

No. 714,760.

Patented Dec. 2, 1902.

E. G. THOMAS.

ELECTRIC ANNUNCIATOR DROP.

(Application filed Mar. 29, 1900. Renewed June 3, 1902.)

(No Model.)

FIG. 1

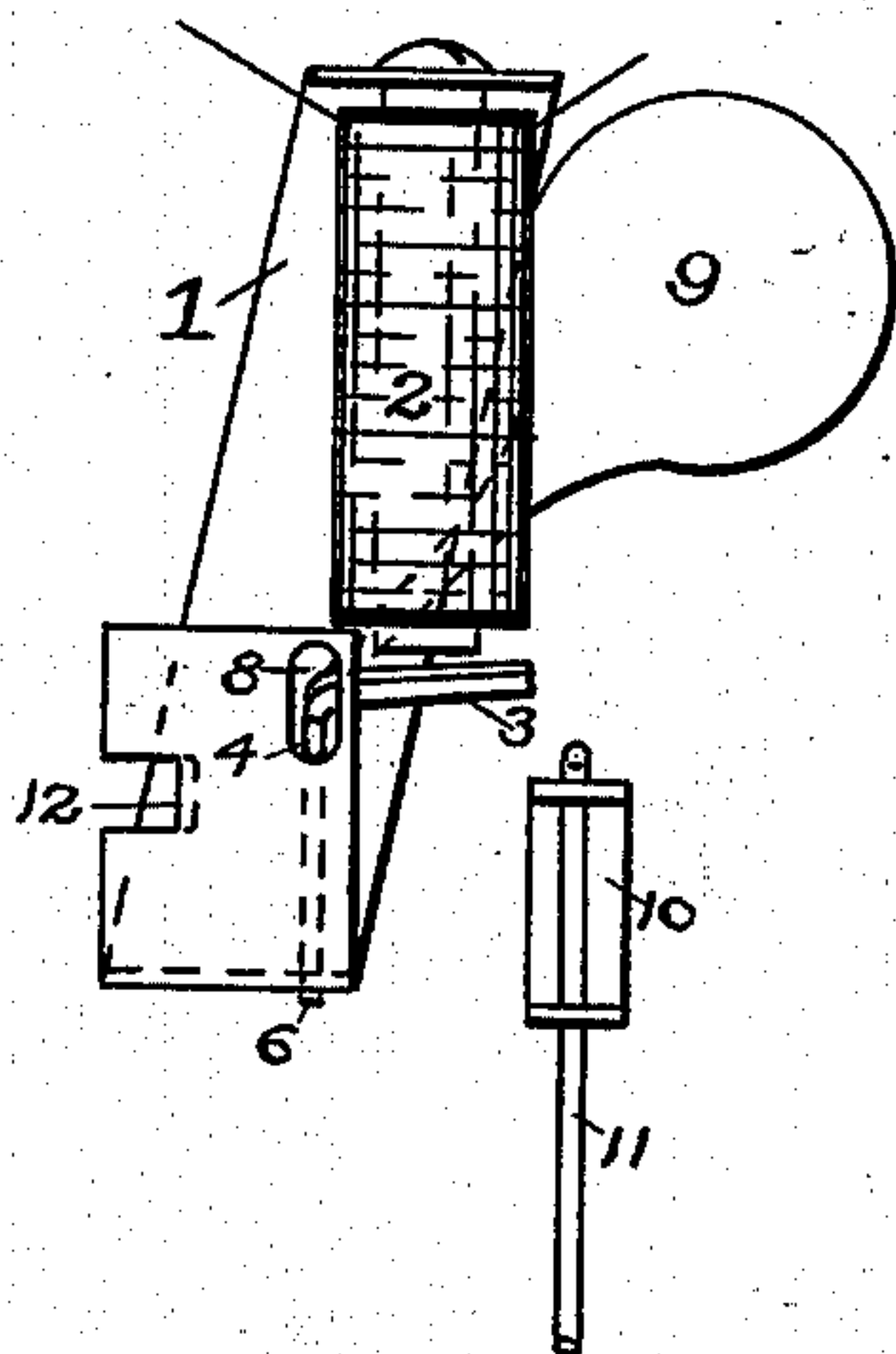


FIG. 2

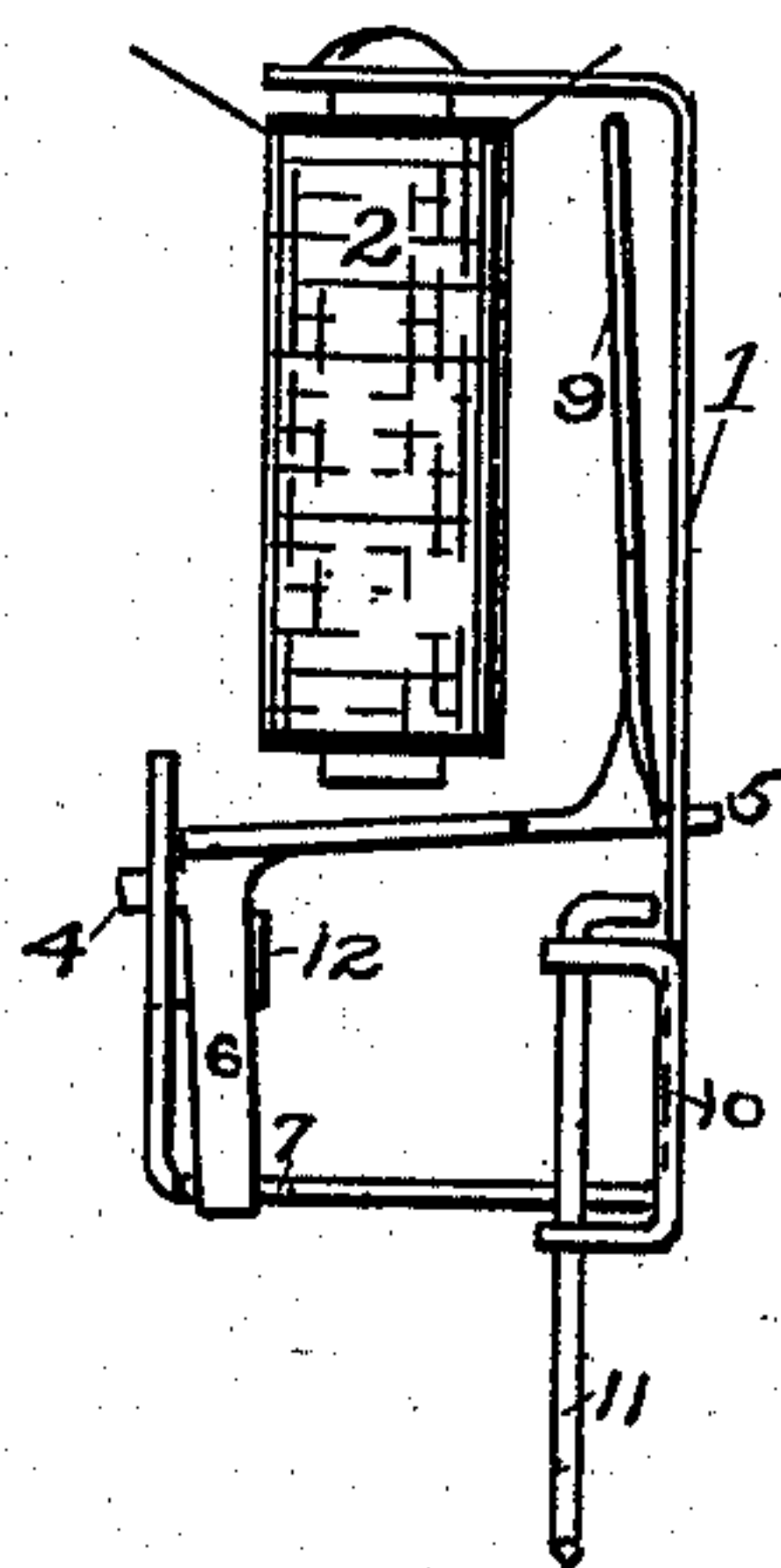


FIG. 3

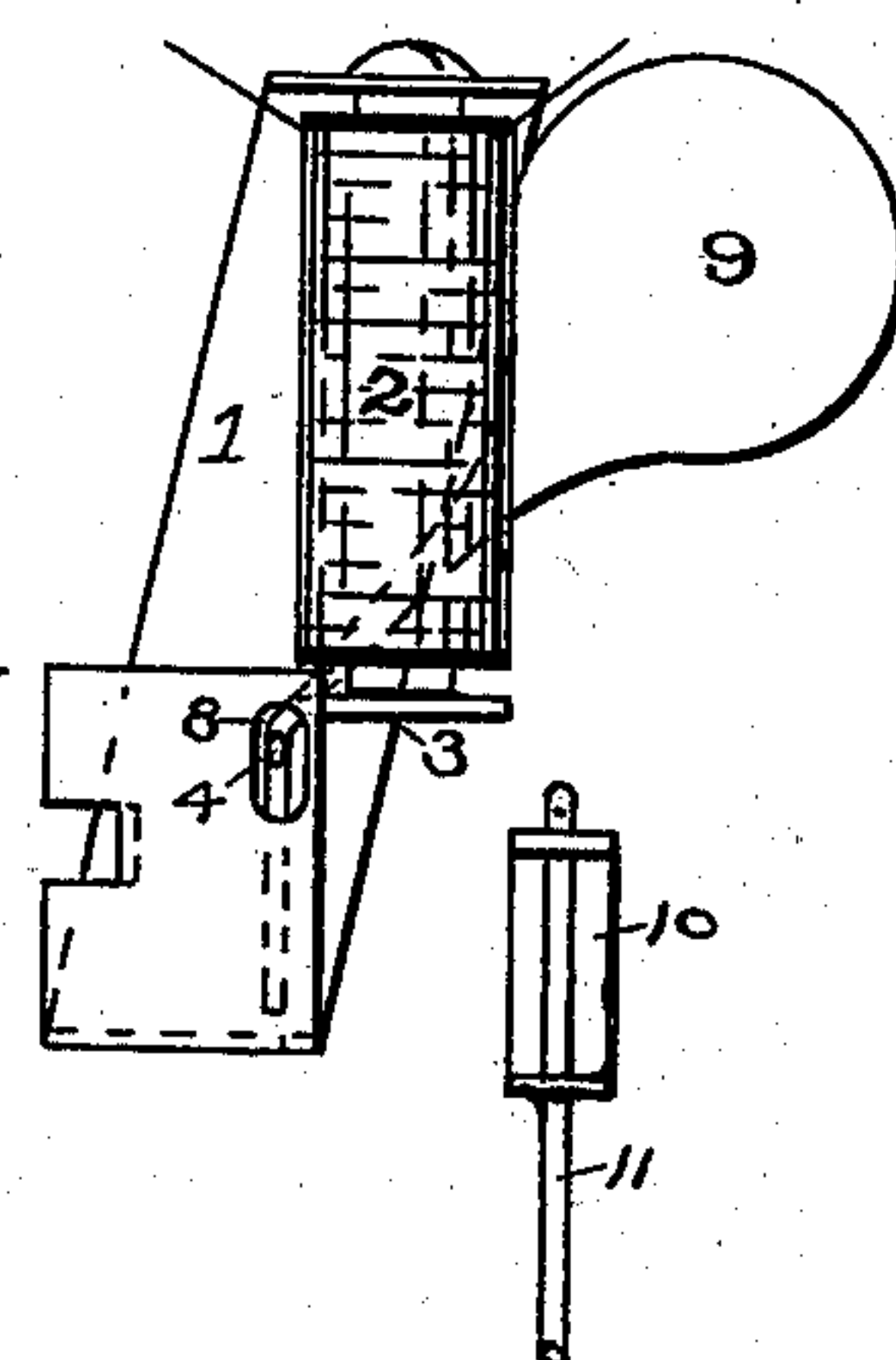
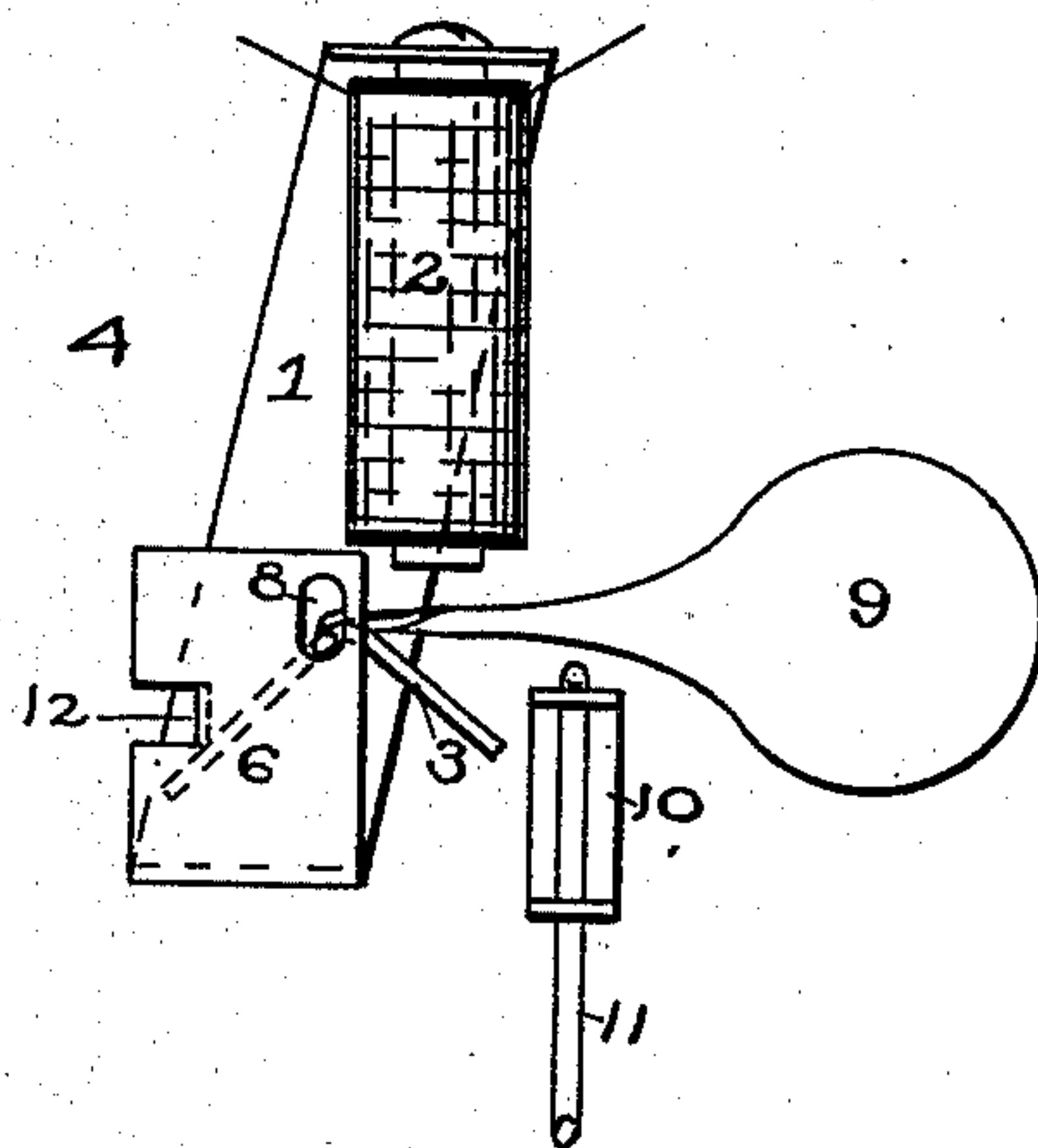


FIG. 4



WITNESSES

Howard C. Forbes
J. E. Robertson

INVENTOR

Edward G. Thomas

UNITED STATES PATENT OFFICE.

EDWARD G. THOMAS, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO ELECTRIC GAS LIGHTING COMPANY, A COR-
PORATION OF MAINE.

ELECTRIC ANNUNCIATOR-DROP.

SPECIFICATION forming part of Letters Patent No. 714,760, dated December 2, 1902.

Application filed March 29, 1900. Renewed June 3, 1902. Serial No. 110,060. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. THOMAS, a citizen of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Electric Annunciator-Drops, of which the following is a specification.

My invention is an electric annunciator-drop for showing a visual signal of the closing of an electric circuit at some remote point and is adapted for all the uses to which such instruments are put—as, for instance, the indication of signals from the rooms in a hotel or house, in connection with fire-alarm systems, or for any other use where it is desirable to indicate the particular circuit of a group of circuits from which the signal comes. It is especially simple in construction and of slight cost.

I will describe the invention in connection with the drawings which accompany and form a part of this specification. These drawings are of conventional form, and the particular form of parts and other details of construction may be modified to any extent necessary for convenience and cheap commercial construction.

Figures 1, 3, and 4 are three front elevations of the device during its operation. Fig. 2 is a side elevation of the device when in the position shown in Fig. 1.

Upon a supporting-frame 1, preferably formed from one piece of metal, as shown in the drawings, is mounted a magnet 2. Beneath the lower end of magnet 2 is pivoted an armature 3 upon pivots 4 and 5. Projecting downward from armature 3 is a catch 6 of such a length that when armature 3 is in its lowest position catch 6 will reach and rest against the lower edge of frame 1. In the drawings a recess 7 has been provided to adjust the position of the armature and catch in which this occurs. The hole in frame 1, through which pivot 5 passes, is of the same diameter as that of the pivot 5 or only so little larger as to allow the pivot to turn freely therein. On the other hand, pivot 4 passes through a hole 8, which is slotted in the direction of a line passing from this pivot to the

lower edge of frame 1 at the point where catch 6 touches it.

Secured to armature 3 is a target 9, serving for the indication of the signal. A setback consisting of a suitable support 10 and a sliding rod 11 is provided to engage the target 9 and raise it, after it has fallen, to the position in readiness for the indication of another signal. A stop 12 upon the frame 1 is provided for limiting the downward motion of the target 9.

The armature 3, pivots 4 and 5, catch 6, and target 9 can preferably be made from a single piece of sheet metal punched in suitable form and bent to the indicated shape; but these parts may of course be made separately and joined together in any convenient manner. In any event they form a single and integral unit, moving together and having no relative motion.

The operation of the device is as follows: The parts in Fig. 1 are shown in the set position of the annunciator in readiness to receive a signal. The circuit of the magnet having been closed presumably at some distant point, magnet 2 will attract armature 3 and lift it into the position shown in Fig. 3, thereby raising catch 6 above the level of the bottom of frame 1. As long as the circuit is closed the magnet will hold the parts in this position; but as soon as the circuit is broken target 9 will fall toward the right to the position shown in Fig. 4, where the catch 6 is resting against the stop 12, so indicating the receipt of a signal on the circuit connected with magnet 2. Now by raising the setback-rod 11 target 9 will be raised, pivoting about pivots 4 and 5 until catch 6 has passed beyond the edge of frame 1. The weight of this side of the armature will then cause pivot 4 to slip to the bottom of the hole 8 and the tip of catch 6 will drop below the bottom of frame 1, and the parts will then be held in the position of Fig. 1 again and can only be released by raising armature 3 by the magnet. In order that catch 6 may not drop back into recess 7 when the magnet-circuit is broken after the parts assume the position shown in Fig. 3, it is advisable to make the angle be-

tween the plane of the armature 3 and that of the catch 6 such that when armature 3 is held by the magnet the tip of catch 6 will be carried slightly to the left of the edge of recess 7, as is shown in Fig. 3. When the armature is released by the breaking of the circuit, the tendency is very strong for the overbalancing-weight of the target 9 to turn the movable part about the pivots before anything else occurs; but even should the armature drop down before target 9 has time to fall catch 6 will not engage the edge of frame 1 and be held in its upper position. The drop itself may be supported in any of the ways in which annunciators are ordinarily constructed. It may be secured to a plate by its back, said plate being painted dark and having an opening, where the target will cover it only in its lowest position, so that if the target is painted white the signal will be given by the indication of a white spot at a particular opening. If an indication by a swinging arrow is preferred, such an arrow may be secured to the end of pivot 5 and by turning from one position to another will indicate the desired signal. Such parts of the construction do not constitute a part of my invention, and are therefore not claimed. The target 9 will preferably be located at the end of the armature away from the catch 6, since in this case magnet 2 will not have to lift the weight of the target 9, but will only have to lift that of the armature 3 and catch 6, so that a much smaller magnet will serve for the work. The setback also should be arranged to work upon the target 9 rather than upon the other end of the armature, since the loosely-pivoted end of the armature will then be free to drop into place as soon as the catch 6 has passed beyond the edge of frame 1 when the drop is being set back into place. It is not necessary that pivot 5 should be closely pivoted, and as much freedom as is found desirable may be left at this point; but I think that the best construction will be obtained by making the hole about the size of the pivot.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an electric annunciator-drop, the combination with a magnet and a support therefor of an armature pivoted to said support below and to one side of said magnet, and tending to fall away therefrom by turning on its pivots, said support being slotted to re-

ceive one of the pivots of the armature, a catch carried by the armature and a stop therefor, said catch being arranged to be withdrawn from its stop by a non-rotational movement of the armature lengthwise of said slot, and an indicating device movable with said armature, substantially as described.

2. In an electric annunciator-drop, the combination with a magnet of a pivoted armature carrying an indicating device, one of the pivots of the armature being vertically movable, a catch carried by the armature, and a stop for said catch adapted normally to hold the armature in proximity to the pole of said magnet, and at an angle with respect to the face of said pole, whereby the attraction of the armature against said pole is caused to give the former a partial rotation sufficient to carry said catch back of said stop, for the purpose set forth.

3. In an electric annunciator-drop, the combination with a magnet and a support of an armature pivoted to said support and carrying a catch and an indicating device, said support being slotted to receive the pivot on that end of the armature at which said catch is located, and a setback arranged to engage said armature at that end which is opposite to said catch, substantially as described.

4. In an electric annunciator-drop, the combination with a magnet and a support of an armature pivoted to said support and carrying at one end a catch and at the other end a target serving also as an operating-weight, said support being slotted to receive the pivot on that end of the armature which is opposite to the target, and a setback arranged to engage and operate said target, substantially as described.

5. In an electric annunciator-drop, the combination of a frame U-shaped at its bottom and supporting a magnet from its top, and an armature pivoted in the sides of the U-shaped bottom of said frame, and provided at one end with a catch adapted normally to engage the bottom of said frame, and at its other end with an operating-weight and an indicating device, the side of the frame next to said catch being slotted to receive one of the pivots of the armature, substantially as described.

EDWARD G. THOMAS.

Witnesses:

W. E. SMITH,

F. E. ROBERTSON.