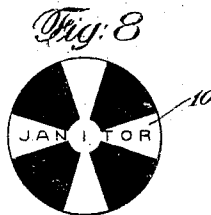
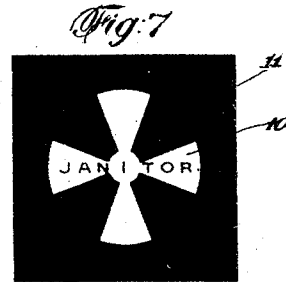
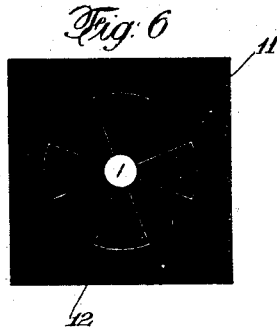
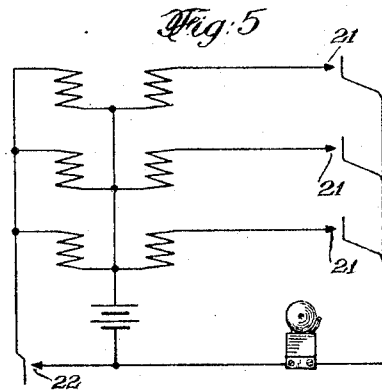
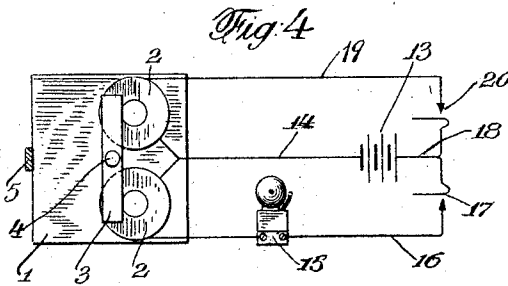
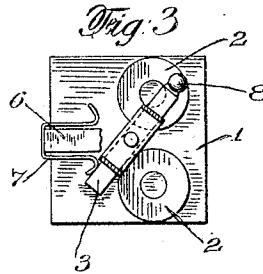
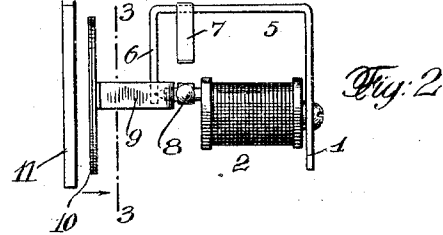
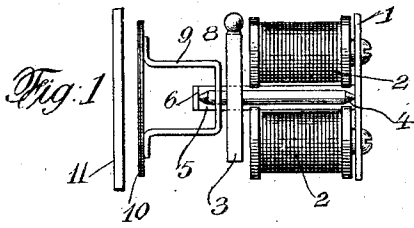


C. AUTH.
ANNUNCIATOR DROP.
APPLICATION FILED JULY 7, 1908.

959,193.

Patented May 24, 1910.



Witnesses:
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M. Meikle.

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UNITED STATES PATENT OFFICE.

CHARLES AUTH, OF NEW YORK, N. Y.

ANNUNCIATOR-DROP.

959,193.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed July 7, 1908. Serial No. 442,396.

To all whom it may concern:

Be it known that I, CHARLES AUTH, of New York, in the county of New York and in the State of New York, have invented a certain new and useful Improvement in Annunciator-Drops, and do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to annunciator drops, and especially to drops used where it is especially desirable to economize space as much as possible, the drop which I have devised being exceedingly small and adapted to be placed in a smaller space than has hitherto been found possible with annunciator drops.

An important feature of the drop which constitutes an embodiment of my invention is the arrangement of the visual indicator thereon on a part movable on a center within the outlines of the sign to be displayed, such as a shape somewhat similar to a Maltese cross. The particular construction illustrated consists, with regard to this particular thereof, in a disk attached to the armature of the annunciator drop, which is designed to rotate upon its own center when the armature is actuated. The said disk carries a design shaped somewhat similar to a Maltese cross, the cross itself being adapted to carry a name or some other significant marks upon a white field, while the background of the cross is black. The disk is located, when installed in the annunciator, in the rear of a plate provided with a slot, shaped similarly to the design on the disk, which is in the nature of a Maltese cross. The effect of this arrangement is that when the drop is actuated to move the name or other distinguishing mark into view, the white field of the Maltese cross on the disk, carrying the name as above described, appears through the slot within the plate located in front of the disk, resulting in shifting the black background of the disk entirely behind the solid portions of the plate intervening between the arms of the slot, shaped like a Maltese cross, therein. When, however, the drop is reset by a proper movement of the armature, the white field with the name thereon is moved entirely out of view, as the arms on the white Maltese cross appearing upon the disk are moved behind the solid portions of the plate intervening between the arms of the slot located within

the plate. At the same time, this movement results in moving the black background of the disk in juxtaposition with the openings of the slot, shaped like a Maltese cross, within the plate located in front of the disk. In this position, therefore, inasmuch as the plate located in front of the disk is blackened, the entire plate, including the slot located in front of the disk, will appear black with the exception of a small circular center of the disk which is located opposite to the central portion of the slot in the plate, shaped like a Maltese cross.

In the accompanying drawings, Figure 1 is a side elevation of the drop; Fig. 2 is a plan view of the same; Fig. 3 is a vertical section thereof taken on the line 3—3 of Fig. 2; Fig. 4 is a diagrammatic representation of an electrical circuit equipped with the said drop; Fig. 5 is a diagrammatic representation of a circuit equipped with a plurality of the drops; Fig. 6 is a representation of the appearance of the annunciator when the signal therein has been actuated; Fig. 7 is a similar view of the annunciator with the visual signal in sight; and Fig. 8 is a representation of the disk carried by the drop.

In the drawings 1 is a base plate for the drop, upon which are located two solenoids 2. A soft iron armature 3 is located upon a pivot pin 4 which is positioned slightly to one side of a plane passing through the cores of the two solenoids. The pivot pin 4 is supported at one end by means of the base plate 1, and at the other end by means of an arm 5, which extends upwardly from the base plate 1, and is bent parallel therewith at its upper end to form an offset 6. The arm 5 is provided at its upper end opposite the armature 3 with two stop arms 7, the purpose of which is to limit the movement of the armature 3. Upon the upper end of the armature 3 a suitable weight 8, such as a drop of solder, is situated, so as to cause the armature to be overweighted when moved either to the right or the left of its middle position. Immediately above the armature 3, the pivot pin 4 carries a yoke 9, which supports upon its arms an indicator or target in the shape of a disk 10. The latter carries a white design, shaped like a Maltese cross, upon which is situated a name or some other distinguishing mark. It will be obvious that such name or other

distinguishing mark might be located on any one or more of the arms of the Maltese cross.

Between the arms of the Maltese cross, the disk contains a black background. In the annunciator a black plate 11 is situated in front of the disk 10, having a slot or opening 12, shaped like a Maltese cross, and having the same shape and proportions as the white Maltese cross located upon the disk 10.

In the wiring of the device, one terminal of a battery 13 is attached by means of a wire 14 to the two solenoids 2. From the lower one of the solenoids 2 a wire leads to a bell 15 for the purpose of making an audible signal at the same time that the visual signal, located upon the white Maltese cross, situated upon the disk, is brought into view. From this point this branch of the wire leads, by means of a wire 16, to a circuit closer of any desired character 17, whence the current leads, by means of a wire 18, back to the other terminal of the battery 13. The upper solenoid 2 is connected through a wire 19 to a circuit closer 20 of any desired character, similar to the circuit closer 17 already described, and finally to the wire 18, which leads to the other terminal of the battery 13.

In Fig. 5 I have shown a system equipped with a plurality of annunciator drops such as that already described. In this arrangement the parts are located in the circuit in exactly the same manner as has already been described with regard to the location of the single drop, except that while I provide one circuit closer 21 for each of the drops, I only provide one circuit closer 22 to reset all of the drops simultaneously.

In the operation of the device, the annunciator in its non-signaling position will of course appear, as shown in Fig. 6, with all the arms of the slot or opening 12 in the plate 11, showing the black background of the disk 10. In this position of the disk the armature 3 will have been moved into the position shown in Fig. 3, that is to say, by the closing of the circuit including the upper solenoid 2, which comprises the wires 14, 19, the circuit closer 20, the wire 18 and the battery 13. When, however, it is desired to actuate the signal so as to attract the attention of the proper person, the circuit including the lower solenoid, which comprises the wire 14, the bell 15, the wire 16, the circuit closer 17, the wire 18 and the battery 13 is closed by means of the circuit closer 17, so as to cause the lower solenoid to attract the lower arm of the armature and move the same to the right. The armature will then, of course, be maintained in this new position into which it has been moved, because of the presence of the weight 8 which overbalances the same. The white

field carrying the appropriate name or other mark, which it is desired to disclose when the signal is operated, is now brought into view, as shown in Fig. 7. At the same time the bell 15, which is included within this circuit, is, of course, also operated to attract the attention of the proper person to the annunciator. When the attention of the proper person has been attracted in this manner and the call answered, the circuit closer 20, including the upper solenoid, or the circuit closer 22, in case there is a plurality of such solenoids, is closed so as to reset the armature and move it into the position shown in Fig. 3, thus removing the white field of the disk from view and disclosing only the black background, as shown in Fig. 6.

It will be observed that because of the proportions and shape of the Maltese cross, of which I make use, that in either position of the armature and its attached disk, the similarly shaped opening in the plate in front of the disk will disclose only in the one case the white field of the Maltese cross upon the disk, the black background being entirely removed from view, and in the other case, when the disk is moved to the other position, only the black background of the disk, with the exception of the white spot located in the middle of the Maltese cross, the white spot thus serving to indicate the exact position of the signaling device without at the same time showing that the signal has been actuated. It will also be seen, because of the very few parts of the device which I have above described, and their very small size and simplicity, that a drop of this character takes up an exceedingly small space, in fact, practically no larger than the portion of the annunciator casing which is required to make a visual signal of the proper size, the mechanism being situated entirely in the rear of the portion of the annunciator front, which is set aside for the visual signal of the particular drop. I find with a construction of this character, that, because of its compactness, I can locate four such drops within the space which has hitherto been sufficient for only one drop of the ordinary character. This, of course, results in a very valuable saving of space and inconvenience of arrangement in a case, where, as frequently happens, a very large number of drops are necessary for any one annunciator.

While I have described my invention above in detail, I do not wish it to be understood that I am necessarily limited to the details therein described, but consider that my invention is a broad one and capable of many different embodiments and applications to different structures without departing from the spirit thereof; for instance, the word to which attention is to be called may be placed at some other point upon the ap-

paratus and attention be called to the word by displaying the white Maltese cross, as in Fig. 7, without lettering thereon. Obviously, in case of such location of the word, the form of the white figure upon the movable plate and a corresponding opening in the front stationary plate may be of any shape, so long as the movable plate when rotated upon its center within the boundaries of such figure shall carry white portions thereof behind black portions of the stationary front plate.

I claim:

1. In a device of the character described, the combination of an electro-magnet, a supporting frame therefor, a shaft, bearings for said shaft in said frame, and a target carried by said shaft beyond the adjacent bearing.

2. In a device of the character described, the combination of a shaft having pointed ends, bearings adapted to receive said points, means for rotating said shaft, a target, and means for supporting said target from said shaft outside the adjacent bearing.

3. In a device of the character described, the combination with the front plate of an annunciator, a target adapted to move parallel to said plate, a shaft having pointed ends, bearings for said ends of said shaft, one of said bearings being situated between said target and said shaft, and a member adapted to support said target from said shaft.

4. In a device of the character described, the combination of a signaling means, an overbalanced pivoted armature for operat-

ing the same having its center of gravity above the pivot and a pair of electromagnets located one above the other for operating the armature.

5. In a device of the character described, the combination of a signaling means, an overbalanced pivoted armature for operating the same having its center of gravity above the pivot, and a pair of electro-magnets located one above the other at one side of the pivoted armature for operating the armature.

6. In a device of the character described, the combination of an annunciator plate having an aperture therein, a movable disk located at the rear thereof, an overbalanced pivoted armature attached to said disk having its center of gravity above the pivot, the pivot of the armature being located at the rear of the aperture, and electrical means for operating the armature.

7. In a device of the character described, the combination of an annunciator plate having an aperture therein, a movable disk located at the rear thereof, an overbalanced pivoted armature attached to said disk having its center of gravity above the pivot, the pivot of the armature being located at the rear of the aperture, and a pair of electromagnets for operating the armature.

In testimony that I claim the foregoing I have hereunto set my hand.

CHARLES AUTH.

Witnesses:

EDWIN J. PRINDLE,
M. MEIKLE.