

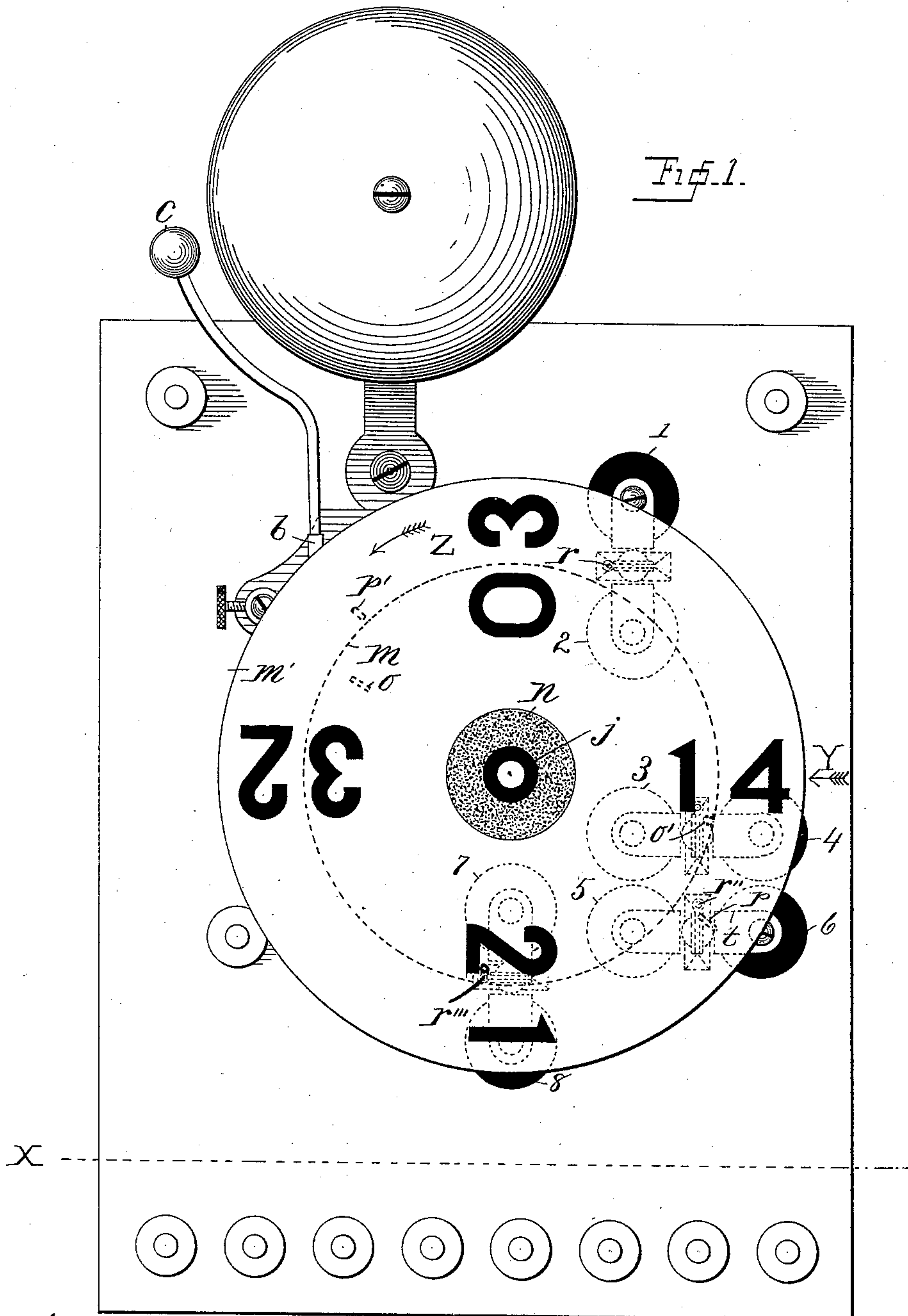
(No Model.)

5 Sheets—Sheet 1.

L. M. PINOLET.  
ELECTRIC ANNUNCIATOR SYSTEM.

No. 453,416.

Patented June 2, 1891.



Witnesses  
W. A. Courtland

Nellie L. Pope.

Inventor.

LOUIS M. PINOLET  
BY HIS ATTORNEY

Edward P. Thompson

(No Model.)

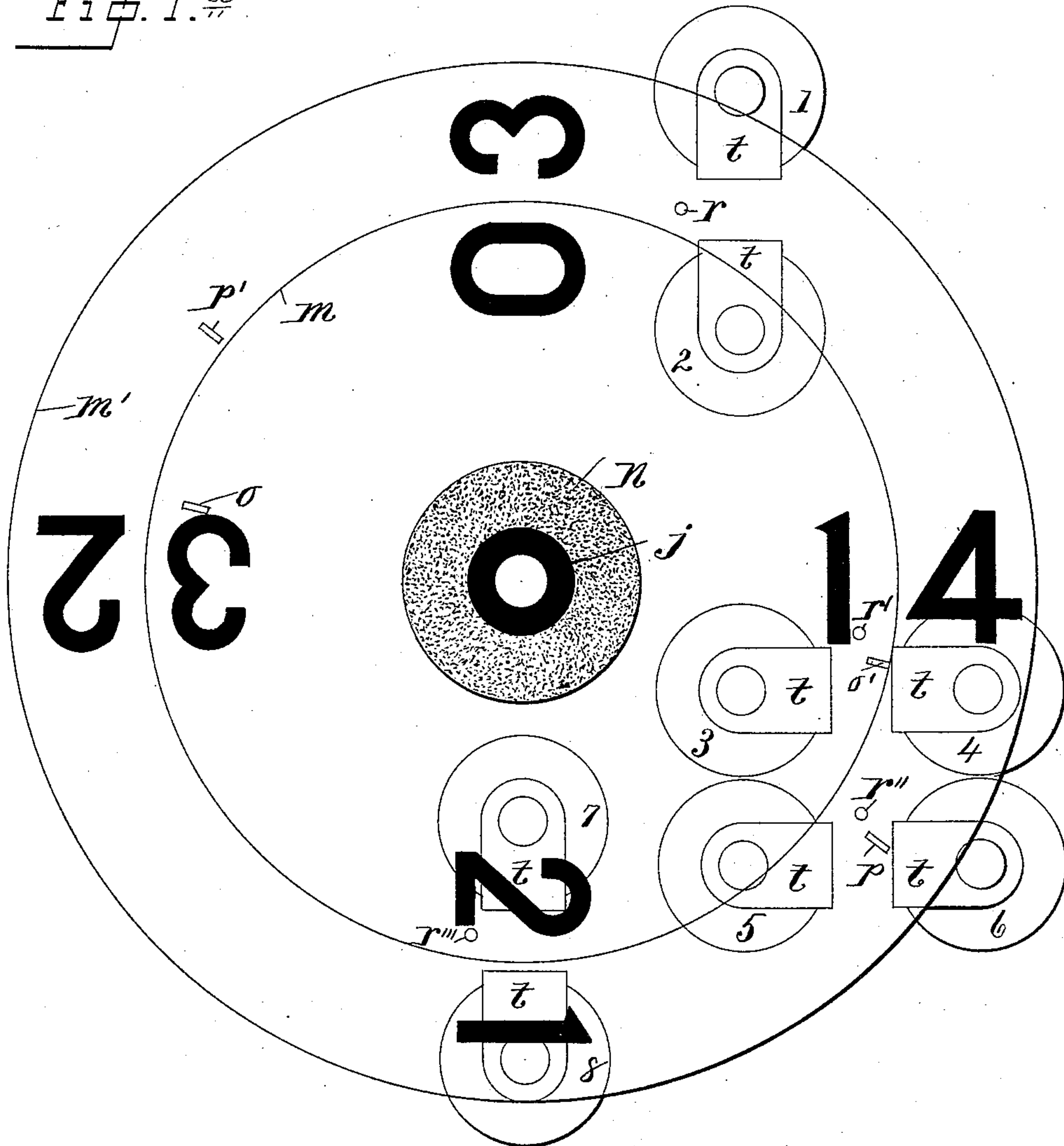
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*Fig. 1.*



*Witnesses:—*

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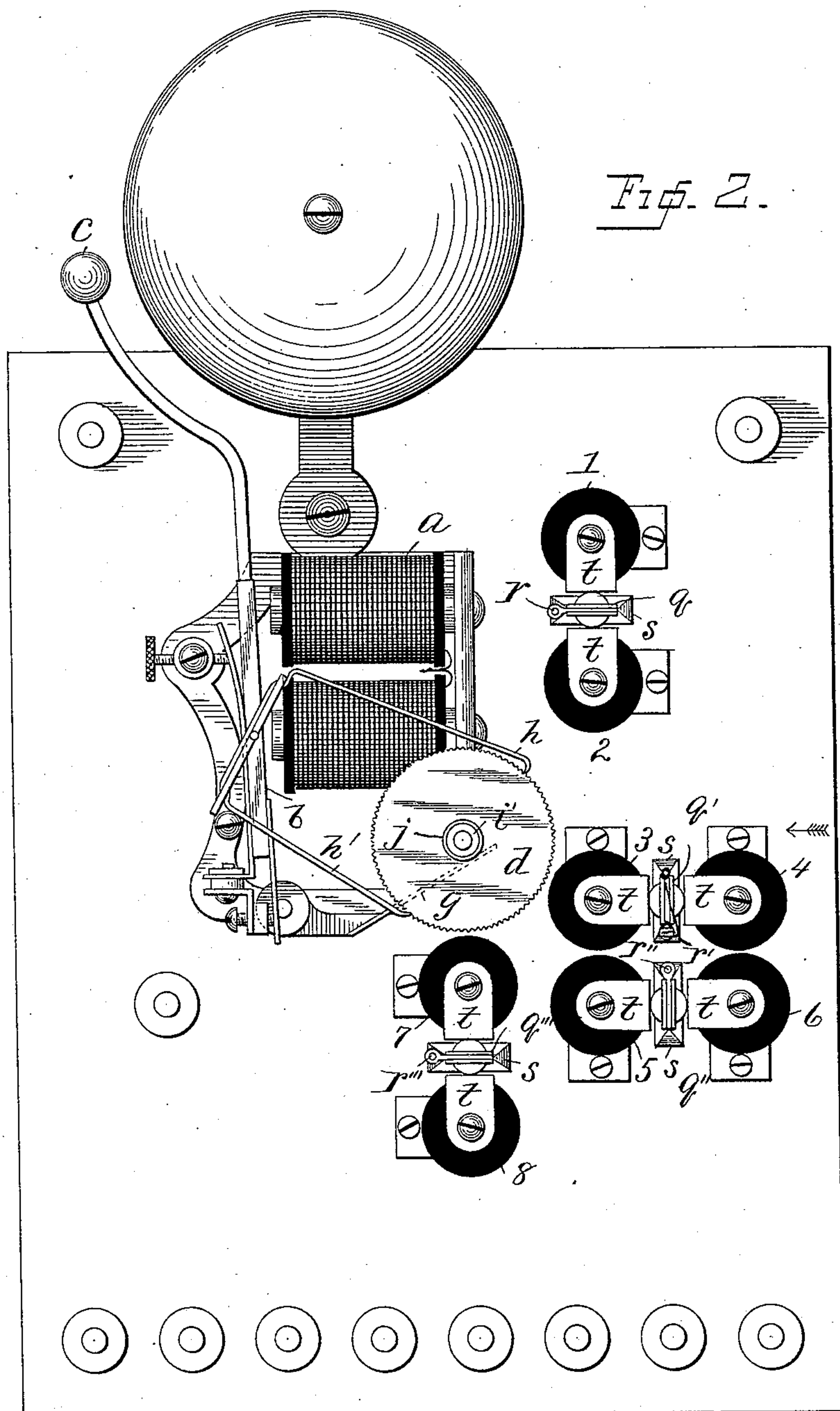
BY HIS ATTORNEY

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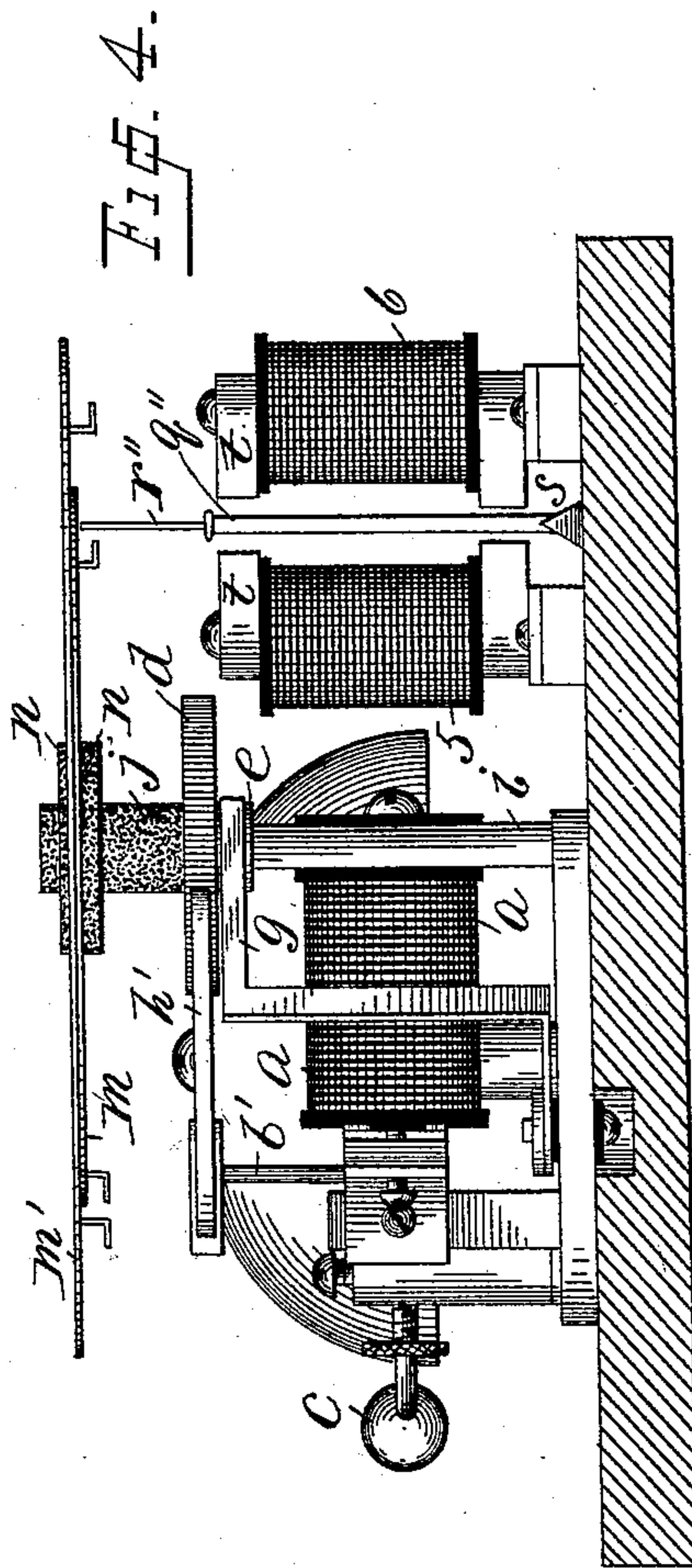
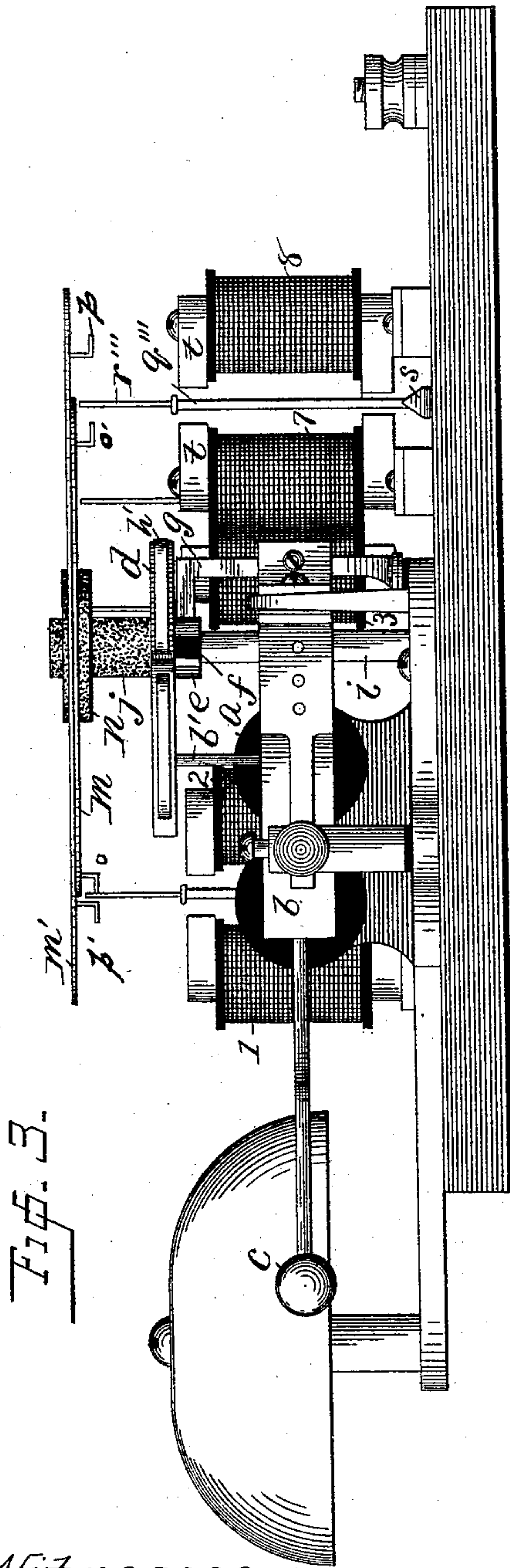
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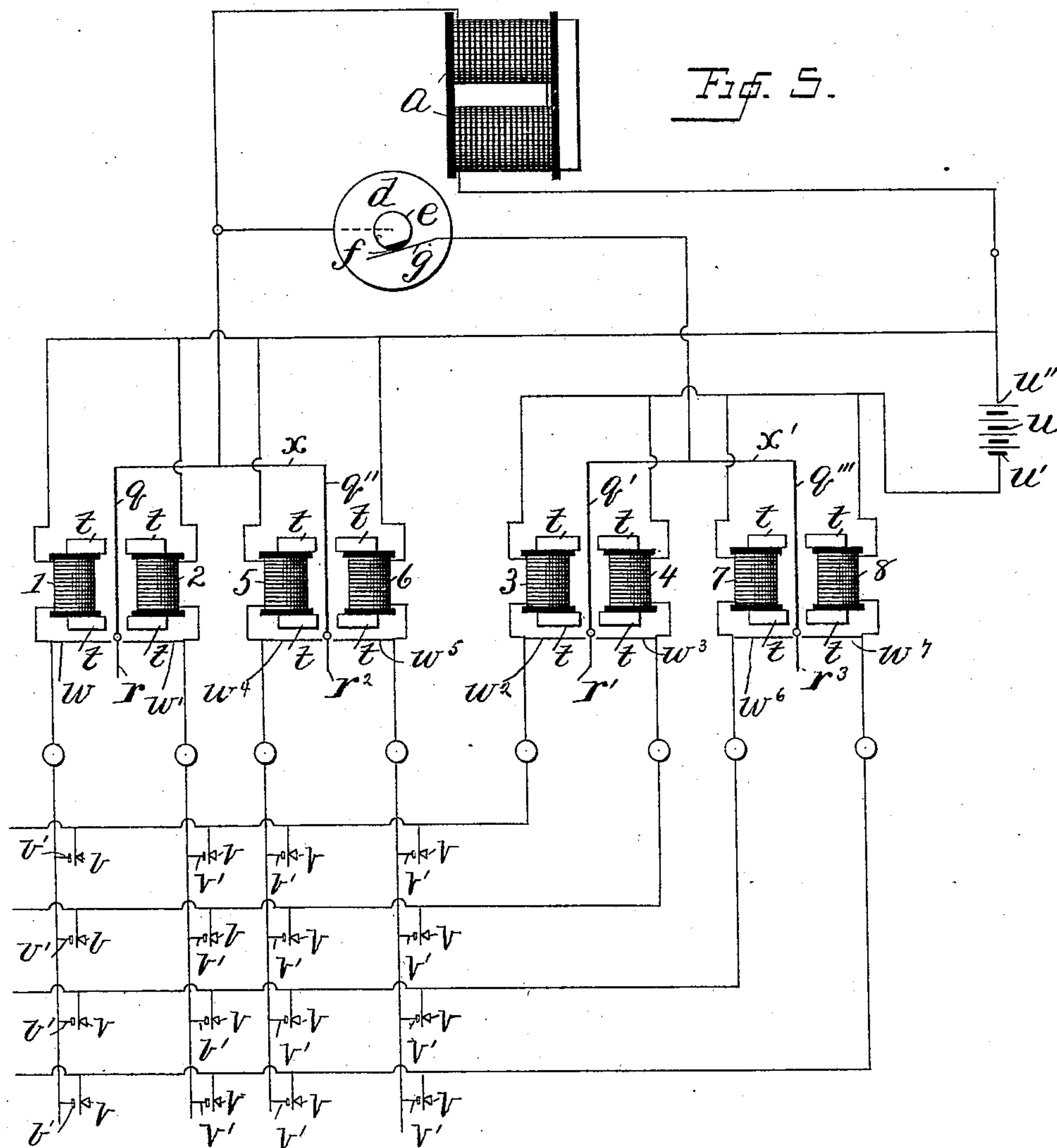
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Witnesses

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# UNITED STATES PATENT OFFICE.

LOUIS M. PINOLET, OF BROOKLYN, NEW YORK.

## ELECTRIC ANNUNCIATOR SYSTEM.

SPECIFICATION forming part of Letters Patent No. 453,416, dated June 2, 1891.

Application filed September 25, 1890. Serial No. 366,063. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS M. PINOLET, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Electric Annunciator Systems, (Case 2,) of which the following is a specification.

My invention relates to electric annunciators provided with means for indicating the numbers of rooms in a hotel, dwelling-house, arcade, or similar establishment.

The object of the invention is to provide simplicity of construction, economy of space occupied, and efficiency of operation.

The number of any room is indicated on the annunciator by pressing, for instance, an electric push-button in said room. The number remains until a person in another room presses a button, when a correspondingly-new number appears in the place of the prior number without any intermediate setting or adjustment of the instrument by internal or external means, except that which takes place after the pressing of the button.

The invention in all its details and operation is described by reference to the accompanying drawings.

The device represented is one which would serve to indicate sixteen independent rooms or sections of a building; but those versed in the art could construct an instrument from the instructions herein contained for indicating the numbers of rooms in the largest hotels.

Figure 1 is a plan of a complete annunciator, including a signal-bell. A portion of the instrument is shown dotted underneath the rotary disks, which are provided with digits. Fig. 1<sup>a</sup> shows a diagram of part of Fig. 1. Fig. 2 is the same as Fig. 1, except that the disks are removed, making clearly visible parts not shown in Fig. 1. Fig. 3 is an elevation of the instrument as it appears when looked at from the left-hand side of Fig. 1, it being a side elevation. Fig. 4 is an end elevation as looked at from the lower part of Fig. 1, the base-board being sectioned at X, magnets 7 and 8 being omitted. Fig. 5 is a diagram of the complete electric circuits which would be employed for equipping a hotel of sixteen rooms.

All the magnets are shown and also the generator. In all the figures the instrument and circuits are shown in a normal condition. The room last indicated is number 14, the arrow Y pointing to the number.

In practice the instrument will be covered by a box with a hole, through which any number in the same position as 14, opposite the arrow Y, would become visible.

The device, in so far as concerns the signal and electro-magnetic mechanism for rotating the disks, consists of the combination of an electro-magnet *a*, provided with the usual vibrating armature *b*, to which is attached a clapper *c* in the ordinary manner, a ratchet-wheel *d*, provided with a hub *e*, cylindrical in form and having a piece of insulation *f* embedded in one side thereof, against which presses an electric contact-spring *g* in the normal condition of the device, a double pawl having two parts *h* and *h'* engaging with the ratchet-wheel upon opposite sides and attached to said armature upon the projection *b'*, the ratchets *h* and *h'* being engaged with the teeth of said ratchet-wheel in such a manner that the vibratory motion of the armature will rotate the disks in the direction of the arrow Z, and a pillar or standard *i*, on which the said wheel is loosely mounted, so that it may rotate.

Upon the wheel *d* is mounted a tube *j*, which carries two concentric disks *m* and *m'*, which are held frictionally by means of fibrous disks *n n* pressing upon opposite sides of the disks *m* and *m'*. There is sufficient friction among the several disks to communicate motion to the disks *m* and *m'*, and at the same time little enough friction to permit one's hand or similar resisting force to stop either one or both of the disks *m* and *m'* without stopping the tube *j*, which fits tightly upon the hub *i'* of the wheel *d*.

Upon each disk *m* and *m'* and upon the under side thereof are located projections *o* and *o'* on the disk *m* and *p* and *p'* on the disk *m'*, the former two being at different distances from the periphery of the disk *m*, and the latter two being at different distances from the periphery of the disk *m'*. Such a disposition is necessary, as hereinafter described, to allow a wire upon a given armature to stop the disk at a predetermined point



by the action of one projection or at another predetermined point by the action of the other projection.

Arranged around the standard *i* are solenoids or small magnets 1 2 3 4 5 6 7 8. Magnets 1 and 2 have a common armature *q*, from which project upward a wire *r*, the magnets 3 and 4 have a common armature *q'*, from which projects upward the wire *r'*, the magnets 5 and 6 have a common armature *q''*, from which projects upward a wire *r''*, and the magnets 7 and 8 have a common armature *q'''*, from which projects upward a wire *r'''*. The common armatures are pivoted at the lower ends upon the supports *s*. The lower ends of the wires *r r' r'' r'''*, being secured to these supports, serve as retractile springs for normally retaining the armatures *q q' q'' q'''*, balanced midway between the poles *t* of the magnets. The wires *r r' r'' r'''* have normally such positions relatively to the projections *o o' p p'* that the disks *m m'* may rotate freely without being stopped by the said wires. When, however, any one of the armatures is attracted to one of the magnets it comes in the path of one of the said projections and causes one of the disks to stop. Thus if the wire *r* is moved by the magnet 2 the projection *o'* will strike it when the wheel is rotated sufficiently. If the wire *r* is moved by and toward the magnet 1, the disk *m'* will be stopped by the projection *p* coming in contact with said wire. In a similar manner the wires *r' r'' r'''* may cause one or the other of the disks *m m'* to stop at predetermined positions.

In Fig. 1 the number 14, opposite the arrow Y, was formed by the wire *r'* being attracted to magnet 4 and the wire *r''* being attracted to magnet 6.

In Fig. 1<sup>a</sup> the disks *m* and *m'* are supposed to be transparent, being of glass or mica, so that the construction relatively to the wires *r r' r'' r'''* and the projections *o o' p p'* may be clearly seen and easily explained.

Referring particularly to Fig. 1<sup>a</sup>, the number 14 was formed by the wire *r'* being moved to magnet 4 into the path of projection *o'* on disk *m'* and by the wire *r''* being moved to magnet 6 into the path of projection *p* on disk *m*. The disks are stopped when the figures 1 and 4 are opposite the arrow. This number being indicated, the operation of indicating another number—12, for example—would be as follows: The wire *r'* being moved to magnet 4 and the wire *r''* to magnet 5, the disk *m* would be prevented from rotating by the action of wire *r'* on projection *o'*. Meanwhile the disk *m'* is rotated by the friction between it and tube *j* and disk *n* until it makes a half-revolution, when it is stopped by the action of wire *r''* on projection *p'*. In like manner other numbers are formed opposite the arrow by the different combinations of the figures on one disk with those on the other disk. By making the disks *m m'* larger and putting the indicating-numbers near their peripheries

there will be plenty of room for multiplying the number of the magnets 1 2 3, &c., so that a large number of rooms, say two or three hundred, may be equipped with the invention successfully.

The electric circuits may be described as follows: Referring particularly to Fig. 5, *u* represents an electric battery. One pole *u'* is connected by electrical conductors to and through the magnets 3 4 7 8 and to one terminal *v* of each push-button or circuit-closer located in the respective rooms or sections of a hotel. The other pole *u''* is connected by conductors to and through magnets 1 2 5 6 and to one terminal *v'* of each circuit-closer above mentioned, the said circuit-closers being in multiple arc and the armatures *q* and wheel *d* being in multiple arc to each other. The pole *u''* is also connected by conductors through the magnet *a* to the wheel *d*, and also to the armatures *q* and *q'*. The brush or spring *g* is connected to the armatures *q'* and *q'''* electrically. One terminal of each magnet 1 2 3 4 5 6 7 8 has a contact-terminal, respectively, *w w' w'' w''' w<sup>2</sup> w<sup>3</sup> w<sup>4</sup> w<sup>5</sup> w<sup>6</sup> w<sup>7</sup>*, the first two *w* and *w'* terminating in the path of the vibratory armature *q*, the second two *w<sup>2</sup> w<sup>3</sup>* terminating in the path of the vibratory armature *q'*, the third two *w<sup>4</sup> w<sup>5</sup>* terminating in the path of the vibratory armature *q''*, and the fourth two *w<sup>6</sup> w<sup>7</sup>* terminating in the path of the vibratory armature *q'''*. The armatures *q* and *q'* are electrically united by the conductor *x*, and the armatures *q'* and *q'''* are electrically united by the conductor *x'*. When any circuit-closer—for instance, the one at the upper left-hand corner—is closed by pressing upon the terminal *v*, a current is established through magnet 1 and magnet 3. The armature *q* will be attracted to magnet 1, closing the terminal *w* through magnet *a*, which will by means of the mechanism described—namely, the ratchet-wheel *d* and vibrating armature—rotate the hub *e* as long as the finger is kept upon the terminal *v*. On account of the piece or insulation *f* being in practice many times smaller than represented, the metallic portion of the hub *e* will come in contact with the brush *g* before the operator can have time to remove the terminal *v* from the terminal *v'*. Consequently a current will be established through the magnet *a*, the wheel *d*, the armature *q'*, the magnet 3, and the battery until the hub *e* has rotated so far as to bring the insulation *f* again in contact with the brush *g*, and thereby interrupt the circuit through the magnet *a*. During the time of this revolution of the wheel *d* and disks *m* and *m'*, the wires *r* and *r'* come into the path, respectively, of the projection *p*, placing number 1 on the disk *m'* opposite the arrow Y and into the path of the projection *o*, so that the disk *m* would stop with figure 3 opposite the arrow Y. Therefore the annunciator would announce the upper left-hand circuit-closer as being in room 31.



It is unnecessary to explain the operation in reference to the other circuit-closers, as the explanation would be exactly similar. After removing the terminal  $v$  from the terminal  $v'$  at the upper left-hand corner, the battery  $u$  remains closed through the magnets 1 and 3, because the armatures  $q$  and  $q'$  are electrically connected, respectively, to the terminals  $w$  and  $w''$ . The circuit is again broken by the circuit-breaker or insulation  $f$ . The upper disk  $m'$  is transparent to show the numerals on the disk  $m$ .

I claim as my invention—

1. In an electric annunciator system, the combination of rotating concentric disks rotating together but independently movable, circuit-closers at different points, as in the rooms of a hotel, an electro-magnet in circuit with each push-button and provided with an armature, and two projections upon each of said disks at different distances from the center, the said armatures being so located that any attracted armature lies in the path of one of said projections, and an electric generator in circuit with said magnets and said push-buttons, indicating-numerals being upon said disks.

2. In an electric annunciator system, the combination, with an electro-magnet and the vibratory armature thereof, a metallic wheel, a pawl engaged therewith for the purpose set forth, electric terminals in contact normally, respectively, with insulation attached to said wheel and the wheel itself, disks mounted upon said wheel and provided with projections, armatures, magnets for bringing said armatures into the path of said projections, an electric battery, circuit-closers located at independent points for closing the circuit of said battery through said magnets, and circuit-closers attached to the armatures of said magnets in a normally-open circuit with the magnet of the said vibratory armature.

3. An electric annunciator system consisting of the combination of an electric generator, two sets of magnets respectively connected to each pole of the generator and to only one pole of the generator, a rotary wheel provided with a circuit-breaker in circuit with said sets of magnets and provided with indi-

cating-characters, such as numerals, and electric push-buttons, whose one set of terminals are in circuit with one of the said sets of magnets and the other set of terminals are in circuit with the other set of magnets.

4. In an electric annunciator system, the combination of two circuits, the one main and containing a push-button and the other local and including a circuit-breaker, and both containing an electric-bell magnet, which is provided with a vibratory armature, the said circuit-breaker consisting of a rotary wheel provided with a hub, upon which is mounted insulation, a spring-terminal pressing upon the said hub, and means for rotating said hub, consisting of a pawl pivoted to the said armature and engaging with teeth which are provided upon the periphery of said wheel, independent electro-magnets provided with pivoted armatures forming circuit-closers between said battery and said first-named magnet, and disks provided with indicating-numerals on one side and projections upon the other, said projections normally being out of the path of said armatures, said projections being in pairs at different distances from the common center of said disks.

5. An electric annunciator system consisting of the combination of an electric generator, two sets of magnets respectively connected to each pole of the generator and to only one pole of the generator, a rotary wheel provided with a circuit-breaker in circuit with said sets of magnets and provided with indicating-characters, such as numerals, an electric-bell magnet in circuit with each armature of the two sets of magnets, and electric push-buttons, whose one set of terminals are in circuit with one of the said sets of magnets and the other set of terminals are in circuit with the other set of magnets.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 20th day of September, 1890.

LOUIS M. PINOLET.

Witnesses:

E. G. DUVALL, Jr.,

EDWARD P. THOMPSON.