2 Sheets—Sheet 1.

J. GAULT.

Projectile.

No. { 1,685. / 32,689. }

Patented July 2, 1861.

Fig: 1.

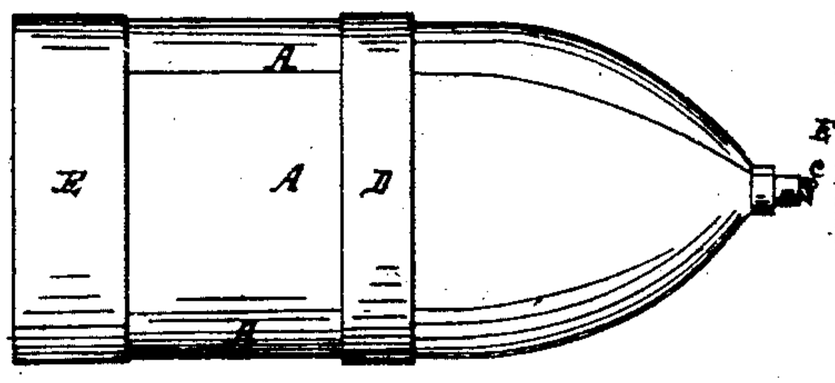


Fig: 2.

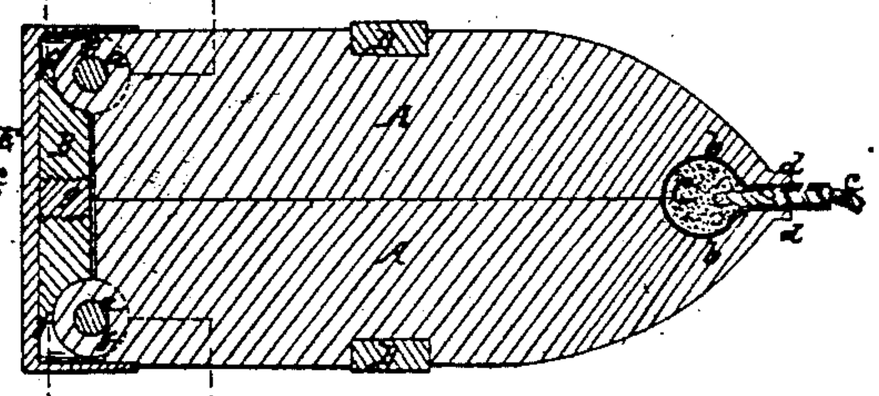


Fig: 5.

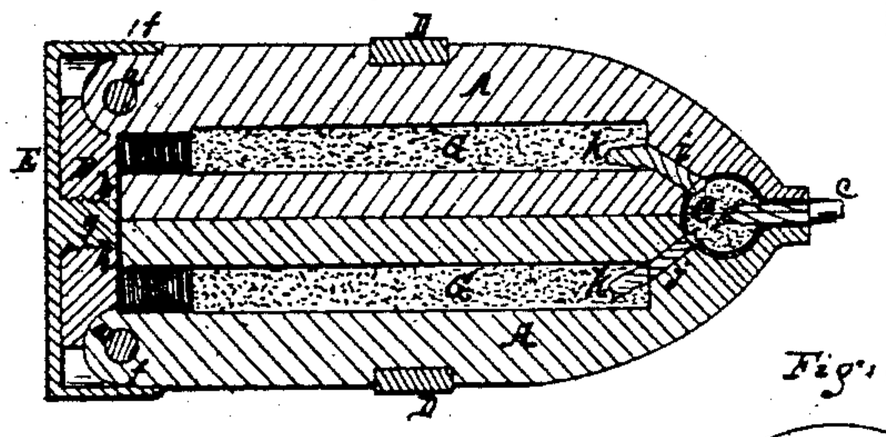
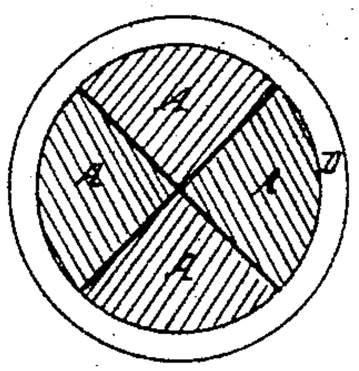


Fig: 3.



Witnesses.

J. W. Coombs

G. W. Reed

Inventor.

J. Gault

per Munn & Co

Attorneys

2 Sheets—Sheet 2.

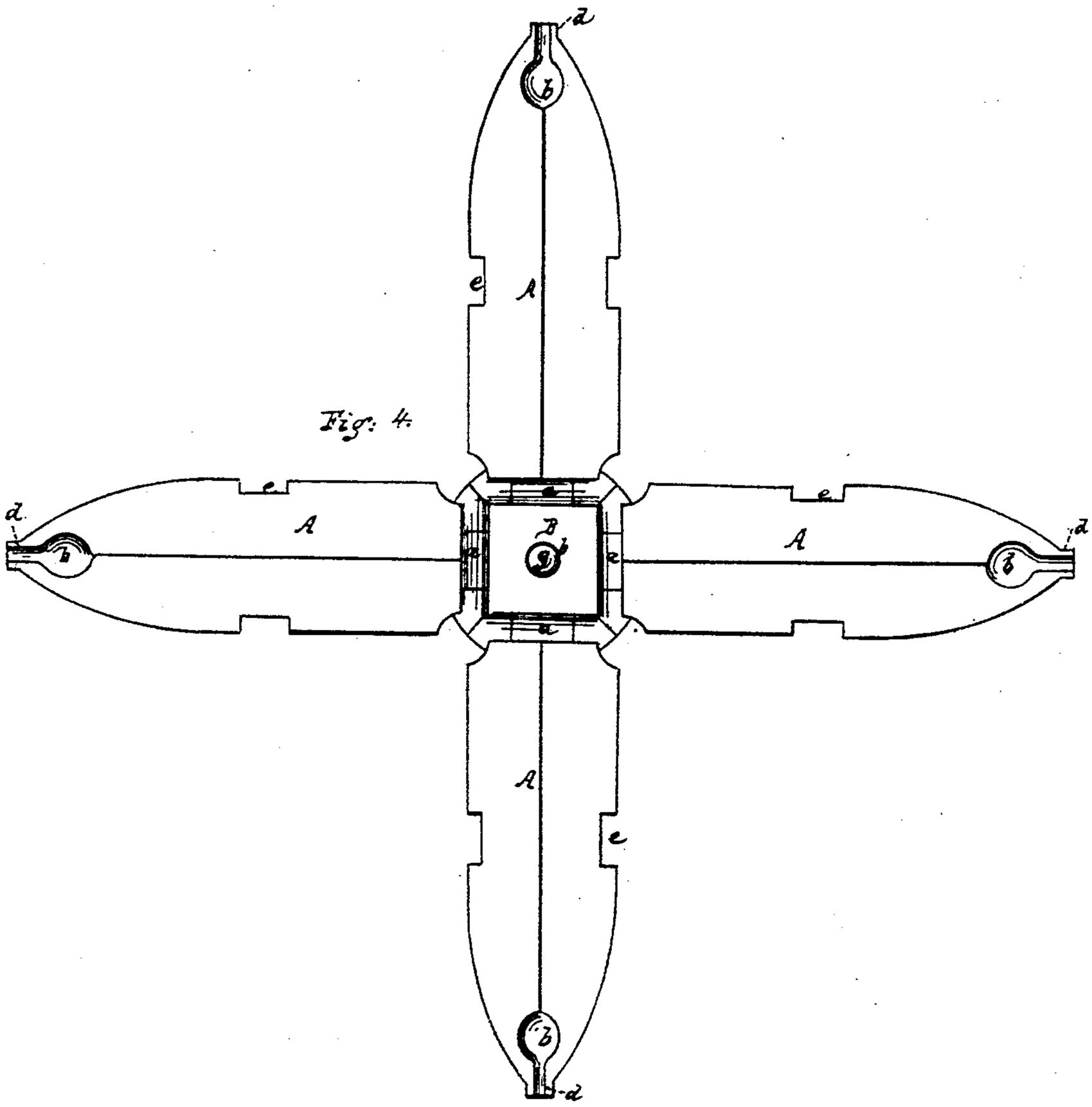
J. GAULT.

Projectile.

No. { 1,685. / 32,689. }

Patented July 2, 1861.

Fig: 4.



Witnesses.
F. Coombs
Geo Reed

Inventor.
J. Gault
per Munn & Co
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN GAULT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PROJECTILES FOR ORDNANCE.

Specification forming part of Letters Patent No. **32,689**, dated July 2, 1861.

To all whom it may concern:

Be it known that I, JOHN GAULT, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Projectiles for Ordnance; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal view of a projectile constructed according to my invention, representing it in the condition in which it is placed in the gun; Fig. 2, a central longitudinal section of the same; Fig. 3, a transverse section of the same; Fig. 4, a front view of the same in the condition it assumes during its flight; and Fig. 5, a longitudinal section of a projectile, illustrating a feature of my invention not illustrated by Figs. 1, 2, 3, and 4.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in the construction of an elongated projectile with two or more movable sections formed by a longitudinal division of its body, and hinged at the base or rear end of the projectile, fitted with a band or its equivalent to keep the said sections together in compact form previous to the insertion of the projectile in the gun and during the first part of its flight, and with a cavity or chamber within and between the said sections to contain a charge of powder to be fired by a fuse for the purpose of bursting the said band or its equivalent, and spreading the said sections by its explosion, that the said sections may, in the continued flight of the projectile, have a wide sweep, and make the projectile more destructive.

It also consists in making such movable sections hollow, to contain gunpowder or other explosive material, and with vents leading to the aforesaid chamber, that the charges in the said sections may be fired by fuses ignited by the explosion of the charge in the said chamber for the purpose of bursting the said sections into fragments, and scattering such fragments in all directions in a suitable time after the spreading of the sections.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The projectile represented in Figs. 1, 2, 3, and 4 has four movable sections, A A, connected by hinges *a a* with a base-piece, B, all of cast-iron, the said sections being solid and fitting together to form a solid body, as represented in the sections Figs. 2 and 3, except near the point, where a cavity is formed in each to make the small chamber *b* to contain the charge of powder which is inserted in a cartridge, C, and a small orifice, *d*, through which a fuse, *c*, attached to the said cartridge, is left protruding, as shown in Figs. 1 and 2, when the sections are closed up.

D is a band of soft metal cast into a groove, *e e*, formed round the exterior of the sections *a a*, for the purpose of holding them together after they have been closed up. This band also serves the purpose of a packing-ring to fit the grooves of a rifled gun, and of thereby receiving and imparting to the projectile a rotary motion.

E is a breeching or cup, of cast-iron, fitted to the exterior of the base of the projectile, and embracing the back parts of the sections A A, to serve the two purposes of holding the sections together and of closing up the rear of the projectile to prevent the fire from the charge of powder used in the gun from entering between the sections and firing the cartridge C. This breeching may be attached to the base-piece B by various means; but I have represented it as provided with a central screwed pin, *g*, which screws into a tapped hole, *h*, in the center of the said piece. It must be made thin enough to be easily split by the forcing apart of the sections A A when the charge of the cartridge C explodes. The said breeching may serve the purpose of holding the sections together without the band D. The hinges should be constructed with stop-shoulders *f f*, to prevent the sections from being forced back beyond a given angle—say a right angle—to the axis of the projectile.

This projectile having had the cartridge C put in and been closed up is secured in the closed condition represented in Figs. 1, 2, and 3 by the application of the band D or breeching E, or both, and in this condition may be transported any distance for use. When used, it is put in the gun in the same manner as a solid shot or shell, and the fuse, which is made of proper length according to the distance it is to be projected, is ignited either before its insertion in the gun or by the explosion of the

charge of the gun, and when the fuse has burned to the cartridge C the explosion of the charge in the latter takes place and forces the movable sections A A apart, bursting the band D and the breeching E, or either of them, if only one be employed. The several sections A A then assume the positions shown in Fig. 4 and in red outline in Fig. 2, and by their great lateral range produce great destruction. Previous to the explosion of the charge in the chamber *b* the projectile is projected forward with as much accuracy as any solid shot, and the fuse may be so timed that the sections will not separate till the projectile has arrived nearly close to where it is required to do execution.

Instead of being made with a number of movable sections occupying its whole circumference, the projectile may be made with two or more movable projections arranged at equal distances apart, with intervening solid and immovable portions of the projectile. The movable sections, instead of being solid, may be made with cavities the whole length of their interiors, thus enabling them to be made longer in a projectile of given weight.

The projectile shown in Fig. 5 illustrates the whole of my invention. It is constructed in all respects like that shown in Figs. 1, 2, 3, and 4, but that its sections A A, instead of being solid, are hollow, and the cavities or chambers G G, formed within them, are filled with powder inserted through holes, which are afterward closed up by plugs *i i*, and vents *j j* are from the said chambers to the chamber *b*. The vents *j j* receive fuses *k k*, which are longer or shorter according to the time desired to elapse between the spreading out of the sections and their bursting into fragments, such fuses being ignited by the explosion of the charge in *b* and carrying fire to G G. The bursting of the sections A A produces further destruction, and when the projectile has this feature its destructiveness is enormous.

I do not claim, broadly, the construction of projectiles with laterally-expanding rings, as such construction has been before known; but

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

1. The combination of the hinged movable sections A A and the chamber *b*, to contain a charge of powder within said sections, substantially as and for the purpose herein set forth.

2. The soft-metal band D, fitted to a groove, *e e*, in the said hinged movable sections A A, and serving the two purposes of confining the said sections and a packing-ring, substantially as herein specified.

3. The combination, with the movable sections A A, of the breeching E, applied substantially as and for the purpose herein specified.

4. The construction of the movable sections A A with chambers G G, connected with the central chamber, *b*, by vents *j j*, substantially as and for the purpose herein described.

JOHN GAULT.

Witnesses:
M. M. LIVINGSTON.
OCTAVIUS KNIGHT.