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UNITED STATES PATENT OFFICE.

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POWDER TIME FUSE.

Application filed August 5, 1924. Serial No. 730,294.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

The invention described herein, may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

The subject of this invention is a powder time fuse.

In high angle firing against aircraft the variation in atmospheric pressure is a determining factor in regulating the venting of the gases generated by the burning powder of the time train. As the external pressure is reduced, the gases are vented at a more rapid rate, thereby reducing the internal pressure in the fuse and allowing the powder of the time train to burn more rapidly. On account of the variations in atmospheric pressure and the irregularity of the combustion of the powder time train, it follows that a fuse which is designed and set to explode a projectile after the lapse of a predetermined interval of time can at best be merely an approximation.

In addition, by virtue of the rapidity of combustion of the powder train and the limitation of the length of the train, due to the size of the fuse, it has generally been considered essential to provide two time rings.

According to the present invention, the fuse or cover is designed to confine within itself all of the gases generated by the burning powder train, thus creating uniform conditions within the fuse regardless of atmospheric pressure. The internal pressure within the fuse will be a constantly rising quantity and will consequently provide for slower combustion of the powder train, thereby permitting reduction to but a single ring to obtain the burning time required in a fuse of this character.

Other equally important objects and advantages are: to provide a powder time fuse including a novel means for obtaining gas obturation without interferring with the rapid setting of the fuse; to construct the setting mechanism so that the tendency to obturate will become greater as the internal pressure is increased; to provide a simple device operable on setback for locking the time ring in set position; to secure the fuse casing in rigid assembly; and, to include a heat insulating lining for minimizing the effect of changes in temperature.

To these and other ends, my invention consists in the construction, arrangement, and combination of elements, described hereinafter and pointed out in the claims forming a part of this specification.

A practical embodiment of my invention is illustrated in the accompanying drawings, in which,

Fig. 1 is a longitudinal sectional view of my improved fuse; and

Fig. 2 is a similar view illustrating an alternate method of carrying out the invention.

Referring to the drawings by numerals of reference:

According to the invention, I provide a suitable fuse casing comprising a body 10, formed with an annular flange 11, on which is seated a hollow fuse head or cover 12. The body is formed with a groove 13 in which is placed a split ring 14 prior to assembling of the casing. When the cover is in position, the split ring is expanded by means of machine screws 15 to partially engage a registering groove 16, on the inside of the cover and thereby serves to hold the cover in place.

The upper and lower surfaces of the ring are coated with a soft and elastic material 17, such as felt, soft solder, or rubber to effectually seal the joint.

The body is formed with a succession of connected irregular bores extending centrally thereof from front to rear and divided by the insertion of a disc 18 which is crimped into place.

To the rear of the disc 18 is a booster charge 19, confined by a base plug 20, which is centrally apertured to receive a covered disc 21, for preventing escape of the booster charge. A passage 22, loaded with a combustible material which may be a portion of the booster charge, extends to a powder pellet 23, which is disposed in a recess in the forward face of the body adjacent its periphery. The base plug 20 may be provided with a filling hole and the hole suitably closed by a threaded pin after assembly.

The forward face of the body is covered by a felt washer 24, on which is seated a time ring 25, formed with a stem 26, the free end of which is threaded for the reception of a nut 27 assembled from the rear and adapted to rotatably hold the time ring to the body. Embracing the stem 26 is

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RAT TRAP.

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My invention relates to improvements in traps for catching mice, rats, or the like.

An important object of the invention is to provide a trap of the above mentioned character which is so constructed that the movable part or jaw may be automatically locked in the open position by swinging the jaw to such position, without the necessity of placing the fingers within or beneath the movable part, or otherwise manipulating the locking elements.

A further object of the invention is to provide a trap of the above mentioned character which will cover the caught part of the animal, thus shielding the same from view.

A further object of the invention is to provide a trap of the above mentioned character the major part of which may be formed of sheet metal, whereby the trap may be constructed cheaply.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective view, from the rear end of the trap, showing the movable jaw closed,

Figure 2 is a similar view, from the front end of the trap showing the movable jaw open,

Figure 3 is a central vertical longitudinal section through the trap, showing the movable jaw closed,

Figure 4 is a similar view showing the movable jaw open,

Figure 5 is an enlarged vertical longitudinal section through the rear end of the movable jaw extension, and,

Figure 6 is a plan view of the base and trigger and associated elements, parts in section and parts removed.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a flat base, preferably formed of sheet metal, provided with longitudinal and transverse flanges 11 and 12. The forward end of the base 10 constitutes the stationary jaw of the trap. Rigidly mounted upon the upper surface of the stationary jaw is a receptable 13, for the reception of bait, such as cheese.

The numeral 14 designates an upper jaw, embodying a top 15, carrying depending longitudinal and transverse flanges 16 and 17. This movable jaw carries an extension 18, integral therewith. This extension is stiffened by having its outer edges bent into laterally extending flanges 19. The extension and movable jaw are formed integral and the same are preferably stamped from one section of sheet metal. The movable jaw and extension are disposed at a right angle from each other, and a common longitudinal slot 20 is formed through the same, and this slot is stamped from the material, and reinforcing flanges 21 are produced, extending along the edges of the slot, as shown. The flanges 16 are provided at their inner ends with apertured knuckles 22, for the reception of a transverse pin 23, and this pin extends through knuckles 24, formed upon the flanges 11. It is thus seen that the jaw is pivoted to the base or stationary jaw, for vertical swinging movement.

A tongue 25 is struck up from the bottom of the base, and this tongue is apertured for receiving the transverse pin 23.

The numeral 27 designates a trigger, as a whole, including a body portion 28, carrying depending knuckles 29, pivoted upon the pin 23. The knuckles 29 are confined between the tongue 25 and one flange 11. The body portion of the trigger 28 is provided with a forward ring or frame 30, and is equipped with an upstanding rearwardly curved tongue 31, having a notch 32. The trigger embodies a rear portion or tail 33, which is heavier than the forward or ring portion 30, and hence serves to retain the ring portion elevated. The upper jaw is swung downwardly by a spring 34, which is coiled about the pin 23, upon one side of the tongue 25. One end of this spring engages the rear end of the base 10 while the opposite end of the spring engages the extension 18. The function of this spring is to throw the movable jaw downwardly, so that its flanges telescope within the flange of the stationary jaw, as shown in Figure 3.

The numeral 35 designates a holding dog, preferably formed of a section of wire, bent