

No. 859,610.

PATENTED JULY 9, 1907.

J. F. MEIGS & E. A. GATHMANN.  
CENTRIFUGAL PERCUSSIVE FUSE FOR PROJECTILES.  
APPLICATION FILED DEC. 5, 1904.

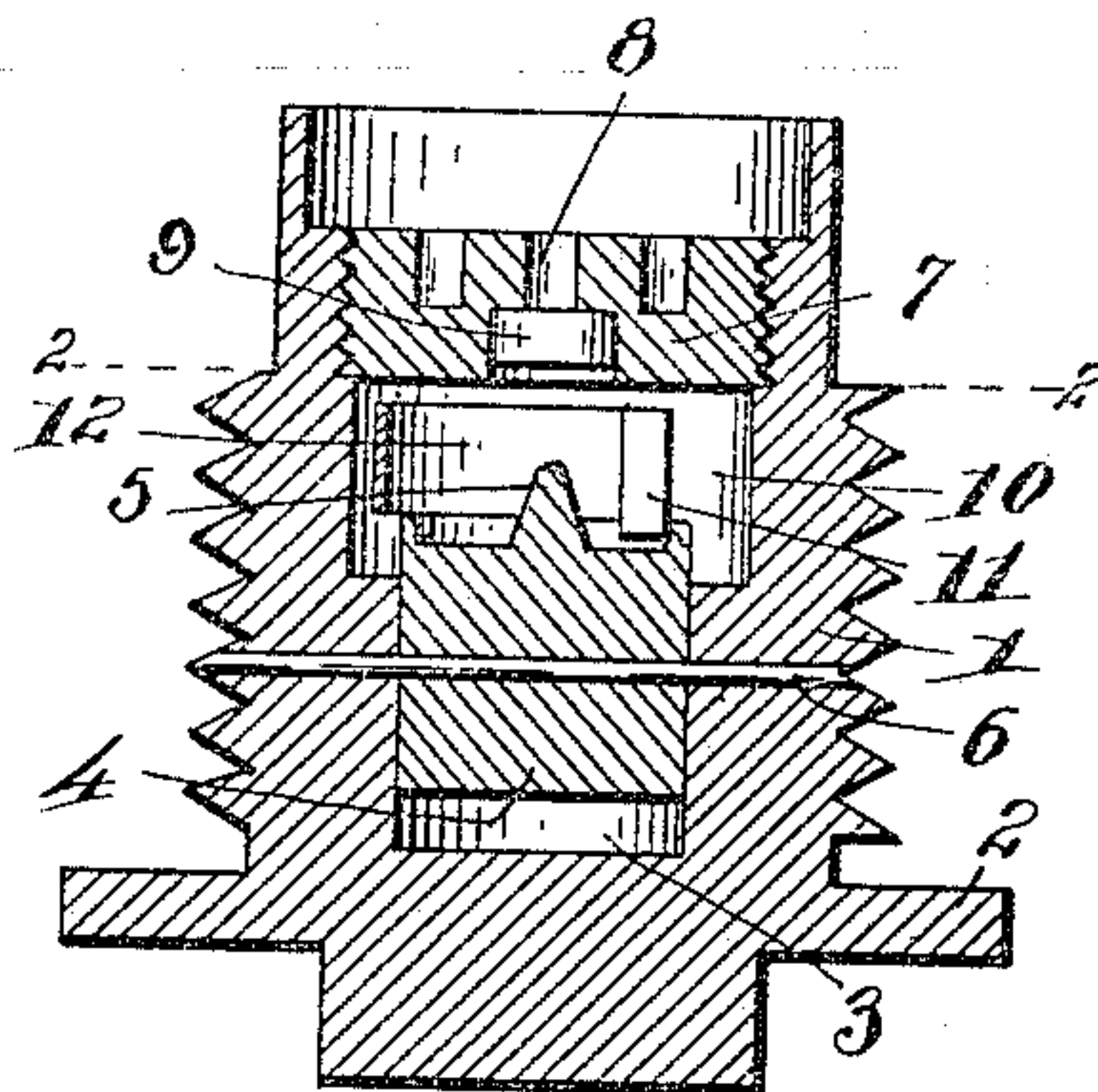


FIG. 1.

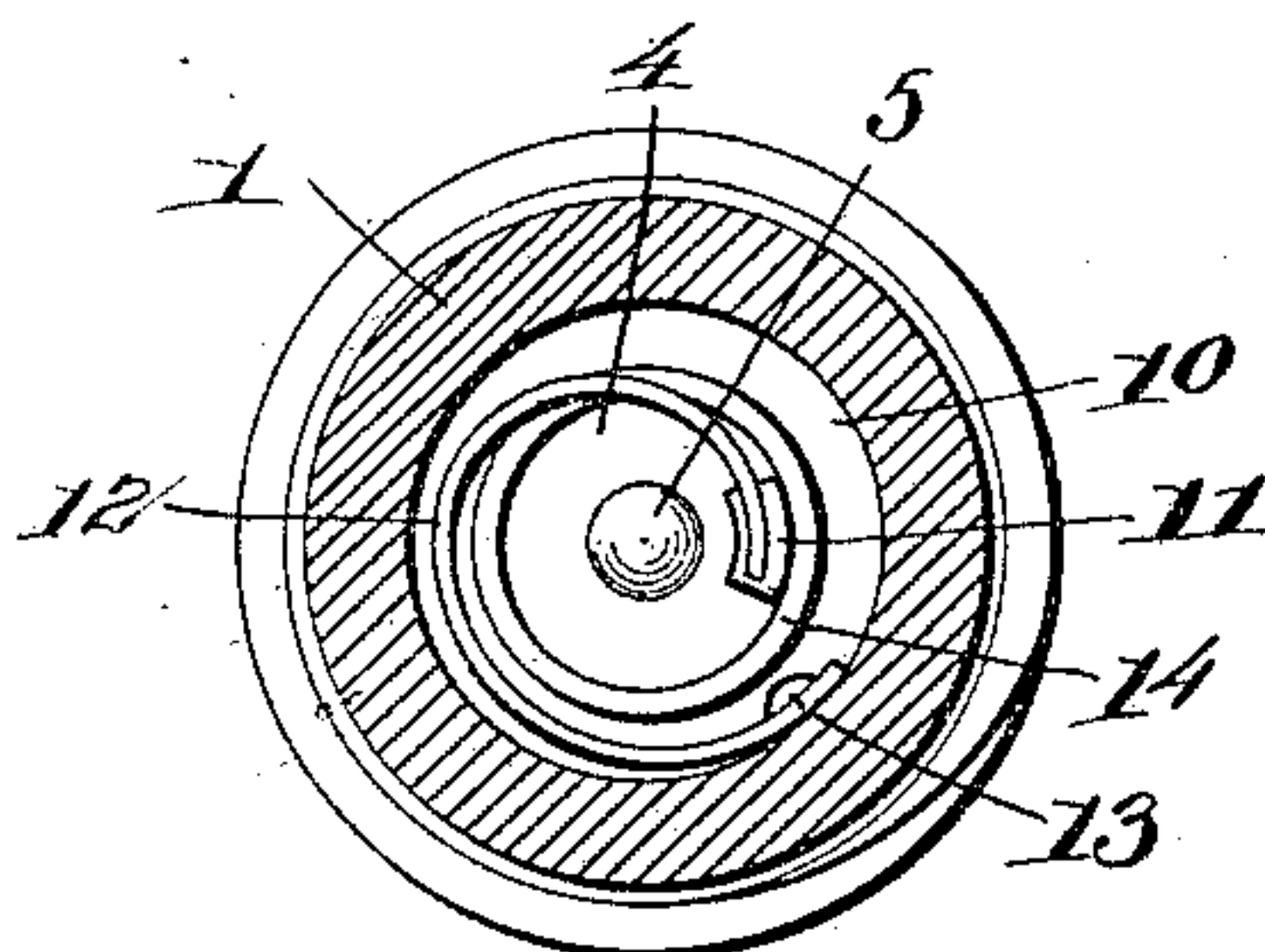


FIG. 2.

Witnesses  
*C. Amatore*  
*J. J. McCarthy*

Inventors  
*John F. Meigs*  
*Emil A. Gathmann*  
By *Foster Freeman Watson*  
Attorneys

# UNITED STATES PATENT OFFICE.

JOHN F. MEIGS AND EMIL A. GATHMANN, OF SOUTH BETHLEHEM, PENNSYLVANIA,  
ASSIGNORS TO BETHLEHEM STEEL COMPANY, OF SOUTH BETHLEHEM, PENNSYLVANIA,  
A CORPORATION OF PENNSYLVANIA.

## CENTRIFUGAL PERCUSSIVE FUSE FOR PROJECTILES.

No. 859,610.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed December 5, 1904. Serial No. 235,568.

To all whom it may concern:

Be it known that we, JOHN F. MEIGS and EMIL A. GATHMANN, both citizens of the United States, residing at South Bethlehem, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Centrifugal Percussive Fuses for Projectiles, of which the following is a specification.

Our invention comprises improvements in percussion fuses for explosive projectiles and it consists in means whereby to lock the hammer or sliding portion of the fuse securely in place until the same is released by the shock in firing the shell and the centrifugal force resulting from the rotation of the shell, as fully set forth hereinafter, and as illustrated in the accompanying drawings, in which,

Figure 1 is a sectional view illustrating a fuse embodying our invention; and Fig. 2 is a section on the line 2—2 of Fig. 1;

Referring to the drawing, 1 indicates a casing which is threaded externally, as shown, for insertion in a threaded opening in the base of the projectile and it is provided with a flange 2 which serves as a gas check. Within the casing 1 is a hammer chamber 3 in which is located a sliding hammer 4 having a firing pin 5 on its forward end. The hammer is normally held in a middle position by means of a transverse pin or wire 6 which is of soft material and adapted to shear when the projectile is suddenly driven forward in firing.

In the forward end of the casing 1 is a removable head 7 having a central opening 8 and a seat having a detonating cap 9 in line with said opening, the cap being also in line with the firing pin 5. Between the hammer in its normal position and the head 7, is a detent chamber 10 of larger diameter than the hammer and within this chamber is a detent 11 carried by a spring 12 which is connected to the wall of the casing, as shown at 13 in Fig. 2. It will be evident that the detent shown may be duplicated upon the opposite side of the detent chamber if desired, in which case the springs should be shorter, to avoid interference.

The detent 11 normally prevents the hammer from moving forward, that is, it prevents the firing pin from reaching the detonating cap. For this purpose the spring 12 normally holds the detent in its inner position as illustrated in the drawing. To prevent the possibility of accidental discharge of the detonating cap, and consequent explosion of the projectile, we prefer to positively lock the detent against outward movement, which would free the hammer, until the hammer is released by the discharge of the projectile from

the gun. As illustrated in the figures, we accomplish this by providing a shoulder 14 on the forward end of the hammer, which shoulder serves to positively prevent the outward movement of the detent.

The operation of the fuse is as follows. It is to be assumed that the fuse is screwed into and secured in the rear end of a shell or projectile and that before firing the parts are in the positions shown in the drawing. The shock of firing will impart to the hammer 4 a relatively rearward movement which will shear the pin 6 and also free the detent from the retaining shoulder 14. The hammer will have no tendency to move forward until the projectile is obstructed in its course. Meanwhile, the centrifugal force caused by the rapid rotation of the shell throws the detent out against the wall of the chamber, thus leaving an unobstructed central opening through which the hammer may move forward. When the projectile strikes, the hammer is thrown suddenly forward and detonates the cap 9, thus exploding the charge in the projectile.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a percussion fuse, the combination with a chambered casing, a hammer seated therein and a head adapted to support a cap, of a detent interposed between the said head and hammer, means normally holding said detent in position between the head and hammer, and additional means upon the hammer normally locking the detent in said position.

2. In a percussion fuse, the combination with a chambered casing, a hammer seated therein and a cap carrying head, of a detent normally located between said hammer and head, a spring supporting said detent yieldingly in said normal position, and means for positively locking the said detent against outward movement from said normal position.

3. In a percussion fuse, the combination with a chambered casing, a hammer seated therein, and a cap carrying head, of a detent normally interposed between the said hammer and head, a shoulder on the face of the hammer adapted to prevent outward movement of the detent, and means for normally holding said shoulder in engagement with said detent.

4. In a percussion fuse, the combination with a chambered casing, a hammer seated therein, and a removable cap carrying head, of means for normally holding the hammer in a mid-position longitudinally of the chamber, a detent interposed between the hammer and the cap carrying head, and means for engaging said detent with the hammer while the latter is in normal position to prevent outward movement of the detent.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN F. MEIGS.  
EMIL A. GATHMANN.

Witnesses:

CLARENCE F. FEINEL.  
EDWIN A. MILLER.