

No. 864,576.

PATENTED AUG. 27, 1907.

T. H. TROLAND.
ALARM.

APPLICATION FILED MAR. 8, 1905.

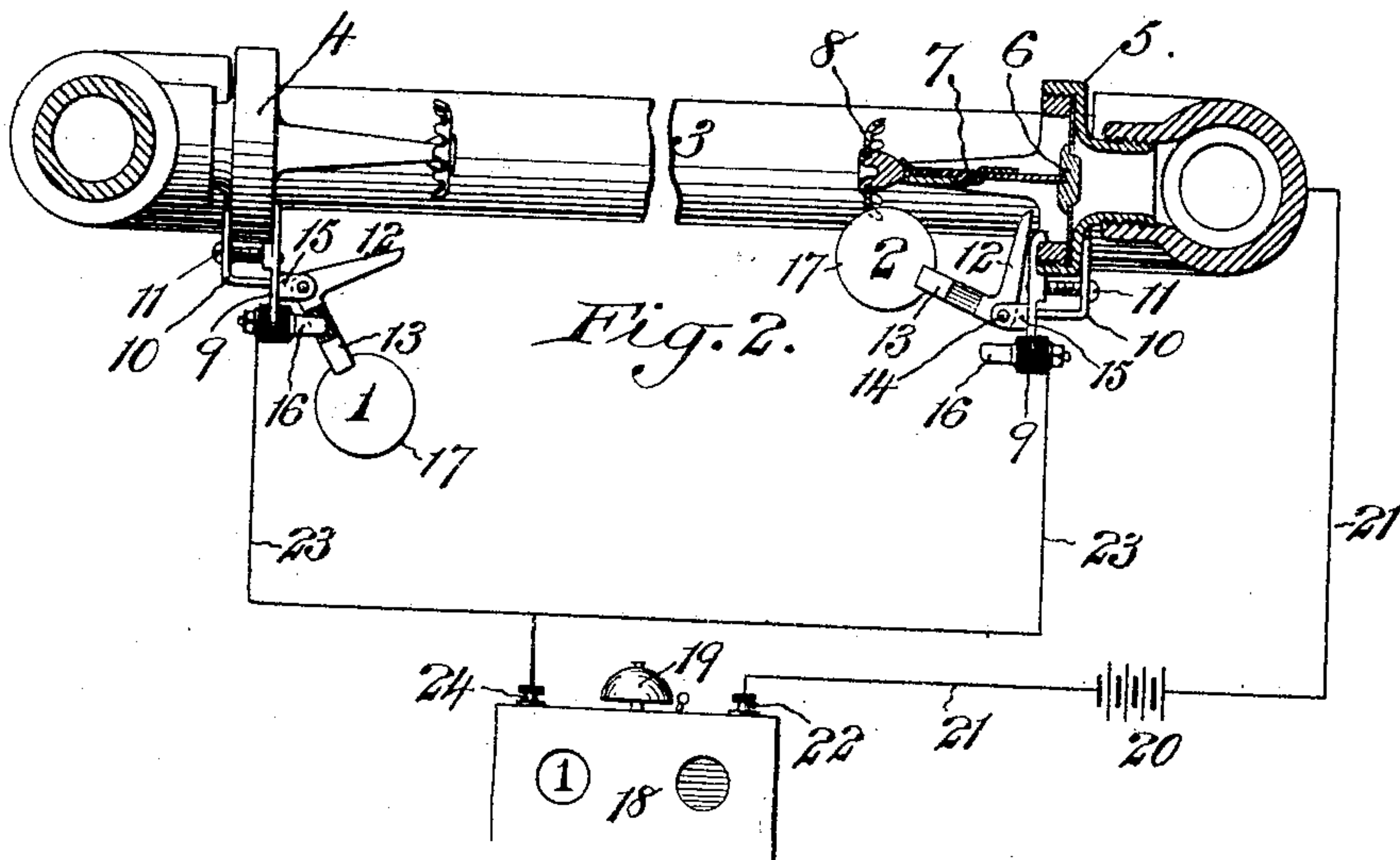
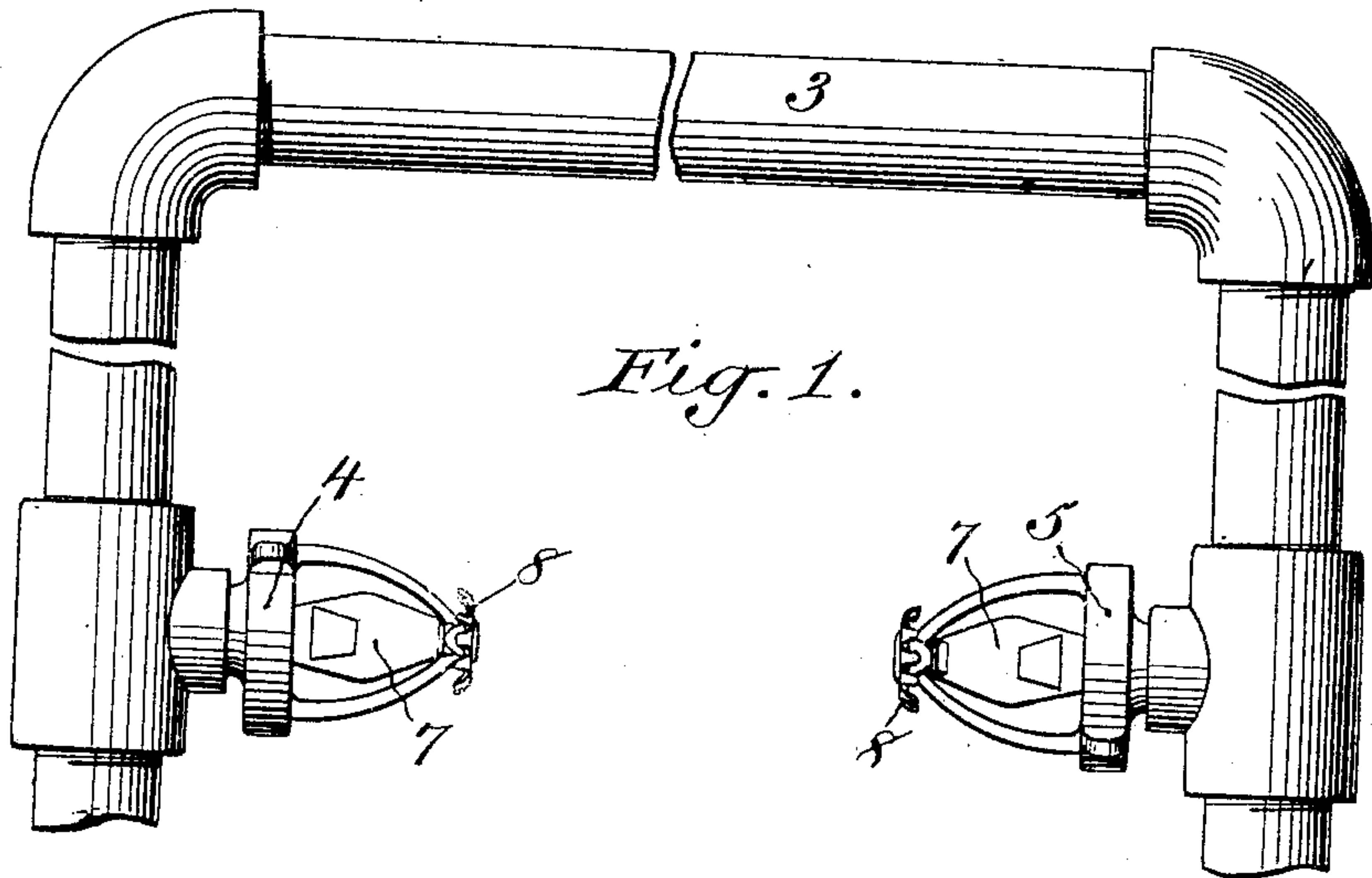
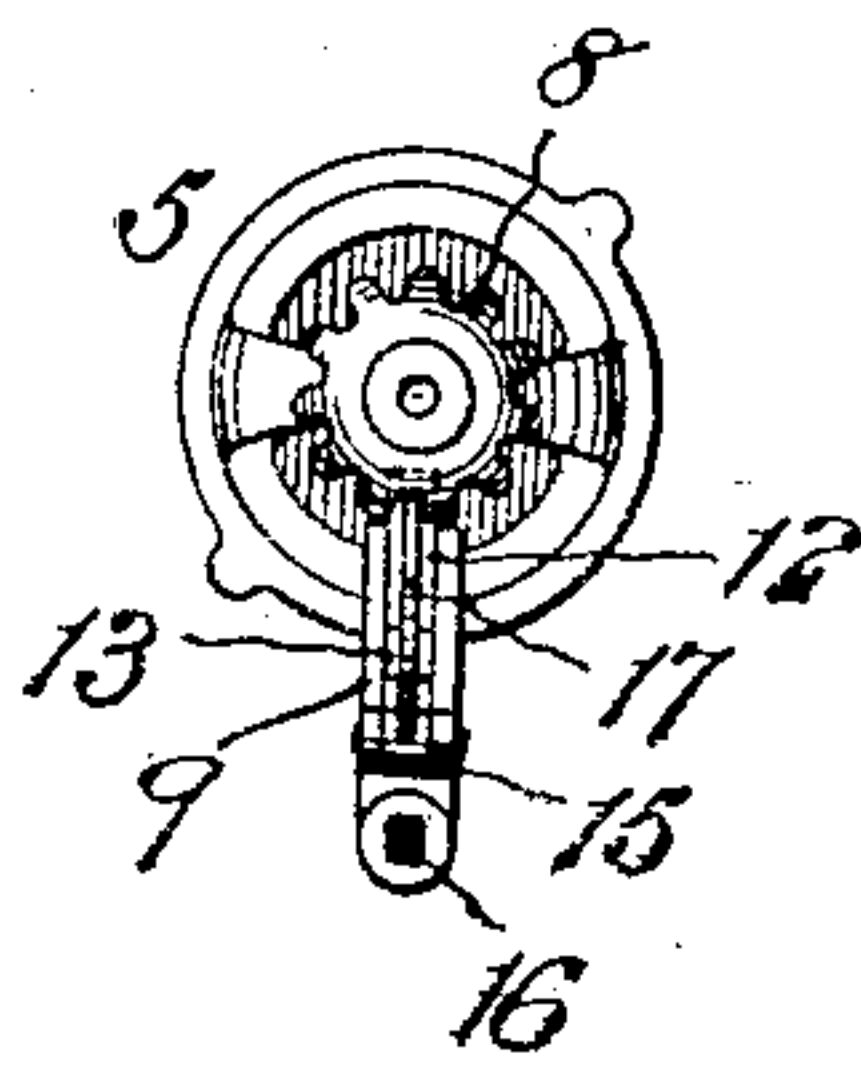


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS H. TROLAND, OF NEW LONDON, CONNECTICUT.

ALARM.

No. 864,576.

Specification of Letters Patent.

Patented Aug. 27, 1907.

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To all whom it may concern:

Be it known that I, THOMAS H. TROLAND, a citizen of the United States, and a resident of New London, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Alarms, of which the following is a specification.

The object of this present invention is, to provide mechanism which will give notice at a predetermined point or points of the escape of water through any one of a plurality of nozzles or any one series of a plurality of series of nozzles attached to an automatic sprinkler system.

A further object is to provide mechanism of this character in which any one of the nozzle attachments can be manually tested at any time without disarranging any part of the automatic sprinkler system, such testing being accomplished by swinging the nozzle attachment down into position to complete the electrical circuit.

In the accompanying drawings, Figure 1 represents a portion of an automatic sprinkler system with two of the nozzles shown in connection therewith in top plan, Fig. 2 is a transverse section through the same with my improved alarm system applied thereto, one of the nozzles being shown in section and the other in side elevation, and one of the nozzle attachments being shown in its released position for completing a circuit to sound an alarm at a predetermined point and to indicate which particular attachment is released, and Fig. 3 is an end view of one of the nozzles with my alarm attachment in its locked position thereon.

The piping of the automatic sprinkler system in connection with which I have illustrated my invention, is denoted by 3. In the piping 3 I have shown two automatic sprinkler nozzles 4, 5, which may be of any well known or approved form such, for instance, as a sprinkler, in which a valve 6 is held closed by a fusible locking piece 7. This particular type of nozzle is also provided with a deflector 8 having a corrugated periphery for spraying the stream of water as it leaves the nozzles when the valve 6 is released.

The mechanism which I have illustrated for sounding an alarm at a predetermined point when any one or more of the nozzles should be deranged, so as to permit the water to escape therefrom and to indicate the particular nozzle or nozzles so deranged, is constructed, arranged and operated as follows:—A clamp comprising a base plate 9, a movable jaw 10 and a clamping screw 11 is arranged to be rigidly attached to the spray nozzle. A two-armed rocking lever 12, 13, is pivoted at 14 in a lug 15 projecting from the face of the base plate 9 of the clamp. A terminal 16 is carried by the clamp but is electrically insulated therefrom. When the lever 12, 13, is in its operative position, the arm 12 projects up into position to be engaged by the water as it issues through the nozzle when the plug 6 is released.

This arm 12 is sufficiently weighted so that when swung past center it will normally hold the arm 13 raised out of engagement with the terminal 16. When the arm 12 is engaged by escaping water, it will be swung into position to permit the arm 13 to drop by gravity down into engagement with the terminal 16. The arm 13 may be provided with an indicator disk 17 which is so arranged that the position of the same indicates whether the circuit is open or closed.

It is desirable that each one of the sprinkler nozzle attachments or each series of a plurality of series should be numbered. In the present instance I have numbered one of the attachments 1 and the other of the attachments 2.

A portion of an annunciator is denoted by 18 and it is provided with a bell alarm 19. It is also provided with openings through which numbers may be displayed. This annunciator may be of any well known or approved construction. A source of electrical energy such, for instance, as a battery 20, is provided in the wire 21 which leads from one of the binding posts 22 of the battery to ground, as, for instance, to the piping 3. The terminals 16 of the several nozzle attachments are connected through wires 23 to the binding posts 24 of the annunciator 18. The electric circuit is so arranged that when any one of or series of these nozzle attachments becomes released, the bell alarm will ring, and the number corresponding to the attachment or the series of which it is a part, will be displayed in the annunciator. This will permit a person to go directly to the particular nozzle attachment or series of nozzle attachments which may be released.

In automatic sprinkler systems it frequently happens that the plug locking pieces in one or more of the nozzles becomes broken and permits the water to escape therethrough when there is no fire thus causing a great deal of unnecessary damage from water. By the use of the attachments herein described such unnecessary damage is obviated as the person can immediately go to any nozzle and stop the flow of water therethrough if it be desirable to do so.

It is evident that various changes might be made in the construction, form and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the structure herein set forth, but

What I claim is:—

1. In an automatic sprinkler system, a sprinkler nozzle, an alarm included in an electric circuit, a gravity controlled device arranged to be swung past center in one direction for retaining the device in position to break the electric circuit and to be swung past center in the opposite direction by escaping water to close the circuit, and an indicator disk carried by the said gravity controlled device arranged to indicate whether the circuit is open or closed.

2. In an automatic sprinkler system, a plurality of

sprinkler nozzles, an alarm included in an electric circuit, gravity controlled devices for the several nozzles arranged to be swung past center in one direction for retaining the devices in position to break the electric circuit and to be swung past center in the opposite direction by escaping water to close the circuit.

3. In an automatic sprinkler system, a plurality of sprinkler nozzles, an alarm comprising an annunciator included in an electric circuit, gravity controlled devices arranged to be swung past center in one direction for retaining the devices in position to break the circuit and

arranged to be swung past center in one direction for releasing water to close the circuit and an indicator disk carried by each gravity controlled device corresponding with a number on the annunciator.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this third day of March 1905.

THOMAS H. TROLAND.

Witnesses:

CHARLES WAGECK,
WILLIAM B. DIBBLE.