

W. S. HENSON.
Gun-Carriage.

Patented Nov. 5, 1861.

No. { 2,642. }
 { 33,646. }

Fig. 1.

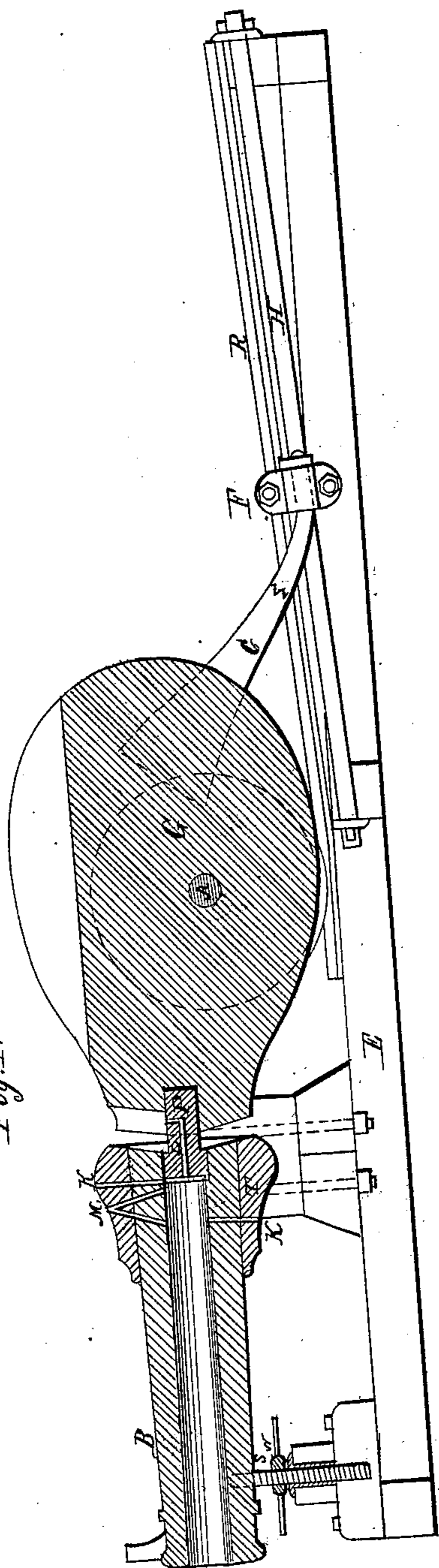
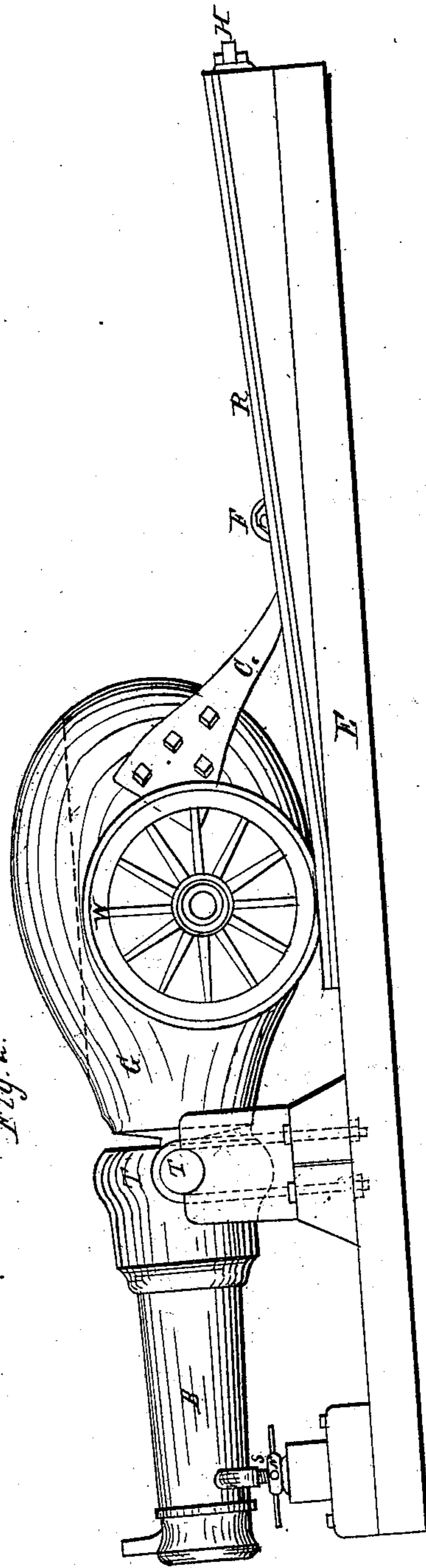


Fig. 2.



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Fig. 3

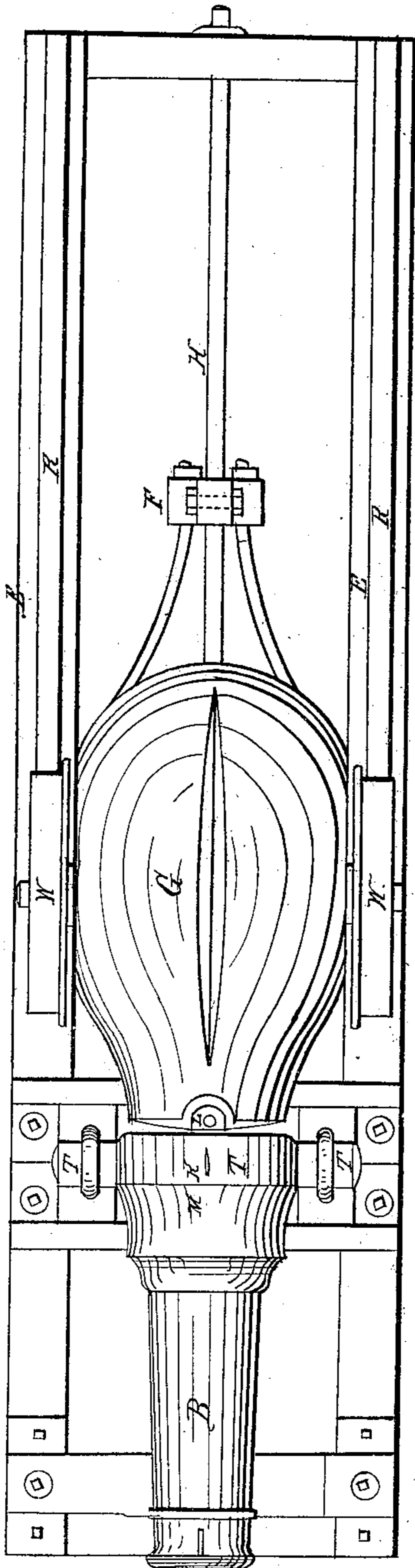
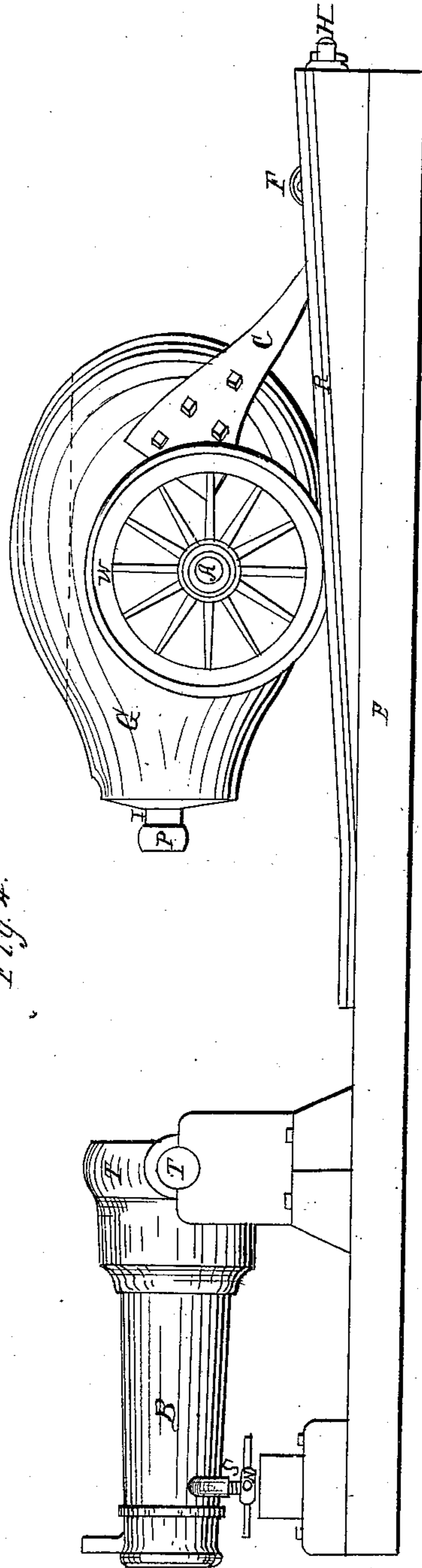


Fig. 4.



UNITED STATES PATENT OFFICE.

WILLIAM S. HENSON, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. 33,646, dated November 5, 1861.

To all whom it may concern:

Be it known that I, WILLIAM S. HENSON, of the city of Newark, county of Essex, and State of New Jersey, have invented a new and Improved Breech-Loading Gun; 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.

The nature of my invention consists of a gun, the barrel of which is mounted stationary upon a platform and remains immovable when it is fired, while the breech recoils backward a short distance away from the barrel upon the hinder part of the same platform. The breech is not attached by any fastenings to the barrel, but is mounted upon the same platform upon wheels in such manner as to be at liberty to run a certain distance backward and forward, and so adjusted as to cause the small end of the breech to enter into the hinder part of the barrel when brought forward, and the breech is made of such weight as to resist the shock of the explosion almost entirely by its inertia being assisted to some small extent in checking the recoil by friction and an inclined plane up which the breech recedes. The elevation and depression of the barrel are effected by means of a screw and nut provided for that purpose. Any horizontal motion required for aiming the gun may be effected by swinging the platform upon wheels running round a pivot in the usual manner, or by mounting the platform upon a turn-table. With a gun made in this manner the strain is divided and simplified, the only strain upon the barrel being at right angles to its axis and none at all in the direction of its length, the backward force of the powder being entirely spent upon the movable recoiling-breech. A gun made in this manner will throw a ball with a force quite equal to a solid breech gun, as the shot will leave the muzzle of the barrel a considerable distance before the breech is driven out of the breech end of the barrel, and when the breech has recoiled back a sufficient distance it is held there while the barrel is reloaded at the breech end, and one man can easily bring it forward again when the loading is completed. Another great advantage of this mode of construction is that the barrel can be made either of wrought or cast iron of much greater

magnitude without any difficulty, and almost entirely free from danger arising from unsoundness of metal. I believe it to be better adapted for coast and harbor defenses and gun-boats than anything at present in use for that purpose.

Figure 1 (see drawings) is an internal sectional elevation of the gun in position for firing. Fig. 2 is an outward elevation of the same. Fig. 3 is a plan of the same. Fig. 4 is an outward elevation showing the positions of the breech and the barrel after being fired.

G G G G is the breech-piece with its wrought-iron breech-pin and wheels W W.

B B B B is the gun-barrel with its trunions T T.

F F is a friction-box connected to the breech-piece B by the connecting-arms C C.

H H, Figs. 1 and 3, is the friction-shaft upon which the friction-box F slides.

R R R R are the rails upon which the wheels W W roll.

L L, Figs. 1 and 3, is the vent-hole in the breech-pin for firing the charge in the center.

S S, Figs. 1, 2, and 4, is the elevating-screw operated by turning the nut N N N.

E E E E is the framed platform upon which the gun is mounted.

The mode of working the gun is as follows: I will assume that it has just been fired, and that the breech has assumed the position shown in Fig. 4. First, the barrel is swabbed out and the breech-pin P wiped clean. A shot is now inserted into the breech end of the barrel and forced a little way in to make room for the cartridge, which is then inserted into the barrel, and while some men are doing this one man will make the usual preparations at the vent, which may be provided with a hammer for firing in the usual way, or with friction-tubes. The loading being completed, one man will now slacken the upper screw of the friction-box F, when the breech-piece will immediately move down the inclined plane and the breech-pin enter the breech end of the barrel, as shown at Fig. 1. The upper screw of the box F must now be made tight again, when, the aim being as desired, the match is applied or the string attached to the hammer being pulled, the gun will be fired and the breech will recoil back to its original position, where the friction of the box F will hold it until it is again reloaded, which it will

now be ready for doing. The trunnions are placed at the hinder part of the barrel to allow the muzzle end to be elevated and depressed sufficiently without interfering with the entrance of the breech-pin, and the end of the breech-pin being a section of a ball and fitting snugly into the end of the barrel, also allows the elevation and depression of the muzzle of the barrel, upon the principle of the universal joint. The breech-pin P is firmly inserted into the breech-piece B, and has the vent-hole L L, Figs. 1 and 3, in it; but one or more vent-holes may be made in the barrel instead of the vent in the breech, one on the upper and one on the lower side of the barrel, as shown at K K, for firing the charge simultaneously at two places; or two passages may both unite in one vent-hole, as at M, Fig. 1, thereby securing a more rapid combustion of the powder and attaining greater velocity in the projectile. The friction-box F by its friction assists to check the recoil as well as hold the breech back after firing. The breech with its attachments should be made to exceed the weight of the shot from one hundred and fifty to two hundred times, and in land defenses, where weight is of no consequence, two hundred times is preferable, the additional weight being no disadvantage in working the gun, as the recoil will carry it back, and by slackening the friction-box F its own weight will carry it forward.

For very large guns the breech-piece can be made in parts for facility of conveyance as well as of construction, and it can be made in form of a car, and when placed in position filled with cannon balls, or earth, or stone to make weight as well as economize metal. The weight of the barrel is also of no disadvantage in working the gun, as it remains stationary excepting such movements as are required for taking aim, and extra strength makes it less liable to injury from casualties in action.

For very large guns I propose to make the

barrel in two parts, as shown in Fig. 1. The barrel being open at both ends affords great facilities for casting, forging, boring, and rifling. If the barrels are required to be made of cast-iron, they can be cast with a core, which can easily be supported during the operation, and the metal will be sounder than if cast solid. The trunnion-piece T T can also be cast with a core, and being bored and tightly fitted onto the turned end of the barrel will greatly assist in strengthening the barrel where the greatest strain takes place.

Where it is desirable to attain greater lightness, as in gun-boats and for battery-guns, the barrel can be readily made of wrought-iron, with its trunnion-piece forged separate and shrunk on with much less expense and almost absolute certainty of having sound forgings without the deterioration of the iron, so apt to occur in very large solid forgings, and I believe there will be no more difficulty in making sound guns to carry balls of five hundred pounds and upward than is experienced in the ordinary way in making guns to carry one-hundred-pound balls, in fact, they can be easily made, easily loaded, easily handled, perfectly safe to use, not easily damaged, and very efficient in action, where it is desirable that the breech may be mounted wholly or partly upon slides, and I desire to call attention to the fact that as the breech will not wear much with use the first cast is the only expense with that part, and that only the barrels would require renewing after much use.

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

The independent recoiling breech, together with the non-recoiling barrel and double vents, made and operated as described.

WM. S. HENSON.

Witnesses:

N. BARLOW,
A. CROSBY.