

No. 861,965.

PATENTED JULY 30, 1907.

C. GEHRKE.
SAFETY FUSE.

APPLICATION FILED JAN. 16, 1907.

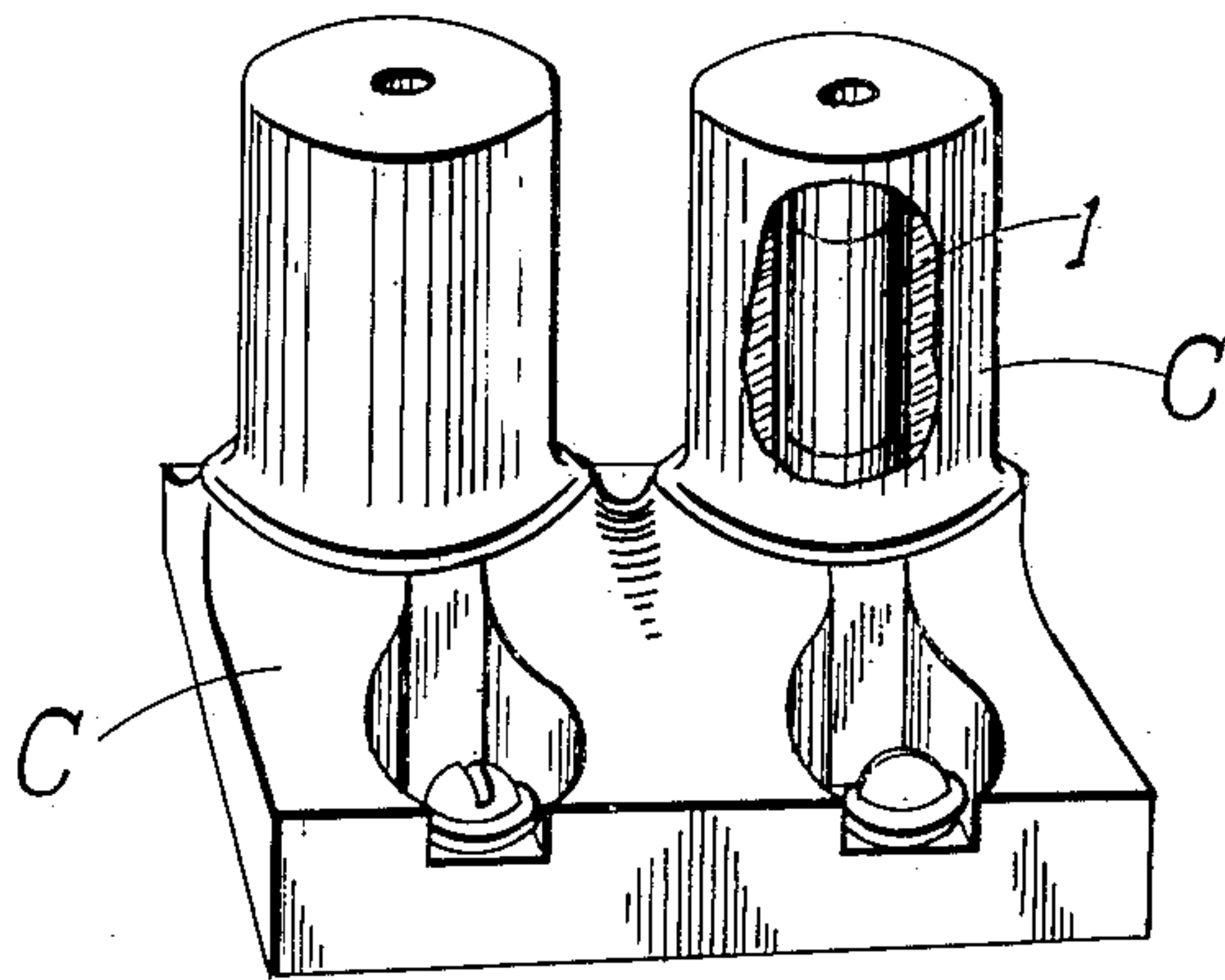


Fig. 1.

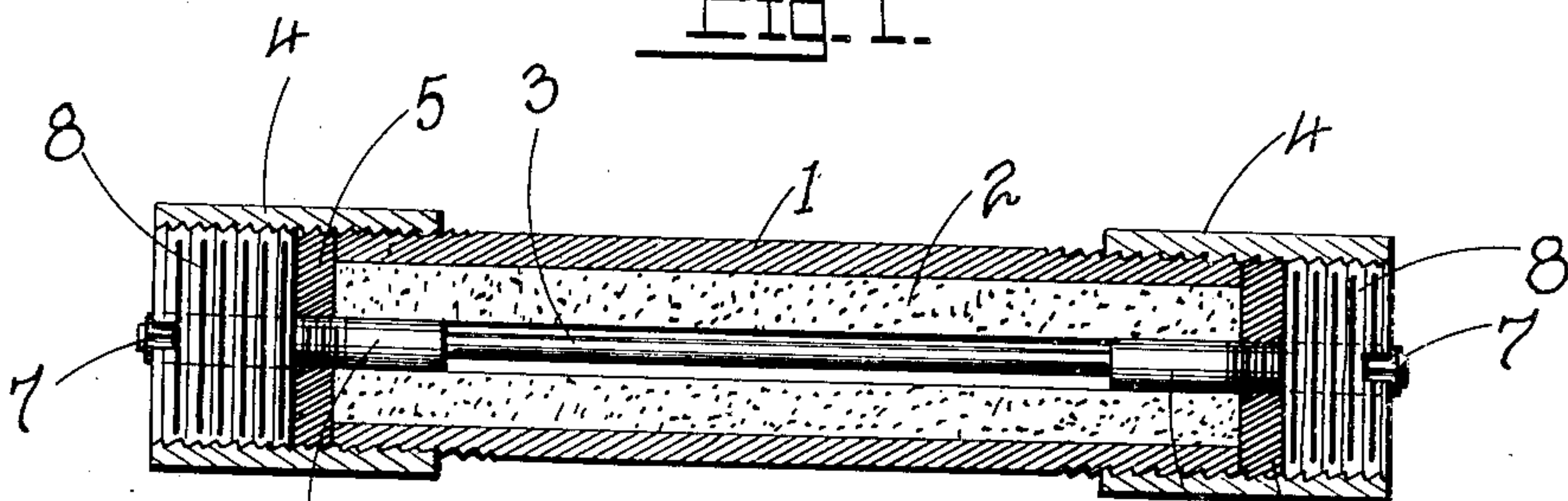


Fig. 2.

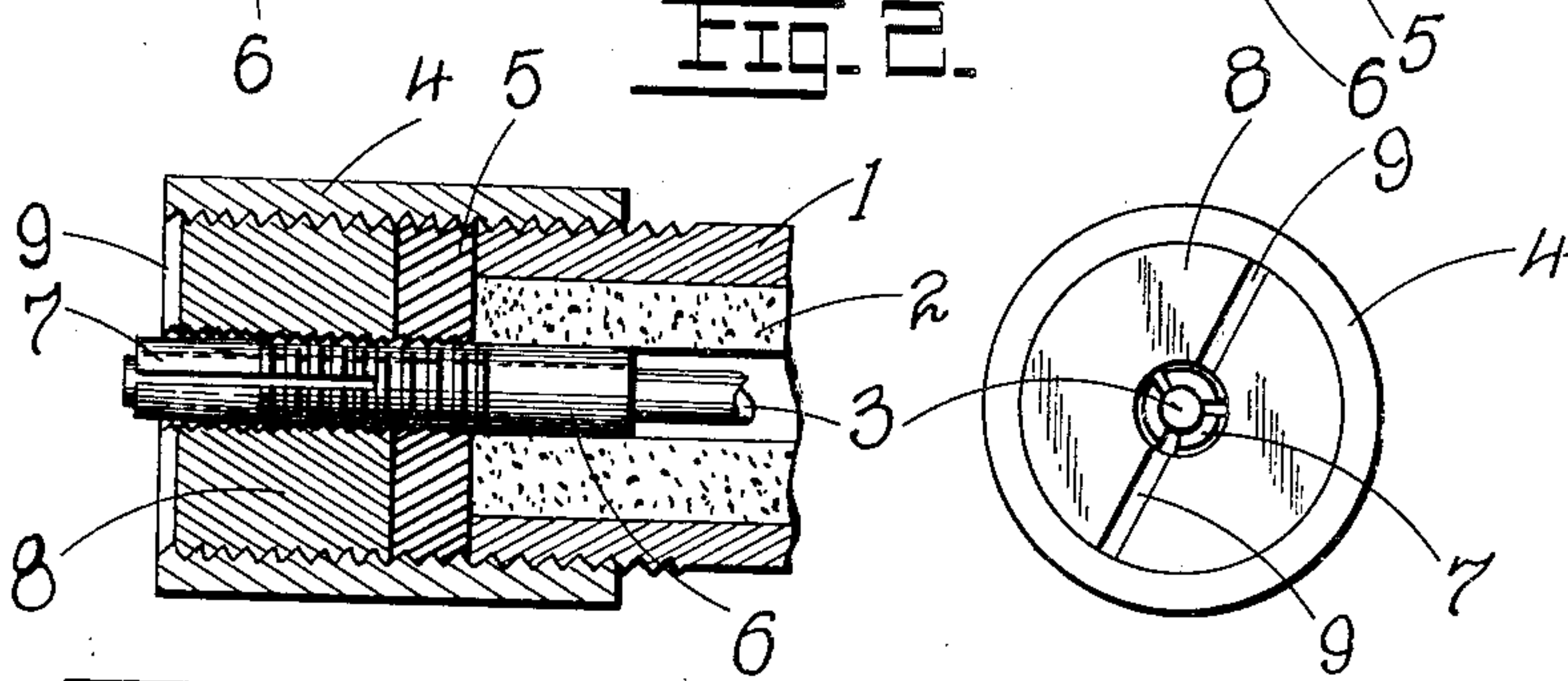


Fig. 3.

Fig. 4.

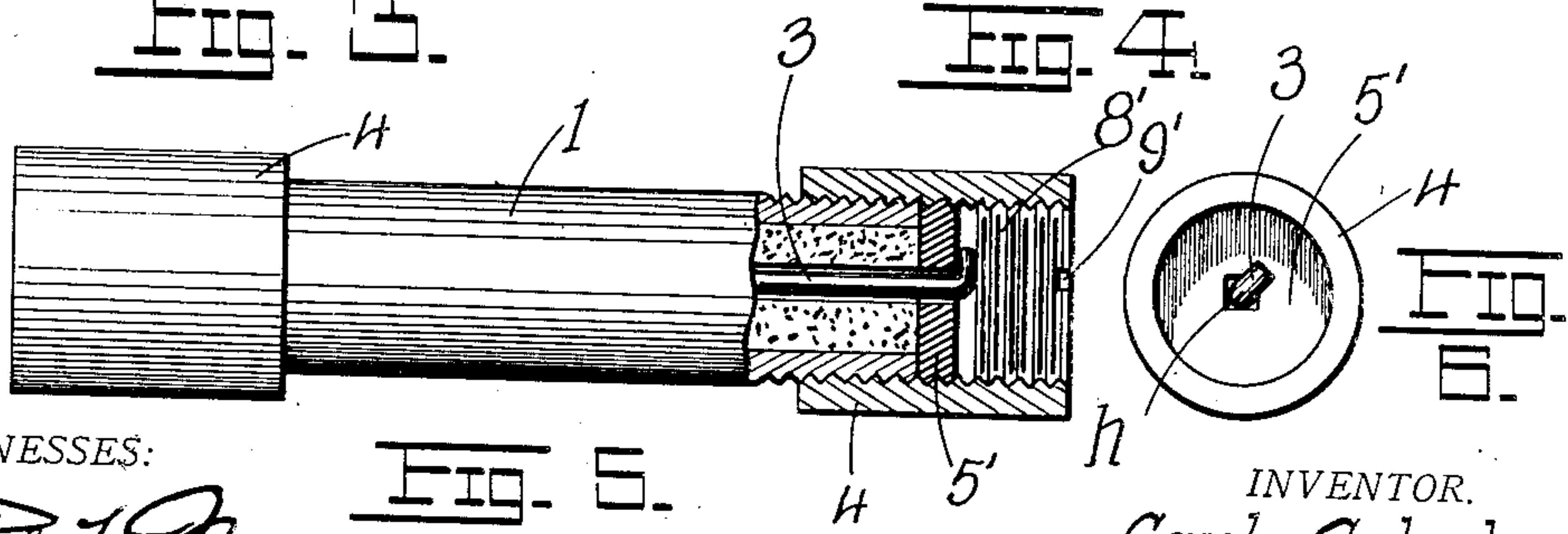


Fig. 5.

Fig. 6.

WITNESSES:

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SAFETY-FUSE.

No. 861,965.

Specification of Letters Patent.

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Application filed January 16, 1907. Serial No. 352,557.

To all whom it may concern:

Be it known that I, CARL GEHRKE, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Safety-Fuses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in safety-fuses; and it consists in the novel construction of fuse more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a conventional "cut-out" showing one of my improved fuses mounted therein; Fig. 2 is a longitudinal middle section of one form of my invention; Fig. 3 is an enlarged middle section of one end of the fuse; Fig. 4 is an end view thereof; Fig. 5 is a combined elevation and section of a modification, and Fig. 6 is an end view with terminal screw plug removed.

The object of my invention is to construct a safety fuse which may be readily assembled, and as readily taken apart when occasion arises to inspect the condition of the fuse wire or strip; one in which the burned fuse strip can be readily replaced thereby permitting the fuse to be used for an indefinite period; one which is simple in construction; one insuring perfect contact with the fuse-strip; and one possessing further and other advantages better apparent from a detailed description of the invention which is as follows:

Referring to the drawings, and for the present to Figs. 1 and 4 inclusive, C represents a form of cut-out or holder for mounting the fuse. The latter is composed of an outer tubular casing 1 of suitable non-conducting material and an inner tube 2 of asbestos or equivalent filling through which the fuse-strip or wire 3 loosely passes. Over the screw-threaded terminals of the tube 1 are passed the open-ended rings 4, the interior of the ring carrying a perforated disk or diaphragm 5 screwed thereinto a suitable depth, each disk being provided with a central tubular spindle 6 terminating in an outer longitudinally slit portion, the slits forming between them a series of resilient arms 7 for a purpose presently to appear. The connection between the spindle 6 and disk 5 is preferably made by screwing the disk over the spindle, the threads in the latter extending about one-third the length thereof and partially along the arms 7 as shown. The disk can then be screwed into the ring 5 by simply turning the spindle 6 in the proper direction. In the assembling of the parts the disk 5 abuts against the adjacent end of the casing 1. The inner smooth end of the spindle 6 passes into the bore or passage of the inner tube 2 to a suitable depth, the fuse-strip 3 freely passing through the inner tube and through the spindle 6. The strip 3 being in place, a screw-plug 8 provided with grooves

9, 9, for the engagement of a split wrench (not shown) is finally passed over the spindle arms 7 and screwed into the ring 4 against the disk 5. The opening in the plug 8 is a trifle smaller than the full cross-sectional diameter of the spindle 6, and when the plug is driven home it causes the arms 7 to hug and firmly grip the wire 3 between them so that perfect electrical contact is assured. The disk 5 forms with the ring 4 a socket for the reception of the metal plug 8 by which the fuse strip is secured in position within the casing 1.

In the event of the burning out of the fuse-wire 3, the electrician partially unscrews the plug 8 which has the effect of releasing the wire, whereupon the ring 4 with its spindle 6 can be unscrewed from the casing, leaving the projecting end of the wire exposed beyond the end of the casing. If the wire is destroyed the parts remaining can be readily withdrawn from the opposite ends of the casing, and a fresh wire inserted, after which the terminal sockets (the rings 4 with their disks 5) are screwed into position, the plugs 8 driven home and the fuse is thus again restored for operation.

I may omit the spindle from the disk 5, in which event as shown in the modified form in Figs. 5 and 6, I employ a disk 5' with a central polygonal hole *h* for receiving a tool-shank (not shown) by which the disk may be screwed the required depth into the ring 4, the fuse-wire 3 being passed through the disk and its projecting end folded against it, whereupon the solid plug 8' provided with a groove 9' for receiving a screw-driver, is forced against the wire end, clamping it tightly between the disk and plug. In the modified form, should it be desirable to replace a burned wire, the plug 8' is unscrewed, and the ends of the wire are seized by a pair of pincers and withdrawn from the casing as in the first or main form. The modification shown in Figs. 5 and 6 answers every purpose for a thin fuse-wire which can be readily folded over the disk 5', but with a very thick wire this would be impractical, and in that event to insure sufficient and perfect contact the form in the first four figures is to be employed.

Having described my invention what I claim is:

1. A safety-fuse comprising a suitable tubular casing, terminal open-ended metal rings passed over the ends of the casing, perforated disks received by and adjustable within the rings contiguous to the adjacent ends of the casing, a fuse-wire passed through the casing and having its opposite ends passed through the disks, and screw plugs received by the rings and gripping the ends of the wire, substantially as set forth.

2. A safety-fuse comprising a suitable tubular casing, terminal rings passed over the ends of the casing, perforated disks received by the rings, a tubular spindle carried by each disk, one end of the spindle projecting into the passage of the casing, and the opposite end terminating in a series of arms or members separated by longitudinal slits, a fuse-wire passing freely through the casing and spindles, and a perforated screw-plug received by the open end of each ring and passed over the slit end of the

spindle, the plug serving to force the arms of the spindle firmly against the fuse-wire as it is being driven home against or toward the disk, substantially as set forth.

3. A safety-fuse comprising a tubular casing, terminal
5 rings passed over the ends of the same, perforated disks carried by the rings, a tubular spindle secured to each disk, said spindle projecting outwardly from the disk and terminating in a series of arms or members separated by longitudinal slits, a fuse-wire passing freely through the
10 casing and spindles, and a perforated screw-plug received

by the open end of each ring and passed over the slit end of the spindle, the plug serving to force the arms of the spindle firmly against the fuse-wire as it is being driven home toward the disk, substantially as set forth.

In testimony whereof I affix my signature, in presence 15 of two witnesses.

CARL GEHRKE.

Witnesses:

EMIL STAREK,

MARY D. WHITCOMB.