

(No Model.)

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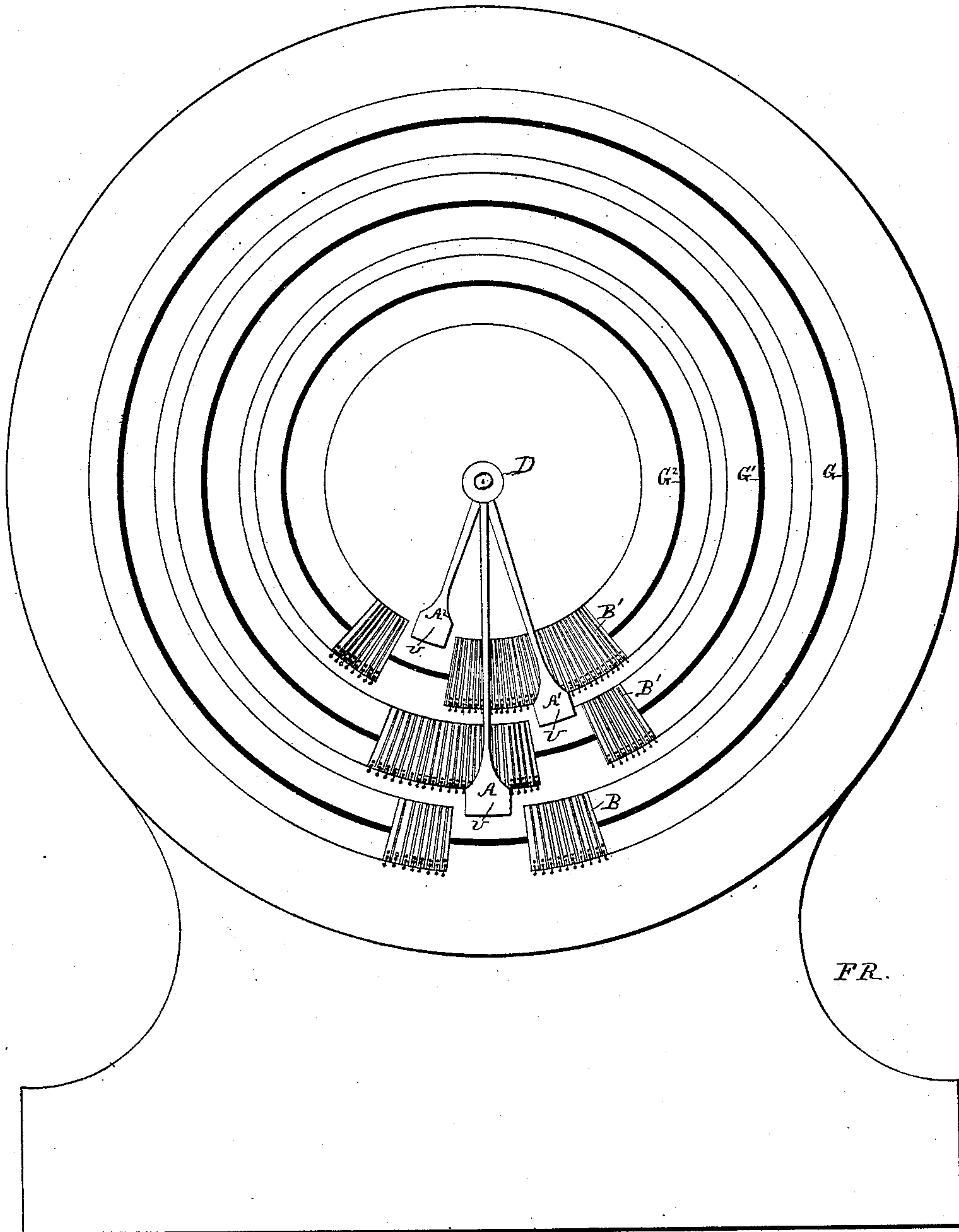
J. M. ORAM.

TIME SIGNAL FOR TELEPHONES.

No. 278,357.

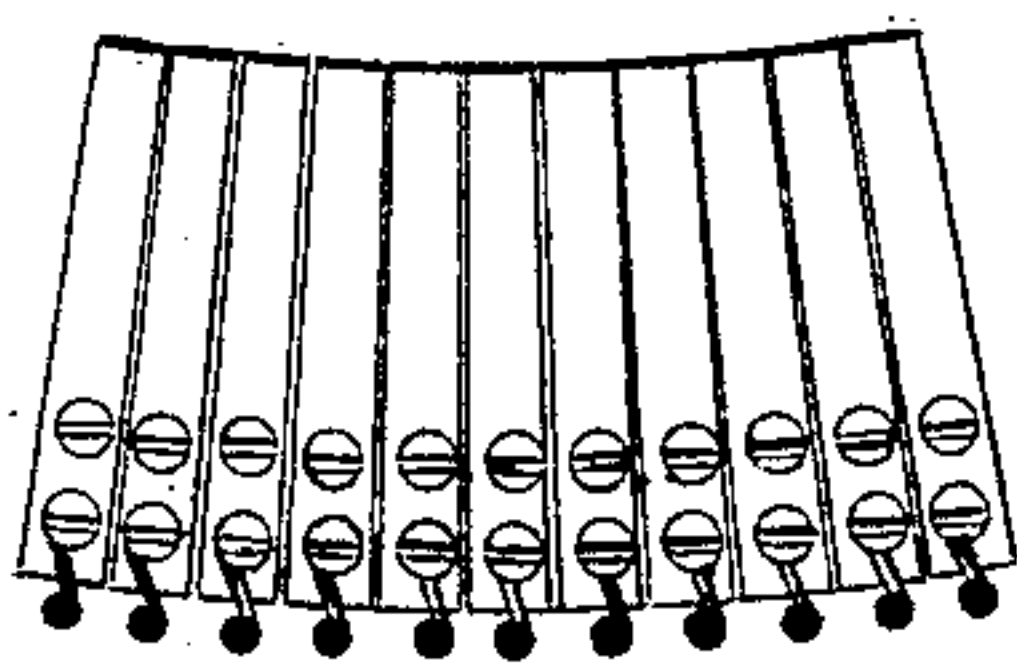
Patented May 29, 1883.

Fig. 1.



WITNESSES:

Thos. Houghton.
Edw. W. Byrne



INVENTOR:

J. M. Oram
BY *Wm. L. E.*
ATTORNEYS.

(No Model.)

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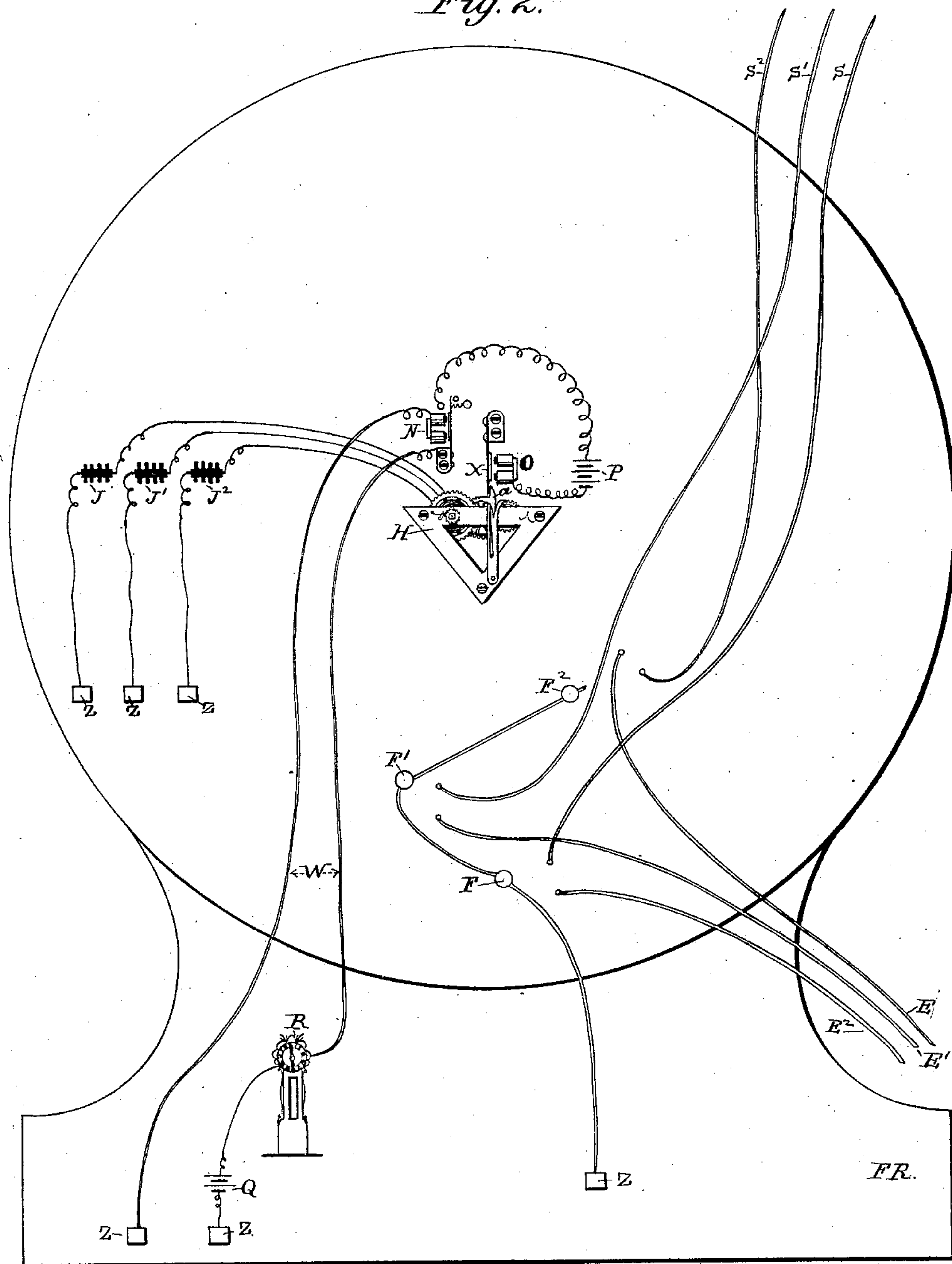
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Fig. 2.



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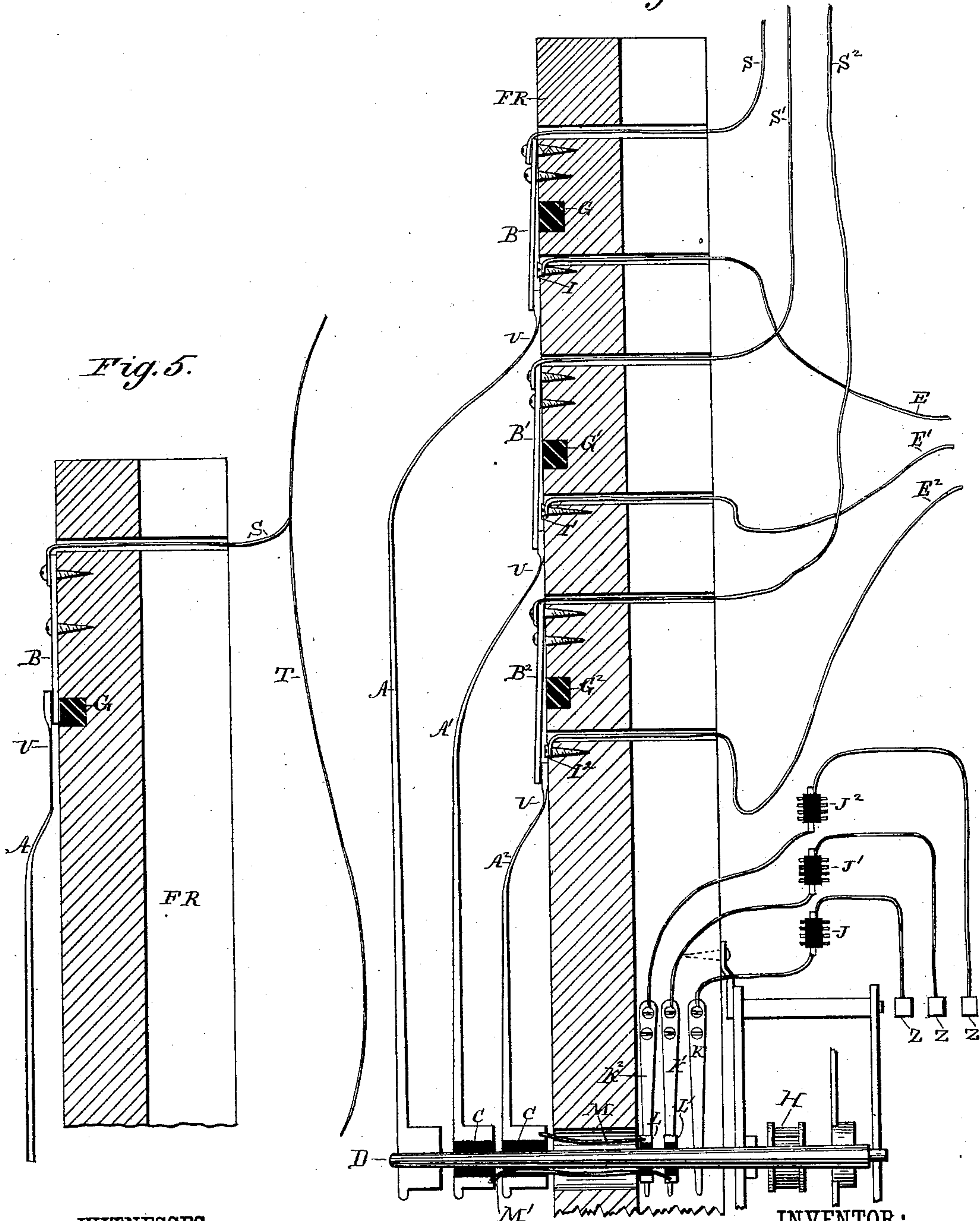
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Fig. 3.



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4 Sheets—Sheet 4.

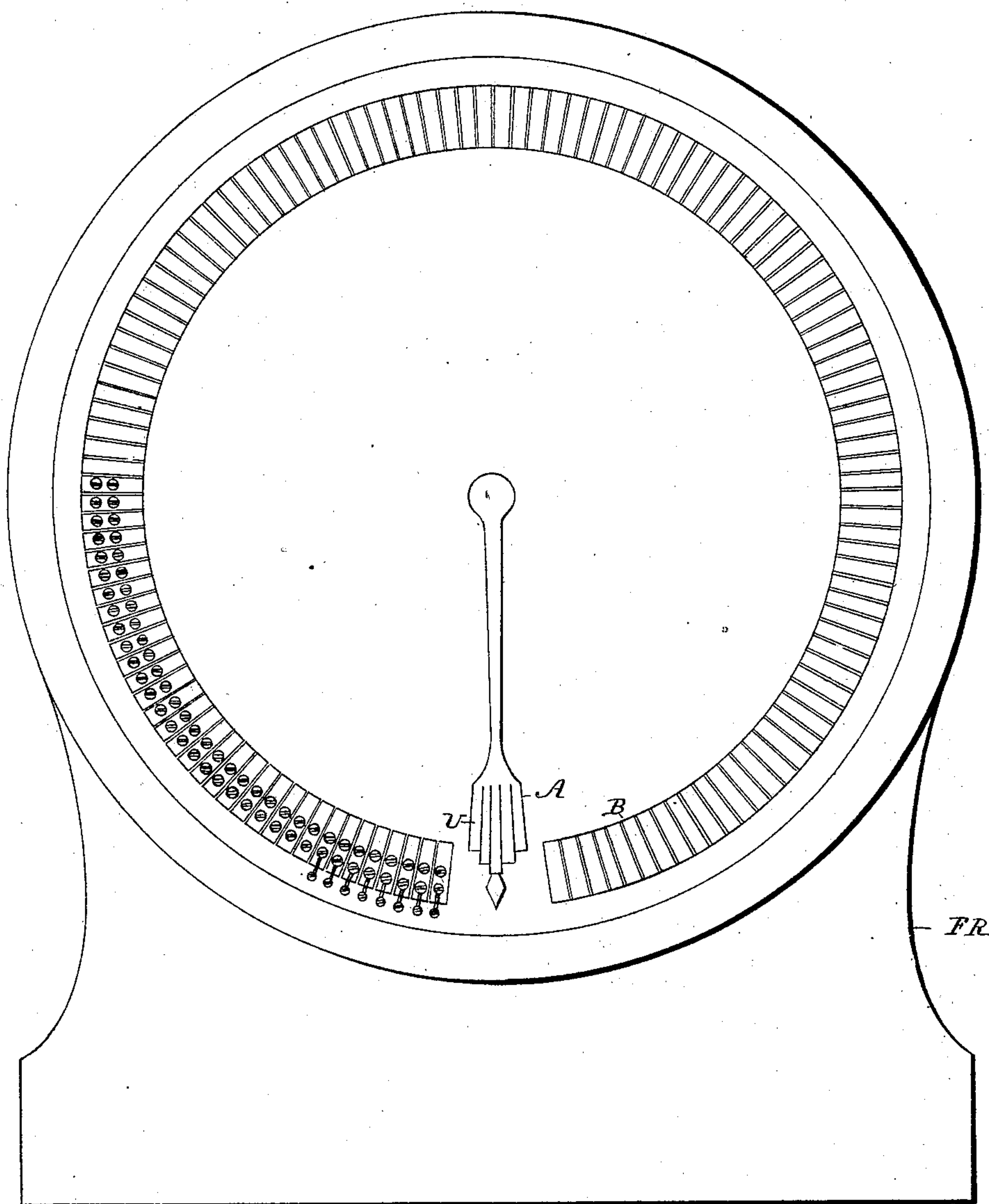
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Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN M. ORAM, OF DALLAS, TEXAS.

TIME-SIGNAL FOR TELEPHONES.

SPECIFICATION forming part of Letters Patent No. 278,357, dated May 29, 1883.

Application filed July 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. ORAM, of Dallas, in the county of Dallas and State of Texas, have invented a new and Improved Time-Signal for Telephones; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to accompanying drawings, forming part of this specification.

My invention relates to standard-time-signaling instruments; and it consists in an instrument for and a manner of signaling standard time through an entire system or systems of telephones.

In the accompanying plates of drawings, which illustrate my invention and form a part of the specification thereof, Figure 1 is a front and Fig. 2 a rear elevation of the instrument. Fig. 3 is an enlarged radial section of the instrument with diagram of circuits. Fig. 4 is a front view of a modification, and Fig. 5 a radial section of a modification.

The construction, operation, and relative arrangement of the component parts of my invention are as follows:

In the said drawings, F R represent a supporting-frame, on which A A' A² designate hands which are movable conductors of electricity, highly elastic near their points, at U, and automatically operated, as hereinafter described. Said conductors are rigidly fixed to an actuating-arbor, D, Fig. 3. A' and A² are insulated from said arbor with hard rubber C. B B' B² are contact-springs, which are insulated from but secured near each other entirely around their respective circles, except the small spaces occupied by each of the conductors A A' A², when at rest, as in Fig. 1. G G' G² are copper-circle lightning-arresters with their terminals at F F' F², Fig. 2. H is a clock-spring-actuating mechanism; J J' J², electric generators; N, relay; O, electro-magnet; P, local battery; Q, clock-line battery; R, standard-time clock; S S' S², lines to telephones connecting with contacts B B' B²; E E' E², lines to switch-boards connecting with contacts I I' I², directly under contacts B B' B²; K K' K², rotary contact springs; L L', rotary contacts; M M', insulated connecting-wires leading from the connections to the hands A' A²; Z, ground-connections; W, clock-circuit; X, electro-magnet armature.

The operation of the telephone time-signal is as follows: At eleven o'clock and fifty-nine minutes the standard-time clock R, Fig. 2, through the circuit W and relay N closes the circuit of the local battery P. Electro-magnet O thereby attracts the armature X, which, striking the stop a, releases the actuating mechanism H. This, in rotating arbor D, forces the non-conducting inclined edges of the conductors A A' A² under the points of the contact-springs B B' B², raising them from their contacts I I' I², breaking connection between S and E, and completing circuits through ground Z, generators J J' J², rotary contact springs K K' K², rotary contacts L L', arbor D, insulated wires M M', conductors A A' A², contact-springs B B' B², lines S S' S², and subscribers' telephones. The operation of the generators J J' J² in these circuits rings all the telephone-bells during their electric connection with the conductors A A' A², as said conductors make their excursion or movement. The standard-time clock with battery is then cut into a telephone-circuit, then once per second during the fifty-ninth minute and twice during the sixtieth second of the same the clock breaks this circuit of electricity, causing a vibration of the annunciator-armature of said telephone-circuit. The action of said armature each second opens a spring-connection in the normal ground-circuit of the switch-boards, causing the current of electricity to complete circuits through all the telephones of the system. Each subscriber may hear through his telephone the double break of the sixtieth second and record the number of seconds slow of noon. His signal will always be heard. By substituting powerful transmitters for the generators J J' J², and receivers for the bells, audible sounds may likewise be transmitted. The conductors A A' A² may be branched, as shown at U, Fig. 4, and pass over contact-springs B B' B², said springs having branches to line-wire, as shown in Fig. 5.

Having thus described my invention, what I claim as new is—

1. A device for signaling standard time simultaneously over a series of telephone-circuits, consisting of the combination of a supporting-frame, one or more circular series of spring-contacts, B, connected to lines S, a corresponding series of contacts, I, connected to

switch-board lines E, one or more rotary conducting-hands, A, mounted on arbor D, an actuating mechanism for the hands, an electric generator connecting with said hands, and an
5 electric circuit controlled by a standard-time clock and operating upon the actuating mechanism for the rotary hands or conductors, as described.

2. The combination, with several sets of

contacts in a time-signaling instrument, of two 10 or more conductors of electricity upon the same actuating-arbor, each insulated from the other and connected with an independent generator, substantially as shown and described.

JOHN MILTON ORAM.

Witnesses:

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CHAS. FRED. TUCKER.