

F. E. SCHULTZ.
AUTOMATIC FIRE ALARM SIGNAL.
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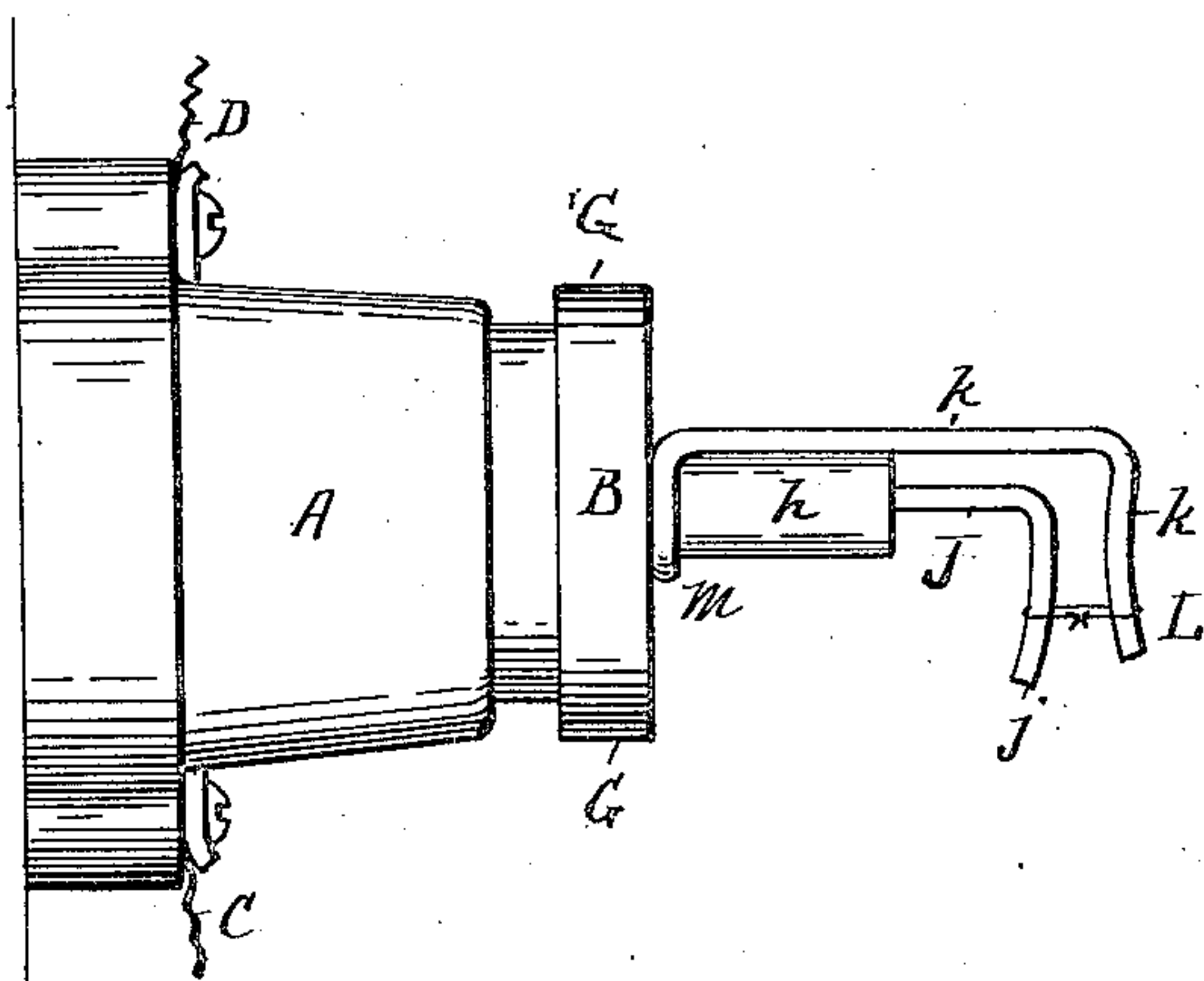


Fig. 1.

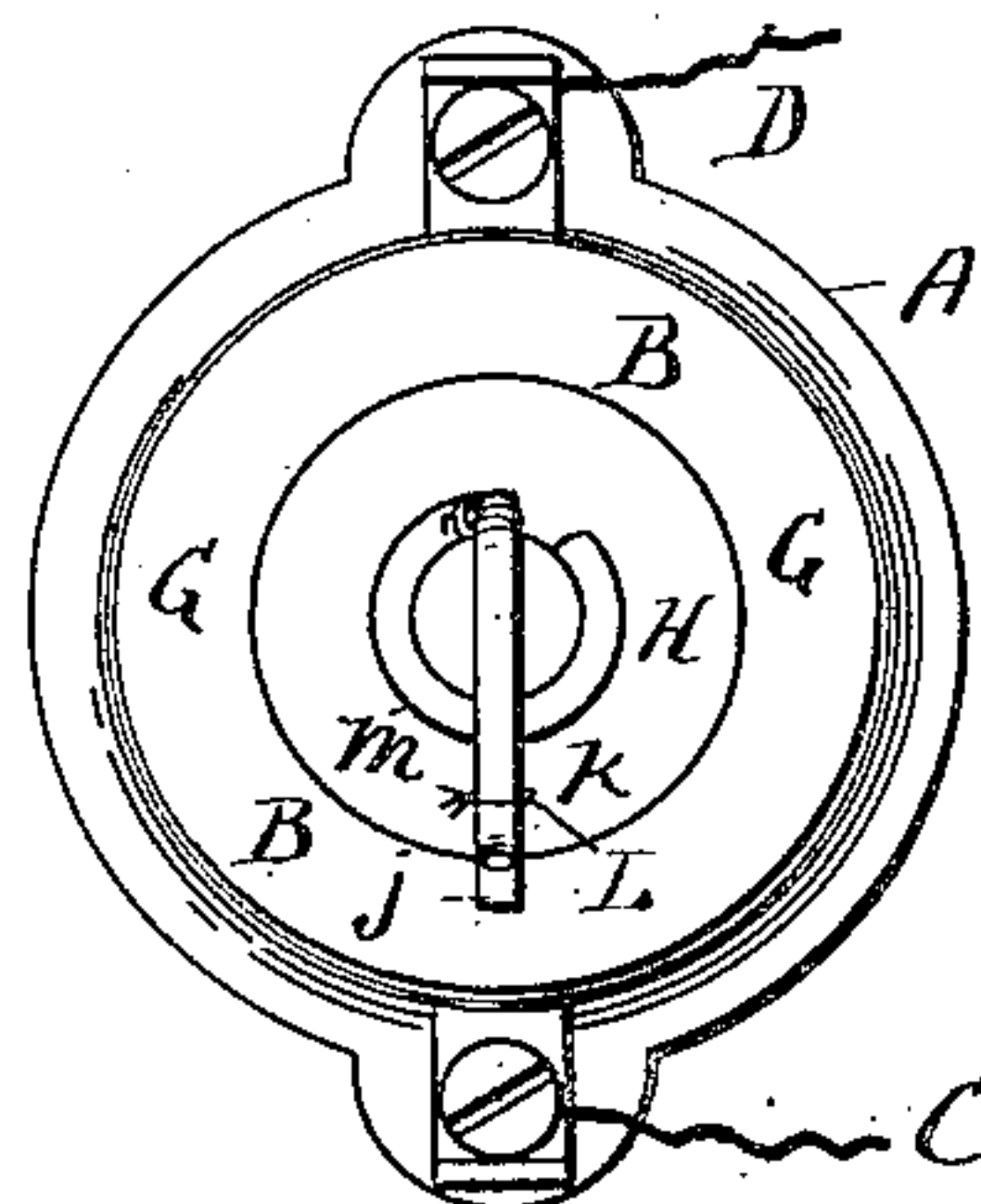


Fig. 2.

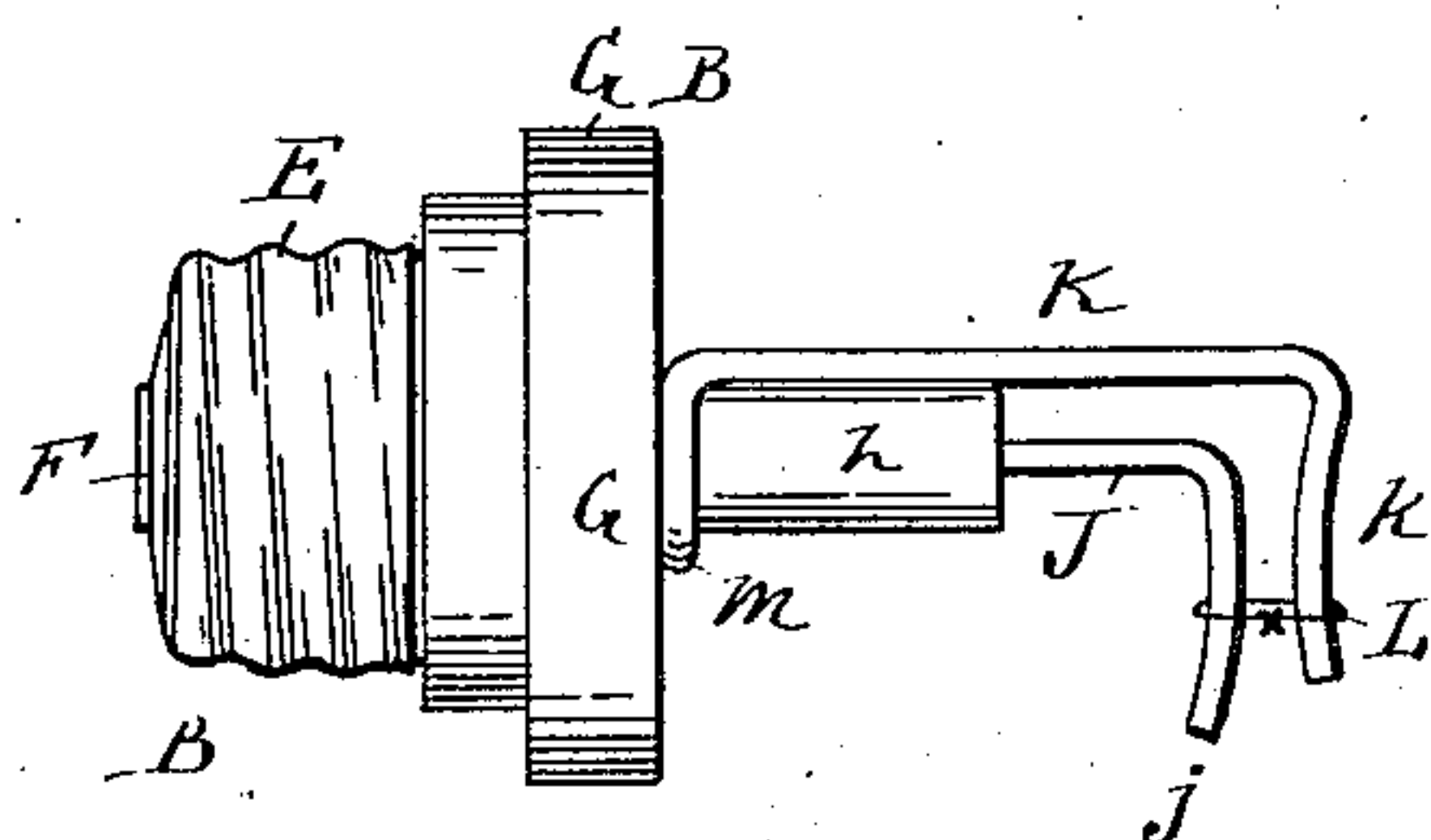


Fig. 3.

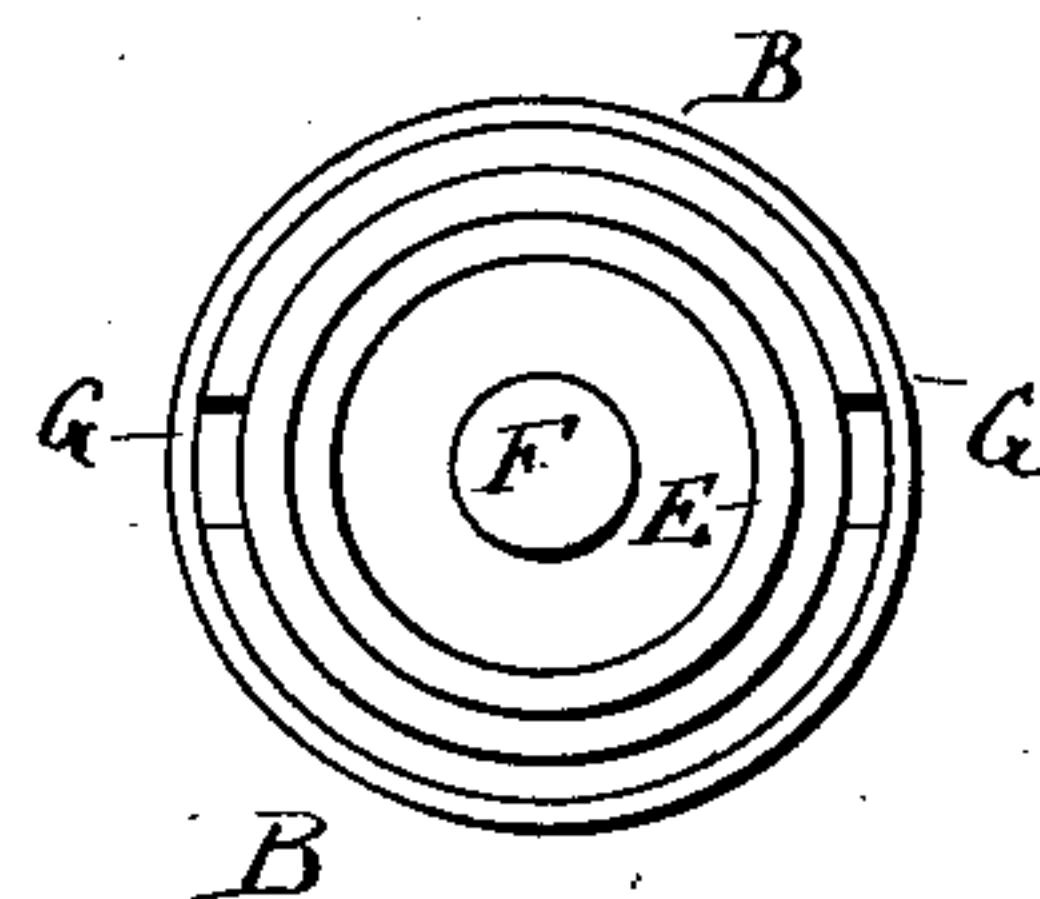


Fig. 4.

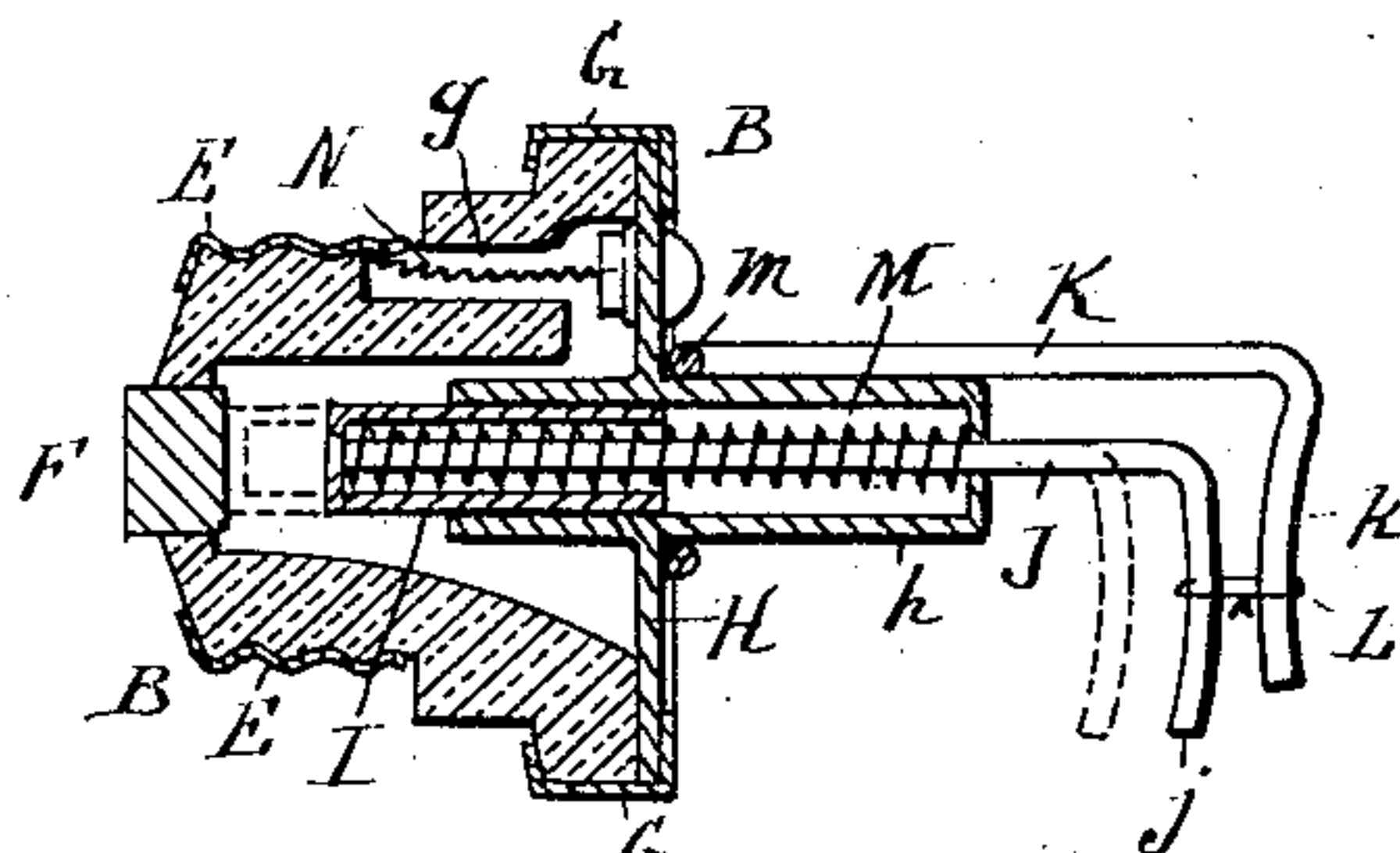


Fig. 5.

Witnesses

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AUTOMATIC FIRE-ALARM SIGNAL.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK E. SCHULTZ, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Automatic Fire-Alarm Signals, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to automatic fire alarm signals and an object of my improvements is to provide an efficient device and one that may be cheaply and easily made and that is adapted to be used with a plug of the ordinary electric fuse box, which is for sale on the open market. I attain this object in the device illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is an end elevation looking from the right of Fig. 1. Fig. 3 is a side elevation of the plug detached from the socket. Fig. 4 is an end elevation of the plug looking from the left of Fig. 3. Fig. 5 is a longitudinal section of the plug.

A is the socket and B the plug of an ordinary fuse box which is ordinarily made principally of porcelain and provided with a ferrule E and a central contact point F, upon the plug, which parts are insulated from each other by the material of the plug. In the ordinary construction of a fuse box the fuse is connected at one end to the ferrule E, passes through an aperture *g* (Fig. 5) then back and connects with a contact piece F. The mains C and D connect with the contact piece F and with the ferrule E. Upon the outer end of the plug B, in the ordinary construction of the fuse box, there is a disk of mica which is secured in place by an annulus G which has an inwardly extending flange lying over the periphery of said disk, on the outside, and is turned inward around a ledge upon the plug to secure it in place and to secure the mica disk in place. Said disk is transparent and one may look into the cavity of the plug to see if the fuse is intact.

To adapt this construction to the purpose of an automatic fire alarm, I substitute for the mica disk above described a disk H of

brass. The fuse is removed and a wire N (Fig. 5) connected with the ferrule E and with the brass disk H. There is a circular aperture formed through the center of the disk H.

h is a metal cylinder whose walls extend inward and outward from the bounding edge of the central aperture in the disk H. The outer end of the cylinder *h* is closed except for a small circular aperture at its center.

I, is a cylindrical part, closed at its inner end and fitting, for the greater part of its length, and adapted to reciprocate in the inner end of the cylinder *h*.

J is a rod secured at the center of the closed end of the part I, extending coaxially with said part and the part *h* and passing through the aperture in the outer end of the cylinder *h* so as to be guided by the edges surrounding said aperture. At its outer end, the rod J is turned and extends at right angles in a part *j*.

K is a rod or wire secured at its inner end to the disk H and extending parallel to the rod J and bent and extending at right angles in a part *k* toward its outer end, the part *k* being outside of and parallel to the part *j*. I prefer to secure the rod K to the disk H by turning its inner end at right angles and bending it to embrace the cylinder *h*, as indicated at *m* in the drawings.

M is a compression spring, one end bearing against the outer end of the cylinder *h* and at its inner end against the closed end of the part I. The spring M is helical and surrounds the rod J. The spring M is under compression and if unrestrained will act by its resilience to press the inner end of the part I against the contact piece F, thus forming an electrical connection between the disk H and the contact part F, and therefore, through the wire N, an electrical connection being formed between the contact piece F and the ferrule E. This position is indicated in dotted lines in Fig. 5.

The operation of the above described device is as follows. An alarm signal, as an indicator or bell, or both, is placed in an electric circuit of which the wires C, D form a part and there is a source of electrical energy in said circuit. The rod J is then drawn out as shown in the figures, especially Fig. 5, against the action of the spring M, thus separating the contact piece F and the part I and interrupting the elec-

trical connection between the ferrule E and F, and breaking the circuit. A piece of wire L, of fusible metal, is then tied or wrapped around the parts *j* and *k*, thus holding the rod J in its outer position. Should a fire occur in the vicinity of this device, the fusible wire L will be melted by the heat, and the spring M will act to press the part I into contact with the contact point F, completing the circuit and sounding the signal, or operating the indicator, to note the location of the fire.

An ordinary thread may be used instead of the fusible wire L although in this case an actual flame would probably be necessary to release the parts *j* and *k* and allow the circuit to be closed.

Claims:—

1. The combination of the plug B having a ferrule E, a contact point F, and an annulus G, a part H having a slide way thereon adapted to be secured in place by said annulus, said part being electrically connected to said ferrule, a rod J adapted to reciprocate on said way, a spring adapted to actuate said rod to make contact with the contact point F, the outer end of said rod being turned to form a part *j*, a rod K extending from said part H and bent to form the part *k*, and a securing device L adapted to be released by heat, uniting the parts *j* and *k*, for the purpose described.

2. The combination of the plug B having the ferrule E, contact point F and annulus G, a part H secured to said plug by said annulus and having an aperture at its center, a portion *h* extending from the bounding edges of said aperture, a part I, having its inner end closed, fitting and adapted to reciprocate in the part *h*, a spring in the parts *h* and I tending to force the latter into contact with the point F, a rod J connected to the part I and extending axially through the part *h*, and bent at its outer end to form a part *j*, and a rod K extend-

ing from the part H and bent at its outer end to form a part *k*, and a securing device L, adapted to connect the parts *j* and *k* and to be released by heat, for the purpose described.

3. The combination of the plug B having the ferrule E, contact point F, and annulus G, a part H secured to said plug by said annulus and having an aperture at its center, a portion *h* extending from the bounding edges of said aperture, a part I, having its inner end closed, fitting and adapted to reciprocate in the part *h*, a spring in the parts *h* and I tending to force the latter into contact with the point F, a rod J connected to the part I and extending axially through the part *h*, and bent at its outer end to form a part *j*, and a rod K extending from the part H and bent at its outer end to form a part *k*, and a securing device L adapted to connect the parts *j* and *k* and to be released by heat, the rod K being bent to embrace the cylindrical part *h* for the purpose described.

4. The combination of the plug B having the ferrule E, and contact point F, a part H secured to said plug and provided with an aperture at its center, a cylindrical portion *h* extending from the bounding edges of said aperture, a cylindrical part I having its inner end closed and being adapted to fit and reciprocate in the part *h*, a spring in the parts *h*, I tending to force the latter into contact with the point F, and means for retaining the part I in its retracted position against the action of said spring, said retaining means being adapted to be released by heat.

In testimony whereof, I sign this specification in the presence of two witnesses.

FREDERICK E. SCHULTZ.

Witnesses:

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