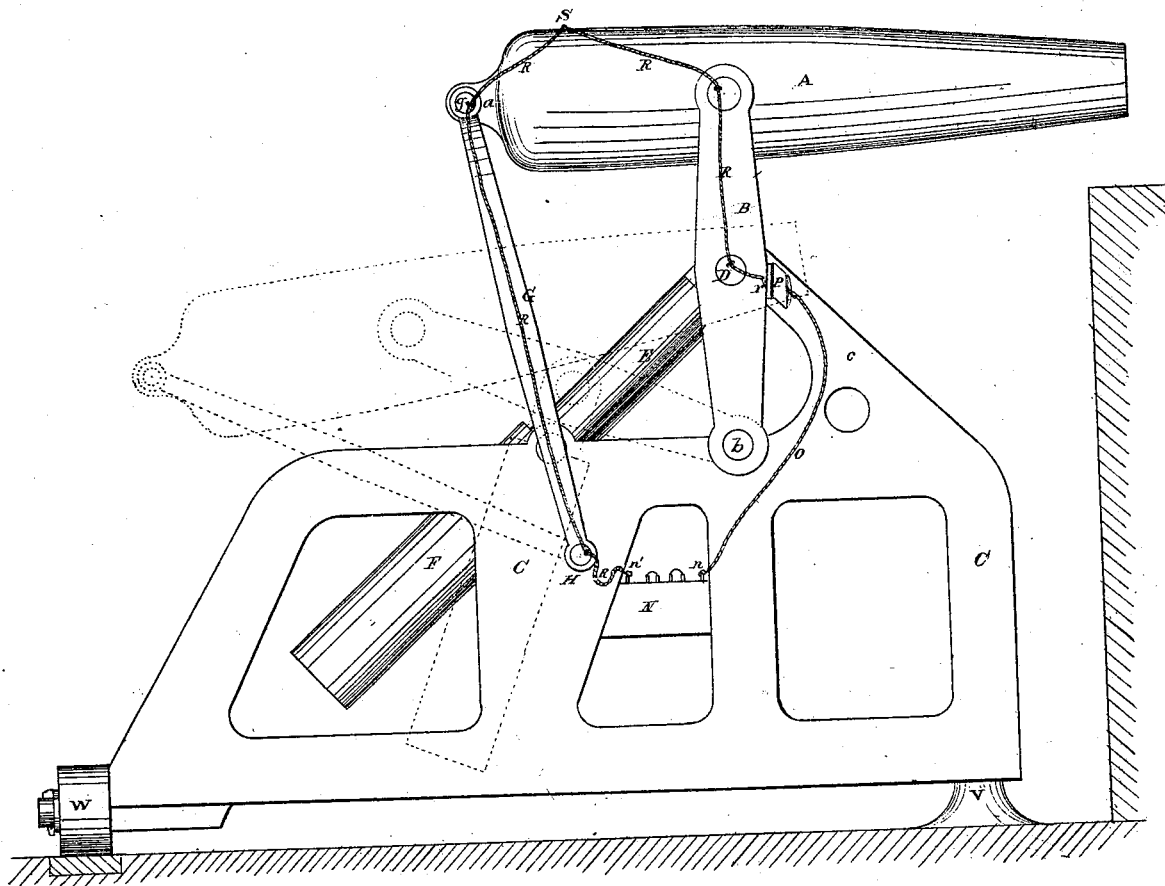


J. B. EADS.  
Operating Ordnance.

No. 112,230.

Patented Feb. 28, 1871.



Attest.

Gas & Ewin  
Wm. H. Brewster

Inventor.

James B. Eads  
By Knight Bros. Atty

# UNITED STATES PATENT OFFICE.

JAMES B. EADS, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN OPERATING ORDNANCE.

Specification forming part of Letters Patent No. **112,230**, dated February 28, 1871.

I, JAMES B. EADS, of the city and county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Operating Ordnance, of which the following is a specification:

### *Nature and Object of the Invention.*

My present invention relates to an improvement of my patent of August 18, 1869, No. 93,691, entitled "improvement in gun-carriages." Said patent relates to the storing of the recoil-power of the gun in a spring or springs of metal or compressed air, and utilizing it in restoring the gun to the position for firing after loading; and my present invention consists in the application to the gun and carriage of an apparatus by which an electric circuit is established by the arrival of the gun in position for firing to discharge the gun.

### *Description of the Drawing.*

The drawing is a side elevation of a gun-carriage and gun illustrating my invention, the gun being shown by full lines in its firing position and the electric circuit complete, and by dotted lines in the loading position with the electric circuit broken.

### *General Description.*

A is the cannon, whose trunnions have bearings in a frame, B, that is pivoted at *b* to a carriage, C. A cross-bar, D, of the frame is connected to the plunger E, which works in an air-cylinder, F, whose upper end is pivoted to the sides of the carriage.

The recoil of the gun when fired forces the plunger into the cylinder and compresses the air therein, the compressed air being forced into another chamber of smaller dimensions than the cylinder, and retained there by a valve until the gun is again loaded, when the pressure of air is admitted beneath the plunger and throws the gun upward and forward into firing position.

The air-chamber and valve mechanism are not shown, and form no part of my present application, but are merely alluded to to render the description plain.

The breech end of the gun is connected to the carriage by two side rods, G, which are pivoted at *g* to the breech-lug *a* at the upper end and to the carriage at H at the lower end.

The pivots at H may be made to slide upward and downward to raise and lower the

breech, and consequently to change the inclination of the gun. The two sides of the gun-carriage are similarly constructed, a side view showing the arrangement clearly.

N represents a galvanic battery, to one pole or terminal, *n*, of which is connected a wire, O, which is wrapped or covered with non-conducting material to insulate it from the gun-carriage. This wire connects the pole *n* with an insulated metallic plate, P, secured upon the abutment-brace *c* of the carriage.

From the pole *n'* of the battery extends an insulated wire, R, which is secured to the pivot H and to the breech-pivot *g*, from which it passes to the touch-hole of the gun at S, where is a coil of fine platinum wire or other means to cause the explosion of the fulminate or powder. From the touch-hole the wire passes to the trunnion, and from that to the part of the frame B in near proximity to the insulated plate P, when the gun is in firing position.

The end *r* of the wire R is so arranged as to come in contact with the plate P when the gun comes into firing position, and the contact of the end *r* with the plate P establishes the electric circuit, and the electricity, passing through the reduced portion of the wire R at the touch-hole, heats said portion and causes the discharge of the gun; or, if preferred, a spark may be caused to traverse the fulminate by a small break in the wire.

U represents the parapet; V, the pivot on which the carriage turns, and W one of the wheels.

A galvanic battery is shown as the means for producing an electric current; but electricity may be produced by other means. For instance, the rising of the gun may set in motion a frictional electrical machine, or the magnet or armature of a magneto-electric machine, or the said machines may be operated by hand.

### *Claim.*

I claim as my invention—

The electric battery or machine N and wires O and R, in combination with a gun-carriage, substantially as and for the purpose described.

In testimony of which invention I have hereunto set my hand.

JAS. B. EADS.

Witnesses:

SAML. KNIGHT,  
GEO. C. FABIAN.