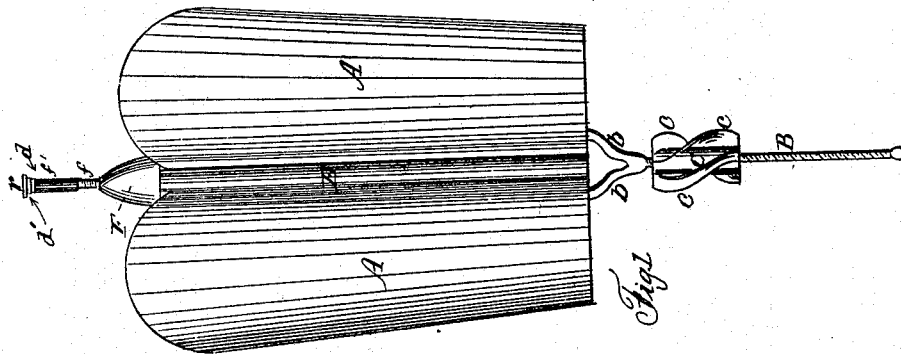
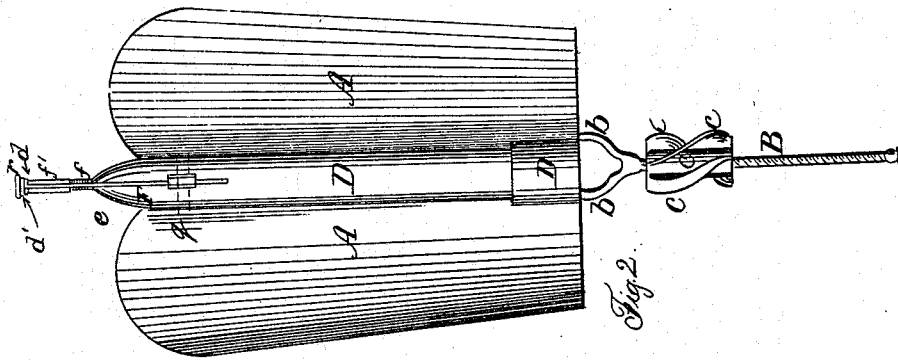
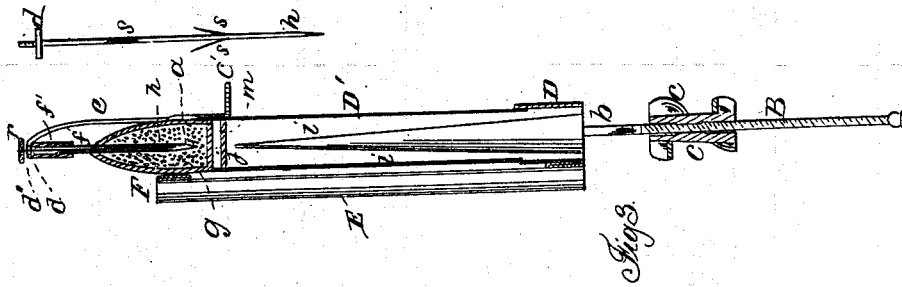


J. J. B. WALBACH.

Rocket.

No. 59,487.

Patented Nov. 6, 1866.



Witnesses.
S. J. Bahnestock
Theodore Lang

INVENTOR.
J. J. B. Walbach

UNITED STATES PATENT OFFICE.

J. J. B. WALBACH, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN WAR-ROCKETS.

Specification forming part of Letters Patent No. 59,487, dated November 6, 1866.

To all whom it may concern:

Be it known that I, JOHN J. B. WALBACH, of the city and county of Baltimore, in the State of Maryland, have invented a new and Improved War-Rocket; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which like letters indicate like parts in the several figures.

The nature of my invention consists in constructing a war-rocket in such manner as to secure a long and correct and direct flight, (having wings,) and to insure an explosion of the magazine upon striking.

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

In the drawings, Figure 1 represents a top view of my rocket. Fig. 2 represents an under-side view of my rocket. Fig. 3 represents a longitudinal section of the same.

A A are wings, which can be unshipped at pleasure. B is a screw-tail, on which works a balancing weight, C, having spiral wings or flanges c. The stem B is connected with the main body D, or rather its lower end, D', by two arms, b. The main body D is of cylindrical form, charged, as usual, with rocket-composition, *i*, well known to pyrotechnists, ordnance or artillery men. D' is made separate for convenience, so as to screw on to the lower end of D after it has been filled with composition. The wings A A are fitted in any suitable manner on the main body D D', so that they can be put on or taken off at pleasure, but remain in position during the flight of the rocket.

On the top of the rocket, or main body D, I secure a tube or cylinder, E. This is intended as a guide, to keep it in a direct line, on the theory that the air rushing through it with great velocity will effect this purpose. The tube E can be unshipped at pleasure, in like manner as the wings A A.

In the front end of main body D, I secure (say, screw) a magazine or shell, F. Through the loading-hole of this shell, after being properly charged, I introduce a tube, *f*, pointed or not, and having fulminate *a* at its lower end, or the fulminate composition may be secured to the end of the plunger or needle *h*. In

either case the lower end of tube *f* is perforated, so that the fire from the fulminate can communicate with the charge *g* in the shell F.

On the top of tube *f*, I screw a second one, *f'*. Through this, as also through *f*, the plunger or needle *h* passes. This needle has several longitudinal springs *s* on it to keep it in its normal position. On the top of this needle, or near it, is fastened a button, *d*. Above or in front of *d*, a disk, *d'*, is placed, fitting over the needle and having an arm, *e*, passing backward and under a guide, *g*, attached to the shell. *e* has an elbow, *e'*. The disk *d'* is held in place by being clamped between *d* and another disk or button, *r*, at the extreme front end, which screws down upon it. In the position shown the needle is stationary, and cannot be pushed down the tube *f* and an explosion take place.

At the top of the composition *i* in the rocket there is a partition, *j*, and there may be a small hole or holes in any part of it, so that the flame may penetrate the space *m* between the partition and the shell. There should be, in such cases, also a small hole in the bottom of the shell, and some powder between the shell and the partition, to explode the shell when the rocket-composition burns out.

The operation of firing the rocket is as follows: A suitable guide-piece or half-cylindrical tube is prepared, one that the balance-piece C will fit into. At the start this is intended to be at the front or upper end of the screw-tail B, preserving a proper equilibrium. The tube *f'* is screwed or run backward, leaving a space between it and the disk *d*, and leaving room for a backward play of the needle.

The rocket-composition may now be fired, and the rocket will start on its flight, its length of flight being assisted by the wings A A, and its direction more accurately secured by the current of air passing through tube E. Upon striking, at the end of its flight, upon its nose or extreme front end, the needle will be driven down or backward, ignite the fulminate, and explode the shell. Should it strike on its under side the elbow *e'* will effect the same result.

During the flight of the rocket, as the composition burns out, the body or balancing-piece C will be moving backward on screw-

tail B, the inner or hollow part of C having a screw cut upon it to fit the thread of B. This tends to preserve a certain equilibrium, or keep the front end of the rocket up. The current of air or the flame from the burning composition acting on the wings or flanges *e*, will produce the backward movement of C.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The self-adjusting balancing-weight C, in combination with the screw-tail B and main

body D D', constructed, arranged, and operating in the manner substantially as shown and described, and for the purpose set forth.

2. The combination of shell F, tubes *f f'*, needle *h*, and arm *e*, constructed, arranged, and operating in the manner as shown and described, and for the purpose set forth.

J. J. B. WALBACH.

Witnesses:

S. S. FAHNESTOCK,
JOHN S. HOLINGSHEAD.