K. WIESER.

MECHANICAL TIME FUSE.

APPLICATION FILED SEPT. 14, 1911.

1,029,036. Patented June 11, 1912.

Fig. 1.

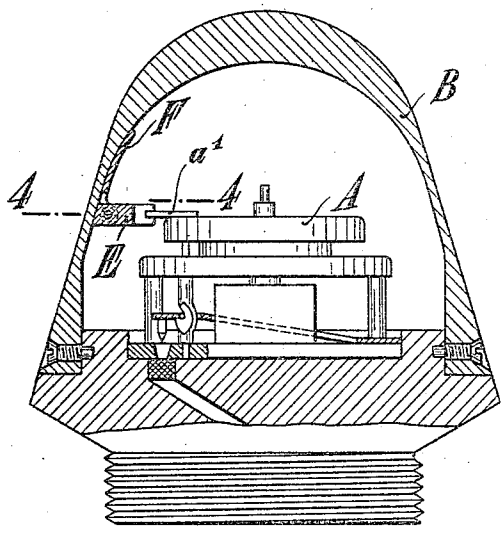


Fig. 2.

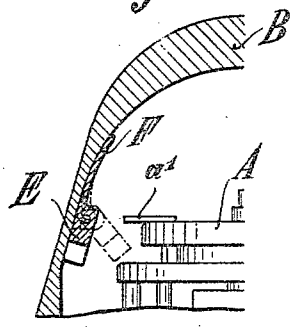


Fig. 3.

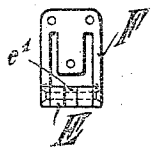
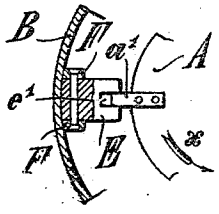


Fig. 4.



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MECHANICAL TIME-FUSE.

1,029,036. Specification of Letters Patent. Patented June 11, 1912.

Original application filed July 1, 1910, Serial No. 569,911. Divided and this application filed September 14, 1911. Serial No. 649,358.

To all whom it may concern:

Be it known that I, KARL WIESER, a subject of the Emperor of Germany, and a resident of Bredeney, Germany, have invented certain new and useful Improvements in Mechanical Time-Fuses, of which the following is a specification.

This application is a division of my application filed July 1, 1910, Serial No. 569,911.

The invention relates to mechanical time fuses the setting of which is effected by rotating an external part of the fuse, which external part is connected by a clutch (which releases itself automatically on firing and acts in both directions of rotation) to a locking disk which determines the instant of the release of the igniting apparatus. In known fuses of this kind the clutch consists of a tongue attached to the locking disk and an inwardly bent flat spring attached to the external part of the fuse, and provided with a slot into which the tongue of the locking disk enters. During the flight of the projectile this spring bends outwardly under the action of centrifugal force and at the same time releases the tongue of the locking disk. The disadvantage of this clutch is that the adjustments of the fuse are easily rendered inaccurate. The spring may stretch or bend inward on the rotation of the outer part of the fuse and according to the direction in which the rotation takes place. When the fuse is set, the revolving external part of the fuse advances beyond the locking disk, by the amount by which the spring has become lengthened or shortened, whereby errors in the setting of the fuse are caused.

Now the object of the present invention is to provide for mechanical time fuses of the kind hereinbefore mentioned, a clutch which will enable the fuse to be accurately set by means of the external revolving part thereof. This end is attained, according to the invention, by the use of a clutch in which both that member thereof which is mounted on the locking disk, and the one mounted on the external revolving part of the fuse, is unyielding in the direction of rotation.

In the embodiment of the invention specifically claimed in my previous application above identified, said clutch comprises a slidable bolt engaging a tongue attached to the locking disk.

According to the form constituting the basis of this application a hinged lever carried by the external revolving part, is used, instead of the sliding bolt, the lever engaging a tongue attached to the locking disk.

In the accompanying drawing is shown a form of a mechanical time fuse constructed according to this invention, and provided with a clockwork movement.

Figure 1 is a longitudinal section through the fuse (partly in elevation) in its transport state; Fig. 2 shows a section of the fuse similar to Fig. 1, but after firing, Fig. 3 is a detail of part of the clutch and Fig. 4 is a section on line 4—4 of Fig. 1, looking from above.

A denotes the locking disk which determines the instant of the release of the igniting apparatus and can be rotated by the clockwork in the direction of the arrow x, Fig. 4, and B is the external revolving part of the fuse which is made in the shape of a cap. The cap B is coupled to the locking disk A by a tongue a^1 which projects in radial direction beyond the periphery of the locking disk A and engages a slot c^1 (Fig. 4) of a lever E without lateral play, when the fuse is in transport state. The lever E is mounted on the free end of a flat spring F secured to the cap B and forms one limb of a trip catch. The front face of the end of the lever E lying in the vicinity of its journal lies, in the transport state of the fuse, snugly against the inner wall of the cap B.

Since the cap B and locking disk are unyieldingly coupled in the direction of rotation of the cap by the lever E and the tongue a^1, no errors in the setting of the fuse can arise.

On firing the lever E is tilted downward under the action of inertia. The flat spring F is at the same time first lifted from the wall of the cap, and then approaching the wall of the cap again, forces the lever, after it has overstepped the tilting position (see Fig. 2, dotted position), into the position shown in Fig. 2 by full lines, in which the lever releases the locking disk A, and the spring F maintains the lever E in this position during the flight of the projectile.

I claim:

1. A mechanical time-primer having an outer primer part for effecting adjustment,

a rotatable member which effects the release of the priming mechanism, and a non-yielding coupling between the rotatable member and said outer primer part; said coupling comprising a hinged part carried by the outer primer part and adapted to disconnect the coupling through inertia on firing and permit of rotation of the rotary member.

2. A mechanical time-primer having an outer primer part for effecting adjustment, a rotatable member which effects the release of the priming mechanism, and a non-yielding coupling between the rotatable member and said outer primer part; said coupling comprising a member carried by the ratatable part and a lever pivotally mounted on the outer primer part adapted to engage with said member and to become disengaged by the action of inertia on firing, and a spring adapted to hold said lever in engaging or released position.

3. A mechanical time-primer having an outer primer part for effecting adjustment, a rotatable member which effects the release of the priming mechanism, and a non-yielding coupling between the rotatable member and said outer primer part; said coupling comprising a tongue carried by the rotatable part, a spring secured to the inner face of the outer primer part, a lever pivotally mounted on the spring and adapted to engage with said tongue and to become disengaged by the action of inertia on firing, said lever having a part held in frictional engagement with the inner face of the outer primer part by the spring whereby to hold the lever in operative position during transport of the primer.

4. A mechanical time-primer having an outer primer part for effecting adjustment, a rotatable member which effects the release of the priming mechanism, and a non-yielding coupling between the rotatable member and said outer primer part; said coupling comprising a tongue carried by the rotatable part; a spring secured to the inner face of the outer primer part, a bifurcated lever pivotally mounted on the spring, the prongs of said lever adapted to engage with said tongue during the transport state of the fuse and to become disengaged by the action of inertia on firing, said lever having further a flat face engaging the inner face of the outer primer part actuated by said spring to hold the lever in operative position.

The foregoing specification signed at Barmen, Germany, this 24th day of August, 1911.

KARL WIESER. [L. S.]

In presence of—

ALBERT NUFER,

L. NUFER.