

G.K. Farrington,
Gun Lock.

No 110448.

Patented Dec. 27. 1870

Fig. 1

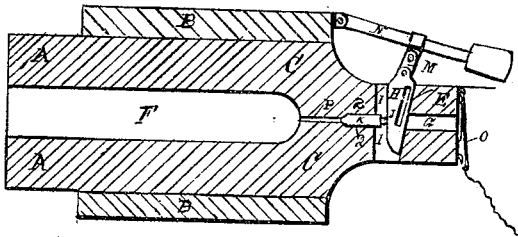


Fig. 2

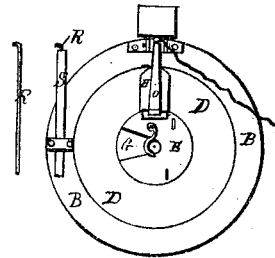


Fig. 3

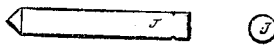
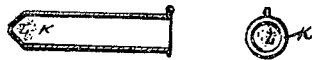


Fig. 4



Witnesses:

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GEORGE K. FARRINGTON, OF ALCATRAZ ISLAND, CALIFORNIA, ASSIGNOR
TO HIMSELF, LORENZO HUBBARD, AND C. W. M. SMITH.

Letters Patent No. 110,448, dated December 27, 1870.

IMPROVEMENT IN DEVICES FOR SIGHTING AND FIRING 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, GEORGE K. FARRINGTON, of Alcatraz Island, county of San Francisco, State of California, have invented "an Improved Device for Sighting and Firing Cannon;" and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters marked thereon.

The first part of my invention relates more particularly to a device or means for taking sight or aim at an object on a line coincident to and parallel with the axis of the bore of the gun.

Second, to prevent the recurrence of premature explosions of the cartridge and gas in ordnance while loading, by causing the vent to be hermetically closed after each discharge, by the action of the appliance for firing the gun, and doing away with the necessity of thumbing or serving vent with the thumb, thereby preventing the possibility of accident.

Third, to give a central ignition to the charge of powder in the cartridge, thereby securing an equal consumption of the powder on all sides, and a consequent equal expansion of the gases upon the projectile and surrounding parts of the gun.

Fourth, to gain the full effective force of the gas upon the projectile by securely closing the vent the instant of ignition of the cartridge, that no gas escapes by the vent, preventing the enlargement of the vent caused by the rush of gas intensely heated through it, (as is the case in the ordinary manner of firing,) doing away with the necessity of bushing the vent after becoming enlarged to such an extent as to materially affect the force of the gas upon the projectile.

Fifth, to secure the safety of the parties firing and aiming the gun from the fire of sharpshooters, where guns are mounted "en Barquette," there being no necessity of exposing any part of their person above the parapet to take sight or to serve vent.

My improvement consists in forming a vent in the breech of the gun, on a line parallel with the axis of the bore, in the immediate rear of which is a chamber for the reception of a percussion-primer and a percussion-needle.

A perpendicular recess or chamber is formed in the cascable to receive a plunger or wedge, the weight of which forces the percussion-needle into the fulminating-powder which is contained in the percussion-primer by which the piece is discharged.

The vent is made air and gas-tight where the wedge or plunger is forced down by its own weight, in connection with the weight at the end of a lever attached by a pitman or link to the plunger, and the vent remains closed during the exit of the charge and until another charge is inserted.

A longitudinal chamber is made in the side of the

cascable, extending from its base to the base of the breech.

The lever and plunger is supported, when elevated, by a rest attached by a hinge to the base of the cascable, the rest having an eye near its apex for the insertion of a lanyard-hook, the lever being attached to the reinforce or breech of the gun by brackets and pin.

For sighting purposes, a tube having a wire across the center of one of the open ends, for the purpose of keeping the center of the line of sight parallel with the axis of the bore, and which may contain telescopic lenses, is inserted in the vent-chamber extending back a little beyond the base of the cascable.

The rear end of tube being retained in position parallel to the vent or bore by means of a hook on the base of cascable, the wire hook in this tube is intended to withdraw the primer and needle.

Referring to the drawing—

Figure 1 represents a longitudinal section of breech and cascable, and a portion of the chase of the gun, Parrott principle.

Figure 2 is a rear elevation of breech.

Figure 3 is an elevation and end view of percussion-needle.

Figure 4 is a longitudinal section and end view of percussion-primer.

To enable others skilled in the art or science to which it most nearly appertains to make and use my invention, I will proceed to describe its construction and operation.

A A represent the chase.

B B, the reinforce.

C C, the breech.

D D, base of breech.

E E, cascable.

F, the bore.

G, the side-chamber in cascable, extending from base of cascable to base of breech.

H is the plunger.

I, the perpendicular recess or chamber in cascable, to receive plunger.

J is the percussion-needle.

K, the percussion-primer, containing fulminating-powder at L.

M is the pitman or link connecting plunger with lever N.

O is the rest to support lever and plunger.

P is the vent.

Q, vent-chamber.

R, the primer-hook, taking the place of a lanyard.

S is the sighting-tube.

Principle of Working.

The cartridge and projectile having been inserted in the gun, the plunger is raised and supported by

the rest O, which has an eye near its base for a lanyard-hook.

If the piece has been previously discharged, the old percussion-primer is withdrawn containing the needle, (there being an eye on the primer to hook in a short lanyard for this purpose,) a new percussion-primer is put on the needle, the cartridge is pricked through the vent by a priming-wire, and the whole placed in the chamber Q in the breech, in the immediate rear of the vent P.

The gun is now ready to be fired, which is done by pulling the lanyard, displacing rest O, when the plunger descends on an incline of the groove, the inclined surface of plunger sliding on the incline of chamber I in the cascable.

The perpendicular surface of plunger (the rounded portion having advanced the needle slightly) strikes the base of the needle and drives it forcibly into the percussion-primer, the point of the needle entering the vent. The point of the needle, together with the copper shell of the percussion-primer swaged around it in the vent and chamber, hermetically seals the vent from any escape of gas, while the plunger, being immovable vertically or horizontally, the needle is retained firmly in its position in the vent.

At the moment the needle is driven home the fulminate is ignited, and there is no escape of fulminate fire to the rear; all passes through the vent into the cartridge with such force that the cartridge is ignited in the center of the mass of powder from the base to front instantly, and all of the powder is consumed and an equal expansion upon the projectile and surrounding parts of the gun is obtained, the projectile receiving the full force of the gas, as none escapes through the vent, as in the ordinary manner of firing.

In all cases the plunger should remain down until the gun is again loaded, when, to fire again, everything heretofore described must be done.

In this invention it will be obvious that, by placing the vent at and through the base of the breech to the center of the termination of the bore of the gun with the appliance for firing, premature discharges will be prevented while loading the gun, from the residue of powder left in the gun after a discharge, or from the ignition of the cartridge when inserted after a previous discharge, caused by a draught of air through the vent while sponging or inserting the cartridge.

This draught through the vent of ordinary guns is caused often by the carelessness of the man serving the vent with his thumb, either in not properly covering the vent or allowing the thumb to be removed for an instant. Sometimes, however, it is caused by the heat of the gun after rapid and frequent discharges, causing the man to remove the thumb by reason of this intense heat, there being frequently fire left in the gun after a discharge. A draught of air passing through the vent into the bore increases or intensifies this fire by igniting the inflammable residue and also the cartridge which is being rammed down, and a premature discharge is the consequence, sacrificing the limbs and lives of men loading the gun.

But in my invention the vent is hermetically closed the instant of ignition of the cartridge, and remains

so closed until the gun is reloaded, preventing the possibility of a premature fire, and permitting no gas whatever to pass through the vent when the cartridge is ignited, thereby causing wear on the vent, as is the case in the ordinary guns where the vents require to be bushed frequently, the force of the gas and the intensity of the flame passing up through the vent wearing it away or burning it, and increasing the size beyond that required for effectiveness of the gas upon the projectile.

Again, it will thus be clearly seen that by the use of my device the projectile receives the full force of all the gas from the ignited powder, and the vent never requires bushing.

Also, by having the vent through the center of the breech, a central fire is communicated to the powder, and an equal consumption of the powder and an equal expansion of the gas are obtained upon the sides of the bore and projectile, preventing what is termed "lodgment" of the projectile through the irregularity of the force of the gas upon it, causing the projectile to bound from one side of the bore to the other in its exit, and producing dents in the bore by the lodgment of the projectile in its exit, termed "honeycomb" in the bore.

The gun may be sighted, previous to giving it the proper degree of elevation for the distance, at any object on an immediate line with the axis of the bore through the vent, by means of a tube placed in a chamber in rear of the vent, extending back through the chamber G in the cascable.

This tube may be a telescope adapted for the purpose, or an ordinary tube having a fine wire across the center of one of the open ends, which is carried out on the line of vision indicating the center of the bore. In sighting a gun in this manner the person is not exposed to the fire of sharpshooters, and a greater degree of accuracy is attained in line shots. Neither is a man exposed to the fire of sharpshooters to serve vent while loading.

The appliance or device can be adapted to any principle of cannon and to close the vent. It is also equally applicable to side or lateral vents, as well as to a vent in the center of the breech.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The cascable E provided with the recess G, in combination with the chambered vent P in the breech, as and for the purpose described.

2. The cascable E having the recess I, when combined with the wedge H, as described, for the purpose set forth.

3. A piece of ordnance constructed substantially as described, with chambers, recesses, wedge, weight, and rest, for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal.

GEO. K. FARRINGTON. [L. S.]

Witnesses:

C. W. M. SMITH,
E. V. SUTTERS.