

J. McINTYRE

Shell

No. 36,664.

Patented Oct. 14, 1862.

Fig. 1.

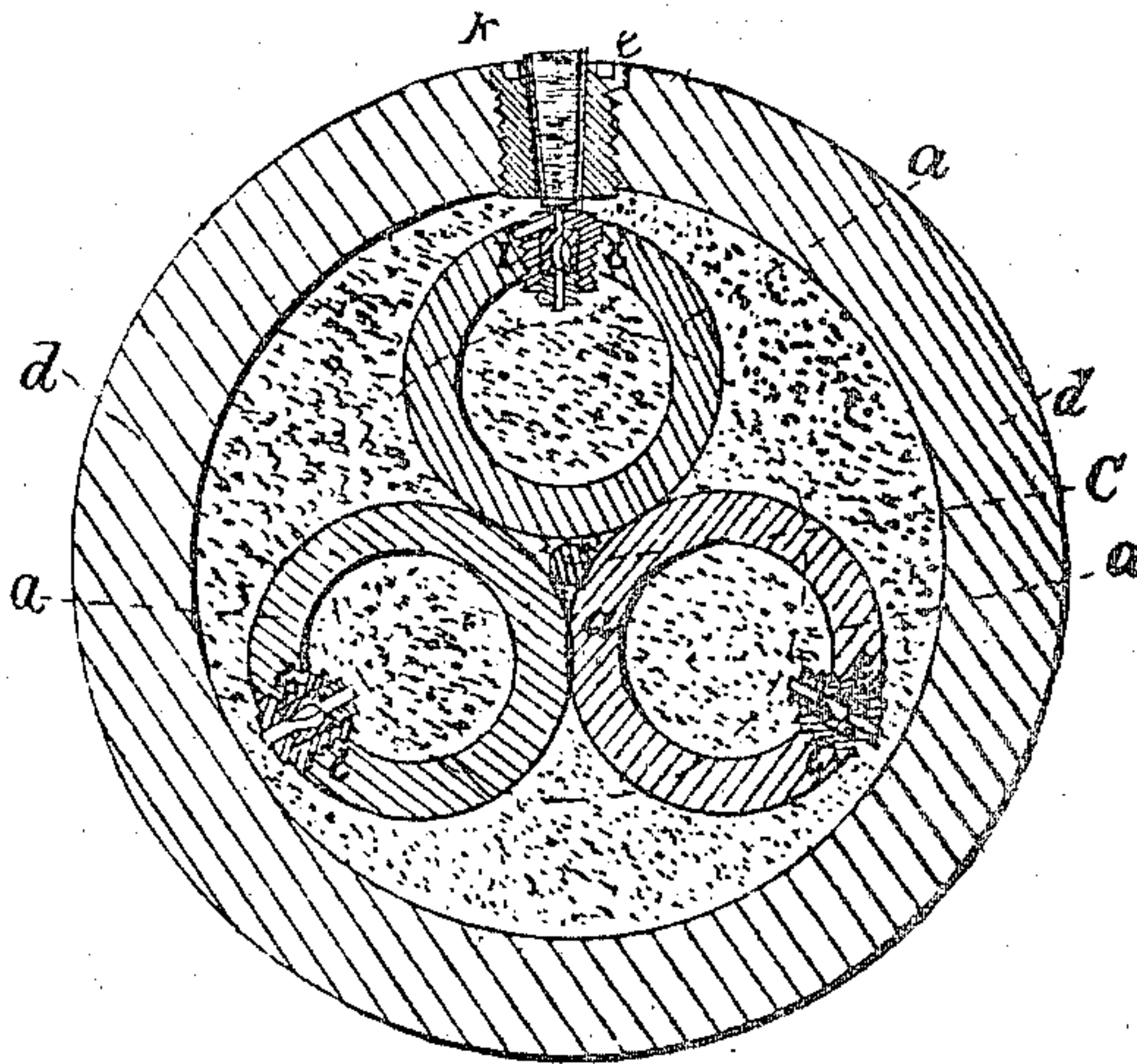
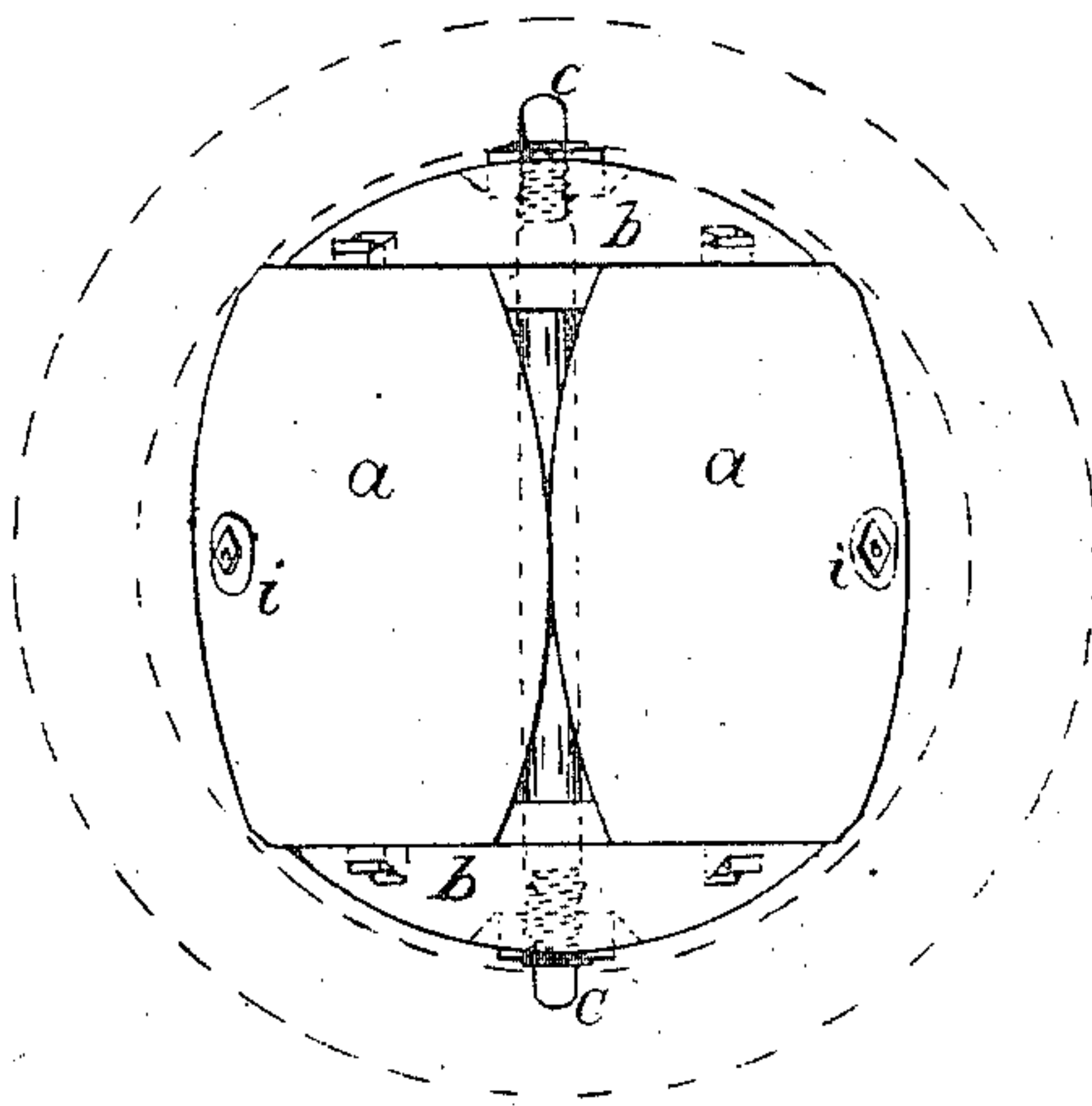


Fig. 2.



Witnesses

James M. McIntyre

Lemuel W. Perrell

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JAMES MCINTYRE, OF NEW YORK, N. Y.

IMPROVEMENT IN COMPOUND EXPLOSIVE SHELLS.

Specification forming part of Letters Patent No. 36,664, dated October 14, 1862.

To all whom it may concern:

Be it known that I, JAMES MCINTYRE, of the city and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Projectiles; and I do hereby declare the following to be a full, clear, and exact description of the nature of my said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a section of my bomb or projectile, and Fig. 2 is a plan of the grenades contained in said bomb.

Similar marks of reference denote the same parts.

My invention consists in a combination of grenades with a bomb-shell, the said grenades being so fitted that their proper position is maintained in the shell, but that they can be successively charged with powder while within the main shell, and a fuse introduced in each, and then the main shell is to be charged with powder. The explosion ensuing from the firing of the bomb, as usual, breaks the main shell, throwing that and the several grenades in different directions, and these grenades, exploding separately, produce a very destructive result upon the vessel or troops against which the bomb has been directed.

In the drawings, *a a a* are grenades of the desired size and shape. I prefer that they should be of an elongated or oval shape. Each of these grenades is properly prepared with a screw-hole for receiving the fuse and with projections at the ends, by which said grenades are held in place between two heads, *b b*, as seen in Fig. 2, said projections entering mortices in the said heads, and these heads are kept to the ends of the grenades by a tie-rod, *c*, passing through the center and forming an axis, on which said grenades may be rotated. When the grenades are thus prepared, they are to be surrounded with molding-sand and form the core around which the bomb-shell *d* is cast. The ends of the axis *c* are left projecting from the sand core, and the shell *d* is cast around them, so that after the casting has been made of the shell *d* and the sand cleaned out, as usual, through the hole

at *e*, the said grenades can be rotated on the axis *c*. Each grenade in succession is filled with powder through this fuse-hole *e*, and its fuse *i* screwed in, after which the main shell *d* is charged and its fuse *k* inserted in the hole *e*, as usual. When the shell is fired, the fuse *k* is ignited, and that causes the explosion of the bomb. The force of the explosion not only breaks the outer case, but also separates the grenades from the heads *b b*, sending them in different directions, igniting their fuses *i*, and said grenades explode separately, thus increasing the destructive power of the projectile, and causing as many separate explosions as there are grenades.

By this construction the grenades are held properly in their place in the ball and prevented from changing position in transportation. Thus liability to premature explosion by any movement of the grenades is prevented, and the bomb is uniformly balanced in weight.

Strings of cast balls may be introduced between the heads *b b* at the sides of the grenades *a a*, if desired.

The fuses employed in the grenades *a a* should be of a character that will resist the pressure to which they are subjected by the explosion of the bomb without the fire driving through them, and may be of a length that will allow the necessary lapse of time between the explosion of the main bomb and the respective grenades.

The present invention is set forth in Letters Patent granted to me in Belgium, January 31, 1862.

What I claim, and desire to secure by Letters Patent, is—

The grenades *a a*, introduced between the heads *b b*, and fitted so as to be rotated upon the shaft or axis *c* within the bomb-shell *d*, as and for the purposes specified.

In witness whereof I have hereunto set my signature this 9th day of August, 1862.

JAMES MCINTYRE.

Witnesses:

LEMUEL W. SERRELL,
CHAS. H. SMITH.