

(No Model.)

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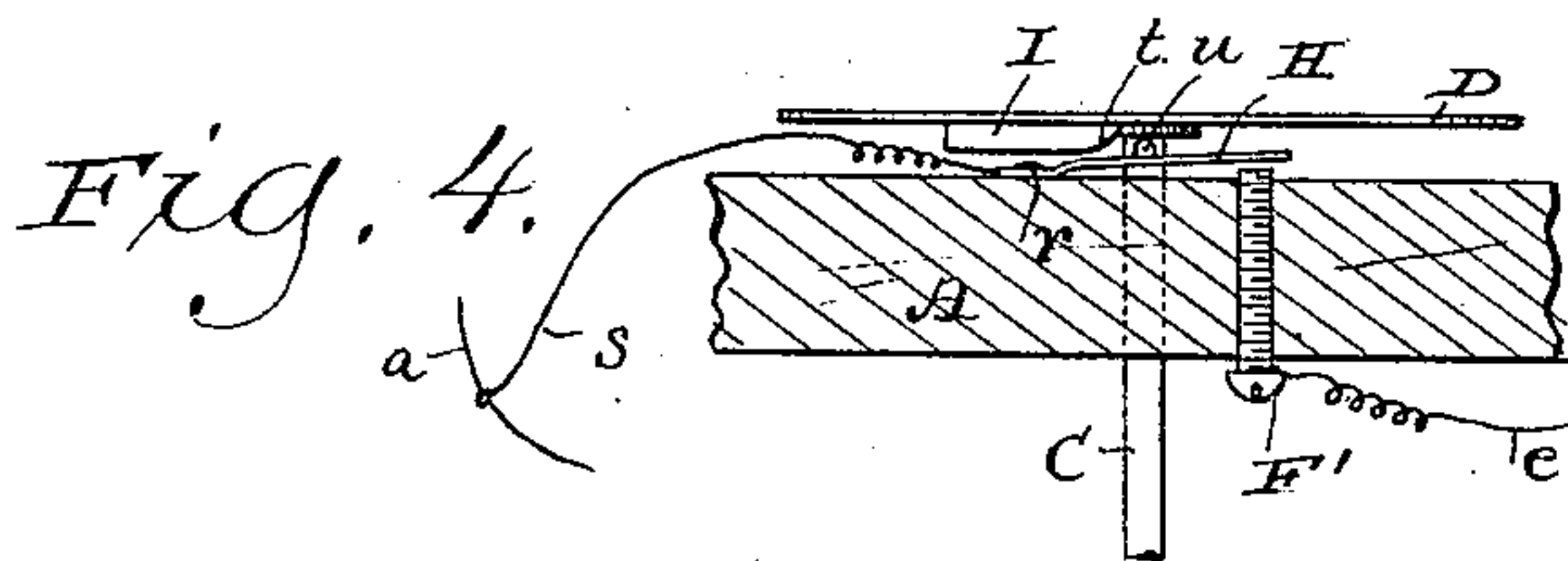
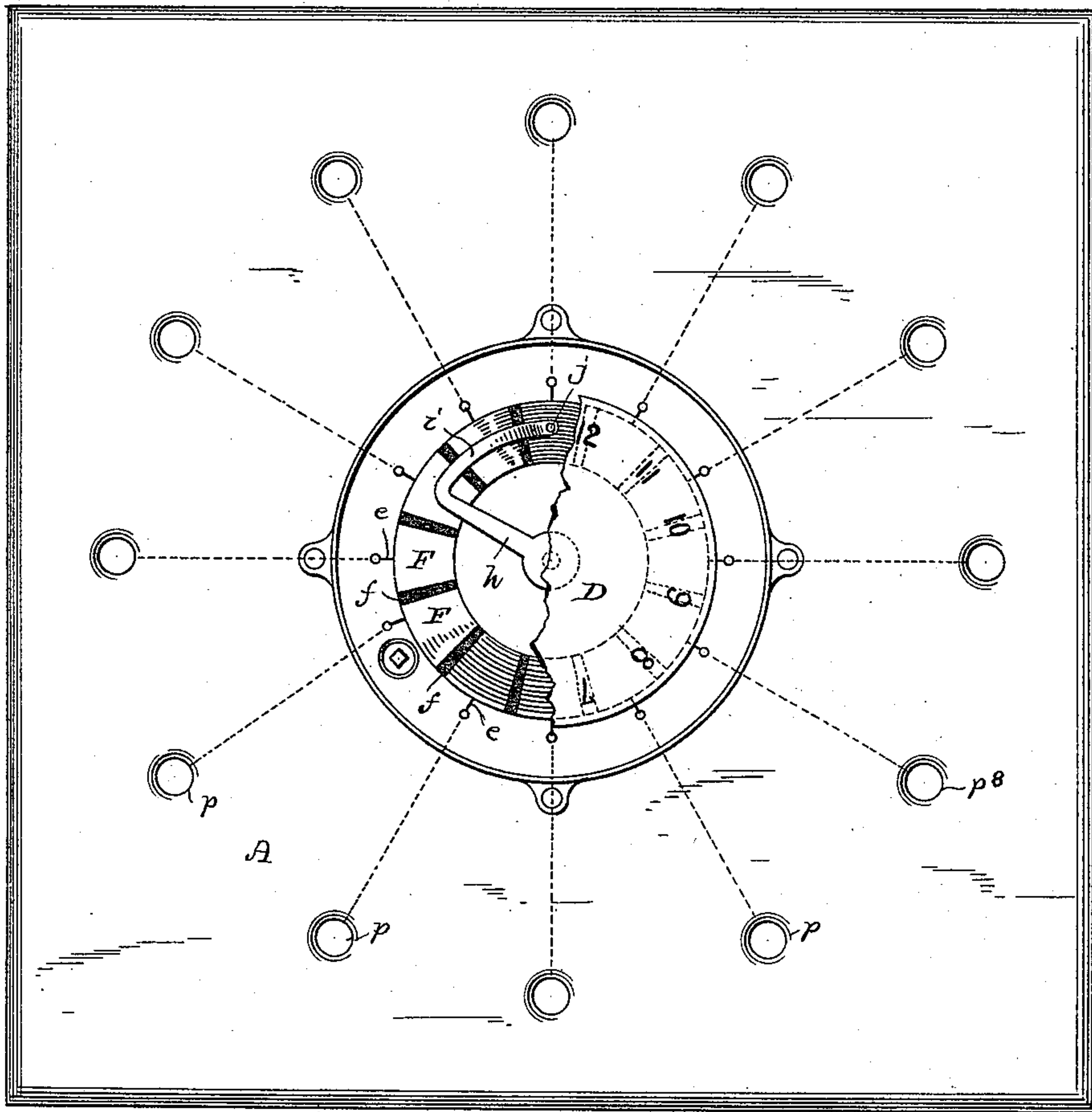
J. A. McMANMAN.

CALLING DEVICE FOR CLOCK TELEPHONE LINES.

No. 440,898.

Patented Nov. 18, 1890.

Fig. 1.



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2 Sheets—Sheet 2.

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Fig. 2.

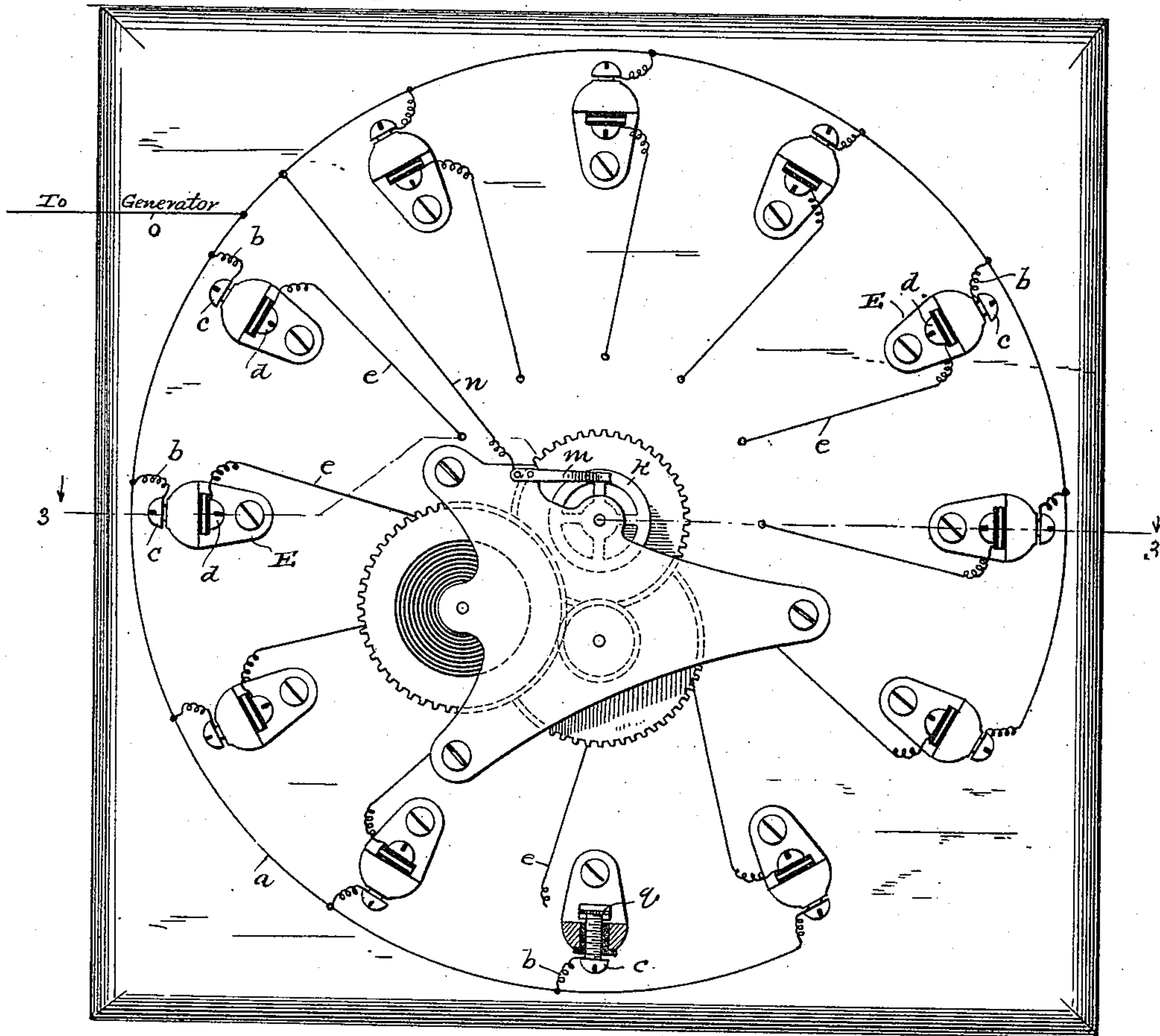
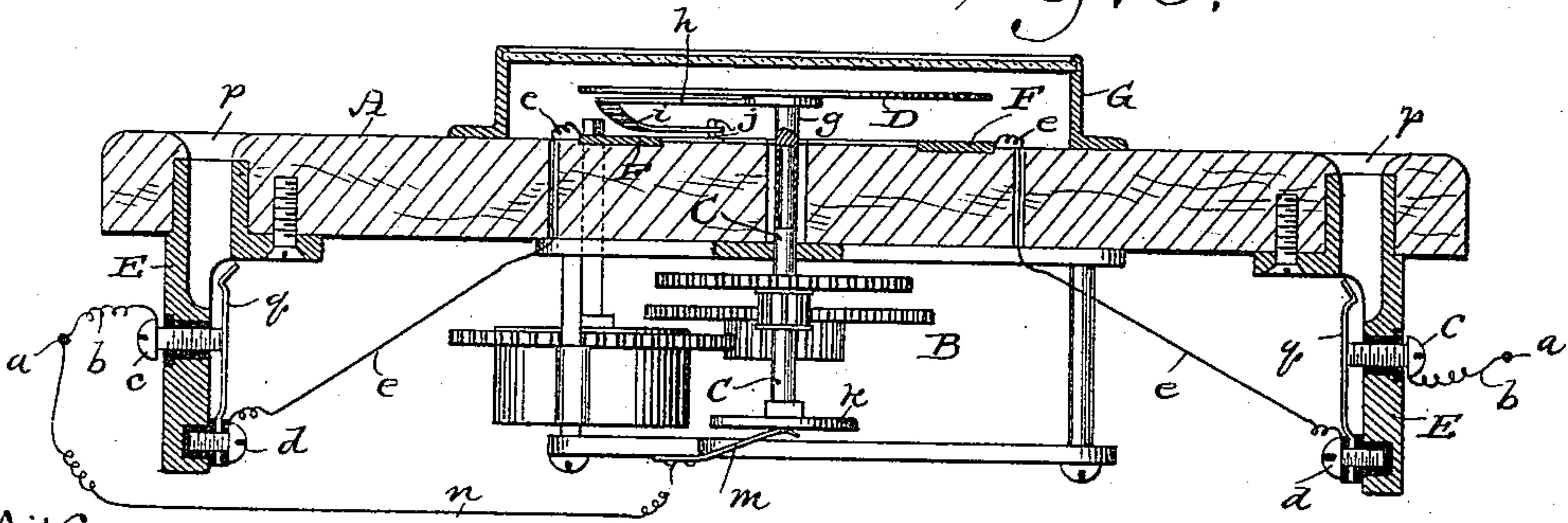


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN A. McMANMAN, OF MILWAUKEE, WISCONSIN.

CALLING DEVICE FOR CLOCK TELEPHONE-LINES.

SPECIFICATION forming part of Letters Patent No. 440,898, dated November 18, 1890.

Application filed March 21, 1890. Serial No. 344,712. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. McMANMAN, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented
5 certain new and useful Improvements in Calling Devices for Clock Telephone-Lines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to calling devices for
10 clock telephone-lines; and it consists in certain peculiarities of construction, as will be fully set forth hereinafter and subsequently claimed.

In the drawings, Figure 1 is a plan view of
15 one form of my device, partly broken away to illustrate details of construction. Fig. 2 is a bottom view of the same. Fig. 3 is a central vertical section of the same on the line 3 3 of Fig. 2, and Fig. 4 is a detail sectional view
20 illustrating another form of my said invention.

As indicated in the title, my device is designed to facilitate calls on clock-lines of telephones, and is intended for use in the operating-room of the "exchange" or "central office," whereby the calls to subscribers may be made automatically and the ordinary "office" or "exchange" clocks dispensed with.

What I have designated as "telephone
30 clock lines" are such telephone-lines as have several telephones (often from seven to eleven) upon a single line, and as now commonly constructed each telephone is provided with a clock in circuit therewith and with
35 the said line, and so connected that each subscriber on this line may be individually notified by the ringing of a bell connected to the clock of the subscriber wanted without ringing the bells of the other subscribers on the
40 same line. These clocks are shown and described in United States Letters Patent granted to George H. Blies, No. 223,469, January 13, 1880, and No. 225,327, granted March 9, 1880, for signaling apparatus for telephone-
45 lines, and their function and construction are well known in the various telephone-exchanges throughout the United States.

My device is adapted for any number of clock lines, and in the illustration given there
50 are accommodations for ringing twelve different lines at one time, though of course the number is immaterial and may be more or

less, twelve being a convenient number, and hence selected.

A represents a convenient wooden plate, 55 from which is suspended a clock B of the kind now used in clock telephones, and C is the post, which ordinarily supports the dial-hand in such devices, projecting up through the plate A; but in my device the dial D is
60 connected to this post so as to revolve with it.

E E are spring-jacks, (twelve being shown in this device,) which are all connected together by the wires *a b*, the former extending around the jacks and the latter wires running
65 from said wire *a* to the insulated screws *c* in each jack, while from the lower insulated screws *d* of each jack there run other wires *e* up through suitable holes in the wooden plate A to the metallic sections or plates F F, (separated by insulating material *f f*), there being
70 of course one such plate F to every jack, and these plates are arranged in a circle just beneath the dial D, and from the stem *g* of this dial there projects an arm *h*, having preferably
75 an angular bent portion *i*, and at the end of this arm or bent portion is a platinum point *j* for contact with the several described plates F. The post C, hereinbefore named, carries at the base a contact-wheel *k*, and on the
80 frame of the clock is a spring-contact *m*, connected by wire *n* to the jack-surrounding wire *a*, and from this last-named wire there extends another wire *o* to the generator. (Not shown.) The wooden plate A is provided
85 with a perforation *p* for the plug above each jack, and said plug comes in contact with the spring *q* on the line side of the jack and breaks the contact with the screw *c* and connections when inserted in an obvious man-
90 ner. The dial-plate is preferably protected by a glass-top case G, and the wooden plate A may form the top of a suitable box or casing to inclose the described parts and keep them free from dirt, &c. 95

The operation of my device is as follows: The clock being wound, the dial-plate D and its arm *h* are revolving all the time. Now, suppose it is desired to ring a subscriber on a clock line whose station is No. 8. The plug
100 at one end of the connecting-cord is put into the appropriate place on the switch-board for the subscriber's line, and the plug at the other end of said cord is dropped into the hole *p* of

the wooden plate A, which is just in front or opposite the figure 8 on the dial-plate at the time, (in this instance the hole marked p^8 in Fig. 1 when the parts are in the position shown in said figure,) it being understood that as the dial-plate is constantly revolving the proper hole for a plug for any station-number is constantly changing, because the said revolving dial-plate, which has the station-numbers marked thereon, is constantly shifting said numbers opposite all the holes successively in the plate A, and whenever any number is to be plugged of course the hole in plate A, which is adjacent to that number on the dial-plate D at the time of plugging, must be used. The action of putting in the plug by reason of its end touching the upper part of the spring q on the jack allows the generator-current to pass over the entire line on which the subscriber's clock is located and starts every clock on said line in motion, every clock being provided with an electro-magnet, to whose armature is attached a spring, which when caused to vibrate by the said generator-current will release the clock-works and start the clock in motion, as described in the said patents hereinbefore referred to, and then as the plug is pushed farther down to place the contact between the spring q and the screw c is broken and the generator-current thereby thrown off, and it will not be connected again until the point j on the dial-arm comes in contact with the plate F, which is connected to the just-plugged jack, and when this happens the current from the generator will ring the bell of the "station-8" clock on that line.

Heretofore, as is well known, the ordinary use of clock lines compelled the operator, under such a call as has just been described, to first start a clock in the central office, and the subscriber's clocks on the particular line at the same time, and then to watch the office-clock till the pointer was opposite "8," and then by hand or by pressing a button to ring the subscriber on station 8, and if several calls come in within a few moments of each other (as very frequently happens) it requires an expert to avoid confusion and mistakes, as well as consumes a great deal of time, and an operator can only watch two office-clocks at the best, while with my device the number of people that can be called practically at the same time is only limited by the number of jacks that can be successively plugged, and as a plug can be removed from a jack the moment the call has been made by the pointer j , passing over the plate F, connected to said jack, the device is practically limitless with even twelve jacks, (and as stated there may be any number of jacks desired,) and the revolving dial makes my device practically equal in scope to as many of the old style office-clocks as there are jacks in the device.

In the modification shown in Fig. 4, A represents the wooden plate, D the revolving

dial-plate, and C its supporting-post, as before; but in place of the metallic plates or sections F F', I show in this form metallic posts or screws F', from which wires e run to the jacks E, as before, there being one of these posts or screws F' to each jack.

H is a metallic spring, one end of which is secured to the wooden plate A, as shown at r , while its free end is over the top of the post or screw F', and said spring H is connected by a wire s to the jack-surrounding wire a , already described. I dispense with the described arm h on the stem of the dial-plate and substitute a lug I on the underside of said plate, which lug is rounded or beveled at its forward end, as shown at t , where it comes in contact with a ball or projection u on the upper side of each spring H, and thereby serves to press said spring down upon the top of the post or screw F', and thereby sends a current from the generator through wires a and s , spring H, post F', and wire e to the jack, and if the connected plug is in that jack (as before described in detail) said current from the generator will ring the bell of the subscriber connected to said plug.

In this form of device the clock B is used, just as before, for the purpose of keeping the dial-plate D in constant revolution; but the current from the generator does not in this form pass through the clock at all, but, as described, goes directly to the springs H, there being of course a spring H for every post F' and jack E in the device, and each spring H having its separate wire s connected to the jack-surrounding wire a , which wire in turn is connected to the generator or source of electricity (whatever it may be) by the wire O, as before described. It will thus be seen that I may either employ the arm h with its contact-point j or the lug I (in connection with the springs H) as the circuit making and breaking device, one being adapted for the plates F and the other for the posts F', as preferred in any given instance.

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

1. An automatic calling device for clock telephone-lines, consisting of a suitable clock mechanism carrying a revolving dial-plate, a series of metallic plates or posts arranged beneath said dial-plate and each wired to a jack, which jacks are in turn wired together and to a generator or other source of electricity, a circuit making and breaking device connected to the dial-plate, and suitable electric connections between the said generator or source of electricity and the said circuit making and breaking device, the said jacks being adapted to be connected by means of ordinary plugs to subscribers' lines and stations.

2. An automatic calling device for clock telephone-lines, consisting of a clock mechanism electrically connected with a number of jacks, and a revolving dial connected to the

hand-post of the clock and carrying an arm with the contact-point at the end thereof, in combination with a series of plates located beneath said dial and arm and adapted for successive contact with the latter and also electrically connected to said jacks, said device being adapted to be connected to a source of electricity and by means of plugs to subscribers' lines and stations.

3. In an automatic calling device for clock telephone-lines, the combination, with the clock mechanism and jacks and suitable electric connections, of the revolving dial D

and arm *h*, having a contact-point at its end, and a series of plates, also electrically connected to said jacks and adapted for successive contact with said arm.

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.

JOHN A. McMANMAN.

Witnesses:

H. G. UNDERWOOD,
WM. KLUG.