

No. 731,989.

PATENTED JUNE 23, 1903.

K. WIESER.

IMPACT FUSE FOR EXPLODING SHELLS.

APPLICATION FILED DEC. 29, 1902.

NO MODEL.

Fig. 1.

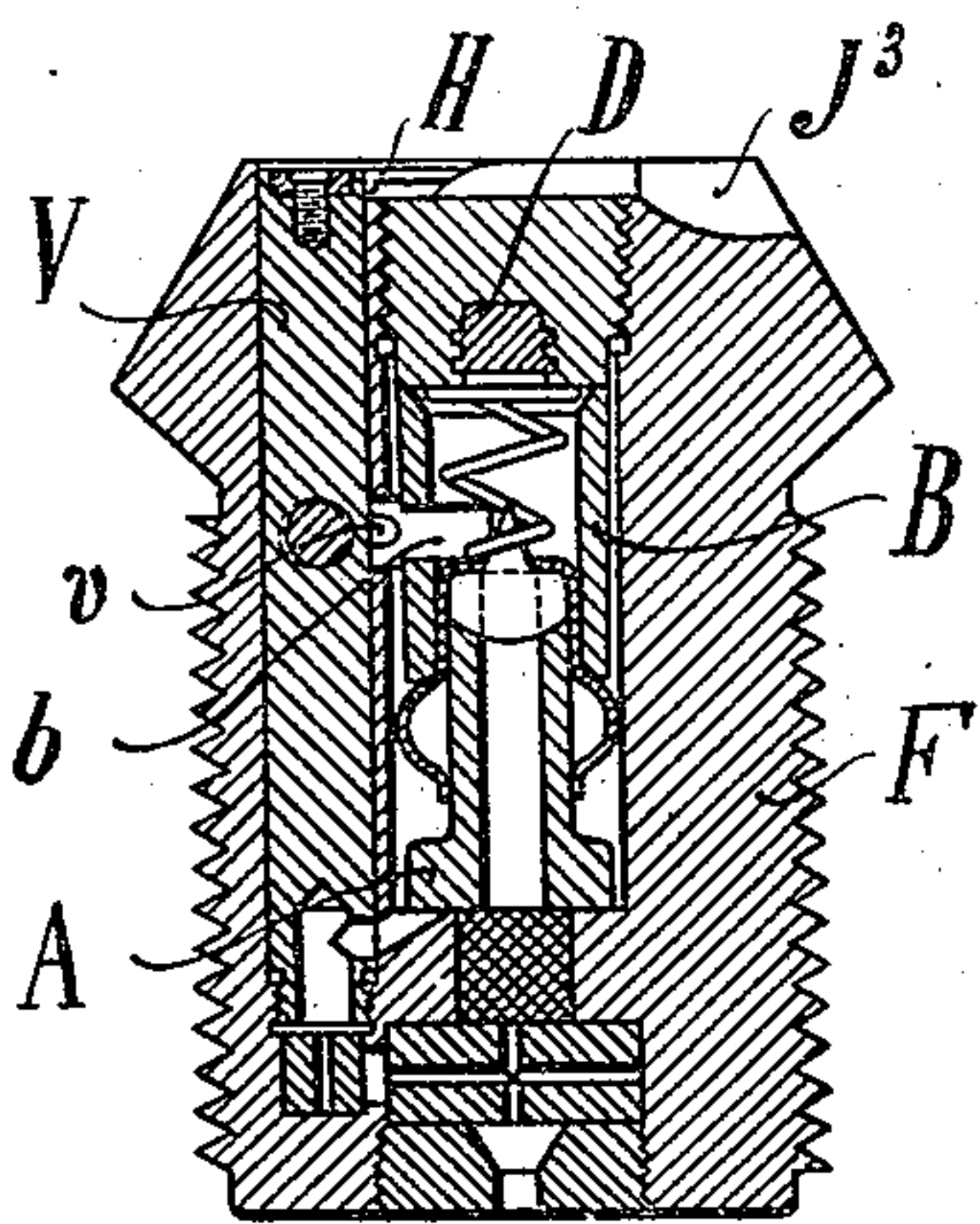


Fig. 2.

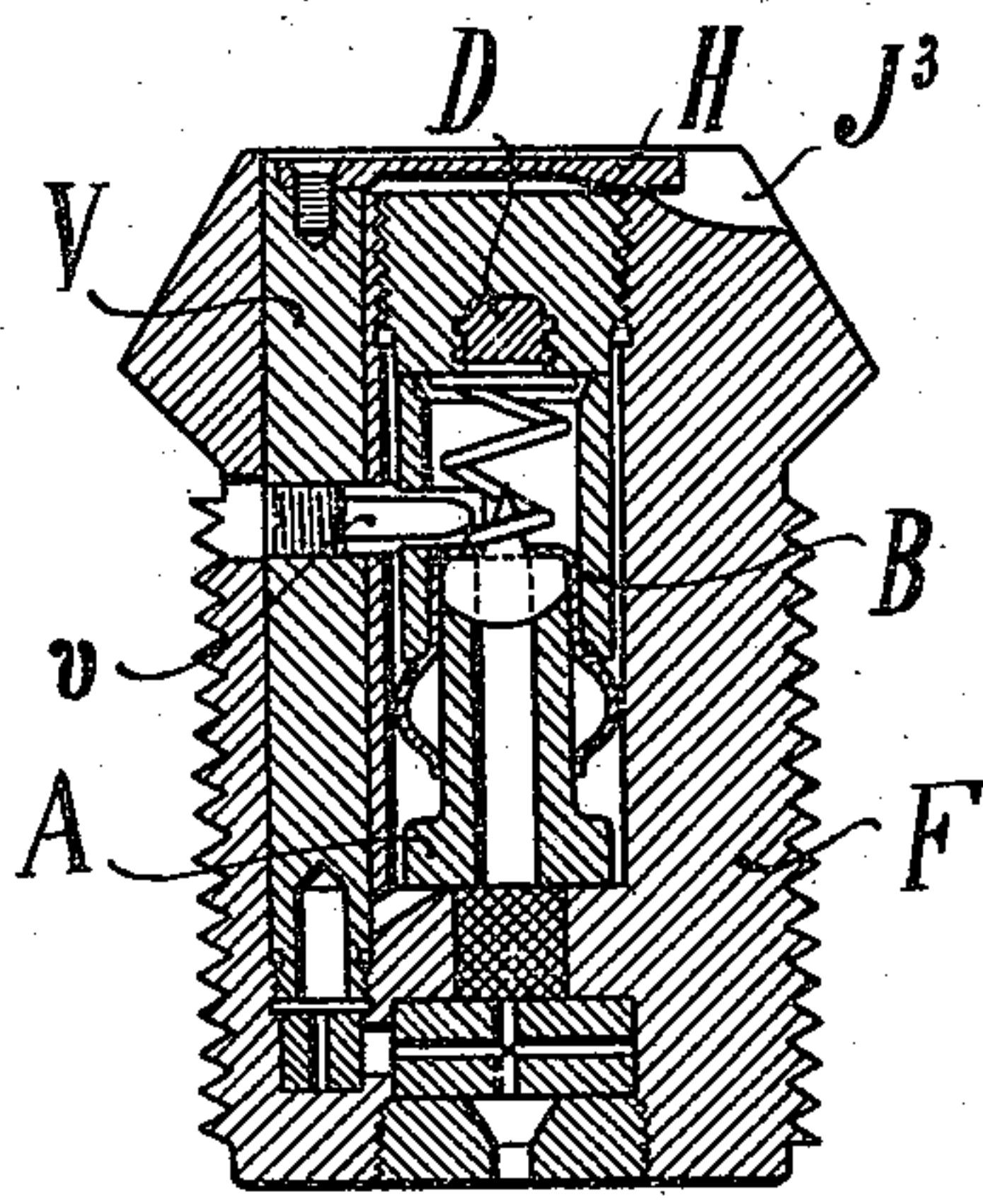


Fig. 3.

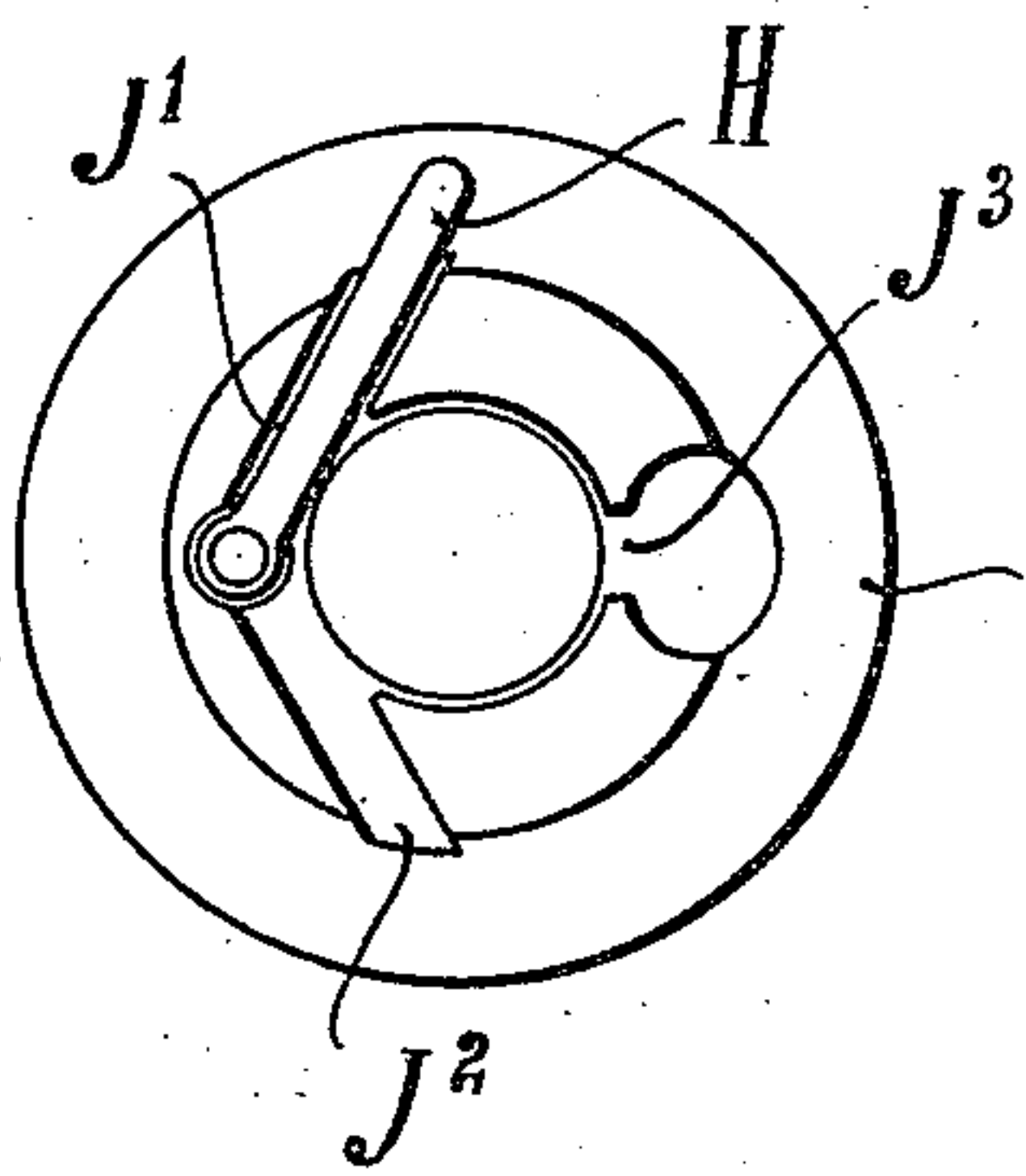
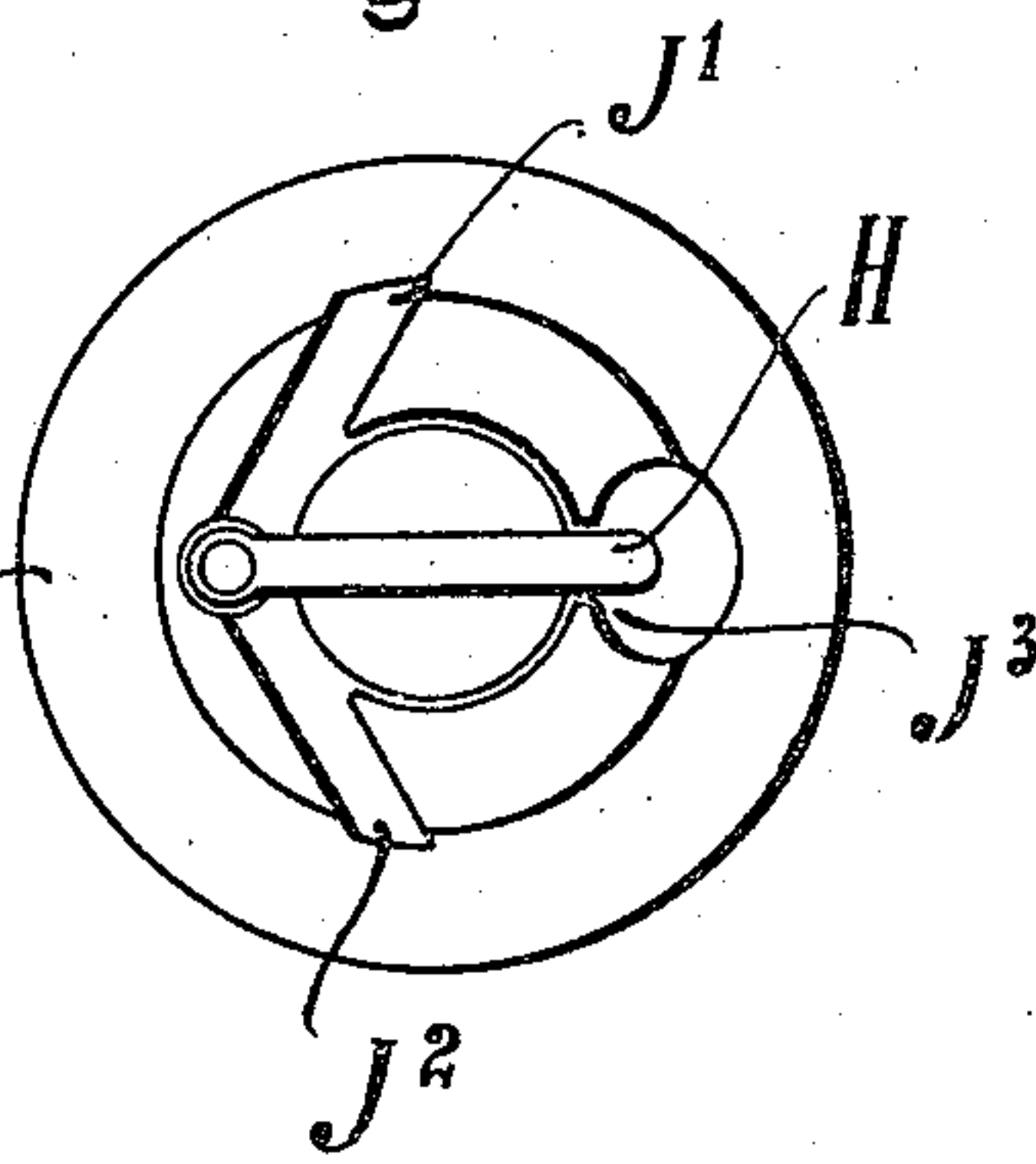


Fig. 4.



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## UNITED STATES PATENT OFFICE.

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## IMPACT-FUSE FOR EXPLODING SHELLS.

SPECIFICATION forming part of Letters Patent No. 731,989, dated June 23, 1903

Application filed December 29, 1902. Serial No. 137,027. (No model.)

*To all whom it may concern:*

Be it known that I, KARL WIESER, a subject of the Emperor of Germany, and a resident of 34 Friederikenstrasse, Rüttenscheid, near Essen-on-the-Ruhr, Germany, have invented certain new and useful Improvements in Impact-Fuses for Exploding Shells, of which the following is a specification.

This invention relates to that class of impact-fuses which by virtue of a device permanently incorporated in the construction of the fuse permits the ignition of the exploding charge to be so regulated from without the shell or fuse that it takes place without or with retardation—that is to say, either immediately on impact of the projectile against the target or after the projectile has penetrated the target.

The invention is especially adapted for the fuse that has been heretofore produced, in which the adjustment to “impact” or “delay action” is accomplished by means of a retarding substance permanently introduced in the igniting-train, while in the channel forming the immediate communication between the percussion-chamber and explosive charge is arranged a cock rotatable from without, this cock being so arranged that it can, according to the purpose desired of the fuse, be fixed, through the medium of an arm and two rests disposed radially to the turning center of said arm, either in open or closed position, so that when the cock is open the igniting-flash strikes uninterrupted through the channel into the exploding charge, while in the closed position of the cock the flash reaches the exploding charge only after burning through the retarding substance.

The present invention has for its purpose to improve the fuse above referred to in such a manner that the cock will serve the additional function of a safety device in transportation. To attain this novel purpose, the cock is capable of being secured in a third position and carries a cross-pin which when the cock is in said third position intercepts the path of the movable parts of the fuse.

In the accompanying drawings one embodiment of the invention is illustrated by way of example.

Figure 1 is an axial section of the fuse in

a plane through the axis of the cock and the parts being in impact position, Fig. 2 being a section similar to Fig. 1 with the parts in transport position, and Figs. 3 and 4 being top views of the fuse in positions corresponding, respectively, to Figs. 1 and 2.

In its structural features the present invention corresponds in the main to the previously-known fuse referred to. The only material features of difference in the present invention over that referred to are the following: A third rest  $j^3$ , in addition to and in the present illustrative embodiment of the invention lying intermediate of the two rests  $j'$   $j^2$ , is provided, so that the cock-spindle through the medium of the spring-arm-H can also be secured in the intermediate position. Furthermore, at about the middle of the cock-spindle V and mounted thereon is a cross-pin  $v$ , presented in the same direction as the spring-arm H, which pin in the turning of the cock-spindle swings in a recess of the fuse-body-R and into and out of a slot in the detent-ring B.

When the arm H is, as shown in Figs. 2 and 4, in the rest  $j^3$ , (transport position of the fuse,) the cross-pin V  $v$  projects through the slot  $b$  of the detent-ring and into the path of the needle-bolt A. In consequence of this it prevents both the receding of the detent-ring and the advance of the needle-bolt against the detonating-pellet D. If the fuse is adjusted to impact position by bringing the arm H into the rest  $j'$ , the cross-pin  $v$  swings out of the slot  $b$  of the detent-ring and out of the path of the needle-bolt A, and the fuse is ready for service. The same procedure obtains when the arm H for the purpose of adjusting the fuse to “delay” position is moved from the rest  $j^3$  into the rest  $j^2$ .

Having thus described the invention, the following is what is claimed as new therein:

1. In a fuse for exploding shells, the combination of the needle-bolt, a pin movable into and out of the path of said needle-bolt, a spindle upon which said pin is mounted, extending to the exterior of the fuse, and a locking-arm on the outer end of the spindle, through which said pin is adjusted.

2. In a fuse for exploding shells, the combination of the needle-bolt, a pin movable into



and out of the path of said needle-bolt, a spindle upon which said pin is mounted extending to the exterior of the fuse, and a locking-arm on the outer end of the spindle through which said pin is adjusted, having rests by which it is secured in its respective positions.

3. In a combined impact or delay-action fuse having a part thereof movable upon impact to produce ignition, means movable to one position to produce action upon impact, to another position to produce a delayed action, and to still another position to hold said movable part against movement so that the fuse may be handled with safety.

4. In a combined impact and delay-action fuse, having a part thereof movable upon impact to produce ignition, a cock-spindle opening and closing a passage to produce impact or delay action, and means upon said cock-spindle adapted to engage with the movable part of the fuse when the spindle is in one position, to prevent the movement of said part so that the fuse may be handled with safety.

5. In combination with a fuse for exploding shells, having a needle-bolt, and a cock-spindle opening and closing a passage to change the effect of the fuse, and a cross-pin carried by said spindle movable into and out of the path of the needle-bolt by the turning of said spindle.

6. In combination with a fuse for exploding shells, having a needle-bolt, and a cock-spindle opening and closing a passage to change the effect of the fuse, and a cross-pin carried by said spindle, projecting into the path of the needle-bolt when the cock-spindle is in

an intermediate position but out of said path when the cock-spindle is in either open or in one closed position.

7. In combination with a fuse for exploding shells, having a needle-bolt, and a cock-spindle opening and closing a passage to change the effect of the fuse, and a cross-pin carried by said spindle, projecting into the path of the needle-bolt when the cock-spindle is in an intermediate position but out of said path when the cock-spindle is in either open or in one closed position, a spring-arm on the outer end of said cock-spindle through which it is moved, and rests securing said arm in either of its positions at will.

8. In a fuse, for exploding shells, the combination of the fuse-body, a needle-bolt, a detent-ring retaining the needle-bolt, a cock-spindle turning in said fuse-body, to open and close an igniting-channel, a cross-pin mounted on said cock-spindle, working through a recess in the fuse-body and into and out of a slot in the detent-ring, and projecting into the path of the needle-bolt when the cock-spindle is in its intermediate position, an arm on the outer end of the cock-spindle by which it is moved, and rests by which said cock-spindle through the arm is secured in open or in closed or in intermediate position.

The foregoing specification signed at Düsseldorf this 18th day of December, 1902.

KARL WIESER.

In presence of—

PETER LIEBER,  
WILLIAM ESSENWEIN.