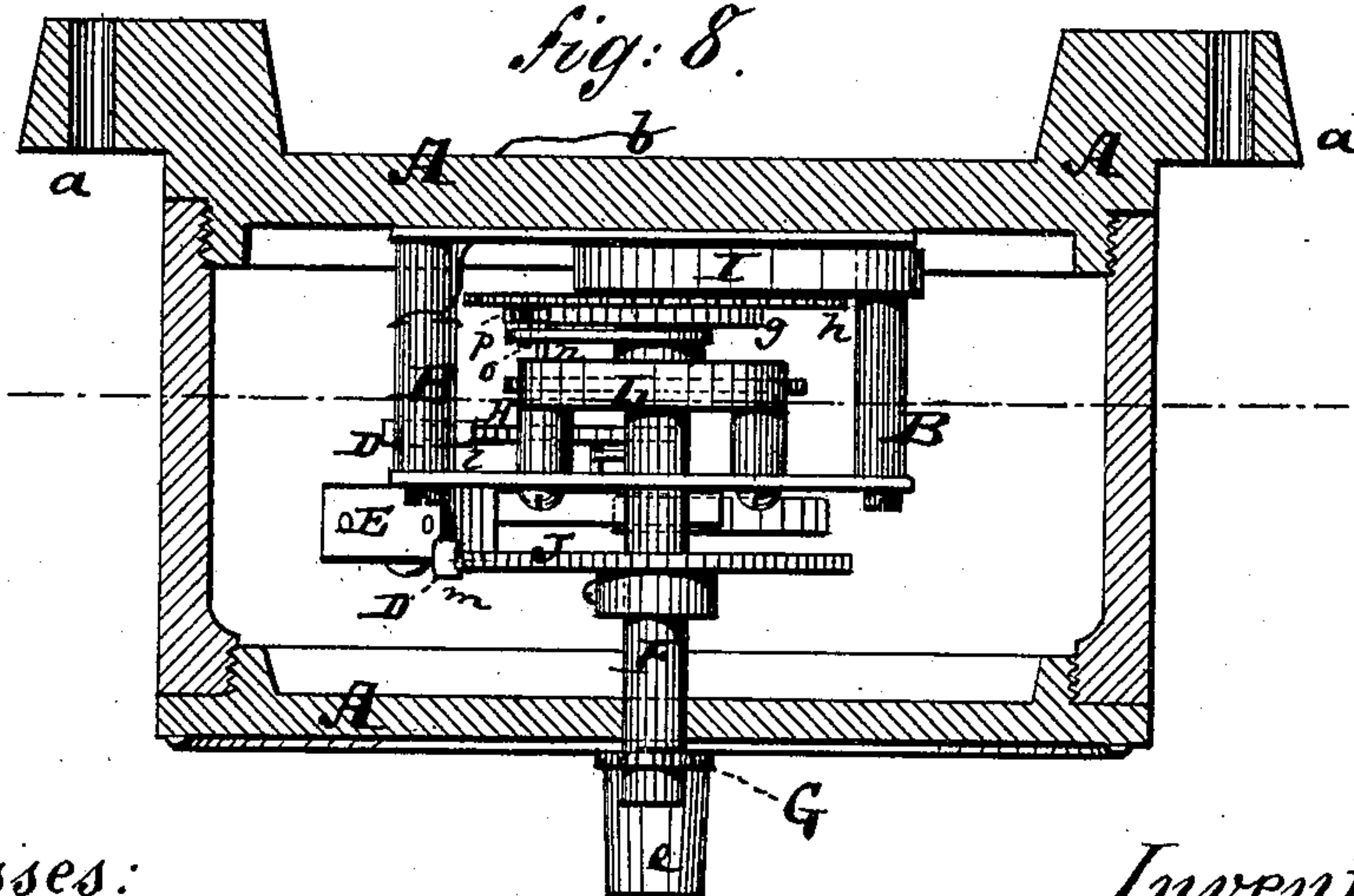
*fig: 6.*



*fig: 7.*



*fig: 8.*



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# UNITED STATES PATENT OFFICE.

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## TELEGRAPHIC CALL-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 321,073, dated June 30, 1885.

Application filed March 13, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK B. WOOD, a resident of New York city, in the county and State of New York, have invented an Improved  
5 Telegraphic Call-Instrument, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a face view of the interior mechanism of my improved telegraphic call-instrument, the shell of the box containing it and the main shaft being represented in section. Fig. 2 is a face view of the instrument Fig. 3 is a perspective view of the contact-pieces  
15 of the same. Fig. 4 is a face view of the internal mechanism, showing the parts in position different from that indicated in Fig. 1. Figs. 5, 6, and 7 are detail views of the ratchet mechanism that is employed in the instrument.  
20 Fig. 8 is a side view of the mechanism in the box, the box itself being shown in central section.

This invention relates to a new telegraphic call-instrument in which a rotary pointer is  
25 employed in connection with a self-winding spring, so that when said pointer is turned to a certain distance the spring will be wound to a certain extent, and a particular signal, which depends in its structure upon the extent of motion given to the pointer, will be  
30 produced upon the subsequent uncoiling of the spring.

The invention consists of the new instrumentalities and combinations of devices that  
35 are hereinafter more fully specified.

In the drawings, the letter A represents the signal-box, which is made of non-conducting substance, and which, by screws passing through ears *a a*, may be fastened to a wall or  
40 other support. Within this box is secured the framing B of the signaling mechanism, which framing B is in metallic contact with one of the electric conductors, *b*, the other electric conductor, *d*, leading to a forked plate,  
45 D, which, by a non-conducting block, E, is secured upon the frame B. In the frame B are the bearings of a shaft, F, which shaft protrudes through the face of the box A and carries at its outer end the index G, which is  
50 provided with a handle, *e*. The shaft F is at-

tached to the inner end of a coiled spring, I, the outer end of which is fastened to one of the posts of the frame B. When the spring is unwound, as it normally is, the pointer G will rest against the pin *f* that projects from  
55 the face of the box. This pin determines the normal position of the pointer. The shaft F passes loosely through a ratchet-wheel, *g*, to which is secured a toothed wheel, *h*, the said toothed wheel meshing into a pinion, *i*, which  
60 is mounted upon a shaft, *j*, that carries one of the signaling-wheels, H. The other signaling-wheel, J, is mounted upon the shaft F. The forked contact-piece D has one of its spring-arms, *l*, in contact with the edge of the  
65 wheel H, and the other spring-arm, *m*, in contact with the edge of the wheel J. To the shaft F is secured a projecting arm, *n*, to which is pivoted, at *o*, the pawl *p*, that engages into the ratchet-wheel *g*. A spring, *q*, crowds said  
70 pawl against the ratchet-wheel. The pawl *p* has a projecting pin, *r*, (see Figs. 5, 6, and 7,) which is to operate in connection with a curved shield, L, that is rigidly attached to the framing B. The shaft *j* of the wheel H is by proper  
75 toothed wheels also in gear with the escape-ment-wheel *s*, against which works an ordinary anchor, which is not shown.

I have now described the parts of the mechanism. Before describing their operation I  
80 will say that, among the objects to be attained by the mechanism are the following: First, that whenever the pointer G is turned from its normal position toward the first signal, which is marked "Messenger" on the face-  
85 plate, no signal shall be given by the instrument unless the pointer is brought fully around to the word "Messenger." In other words, if any one should play with the instrument and turn the pointer half-way from the pin *f* to  
90 the word "Messenger," no signal would be given; hence confusion at the receiving-station will be avoided.

Another object is so to construct the mechanism that after a signal has been started nothing will prevent it from being completed. To  
95 this end I employ the two wheels J and H, both of which in their combined action are to produce the desired signal. The wheel H, it will be seen, has its periphery divided into 100



equal notches—that is, into a series of notches that are equidistant from one another—while the wheel J has its periphery divided partly into regular or equidistant notches and partly into irregular notches of varying lengths.

The instrument, when at rest, is supposed to be in circuit. Fig. 1 shows the parts in the position of rest. When, now, the hand G is turned so as to touch the word "Messenger," or the abbreviation thereof, which is shown in the drawings, the contact-piece *m* will reach contact with the part *t* of the wheel J. If the hand G be turned farther than to the word "Messenger"—say to "Police"—the contact-piece *m* will be in contact with the prong *u*, (see Fig. 4,) and so on, each of the succeeding prongs, *u*<sup>2</sup>, *u*<sup>3</sup>, &c., on the wheel J being successively in contact with the piece *m* as the hand G is carried over the succeeding names on the dial, such as "Doctor," "Carriage," "Coupé," "Express," &c. In the particular illustration shown, that part of the wheel J which is to operate simply in calling a messenger is contained between the portions *v* and *t*. From *v* to the nearest tooth, *v*<sup>1</sup>, the space or notch in the wheel J is supposed to be equal to two notches of the wheel H—that is to say, in matter of speed the wheel H is so regulated as compared with the wheel J that two of its notches will pass under its contact-piece *l* by the time the space from *v* to *v*<sup>1</sup> in the wheel J passes a given point. In like manner the piece from *v*<sup>1</sup> to *v*<sup>2</sup> in the example given is equal to six spaces of the wheel H, while from *v*<sup>2</sup> to *t* the distance in the wheel J is intended to be equal to four spaces of the wheel H. Now, while the pointer G is being turned to the word "Messenger" the pawl *p* is loose and does not affect the ratchet, and during this same motion of the shaft F the spring I is wound. When, now, the handle *e* is let go, the spring will, in unwinding, turn the shaft F in the opposite direction to that shown by the arrow in Fig. 2, and the pawl being now in gear with the ratchet-wheel, the ratchet-wheel will be turned, and with it the toothed wheel *h*, and with the same also the wheel H. The first effect of the backward turning of these wheels by the uncoiling spring is that the space *t v*<sup>2</sup> of the wheel J passes along the contact-piece *m*, and, making no interruption, allows the wheel H, by four notches, to produce four dots on the recording-instrument. In other words, while the space *t v*<sup>2</sup> passes along the contact-piece *m*, four notches of the wheel H pass the contact-piece *l*, and with their four intervening projections produce the four dots or signals. Next, the projection *v*<sup>2</sup> passes the contact-piece *m*, and during that time one notch of the wheel H passes the contact-piece *l*, but produces no signal, as *v*<sup>2</sup> and *m* are in contact. After this six more dots are produced while the space from *v*<sup>2</sup> to *v*<sup>1</sup> is traveling along the contact-piece *m*. Then another stop is produced by the tooth *v*<sup>1</sup>; then two more dots are produced while the space *v*<sup>1</sup> to *v* passes along the contact-piece *m*, and then,

finally, no further signal is given, because the remnant of the wheel J during the unwinding motion is a solid piece, *x*. Thus the following signal is produced: . . . . . In other words, the instrument produces a signal, "462." If the hand G is turned to "Police," the space from *u* to *t*, which is equal to one space on the formula heretofore given of the wheel H, permits one additional dot to be given; hence the signal will be as follows: . . . . . Or, if a doctor is to be called, one further dot will be produced in front of "462," and so on. So that thus, according to the arrangement of the notches on the wheel J, in connection with the equally-divided notched wheel H, the desired signals are produced. Each instrument of course will have its own number, the example showing this instrument to be "462;" but of course each instrument will be numbered differently from the others, so that at the receiving-station the signal will indicate the name and location of the caller.

It remains to show how the pawl *p* is prevented from turning the ratchet-wheel *g* at all unless the hand G is brought at least up to the mark "Messenger." For this purpose I have attached the shield L to the frame B. Fig. 7 shows the position of the parts in question when the instrument is at rest. The pawl *p* has brought the wheel *g* into the position that is shown in that figure. When, now, the pointer G is turned, and with it the shaft F, in the direction of the arrow that is shown in Fig. 7, the first effect will be to slide the pawl back along one of the outwardly-inclining teeth of the ratchet-wheel, thereby bringing the pin *r* into the position which is shown at *r*<sup>2</sup> in Fig. 7—that is, outside of the curved shield L. As, now, the shaft F is turned in the direction of the arrow, the pin *r* will remain outside of the shield L, and should the operator let go the hand G before the word "Messenger" is reached, the spring I will throw the parts back into the normal position that is indicated in Fig. 7, without the pawl being able to reach the ratchet-wheel. If, however, the pointer is turned as far as the word "Messenger," then and in that case the pin *r* will pass the other end, *y*, of the shield L, and will then be thrown by its spring *q* against the ratchet-wheel; and when, now, the pointer is let go, the uncoiling-spring I will cause the shaft F to be turned back, and will cause the pawl to turn the ratchet-wheel and to thus produce the required signal. If the pointer is turned farther than the word "Messenger"—say to "Police," "Doctor," "Coupé," or the like—the pawl will always engage with the ratchet-wheel.

I claim—

1. The combination of the shaft F with the spring I, arm *n*, pawl *p*, having pin *r* and spring *q*, and with the shield L and ratchet-wheel *g*, substantially as herein shown and described.

2. In a signaling-instrument, the combina-



tion of the forked contact-piece *m l* with the notched wheels J and H, which are geared together to simultaneously produce the requisite signals by joint action, as specified.

5 3. The combination of the shaft F with the spring I, toothed wheel *h*, ratchet-wheel *g*, arm *n*, pawl *p*, spring *q*, pin *r*, shield L, shaft *j*,

notched wheels H J, forked contact-piece D, and pointer G, substantially as herein shown and described.

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