

No. 671,776.

Patented Apr. 9, 1901.

D. ROUSSEAU.
ANNUNCIATOR.

(Application filed July 21, 1899.)

(No Model.)

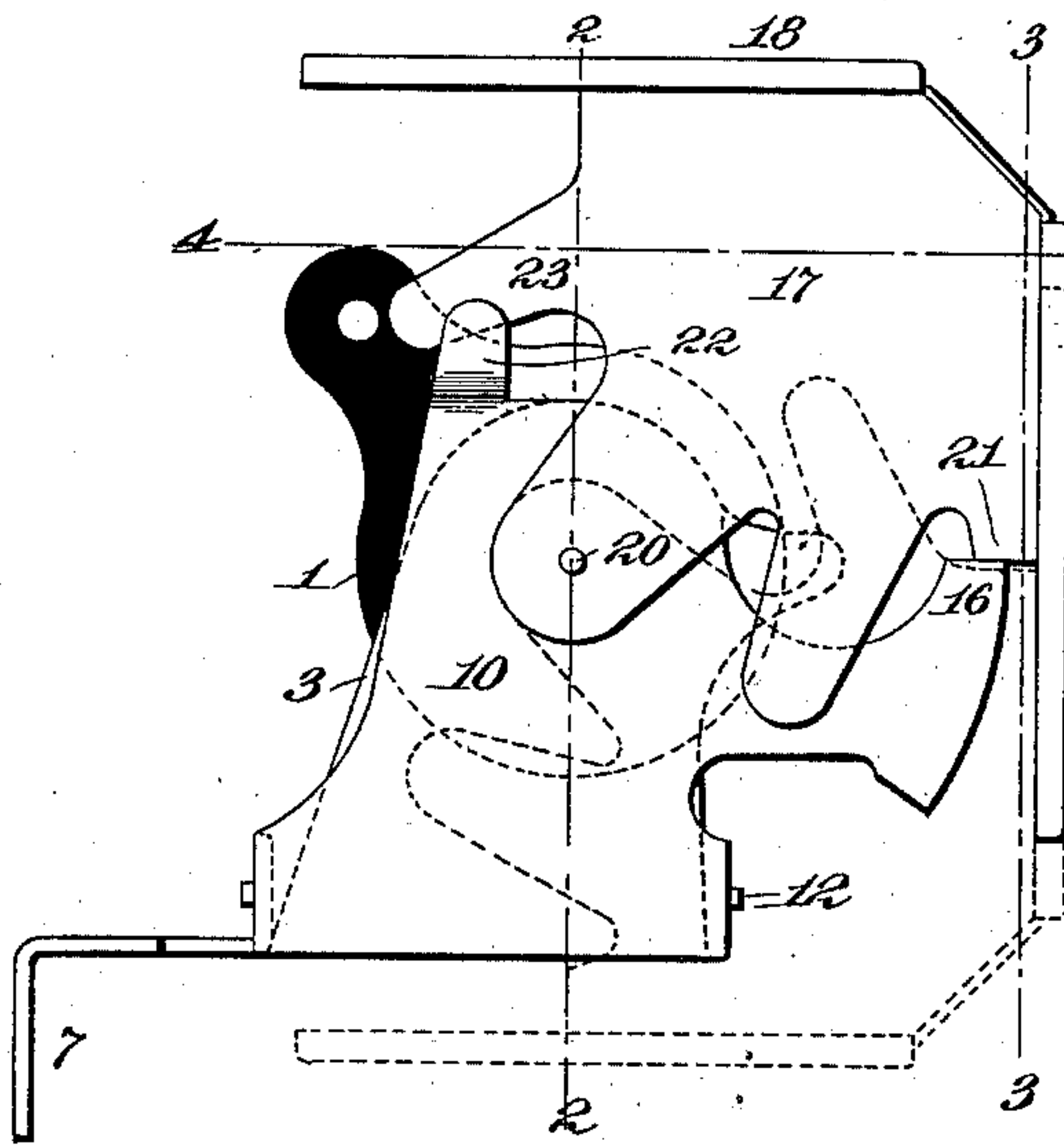


Fig. 1

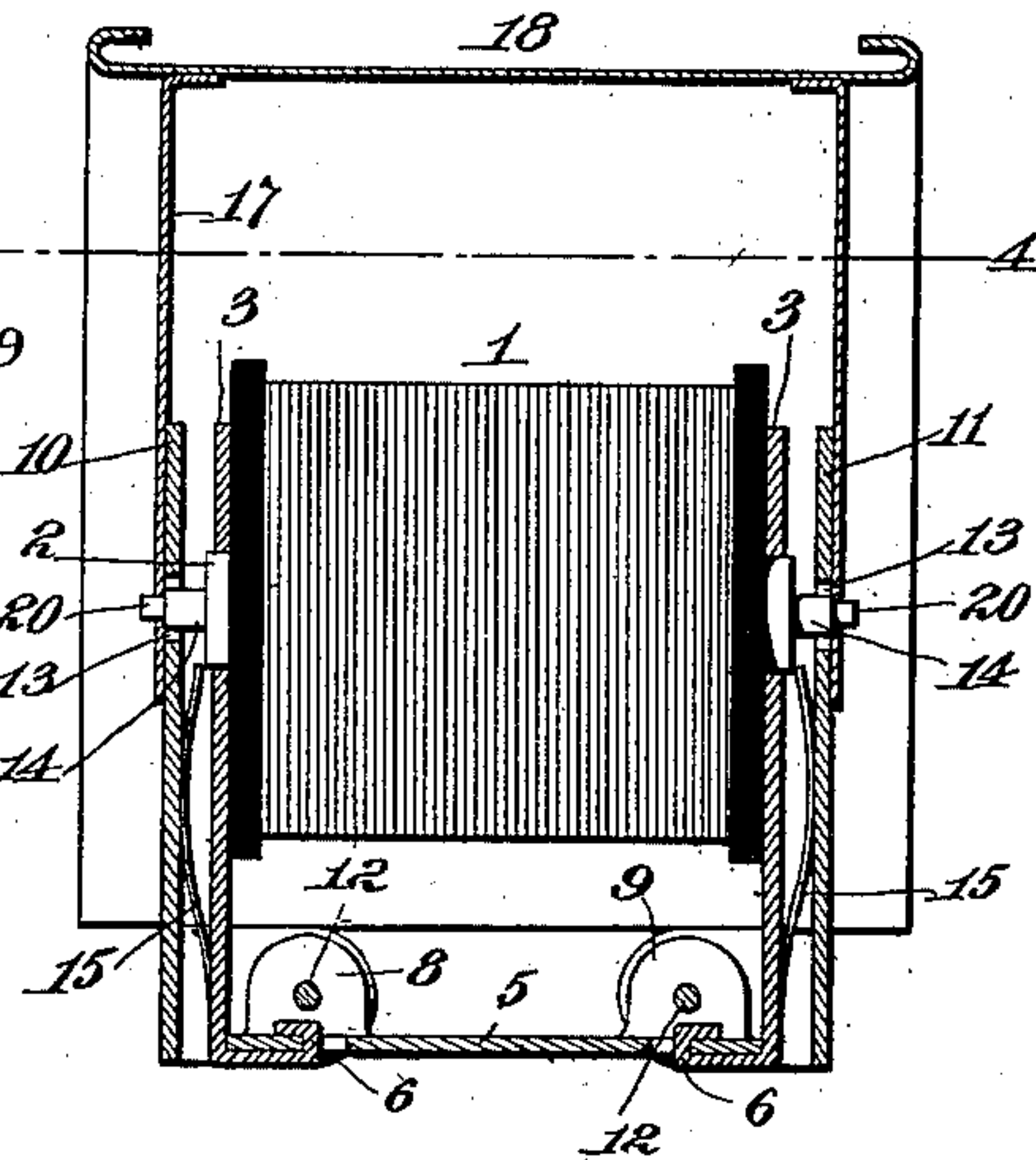


Fig. 2

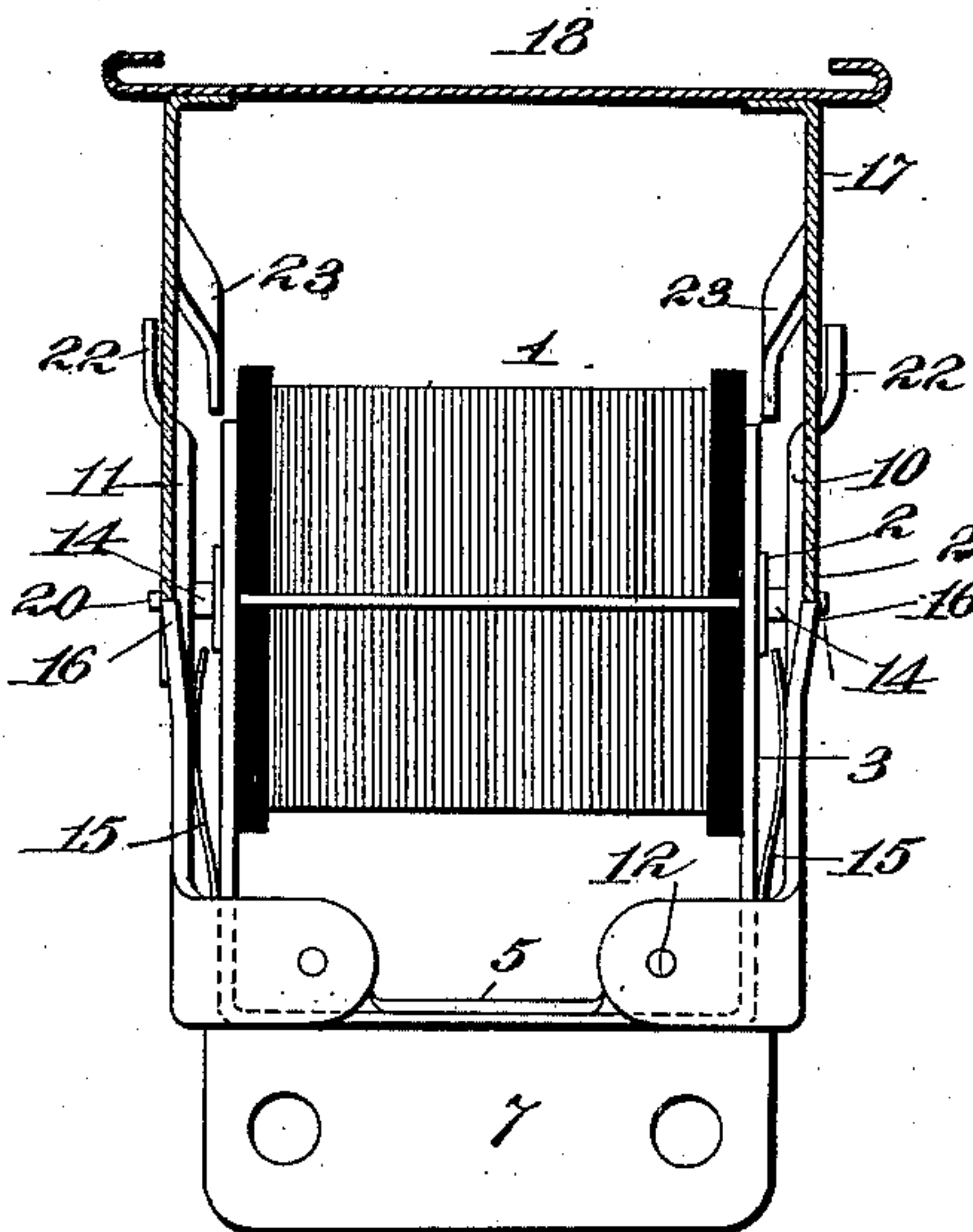


Fig. 3

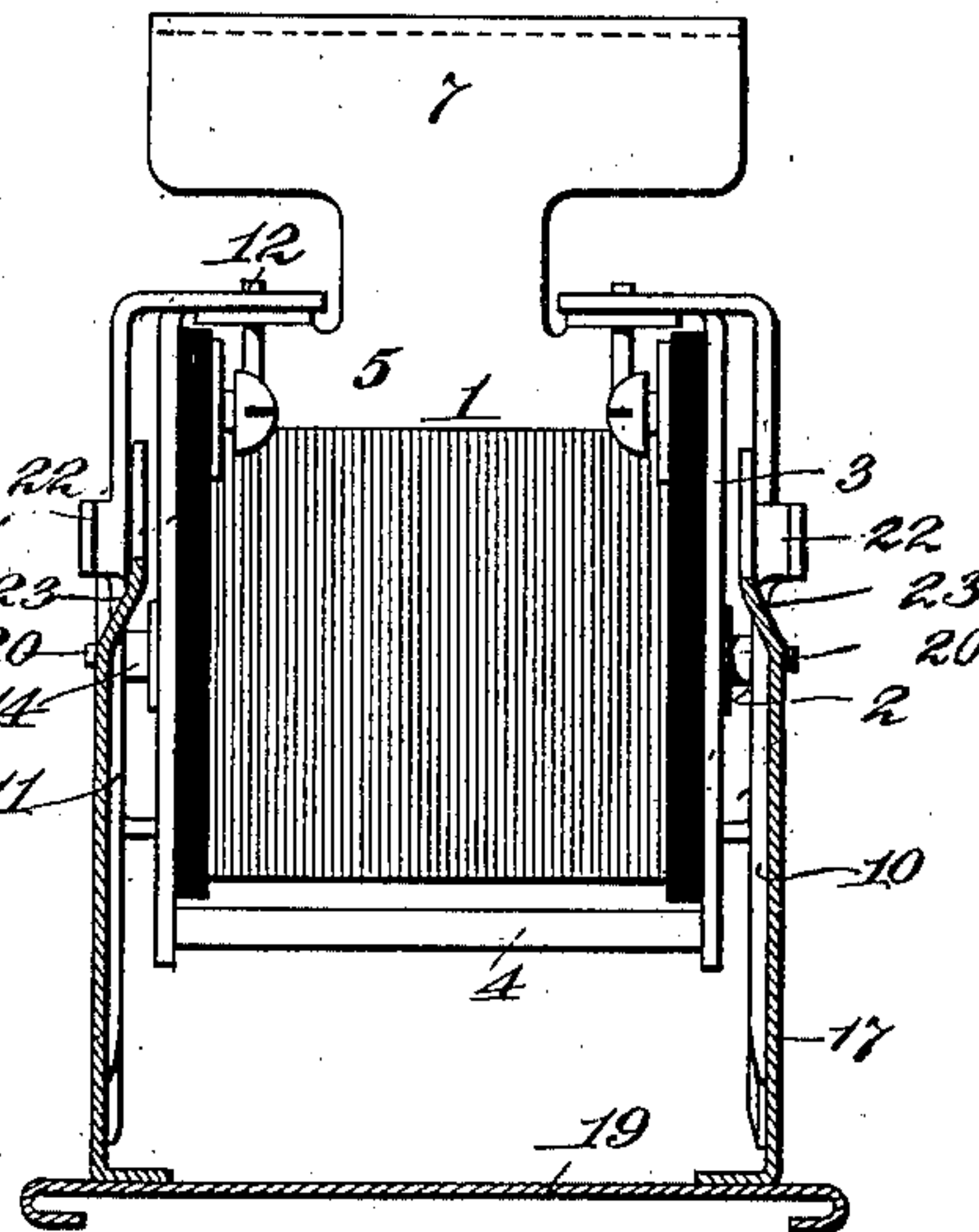


Fig. 4

Witnesses:

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UNITED STATES PATENT OFFICE.

DAVID ROUSSEAU, OF NEW YORK, N. Y.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 671,776, dated April 9, 1901.

Application filed July 21, 1899. Serial No. 724,592. (No model.)

To all whom it may concern:

Be it known that I, DAVID ROUSSEAU, a citizen of the United States, residing in the borough of Bronx, city, county, and State of New York, have invented a certain new and useful Improvement in Annunciators, of which the following is a specification.

My invention relates to various new and useful improvements in annunciators; and the object of the invention is to simplify and cheapen the construction of these devices, to make their operation more certain, and to materially reduce the size of the operating-magnet.

In order that the invention may be better understood, attention is directed to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a side view of the device, showing in full lines the annunciator-drop in its normal position and in dotted lines its position when released; Fig. 2, a longitudinal section on the line 2 2 of Fig. 1; Fig. 3, a section on the line 3 3 of Fig. 2, and Fig. 4 a section on the line 4 4 of Fig. 1.

In all of the above views corresponding parts are represented by the same numerals of reference.

The single coil 1 is provided with a core 2 and is carried in a frame 3, made of non-magnetic material, such as brass. This frame is provided with a front bar 4 to give it rigidity. The frame 3 is secured to a base 5, made of iron or steel, by means of the overturned fingers 6. The base 5 is provided with a bracket 7, having screw-holes therein by which the device may be set up. The base 5 is provided with two pairs of ears 8 8 and 9 9, in which are mounted the two armatures 10 and 11 on longitudinal pins 12. The armatures are provided with openings 13 therein, which receive the ends of the core 2 of the magnet 1. Each end of the core 2 is reduced, as shown at 14, whereby a face will be produced immediately surrounding each reduced portion, so that when the coil 1 is excited the armatures 10 and 11 will be drawn inward by the magnetic attraction. The armatures 10 and 11 are prevented from sticking to the faces of the core 2, due to residual magnetism, by springs 15, which also serve to force the armatures away from the pole-faces. Each armature is pro-

vided with a supporting-finger 16 for holding the annunciator-drop in a normal elevated position. The annunciator-drop is provided with the two side frames 17, which carry the two faces 18 and 19, one indicating the normal or elevated position of the annunciator-drop and the other the depressed position. The side pieces 17 of the annunciator-drop are preferably pivoted on non-magnetic pins 20, formed in the reduced portions 14 of the core 2. Each side piece 17 of the annunciator-drop is provided with a shoulder 21, which engages the corresponding finger 16 of the adjacent armature 10 or 11 when said armature is forced outward into its normal position by its weight or by the spring 15. When the coil 1 is energized, the armatures 10 and 11 will be attracted toward the core, withdrawing the fingers 16 from the shoulders 21 and allowing the annunciator-drop to fall by its weight. By employing two armatures, as explained, it will be observed that should one of them be operated before the other, owing to any increase in friction in the latter, the armature first moved will come into contact with its core to close the magnetic circuit of the coil 1 and materially increase its magnetic strength, whereby the other armature will be immediately attracted to release the annunciator-drop. I have found in practice that by this arrangement of armatures considerably-less battery-power is required. Preferably each armature is provided with a resetting-finger 22, with which a cam-finger 23 on the corresponding side 17 of the annunciator-drop engages when the parts are reset. When the annunciator-drop is moved upward, the cam 23 will engage the corresponding resetting-finger to move the corresponding armature bodily away from its core, throwing the finger 16 into the path of the shoulder 21 and providing for the positive locking of the annunciator-drop in its normal position. By thus positively restoring the armatures to their normal positions I overcome the possibility of failure due to the tendency of the armatures to be held in their attracted position by any residual magnetism in the core or by friction or otherwise.

It will be observed that the entire device is extremely compact in its make up, and since all the moving parts can be stamped out of

sheet metal it can be constructed at very low cost. It will also be understood that the annunciator-drop need not be pivoted upon the magnet-core, as shown and described. It might be pivoted upon frame-plates 3 or any other stationary parts, the relative length and position of members 16, 21, 22, and 23 being arranged accordingly.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. In an annunciator, the combination of a coil, a core for said coil, an annunciator-drop, an armature for each end of the core, a finger on each armature for engaging the annunciator-drop to hold the latter in its elevated position, and restoring-cams on the annunciator-drop for positively restoring the armatures during the resetting operation, substantially as set forth.

2. In an annunciator, the combination of a non-magnetic frame, a coil carried in said frame, a core for said coil, a magnetic base, a pair of armatures pivoted on said base and co-operating with the ends of the core, and an annunciator-drop maintained in a normal, elevated position by said armatures, substantially as set forth.

3. In an annunciator, the combination of a non-magnetic frame, a coil carried in said frame, a core for said coil, a magnetic base, a

pair of armatures pivoted on said base and co-operating with the ends of the core, an annunciator-drop maintained in a normal, retracted position by said armatures, and restoring-cams on the annunciator-drop for positively restoring the armatures during the resetting operation, substantially as set forth.

4. In an annunciator, the combination of a coil, a core for said coil, non-magnetic spindles carried by the ends of said core, an annunciator-drop pivoted on said spindles, and an armature at each end of said core having a finger for locking the annunciator-drop in its normal position, substantially as set forth.

5. In an annunciator, the combination of a coil, a core for said coil, non-magnetic spindles carried by the ends of said core, an annunciator-drop pivoted on said spindles, an armature at each end of said core having a finger for locking the annunciator-drop in its normal position, and restoring-cams carried by the annunciator-drop for positively restoring the armatures during the resetting operation, substantially as set forth.

This specification signed and witnessed this 14th day of July, 1899:

DAVID ROUSSEAU.

Witnesses:

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