

United States Patent Office.

JOHN D. MURPHY, OF BALTIMORE, MARYLAND.

Letters Patent No. 79,377, dated June 30, 1868.

IMPROVEMENT IN REVERSIBLE ORDNANCE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN D. MURPHY, of the city and county of Baltimore, and State of Maryland, have invented certain new and useful Improvements in Cannon; and I do hereby declare that the following is a sufficiently full, clear, and exact description thereof, to enable one skilled in the art to which my said invention appertains to make and use it, reference being had to the accompanying drawings, which are made a part of this specification.

My invention consists in the provision, in a gun, of an additional chamber or bore, situated in the rear of the main bore, and communicating with it by means of a suitable vent, said bores being mutually capable of use as the recipient of the charge, and the one not thus employed serving to contain a body of air, which, by being expanded by the explosion of the charge, shall fill the bore, and thus prevent the occurrence of a vacuum, and the consequent recoil of the gun, when the discharge takes place.

In the drawing—

Figure 1 represents a longitudinal section of my improved cannon, adapted to fire at long range, and

Figure 2, a detached view of the tompon, introduced in the muzzle of the long-range bore, when it is desired to fire at short range, the one represented in the short-range bore in fig. 1 being then removed.

A may represent a gun, preferably made of wrought iron, fagoted and forged into shape in any suitable manner. It is bored out at both ends, to form the bores, B and C, adapted respectively to fire at long and short range, they being of the same or different diameters, as may be desired. The bores B and C communicate by means of a vent, *v*, and said vent also communicates with the touch-hole *y*.

D and E represent tompons, intended respectively for the muzzles of the bores B and C, and in which they are respectively inserted when the other is employed as the bore proper. They are held in place by pins *x*, set-screws, or other suitable device, no great strength of fastening being requisite, as the tompon has but the pressure of the expanded air to resist, and that only for a moment.

I prefer to adapt the two bores of my gun for solid shot and long-range firing, and for use as a mortar, or for firing grape or other scattering shot, at short range. They may have, for whatever purpose employed, any approved internal construction.

When the gun is fired, the explosion of the fulminating-powder instantly heats the air confined in the rear chamber or bore, and such air, being thus expanded, rushes forward into the bore proper, and prevents the occurrence of a vacuum when the discharge takes place, it having been proved by practical experience that, by thus avoiding vacuum, and consequently preventing the external air from rushing into the gun after the discharge, the cause of recoil is effectually removed.

The gun, not being liable to recoil, needs no trunnions, and hence can be readily made of wrought iron, by forging and boring, as above stated. Wrought iron is adopted to oppose greater effective strength to the explosive force of the charge, and is more durable and economical than other metals. A wrought-iron gun, of given calibre and capacity of resistance, may be made of much less metal than an equally effective cast-iron gun, and, inasmuch as it can be manufactured at about the same cost per pound as the cast-iron gun, the cost of the former will be less than the latter, proportionately to the difference between their respective weights.

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

A gun, having two communicating bores, B C, of different calibres, arranged as represented and described, and adapted to be mutually employed as the charge and air-chamber, by removable plugs or tompons D E, substantially as set forth.

To the above specification of my said invention I have signed my hand, this eighth day of May, A. D. 1868.

JOHN D. MURPHY.

Witnesses:

OCTAVIUS KNIGHT,
W. H. BRERETON.