

No Model.)

C. H. SHAFFER.

FIRE ALARM.

No. 390,192.

Patented Sept. 25, 1888.

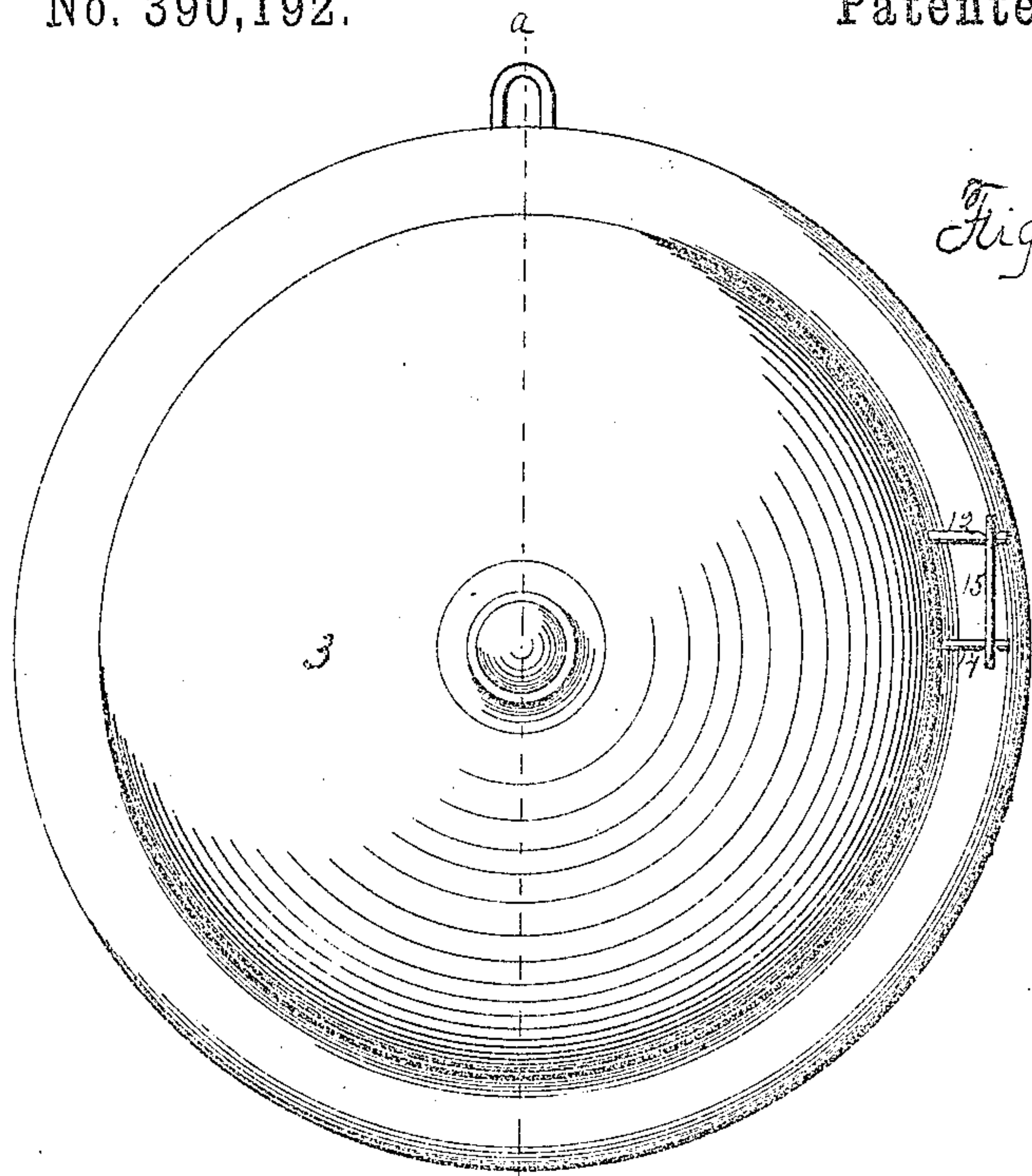


Fig.

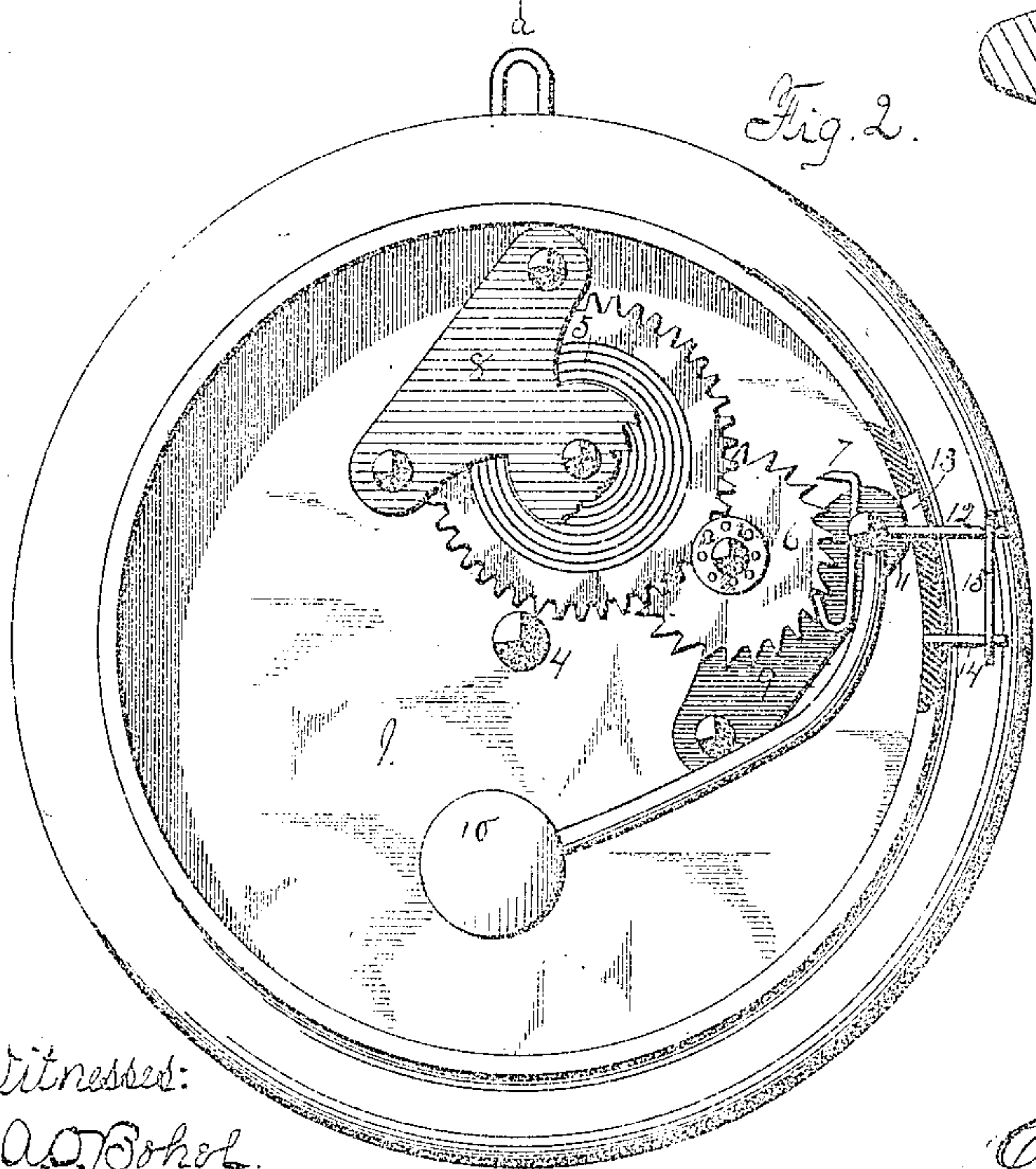


Fig. 2.

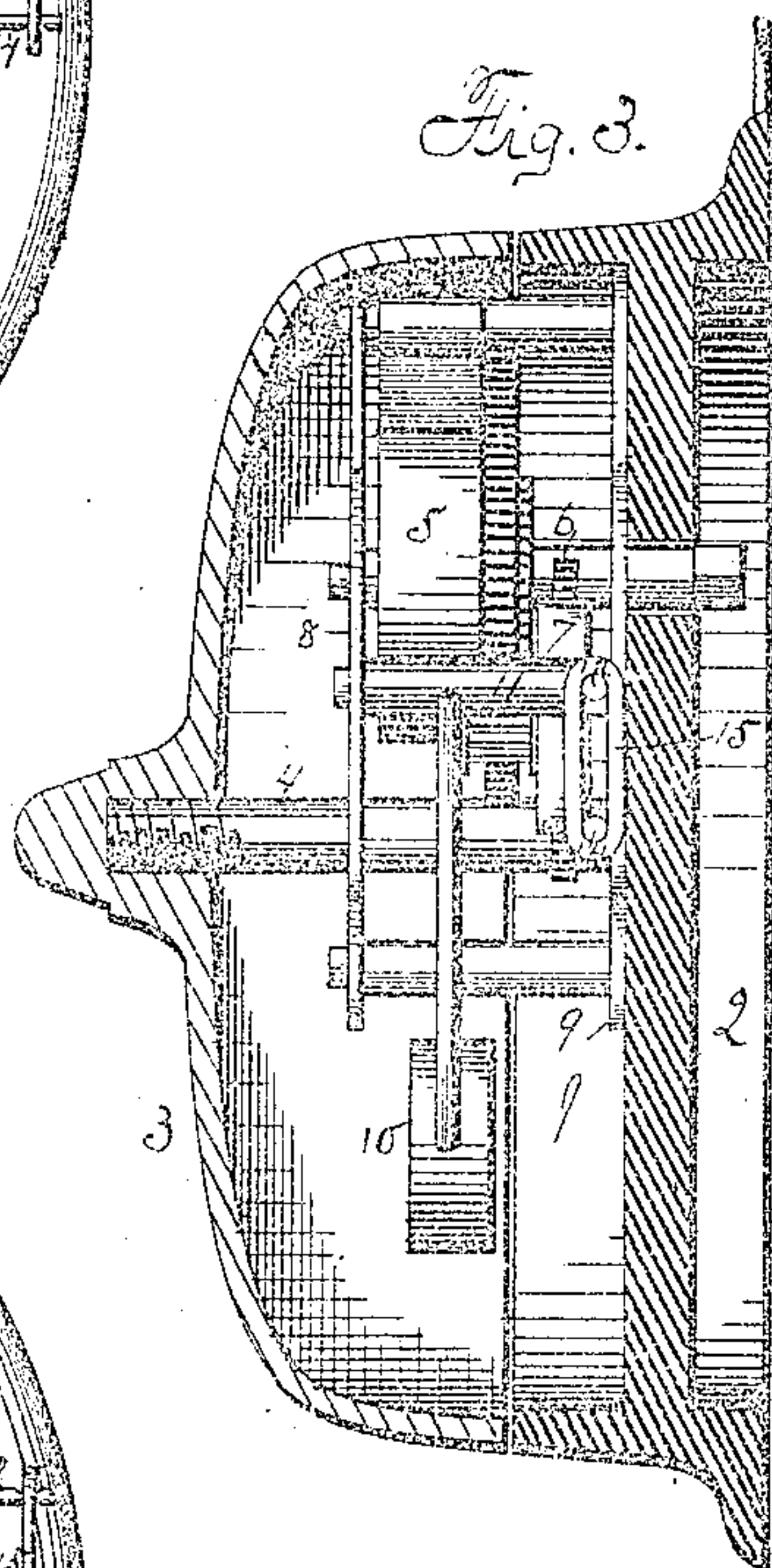


Fig. 3.

Witnessed:

A. O. Bohol.  
E. Behel.

Inventor:

Charles H. Shaffer.  
Per J. A. C. Bohol.  
Atty.



# UNITED STATES PATENT OFFICE.

CHARLES H. SHAFFER, OF ROCKFORD, ILLINOIS, ASSIGNOR OF ONE-HALF  
TO JONES, WOODRUFF & CO., OF SAME PLACE.

## FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 390,192, dated September 25, 1888.

Application filed June 4, 1888. Serial No. 275,968. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. SHAFFER, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Fire-Alarms, of which the following is a specification.

The object of this invention is to construct an alarm for fire purposes, consisting of a gong, a train of gearing carrying a hammer, and a fusible alloy holding the gearing in check until released by heat, when the alarm will sound, giving notice of the rise in the temperature.

In the accompanying drawings, Figure 1 is a plan view of an alarm embodying my invention. Fig. 2 is a plan view of the alarm with the gong removed. Fig. 3 is a vertical section through the gong and base-plate on dotted line *a*, Fig. 1.

The base-plate of my improved fire-alarm is of circular form, having its front face, 1, recessed to contain the train of gearing for actuating the bell-hammer. The back face, 2, is also recessed to permit of the attachment of the winding-key. A gong, 3, of suitable size, is supported over the front recess of the base-plate by a center stud-shaft, 4, secured to the base-plate and having a screw-thread connection with the gong.

The train of gearing employed in the construction of the alarm may be of any of the known varieties adapted for the purpose. In this instance it consists in a mainspring, 5, having a gear-connection with the escape-wheel 6, and a pallet, 7, supported in a suitable frame composed of upper plate, 8, and lower plate, 9. A hammer, 10, is connected to the shaft 11, carrying the pallet, and moves therewith. A lever-arm, 12, projects from the shaft 11, and extends through an elongated opening, 13, in the side wall of the base-plate. A stud, 14, projects from the base-plate, and a link, 15, of fusible alloy, connects the stud 14 with the projecting end of the lever-arm 12 in the manner shown. By this construction of a fire-

alarm the winding of the spring is effected by a key applied to the shaft 16, projecting into the bottom recess of the base-plate. Before the winding is commenced the fusible link 15 is placed in position on the arms 12 and 14, when the winding may be completed. The alarm is then placed in position at a point where fire is most liable to occur, and when the temperature rises to the melting-point of the alloy the arm 12 of the gear-train will be released, and the action of the spring will cause the bell-hammer to vibrate and strike the gong, thereby giving notice of the rise in temperature. It is obvious that there are various other methods of releasing the gear-train than by a link of fusible alloy, and therefore I do not wish to limit myself to the devices herein shown and described so long as the alarm is released by the action of heat in a manner substantially as herein shown and described.

I claim as my invention—

1. A fire-alarm consisting of a base, a gear-train supported thereon, an arm connected with the gear-train and projecting through the base, and a fusible alloy in direct contact with said arm for retaining it in its normal position, whereby upon the melting of said alloy when exposed to heat the arm is released, which thereby sets the gear in motion to sound the alarm, substantially as set forth.

2. A fire-alarm consisting of a base, a gear-train supported thereon, an arm fixed to and projecting from said base, an arm connected with the gear-train, and a fusible alloy connecting and in direct contact with said arms, substantially as set forth.

3. A fire-alarm consisting of a base, a gear-train supported thereon, an arm fixed to and projecting from said base, an arm connected with the gear-train, and a fusible link connecting said arms, substantially as set forth.

CHARLES H. SHAFFER.

Witnesses:

A. O. BEHEL,  
E. BEHEL.