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No. 808,135.

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ANNUNCIATOR.

APPLICATION FILED JULY 17, 1905.

PATENTED DEC. 26, 1905.

5 SHEETS—SHEET 2.

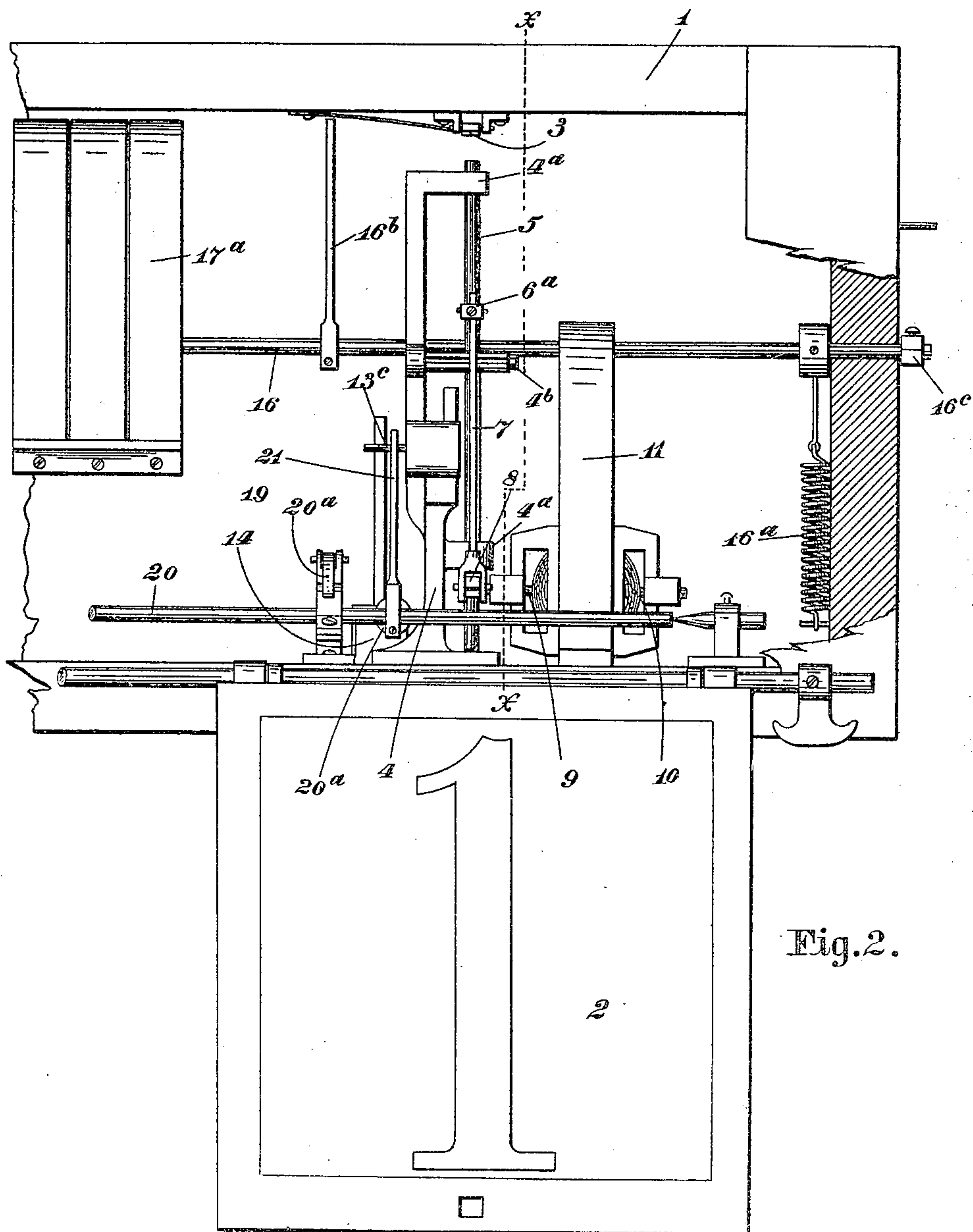


Fig. 2.

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5 SHEETS—SHEET 3.

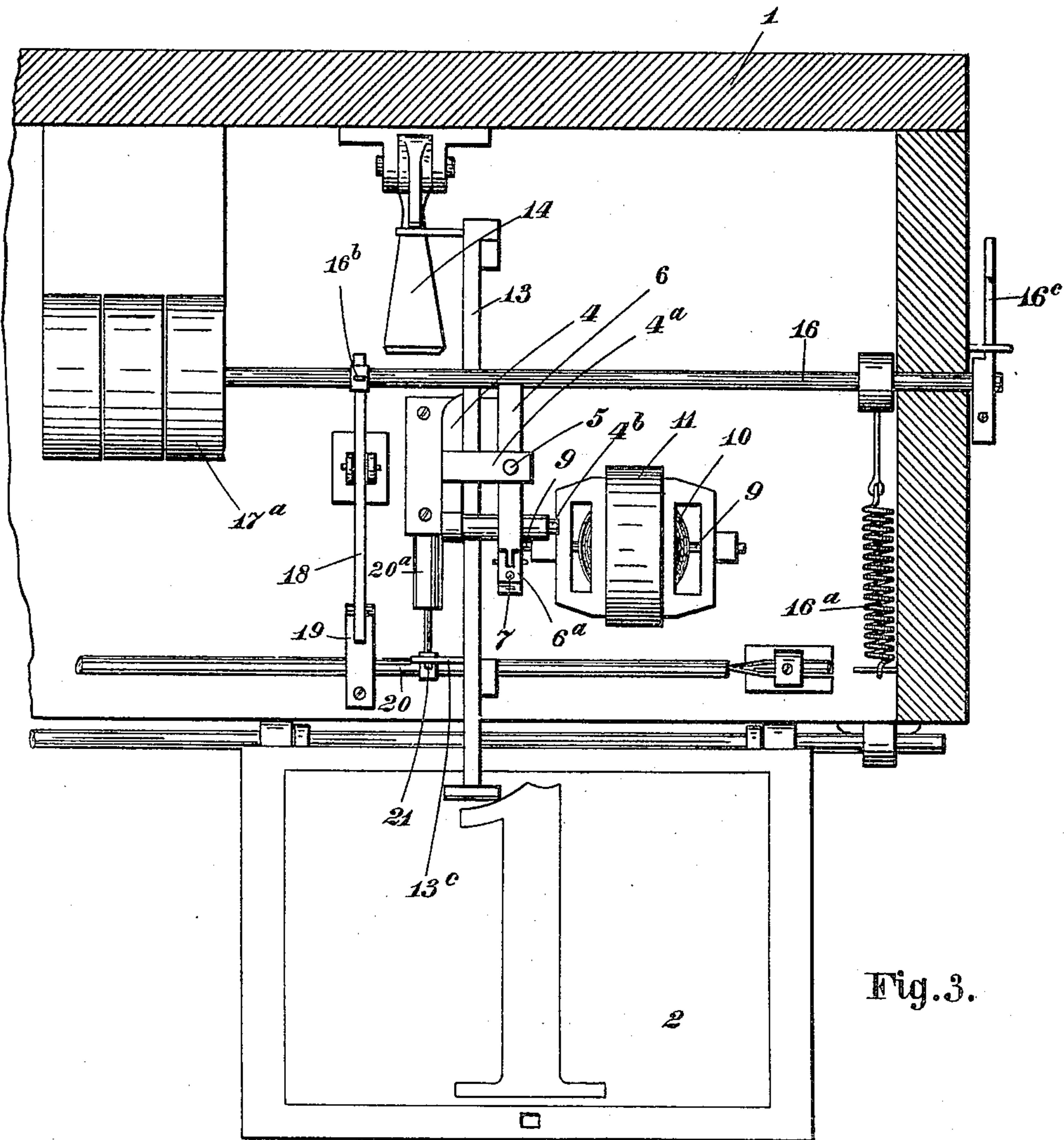


Fig. 3.

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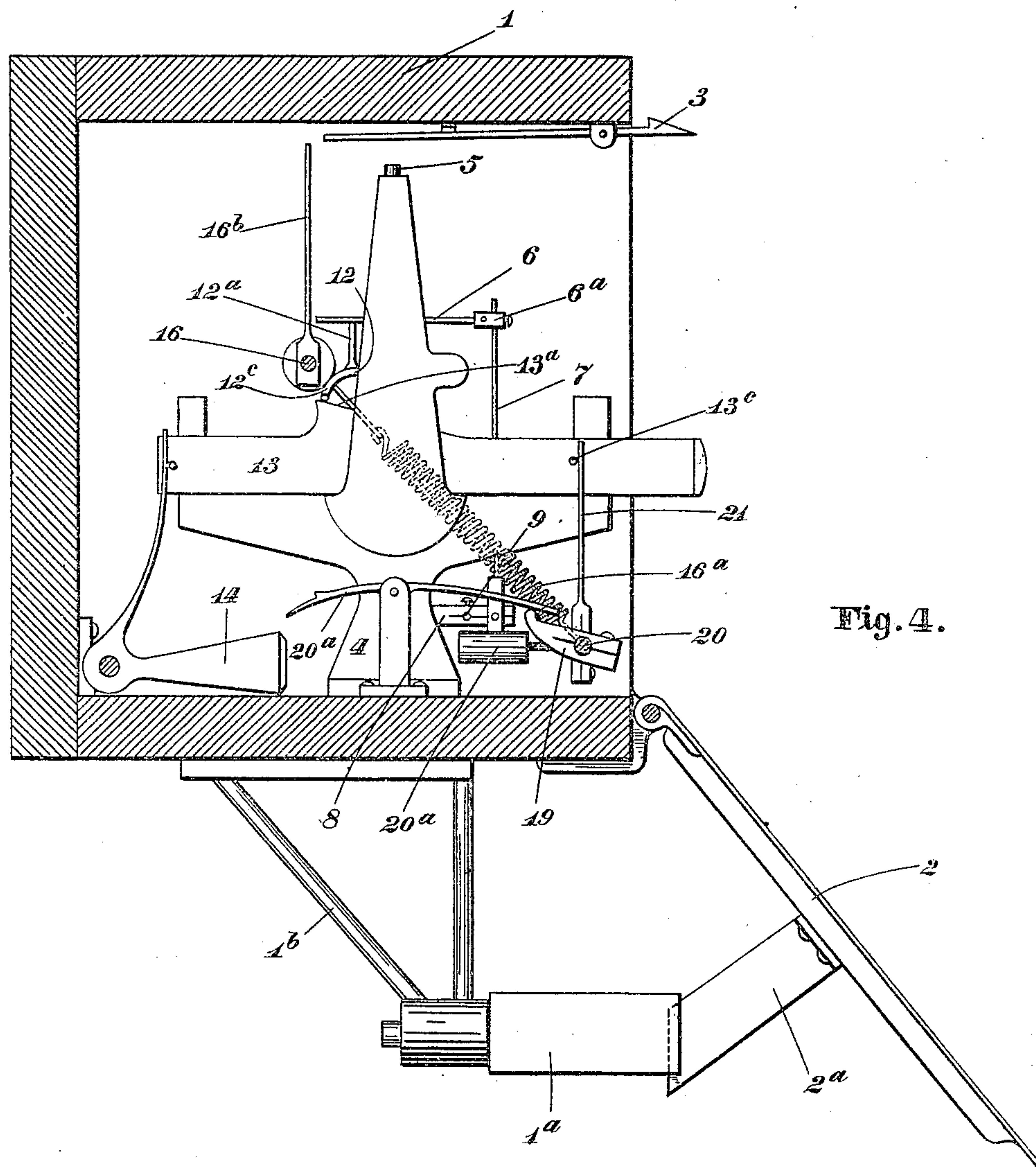
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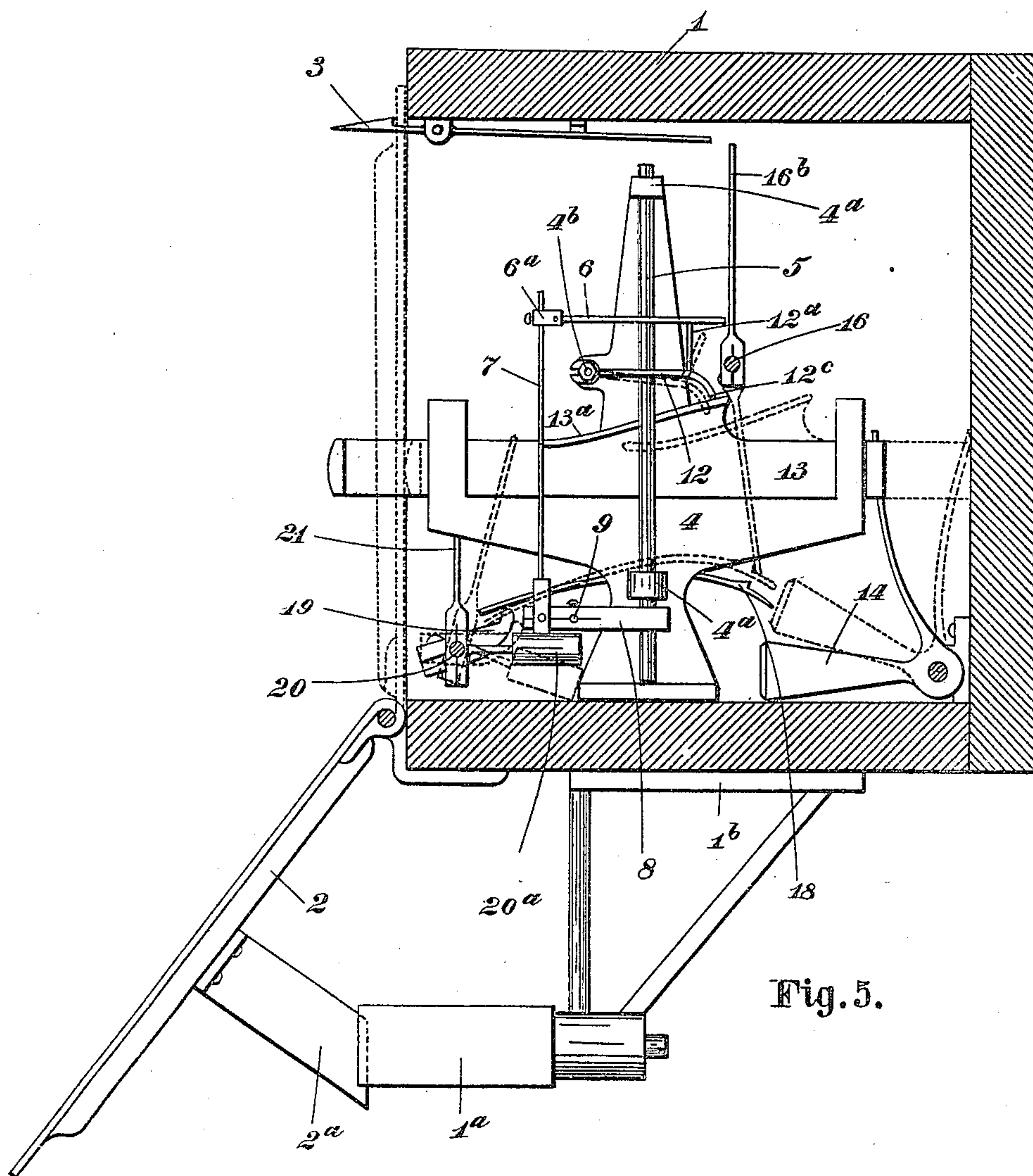
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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

LEONIDAS G. WOOLLEY, OF KENTON, OHIO.

ANNUNCIATOR.

No. 808,135.

Specification of Letters Patent.

Patented Dec. 26, 1905.

Application filed July 17, 1905. Serial No. 270,082.

To all whom it may concern:

Be it known that I, LEONIDAS G. WOOLLEY, a citizen of the United States, residing at Kenton, in the county of Hardin and State of Ohio, have invented certain new and useful Improvements in Annunciators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the invention is to provide a magneto-electric signaling apparatus or annunciator particularly adapted for use as a fire or burglar alarm.

In practice the alarm-sending devices can be located at various selected points and the alarm-receiving device located at a common station or engine-house. The alarm-receiving device is preferably of the visual character, which may be supplemented, if desired, by apparatus adapted to give an audible signal.

The invention consists in the mechanism and arrangement hereinafter described and claimed, the claims not being confined to the particular form of parts shown and described.

In the accompanying drawings, which, as before suggested, illustrate but one embodiment of the invention, Figure 1 shows in general diagrammatic view the several parts of the apparatus. In this view the device at the right-hand side is a sending-box, that at the middle is the visual-alarm-receiving apparatus, and that at the left the audible-alarm apparatus. Fig. 2 is a front view of one of the elements of the visual-alarm-receiving apparatus with the door down to expose the interior mechanism. Fig. 3 is a top plan view of the same interior mechanism. Fig. 4 is an elevation of the same interior mechanism looking at its right-hand side, the electromagnet being omitted to avoid complexity of lines. Fig. 5 is an elevation of the same mechanism looking at its left-hand side, but from the plane $x-x$, Fig. 2. Fig. 6 is a detail, on a larger scale, illustrating a part of the door-releasing mechanism.

The visual-signal apparatus is mounted in a long box-like structure 1, having any suitable number of inclosing doors 2 hinged at their lower edges to the lower front edge of the box. These doors each bear a numeral or other character significant of the district or point from which the alarm may be sent. The box is provided in its upper side with a spring-actuated latch 3 for each of the doors,

adapted to automatically catch the door and hold it when closed. It is the mechanism that is adapted to release this latch when a distant signal-box is operated that constitutes the principal feature of my invention. I will therefore now proceed to describe this mechanism.

4 designates a standard suitably secured to the floor of the box, and from this standard project perforated ears 4^a, in which slides vertically a rod 5. This rod 5 is so located that when raised sufficiently its upper end will press upward the inner arm of the latch 3 and disengage the outer or latching end of the arm from the door and permit the door to swing down and expose its distinguishing character. The rod 5 is fed upward with a step-by-step motion by means of a clutching member or arm 6, hinged to an adjustable block 6^a on the upper end of a rod 7, that is hinged at its lower end to a rocking lever 8. The rocking lever 8 is fulcrumed on a shaft 9, having fixed thereon a wire-coiled armature 10, working between the poles of a permanent magnet 11. The rocking of the shaft 9 is effected by generating electrical impulses in the wire coil of the armature 10, thus changing the polarity of the armature on the shaft 9, and because the armature is in the field and affected by the poles of the permanent magnet a rocking motion of the shaft results.

The clutching member 6 is simply a plain flat arm made with a circular hole 6^b of slightly larger diameter than the diameter of the smooth rod 5, which passes through it.

Pivoted loosely on a pin 4^b, projecting from the standard 4, is a stop-arm 12, having a hole 12^b, (like the hole 6^b in the clutching member 6,) through which hole 12^b the rod 5 also passes. The inner portion of the arm 12 is furnished with an upwardly-projecting pin 12^a, that serves as a rest for the inner end of the clutching-arm when the inner ends of the two arms 6 and 12 are raised, as hereinafter described, to put the holes therein in such position that the rod 5 shall be free to drop by gravity to its starting position. In feeding the bar 5 upward the bars 6 and 12 cooperate with each other. The rod 6 on the upward stroke grips the rod and carries it upward a step, and the bar 12 on the downward stroke of said bar 6 catches and holds the rod in the position to which it was carried by the bar 6 on the upward stroke. The upper end of the rod 5 is preferably located at such a distance below the inner arm of the catch 3 that, say, a

dozen or more upward feeding strokes are required to effect contact of the rod with the catch, because if one or two strokes should be sufficient to operate said catch it might be operated by one or a few electrical impulses caused by the falling of a telegraph, telephone, or other wire across the line of entering the box, and so give a false alarm. The inner portion of the stop-arm 12 is downwardly curved at its inner extremity, as seen at 12°, so as to lie in the path of an inclined edge 13^a on a bar 13, that is mounted to slide horizontally in the standard 4. This sliding bar 13 is pressed outward by one arm of a weighted bell-crank lever 14, fulcrumed in the lower rear corner of the box, and said bar is made of such length that its outer end will protrude and the bar will be pressed rearward by the closing of the door 2. Therefore when the door is operated by the operation of the alarm the inclined edge 13^a of the bar 13 immediately lifts the bars 12 and 6, and so permits the rod 5 to drop to its original position, and when the door is closed the bars 12 and 6 are again free to work upon the operation of the receiving-electromagnet. To relieve the violence of the fall of the door and prevent its rebound, I secure on a suitable bracket 1^b at the under side of the box a pair of spring-fingers 1^a, placed rather close together and forming a clip, and on the outer side of the door a wedge 2^a so located that when the door swings downward the wedge will strike between the fingers 1^a. This construction not only cushions the fall of the door, but the latter is yieldingly held in the position which it finally reaches in its descent.

The mechanism for operating an audible alarm, which may or may not in practice be used in conjunction with the visual alarm, includes a horizontal shaft 16, suitably journaled longitudinally in the box and carrying at one end an armature suitably wound with wire, the terminals of which extend to an electromagnet arranged to operate the detent of a hammer to strike a bell 17, as indicated at the left-hand part of Fig. 1. The said electromagnet works in the field of one or more permanent magnets 17^a, so that when the wire-wound armature is moved or rotated the proper electrical impulses for operating the detent-operating electromagnet are generated. To effect the partial rotation of the shaft 16 when the visual alarm is operated, I employ a coil-spring 16^a, that pulls on said shaft to hold it in one position. On the shaft 16 is a finger 16^b, that is engaged by a pivoted detent 18 when the door is closed. The detent 18 is operated by a trip 19 on a shaft 20, said shaft 20 being operated by the contact of a pin 13^c

on the bar 13 with an arm 21, attached to said shaft. The arm 21 is held normally against the pin 13^c by means of a weight 20^a, attached to the shaft 20. After the door is closed the finger 16^b is set or brought into engagement with the detent 18 by means of a small lever 16^c on the outer side of the right-hand end of the box 1. When the audible alarm is used, only one shaft 16, finger 16^b, and detent 18 are required; but the shaft 20 will extend along the entire box, and there will be provided a pin 13^c and an arm 21 for each of the visual-alarm elements, so that the operation of any of the visual-alarm elements will operate the same audible alarm. The sending-box, which is designated 22, will contain a magneto-electric generator adapted upon the operation of a crank 22^a to send the necessary electrical impulses to operate the door-releasing pin.

In this kind of apparatus voltaic batteries of cells are entirely dispensed with, and as a consequence the care, expense, and trouble incident to the deterioration of such batteries are avoided.

What I claim, and desire to secure by Letters Patent, is—

1. In an annunciator, the combination of a frame having a movable signal-door, a latch for said door to hold the same in normal position, a rod for releasing said latch, a clutching device to feed said rod and means for operating said clutching device.

2. In an annunciator, the combination of a box or frame having a movable signal-door, a latch for said door to hold the same in normal position, a rod for releasing said latch, a clutching device to feed said rod toward said latch, a stop device to hold said rod as it is fed and means for releasing said stop device operative by the release of the door.

3. In an annunciator, the combination of a box or frame having a movable signal-door, a latch for said door to hold the same in normal position, a rod for releasing said latch, a clutching device to feed said rod toward said latch consisting of a bar having an opening the walls of which engage said rod when the bar is tilted, a stop device consisting of a bar having an opening the walls of which engage the bar to hold the same between the feeding movements, and means actuated upon the release of the door to move said feeding and stop-bars out of feeding and rod-holding positions.

In testimony whereof I affix my signature in presence of two witnesses.

LEONIDAS G. WOOLLEY.

Witnesses:

H. E. PEARCE,

GEORGIA DOSTER.