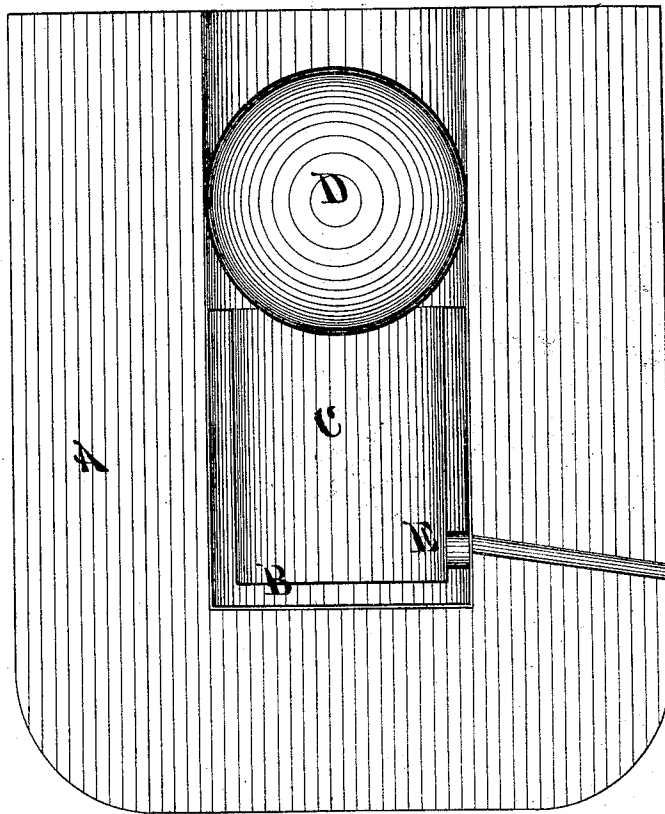


T. SHAW.
Cartridges for Ordnance.

No. 147,871.

Patented Feb. 24, 1874.



Witnesses,

Hector Orr
James Kinnear

Inventor,

Thomas Shaw

UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CARTRIDGES FOR ORDNANCE.

Specification forming part of Letters Patent No. 147,871, dated February 24, 1874; application filed February 25, 1873.

To all whom it may concern:

Be it known that I, T. SHAW, of the city and county of Philadelphia, Pennsylvania, have invented a new and Improved Mode of Preventing the Destruction of Guns and Increasing the Force of Explosive Compounds; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in the introduction of casings or cartridges containing liquids to be generated into gas or steam by the heat of the explosive compound, whereby the walls of the gun or cylinder are protected from the intense heat, and the pressure is augmented, as hereafter described. The object of the invention is to prolong the life of ordnance and gunpowder machinery, and to utilize the intense heat of explosive compounds, as hereinafter described.

In order to enable others to use and practice my invention, I will proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms part of the specification, the sketch represents a longitudinal section through the breech end of an ordinary gun, of which A is the gun, and B an annular casing surrounding cartridge C, said space being filled with water. E is an aperture through said space, to be located opposite the touch-hole. D represents the location of an ordinary ball. The

casing B, inclosing the water, is made of soft metal, to melt at a low temperature. When the powder is exploded in cartridge C, the resulting heat melts the surrounding casing, converts the water into steam and gas, which increases the pressure, and, by reason of the absorption of the heat by the water, the gun is protected against this element of destruction.

It is evident that water is the most suitable liquid on account of its cheapness, and because of the oxygen of the water combining with the excess of carbon in the powder, forming carbonic oxide and carbonic-acid gas, instead of fouling the gun with the otherwise resulting carbon. Twenty pounds of water may be used with one hundred pounds of powder, and, presuming that only ten pounds are utilized, there would be the addition of two hundred and seventy-seven cubic feet of steam or gas at atmospheric pressure.

I claim—

The annular and circular space A in casing B, for containing liquids, in combination with cartridge C, whereby the entire walls of the gun surrounding the cartridge are protected from the intense heat, and a large liquid surface exposed for the rapid generation of high-pressure steam, substantially as and for the purpose set forth.

THOMAS SHAW.

Witnesses:

HECTOR ORR,
JAMES KEENAN.