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FUSE

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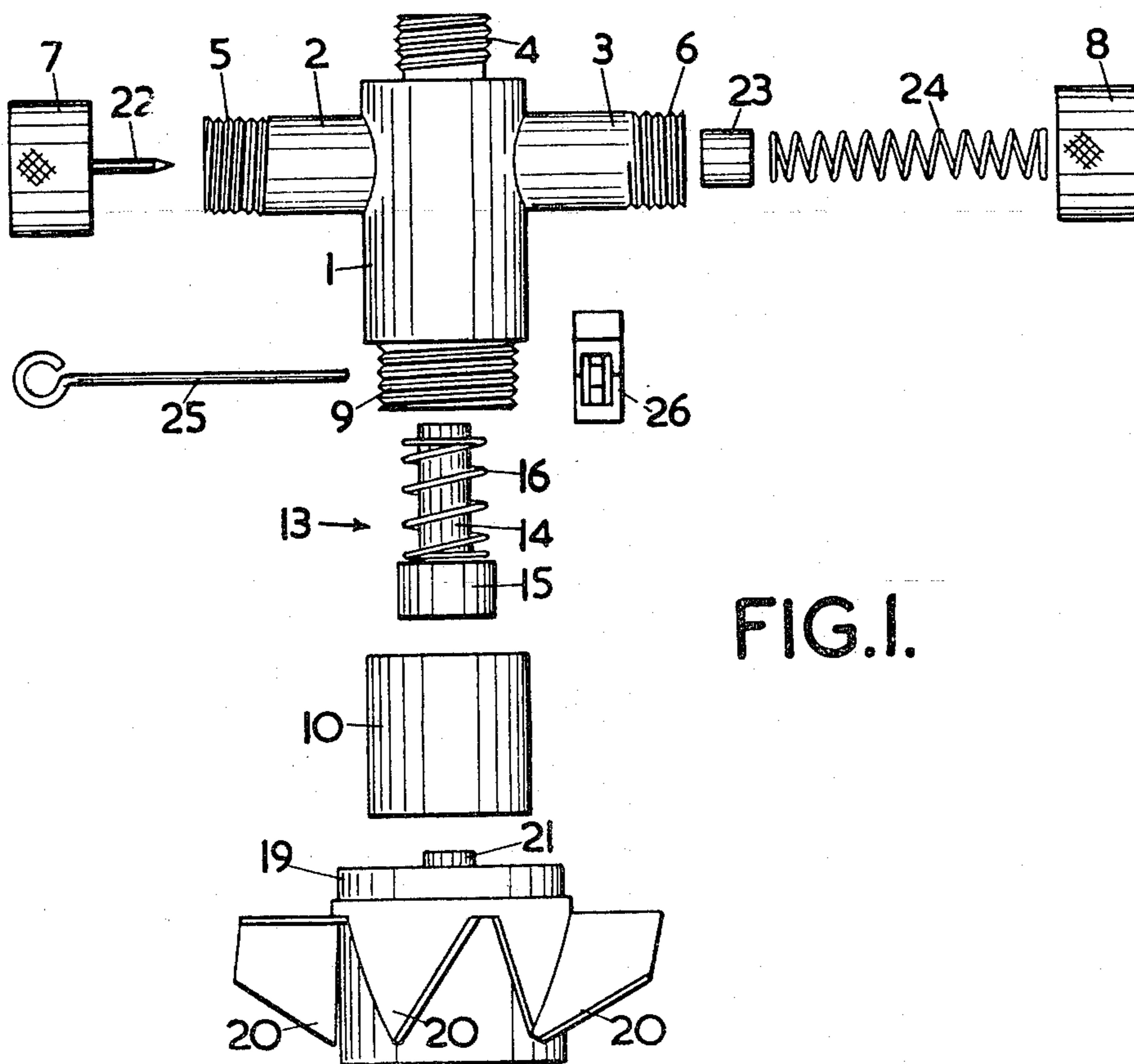


FIG. 1.

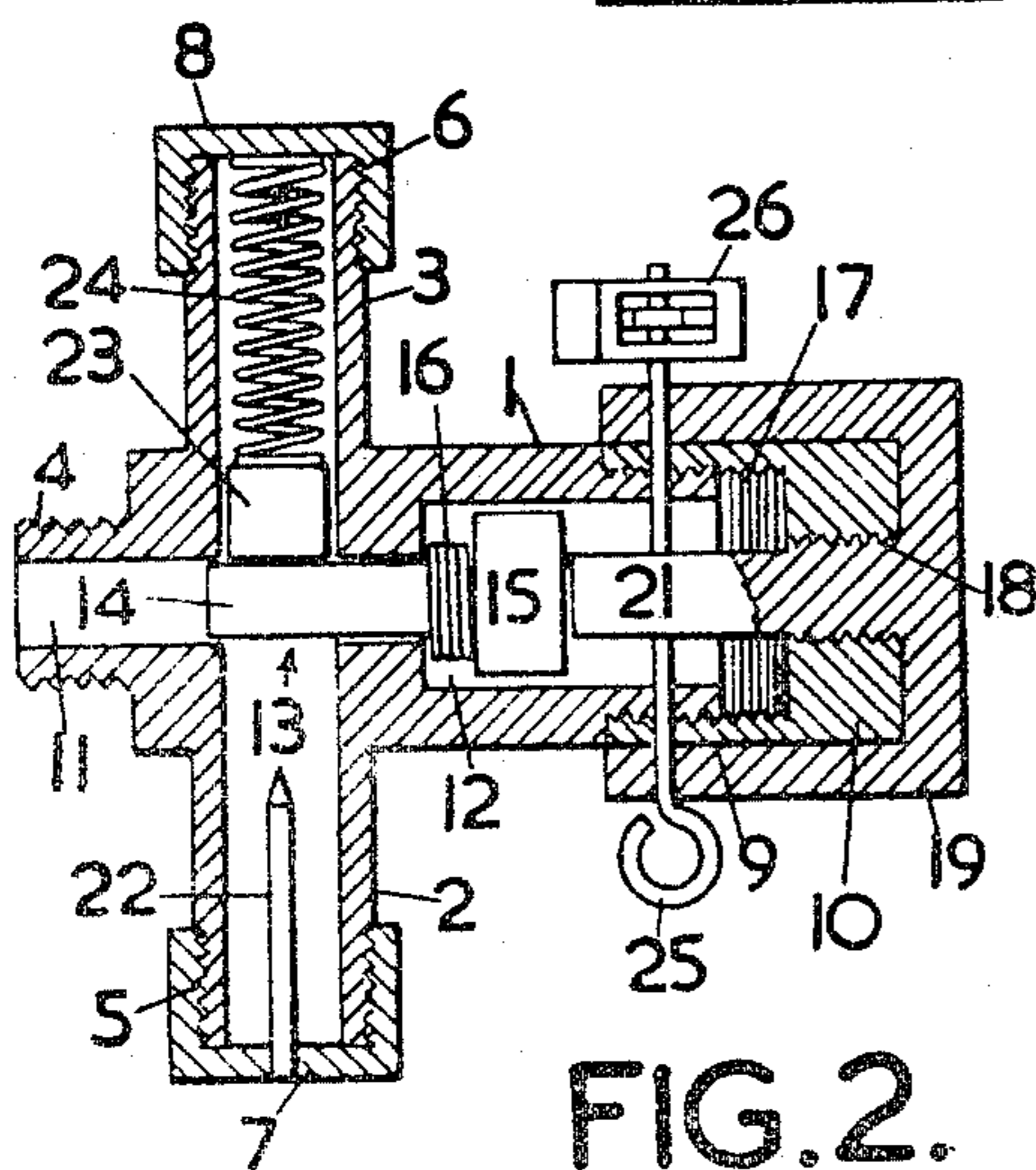


FIG. 2.

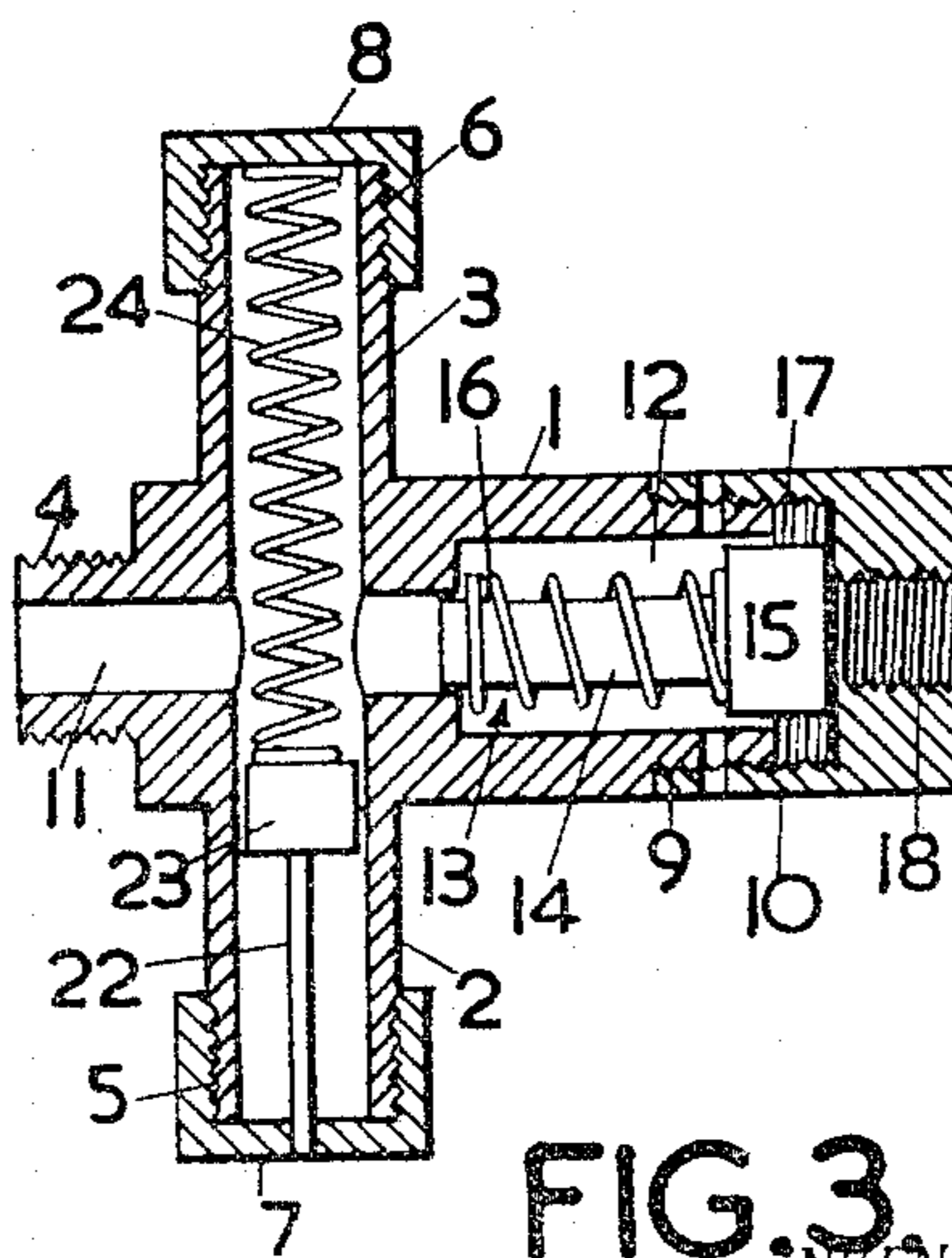


FIG. 3.

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5 Claims. (Cl. 102—86)

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This invention relates to fuzes for the ignition of pyrotechnic devices, such as flares and the like, which are dropped from aircraft and has for its object to provide a fuze which is not actuated until after the device has left the aircraft.

The usual method of igniting flares to be dropped from aircraft is by means of a friction or percussion igniter connected to a delay fuze within the flare casing, the igniter being actuated prior to dropping the flare. It has been found in practice that it is possible for the flare to become ignited before leaving the aircraft with consequent danger of fire in the aircraft.

According to the present invention a fuze for pyrotechnic devices to be dropped from aircraft comprises a cruciform member having a hollow body and two aligned hollow arms, the passage through said hollow arms intersecting the passage through the body, a sliding member in said hollow body, a screw cap adapted to hold the said sliding member in a position to obstruct the passage through said arms, in opposition to a spring, a firing pin within one of said hollow arms, a spring loaded detonator in the other of said hollow arms, and vanes on said cap which during the fall of the device unscrew the cap to release the sliding member and thereby allow unobstructed movement of the detonator onto the firing pin.

The invention will now be described by way of example with reference to the accompanying drawings in which,

Figure 1 is an exploded view of a fuze according to this invention.

Figure 2 is a section through the fuze in safe position, the vanes on the cap having been omitted, and

Figure 3 is a similar section through the fuze after it has been fired.

Referring to the drawings, a cruciform member consisting of a tubular body 1 and tubular arms 2, 3 is provided with an external screwthread 4 by means of which it may be screwed into the nose of the casing of a pyrotechnic device, such as a flare, external screwthreads 5 and 6 onto which knurled caps 7 and 8 may be screwed, and a screwthread 9 onto which a cup-like member 10 may be screwed.

The passage 11 through the body 1 has a widened portion 12. The body 1 is adapted to contain a sliding member 13 comprising a stem 14 which is a sliding fit in the passage 11 and a flange 15 which is a sliding fit in the widened

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portion 12. A spring 16 is arranged around the stem 14.

The cup-like member 10 is provided with an internal screwthread 17 adapted to engage the screwthread 9 on the body 1. The base of the cup-like member 10 is provided with a screwed hole 18.

The cap 19, having vanes 20, is provided with a central peg 21, the lower part of which is externally screwthreaded for engagement in the screwed hole 18.

The knurled cap 7 is provided with a firing pin 22, and the knurled cap 8 is adapted to retain a detonator 23 and a spring 24 within the arm 3.

A safety pin 25 and a spring clip 26 are also provided.

The procedure for assembling the fuze is as follows:

The sliding member 13 and spring 16 are inserted in the body 1 and the cup-like member 10 screwed on. The cap 19 is then screwed on, whereby the peg 21 forces the sliding member 13 into the position shown in Figure 2. In this position the safety pin 25 may be passed through holes in the cap 20, the cup-like member 10 and the peg 21, and held in position by means of the spring clip 26. This holds these parts against unintentional rotation. It is preferable that the screwthreads 9 and 18 should be in opposite directions, one right-hand and the other left-hand.

The detonator 23 and spring 24 are then inserted inside the arm 3 and the knurled cap 8 is screwed on. The detonator 23 is thus held firmly pressed by the spring 24 against the stem 14.

The knurled cap 7 is then screwed on, and the fuze screwed by means of the screwthread 4 into the nose of the casing of a pyrotechnic device, such as a flare.

When the pyrotechnic device is to be used, the safety pin 25 is removed and the device dropped from the aircraft. During the first part of its fall, the vanes 20 rotate the cap 19, thereby unscrewing it from the screwed hole 18, whereupon the cap 19 falls away and the spring 16 is then able to urge the sliding member 13 into the position shown in Figure 3. The spring 24 then forces the detonator 23 into engagement with the firing pin 22 and the flash from the detonator passes through the passage 11 to ignite either the device or a delay fuze connected to the device.

It will be observed that the arming of the fuze takes place while the device is dropping through the air, and premature ignition of the device within the aircraft with consequent danger of fire, is impossible.

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What I claim is:

1. A fuze for pyrotechnic devices to be dropped from aircraft, comprising a cruciform member having a hollow body and two aligned hollow arms, the passage through said hollow arms intersecting the passage through the body, a sliding member in said hollow body, a cap having a central peg which is adapted to hold the said sliding member in a position to obstruct the passage through said arms in opposition to a spring, a cup-like member having a threaded hole in its base, said cup-like member being screwed on to said hollow body and said peg being screwed into the hole in the cup-like member, a firing pin within one of said hollow arms, a spring loaded detonator in the other of said hollow arms, and vanes on said cap which during the fall of the device unscrew said peg from the cup-like member to release the sliding member and thereby allow unobstructed movement of the detonator on to the firing pin.

2. A fuze as claimed in claim 1 wherein the passage in the hollow body has a widened portion and the sliding member comprises a stem which is a sliding fit in the narrower portion of said passage and a flange which is a sliding fit in said widened portion.

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3. A fuze as claimed in claim 2 in which a spring is coiled around said stem.

4. A fuze as claimed in claim 3 there being apertures adapted to receive a safety pin in the body and the cap to prevent premature rotation of the cap.

5. A fuze as claimed in claim 4 in combination with a second cap adapted to be screwed on to one of said arms, the firing pin being mounted in said second threaded cap.

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