

W. S. WILLIAMS.
CANISTER SHELL.

No. 41,882.

Patented Mar. 8, 1864.

Fig. 1.

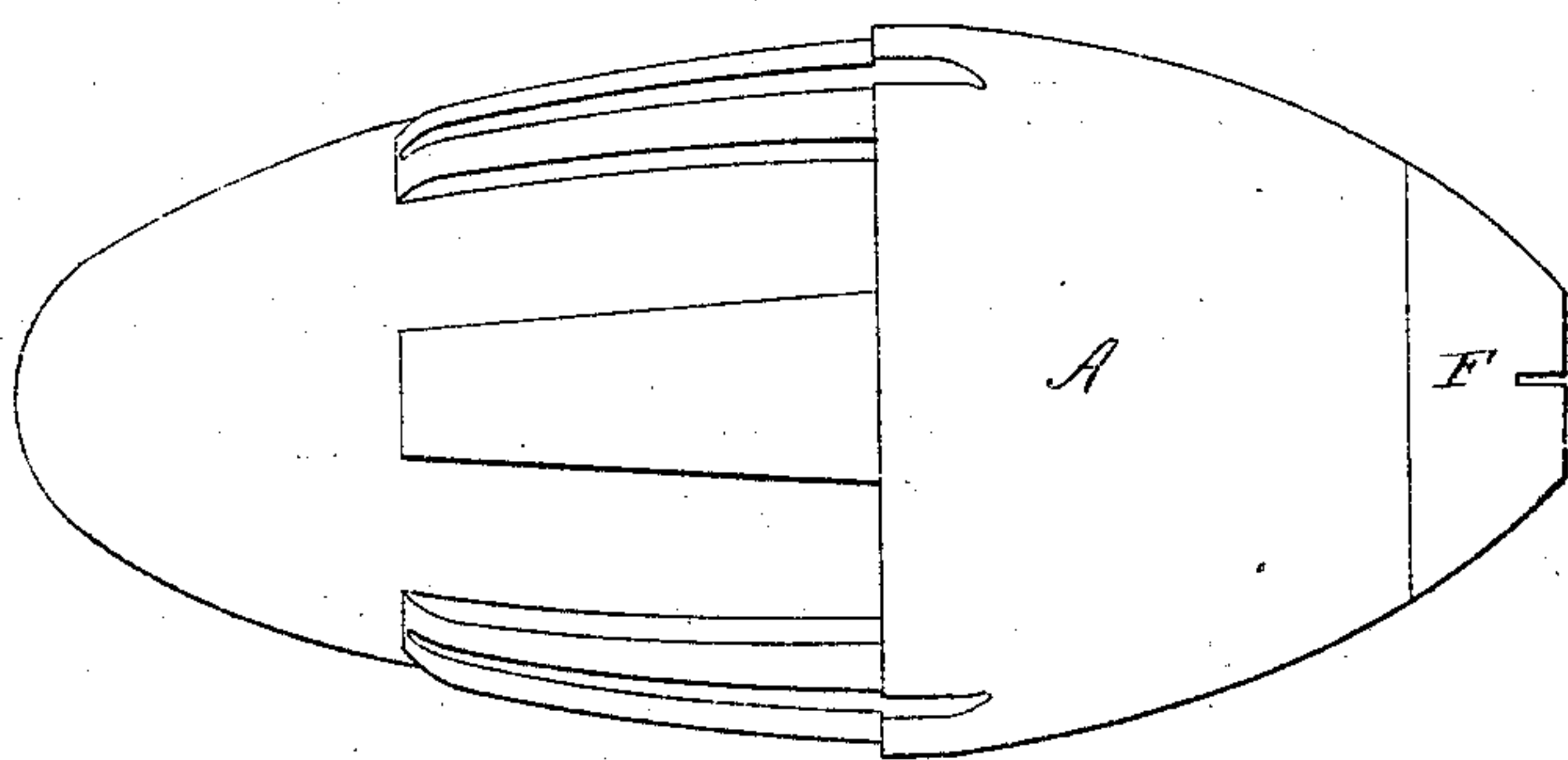


Fig. 11.

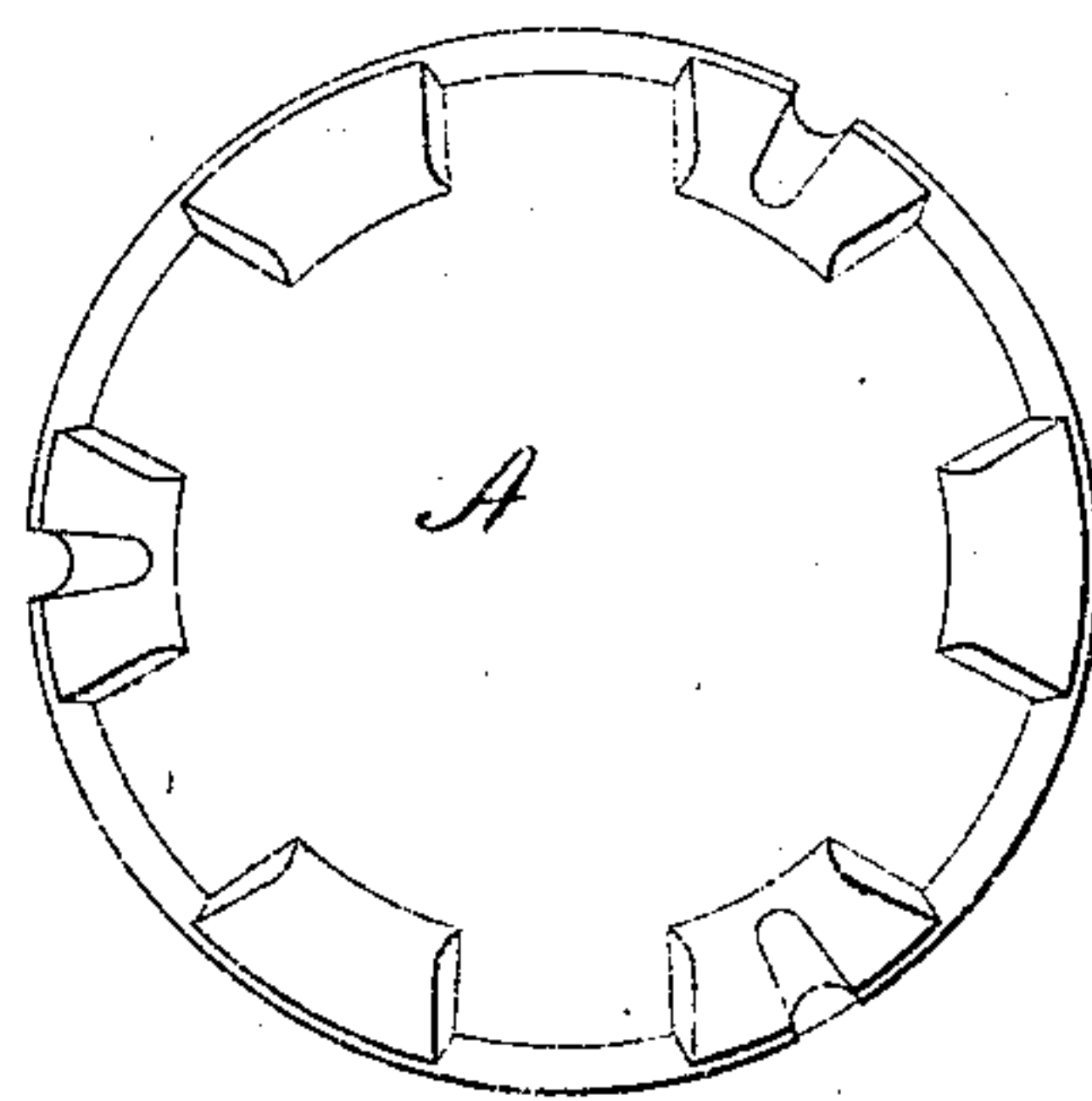


Fig. 4.

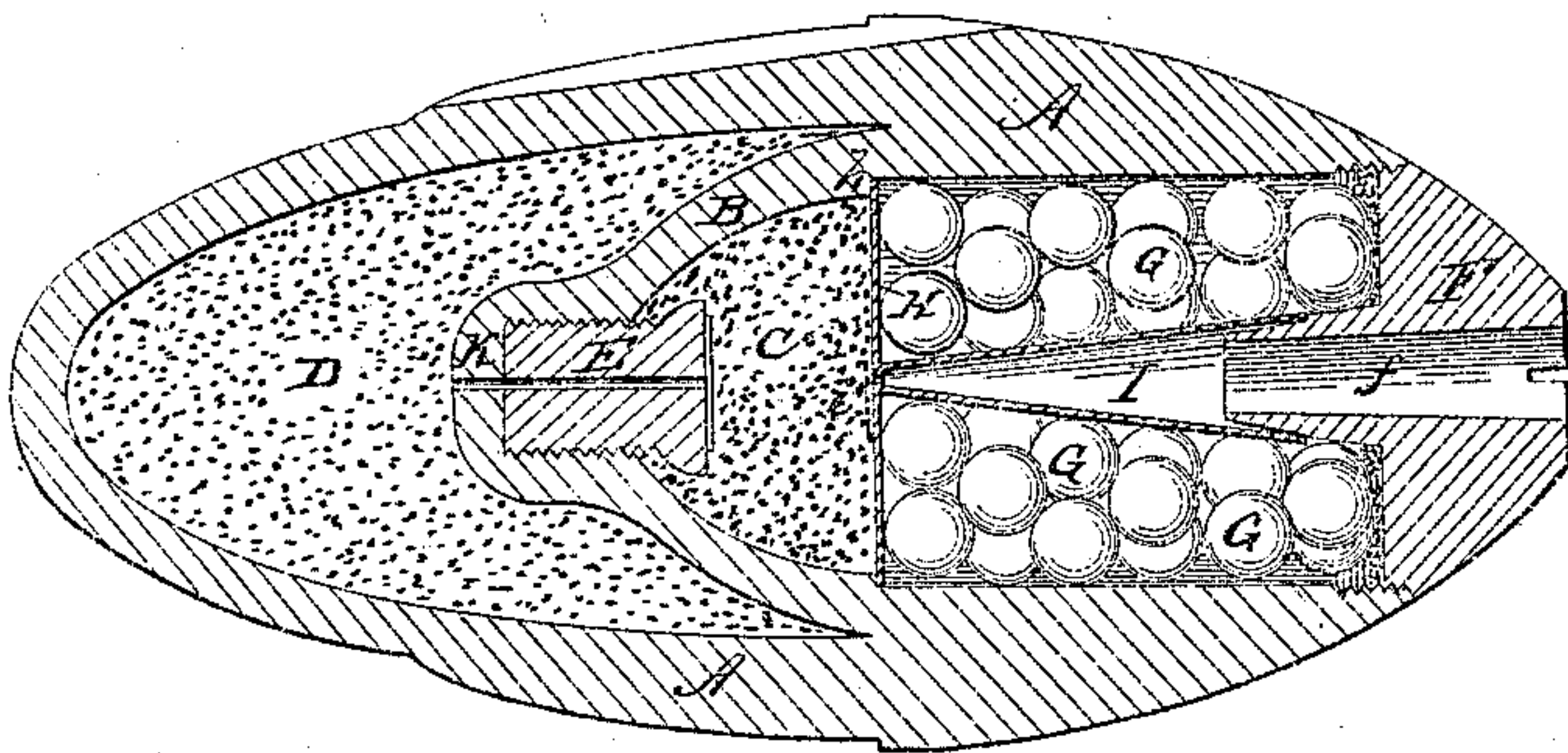
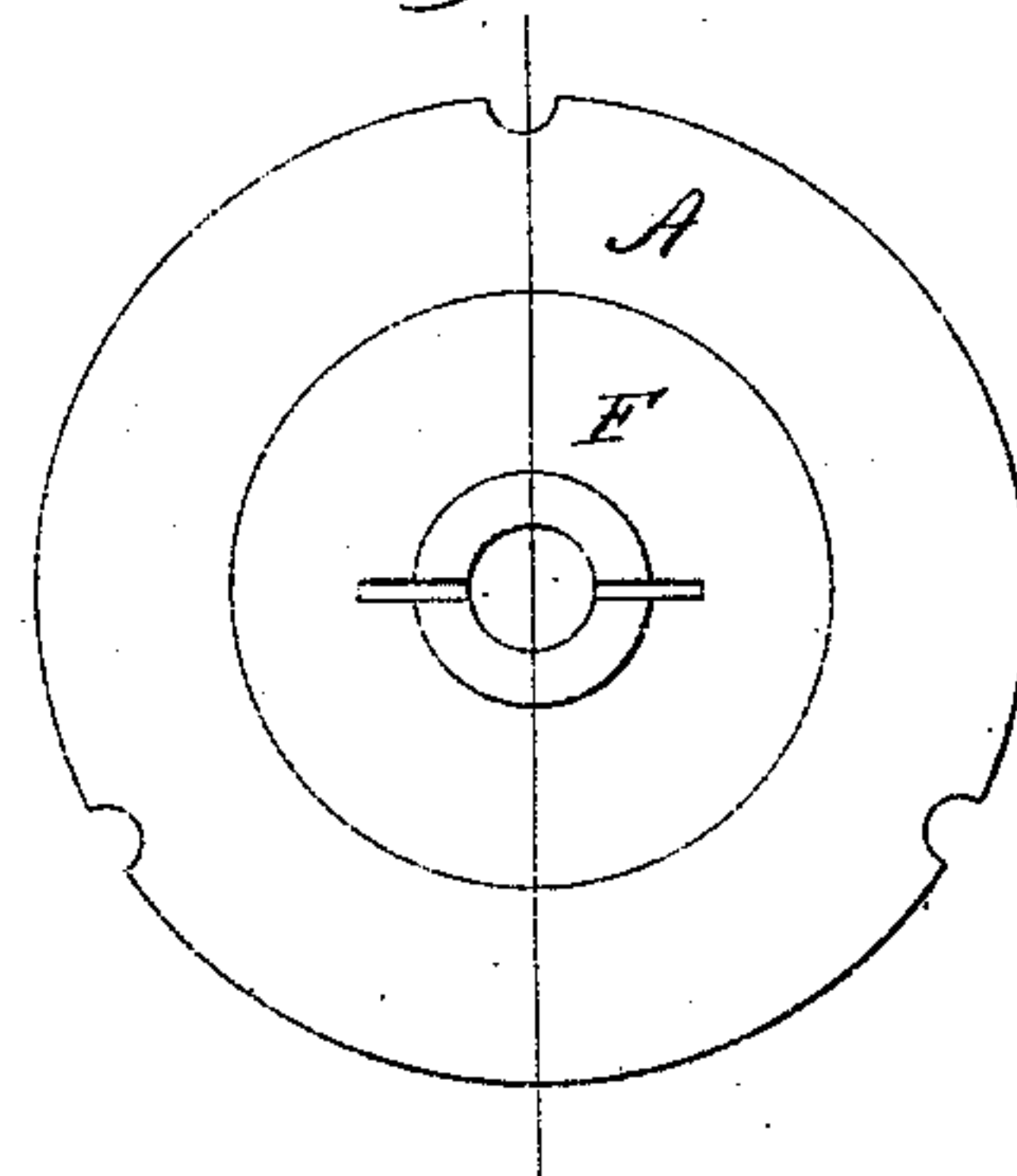


Fig. 3.



Witnesses
Charles DuBois
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UNITED STATES PATENT OFFICE.

WILLIAM S. WILLIAMS, OF CANTON, OHIO.

IMPROVEMENT IN CANISTER-SHELLS.

Specification forming part of Letters Patent No. 41,882, dated March 8, 1864.

To all whom it may concern:

Be it known that I, WILLIAM S. WILLIAMS, of Canton, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Canister-Shells; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the said invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a front elevation of the same. Fig. 4 is a longitudinal section thereof.

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

The subject of my said invention is a shell carrying a charge of canister-shot, which may be projected from it at any desired period during or at the termination of its flight at any desired interval, after which the entire shell will be exploded in manner hereinafter explained.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

In the accompanying drawings, A A represent various parts of the external walls of the shell.

B is a partition dividing the interior into two chambers, C D, between which is placed a time-fuse, E, of any suitable construction, adapted to communicate fire from one chamber to the other at any interval to which it may be set.

D is the main explosive chamber. The front chamber, C, has at its rear end a form similar to the bore of a howitzer, as clearly represented in Fig. 4, and is closed in front by a screw-cap, F, with a thread of such moderate strength that the explosion of the charge within the chamber C will blow out the said cap without rupturing the walls A A, and will thus project the balls G in advance of the shell.

H represents a disk of sheet metal, perforated in its center, and resting at its periphery in an offset or shoulder, *h*, so as to confine the powder in the rear of the chamber C, and separate the balls G from the said powder.

I is a tube attached to the plate H around the aperture *i* therein. The front of the said tube is formed of sufficient size to receive the

neck *f* of the cap F, within which neck may be inserted a time-fuse, cut to the desired number of seconds to produce the first explosion.

K is an abutment in the partition B, which supports the fuse E, so as to prevent it being forced backward through the partition by the first explosion in the chamber C.

e represents a guard, of tin or other fusible metal or material, covering the aperture in the fuse E, and employed to prevent gases being forced through the said aperture at the instant of the explosion, and then melting, to permit the ignition of the fuse.

Operation: The shell is taken from the caisson ready for use, with the exception of cutting the fuse in the cap F to the required number of seconds. As the shell is fired from the gun, the said fuse is ignited by the escaping gases in customary manner. Having reached the desired point in its flight, as determined by the length to which the external fuse is cut, the charge within the chamber C is exploded, forcing out the cap F, and projecting the canister-shot G on the principle of a howitzer at short range. The heat of this explosion melts the guard *e*, so as to expose and cause the ignition of the fuse E, by means of which fire is communicated to the main explosive-chamber D at any desired period after the first discharge, the said period being determined by the length to which the fuse has been cut. This second explosion has all the destructive effect of an ordinary explosive shell, and of course completely destroys the missile.

The construction of this shell throws the center of gravity so completely in advance of the center of the projectile or of the greatest area of resistance as to effectually preserve its position during its flight.

The moral effect of the discharge of the shell, the physical effect of the projected balls, and the moral and physical effect of the final explosion all combine to render this missile very efficient in action.

The external fuse communicating with the chamber C to produce the primary discharge, may be applied in front of the cap F, as here represented, or at back, or at the side, as preferred.

The shell may be used with a sabot or packing of any suitable construction, not necessary to be here described.

Having thus described my invention, what I

claim as new therein, and desire to secure by Letters Patent, is—

1. The peculiarly-formed hemispherical chamber C, in the described combination with the shoulder *h* and final explosive chamber D, for the purposes specified.

2. The combination of the perforated plate H, resting upon a shoulder, *h*, the tapering tube I, permanently attached by its smaller end to the plate H around the aperture *i*, and the cap F, with a tapering neck, *f*, fitting

within the large end of the tube I, all as herein shown and described, and for the purposes specified.

3. The fusible guard *e*, applied to the orifice of the fuse E in the manner and for the purposes explained.

WM. S. WILLIAMS.

Witnesses:

OCTAVIOUS KNIGHT,
CHARLES DU BOIS.