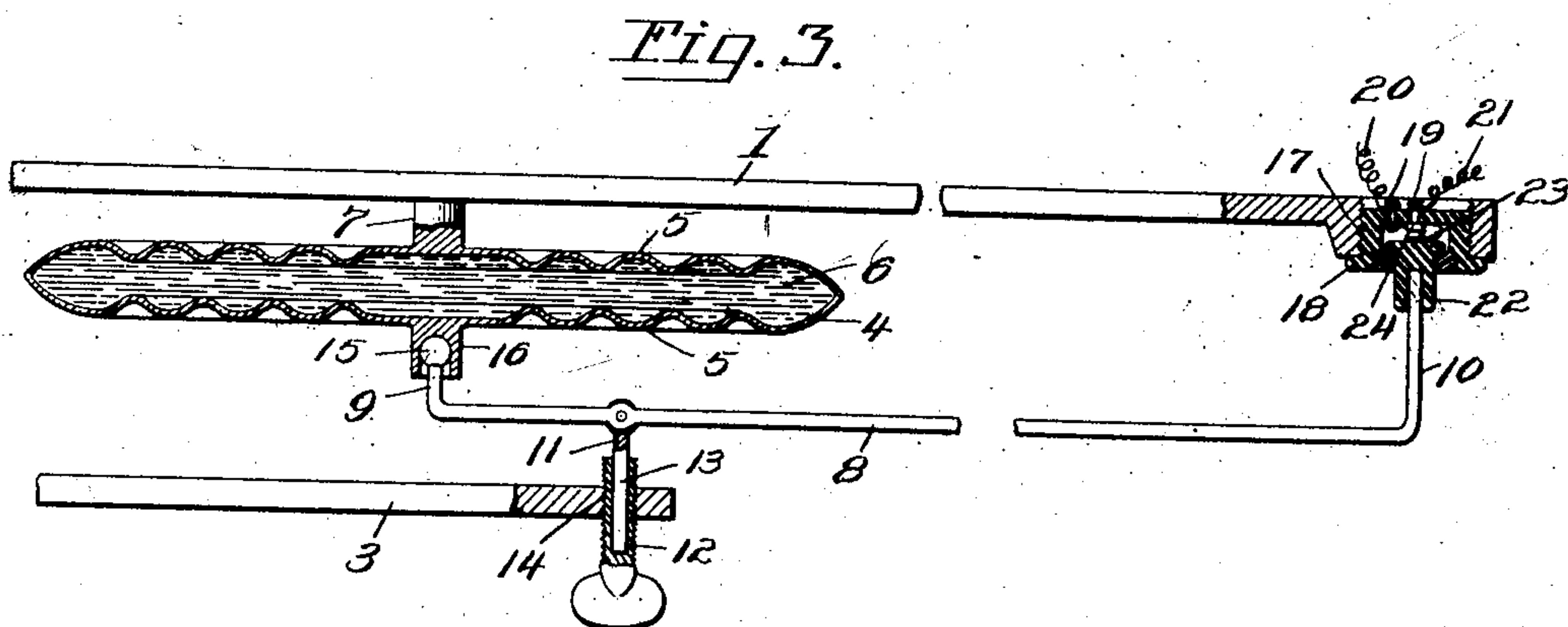
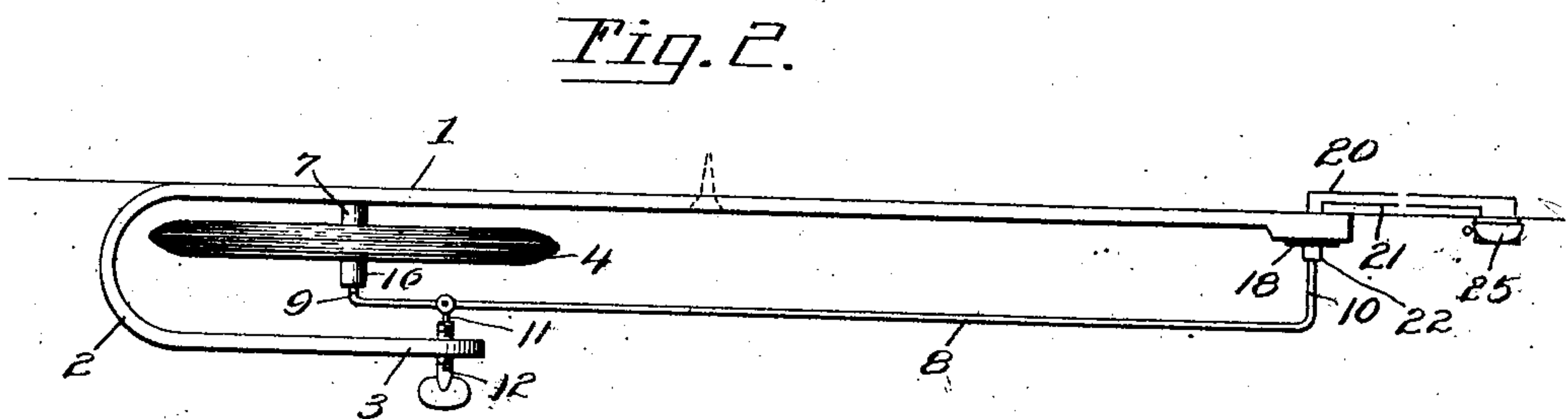
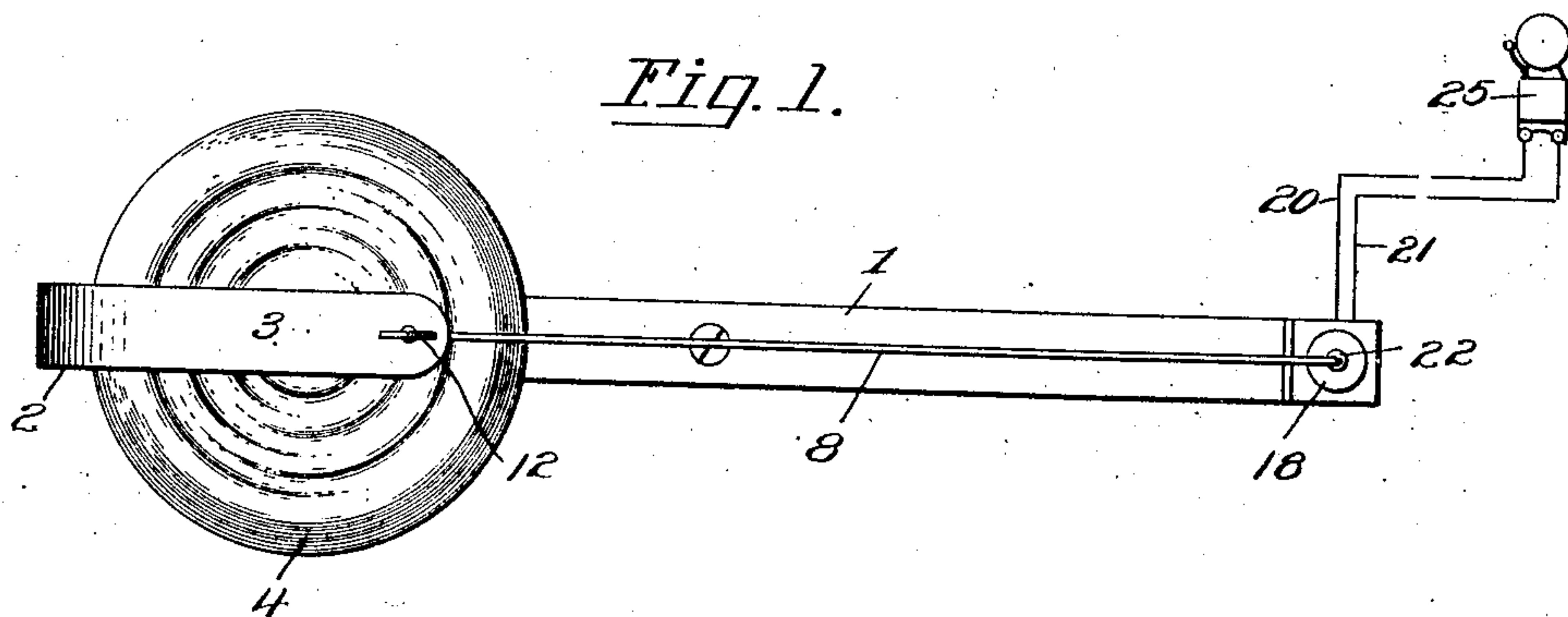


No. 889,765.

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L. CURRIER.
THERMAL ELECTRIC ALARM.
APPLICATION FILED MAY 11, 1907.



Inventor
Lloyd Currier.

Witnesses
F. L. Gibson.
C. Bradway.

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

LLOYD CURRIER, OF UNDERWOOD, NORTH DAKOTA.

THERMAL ELECTRIC ALARM.

No. 889,765.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed May 11, 1907. Serial No. 373,108.

To all whom it may concern:

Be it known that I, LLOYD CURRIER, a citizen of the United States, residing at Underwood, in the county of McLean and State of North Dakota, have invented new and useful Improvements in Thermal Electric Alarms, of which the following is a specification.

This invention relates to an alarm or signaling device of that type in which an electric circuit is closed through the operation of a heat responsive device, whereby an alarm can be given in case of a conflagration.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be comparatively easy and inexpensive to manufacture, readily installed, and thoroughly reliable and efficient in use.

A further object of the invention is the provision of an apparatus comprising in a unitary structure, a supporting frame on which the heat responsive device and circuit-closer are mounted, together with a connection between the said device and closer for completing the circuit through the latter.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a front view of the device. Fig. 2 is a plan view. Fig. 3 is an enlarged view with portions broken away and in section.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, 1 designates the frame of the device, which is preferably a strip of metal having one end bent forwardly and back on itself to form a U-shaped extremity 2. Disposed between the front arm 3 and body portion or back of the frame 1 is a heat responsive element 4 in the form of a hollow disk having flexible walls 5 that move away from each other as the medium, such as water 6, between them expands under an increasing heat. One wall of the element 4 is rigidly secured by a connecting post 7, secured to the body portion of the member 1. The other wall or head is free to move back and forth with the expansion and contrac-

tion of the water and is adapted to close the circuit of the signal system through a lever 8. This lever is disposed parallel with the body portion of the member 1 and has its ends bent rearwardly into arms 9 and 10. The lever is fulcrumed comparatively near the arm 9 on a pin or support 11, the latter extending into an adjusting screw 12 that has its shank formed with a longitudinal bore 13 receiving the pin 11. The screw 12 engages in a threaded opening 14 in the extremity of the arm 3 and is adapted to change the fulcrum point of the lever. The arm 9 of the lever is formed into a spherical enlargement 15 that extends into a socket 16 on the front head or wall of the heat responsive element 4.

The switch or circuit closer of the device is mounted on the end of the member 1 opposite from the U-shaped extremity, which end is provided with a threaded opening 17 for receiving a bushing 18 of insulating fiber or the like. This bushing supports binding posts 19 to which the two sides or conductors 20 and 21 on the signal circuit are connected. Movable back and forth in the bushing is a follower 22 that bears on a contact spring 23 and presses the spring into engagement with the stationary contact 24 when the heat acting on the element 4 becomes excessive, thereby closing the signal circuit. In the present instance, an ordinary electric bell 25 is shown as the alarm, but any other suitable device may be employed and any desired number, so that an alarm will be given at a plurality of points at the same time. The circuit closer, which is of the push button type, has its follower or button 22 socketed to receive the extremity of the arm 10 so as to maintain the lever in permanent engagement with the switch.

In practice, the frame or support 1 is attached to a wall or other structure, as by means of screws and the circuit closer is connected with an electric circuit in which the signaling devices are included. The adjusting screw 12 can be actuated to set the parts for responding at any desired temperature. As the screw 12 is turned, the lever 8 is adjusted back or forth and the pin 11 permits of a swivel movement and the device can be set with great precision.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which

the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired, as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. The combination of a supporting member having one end bent back upon itself, a heat responsive element secured to the supporting member and provided with a socket, a lever having a ball at one end engaging in the socket, means for adjustably mounting the lever on the bent-back portion of the said supporting member, and a circuit-closing device controlled by the lever.

2. In a device of the class described, the combination of a supporting structure, a heat responsive element mounted thereon, a circuit closer mounted on the structure, a lever connected with the closer and heat responsive device, a member on which the lever is fulcrumed, means for adjustably mounting the member on the supporting structure, and a ball and socket connection between the lever and heat responsive device.

3. In a device of the class described, the combination of a supporting member, a heat responsive device fixed thereon, a circuit closer on the member, a lever arranged to transmit motion from the device to the closer, a screw having a bore and engaging in a threaded opening in the member, a pin disposed in the bore of the screw to permit the

lever to turn independently, and a pivot on the pin to form the fulcrum for the lever.

4. In a device of the class described, the combination of a strip of metal bent back on itself and having threaded apertures at its ends, a heat responsive device, a circuit closer mounted in one of the said apertures, a lever extending from the circuit closer to the heat responsive device, means for insulating one end of the lever from the circuit closer, a ball and socket connection between the other end of the lever and heat responsive device, and means in the other threaded opening for adjustably mounting the lever.

5. In a device of the class described, the combination of a supporting member having a threaded opening at one end and the opposite end bent downwardly, a heat responsive device supported on the member and disposed between the body portion of the latter and the backwardly-bent extremity, a hollow screw on the said extremity, a pin mounted in the hollow of the screw for permitting the latter to rotate independently of the pin, a lever hingedly connected with the pin to be adjusted by the screw and having one end bearing against the heat-responsive device and the opposite end disposed adjacent the opening of the member, and a circuit closer removably supported in the opening and actuated by the said lever.

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

LLOYD CURRIER.

Witnesses:

F. E. FUNK,
WALFRED ANDERSON.