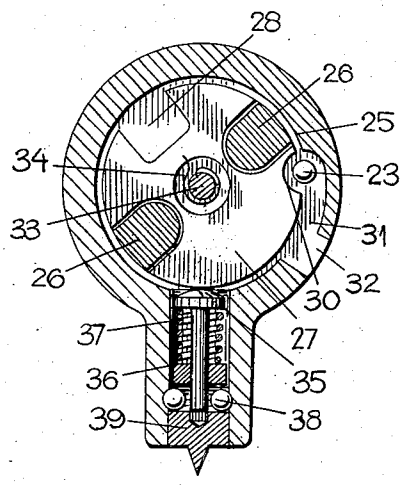
Feb. 22, 1927. 1,618,944

B. PANTOFLÍČEK

CENTRIFUGAL FUSE

Original Filed June 1, 1925



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UNITED STATES PATENT OFFICE.

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CENTRIFUGAL FUSE.

Original application filed June 1, 1925, Serial No. 34,248, and in Czechoslovakia June 9, 1924. Divided and this application filed July 24, 1926. Serial No. 124,768.

This invention relates to a centrifugal fuse for shells which rotate about their longitudinal axis, in which weights are caused by centrifugal force to perform an outward radial movement or a rotary motion about an axis at right angles to the axis of rotation of the shell, the radially outwardly directed motion or the rotary motion storing up a force or causing some other change of state to take place, through which the weights, after the rotation has ceased, are caused to perform a return motion. During this return motion the weights move beyond the original position and thereby cause the needle to be released, which lies in the axis of rotation of the shell.

The present application is a division of my copending application Serial #34,248, filed June 1, 1925.

The accompanying drawing illustrates in longitudinal section a form of construction according to the invention.

25 is a body containing the centrifugal weights and the striker. The centrifugal weights 26 are fixed on a disc 27 having a recess 28. Between the disc 27 and the body 25 a securing ball 23 is provided, which engages in a recess 30 of the disc 27 and in a slot 31 of the body 25. The slot 31 communicates with a hole 32. The disc 27 is rotatable about a pin 33, which is at right angles to the axis of the shell, and is forced by the spiral spring 34 in the counter-clockwise direction and keeps the centrifugal weights 26 in a position inclined to the axis of the shell. A rotation of the disc 27 by the torsion spring 34 is prevented by the securing ball 23 which, as it engages partly in the recess 30 of the disc 27, is pressed against the end of the slot 31, thus forming an obstruction to the rotation of the disc.

The arrangement operates in the following manner:—Through the rotation of the shell during its flight the centrifugal weights 26, the centre of gravity of which does not lie in the axis of rotation of the shell, will be exposed to centrifugal force and will seek to move as far as possible away from the axis of rotation. The centrifugal weights 26 will turn until their centres of gravity lie in a plane at right angles to the axis of rotation. In this rotary motion of the centrifugal weights the disc 27 will be turned in the clockwise direction and the securing ball 23, which is carried along by the recess 30, will come in front of the opening 32 and will be thrown out of the body 25 by centrifugal force. As the ball 23 no longer lies in the path of the disc 27, the latter will be no longer secured. On the impact of the shell, the latter will cease to rotate and the centrifugal weights 26 no longer be acted on by centrifugal force. The torsion spring 34 will thereupon turn the disc 27 in the counter-clockwise direction. Through this rotation the recess 28 of the disc 27 will come in front of the striker mechanism. The head 35 of the securing pin 36, which has up to this point rested against the periphery of the disc 27 and secured the striker, will be forced into the recess 28 by the spring 37 and the securing balls 38 of the striker 39, as they are no longer obstructed by the pin 36, will enter the holes provided for the purpose and thus release the striker 39, which will thereupon be thrown, also by the power stored in the spring 37, against the detonator, igniting the same.

In place of the centrifugal weights 26 being fixed on a disc 27, a single elongated member may be used, which is inclined to the axis of rotation of the shell and is rotatable about an axis at right angles to the axis of rotation of the shell.

What I claim is:—

1. A centrifugal fuse for shells which rotate about their longitudinal axis, comprising a fuse body, a plurality of centrifugal weights forming a balanced system, means capable of storing energy under the action of the centrifugal weights, a striker, means for securing the centrifugal weights in an inoperative position and means for preventing the striker from coming into operation until the centrifugal weights have been sufficiently moved by the stored force in an opposite direction to that of the centrifugal force after the latter has ceased to act.

2. A centrifugal fuse as claimed in claim 1, in which the balanced system of centrifugal weights is capable of rotation within the fuse body.

3. A centrifugal fuse as claimed in claim 1, in which the balanced system of centrifugal weights is capable of rotation within the fuse body about an axis at right angles to the axis of rotation of the shell.

4. A centrifugal fuse as claimed in claim 1, in which the balanced system of centrifu-

gal weights is capable of rotation within the fuse body about an axis at right angles to the axis of rotation of the shell, the centrifugal weights of the balanced system being disposed at an inclination to the axis of the shell, so that, on the shell rotating, they seek to set themselves into a plane at right angles to the axis of rotation of the shell.

5. A centrifugal fuse as claimed in claim 1, in which the balanced system of centrifugal weights is capable of rotation within the fuse body about an axis at right angles to the axis of rotation of the shell and having a rotatable disc (27), to which the centrifugal weights (26) are fixed, the means of storing energy consisting of a torsion spring (34), which tends to rotate the said disc and bring it into such a position that the centrifugal weights on the same lie eccentrically to the axis of rotation of the shell.

6. A centrifugal fuse as claimed in claim 1, in which the balanced system of centrifugal weights is capable of rotation within the fuse body about an axis at right angles to the axis of rotation of the shell and having a rotatable disc (27), to which the centrifugal weights (26) are fixed, the means of storing energy consisting of a torsion spring (34), which tends to rotate the said disc and bring it into such a position that the centrifugal weights on the same lie eccentrically to the axis of rotation of the shell in combination with a slot (31) in the fuse body, a recess (30) in the disc, an outlet opening (32) in the fuse body communicating with the slot (31) and a securing ball (29), as and for the purpose set forth.

7. A centrifugal fuse as claimed in claim 1, in which the balanced system of centrifugal weights is capable of rotation within the fuse body about an axis at right angles to the axis of rotation of the shell and having a rotatable disc (27), to which the centrifugal weights (26) are fixed, the means of storing energy consisting of a torsion spring (34), which tends to rotate the said disc and bring it into such a position that the centrifugal weights on the same lie eccentrically to the axis of rotation of the shell in combination with a securing bolt (36) for the striker, the disc (27) having a recess (38) to receive the head (35) of the said securing bolt, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification.

BOHDAN PANTOFLÍČEK.