

(No Model.)

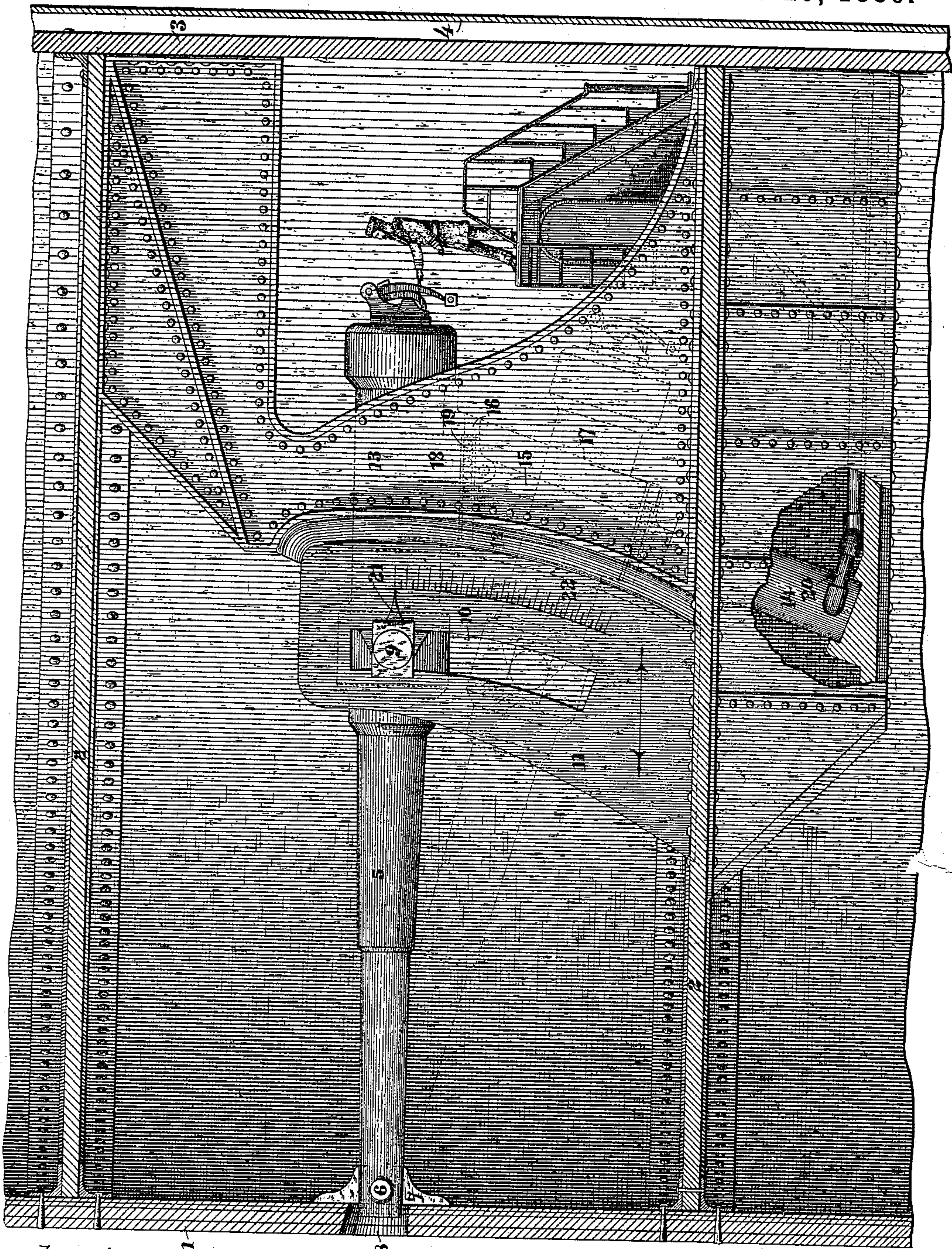
2 Sheets—Sheet 1.

T. R. TIMBY.

GUN CARRIAGE FOR REVOLVING TURRETS.

No. 344,758.

Patented June 29, 1886.



Attest
Geo. T. Smallwood.
F. A. Hopkiss

FIG. 1.

Inventor:
Theodore R. Timby.
By Knight Bros. attys

(No Model.)

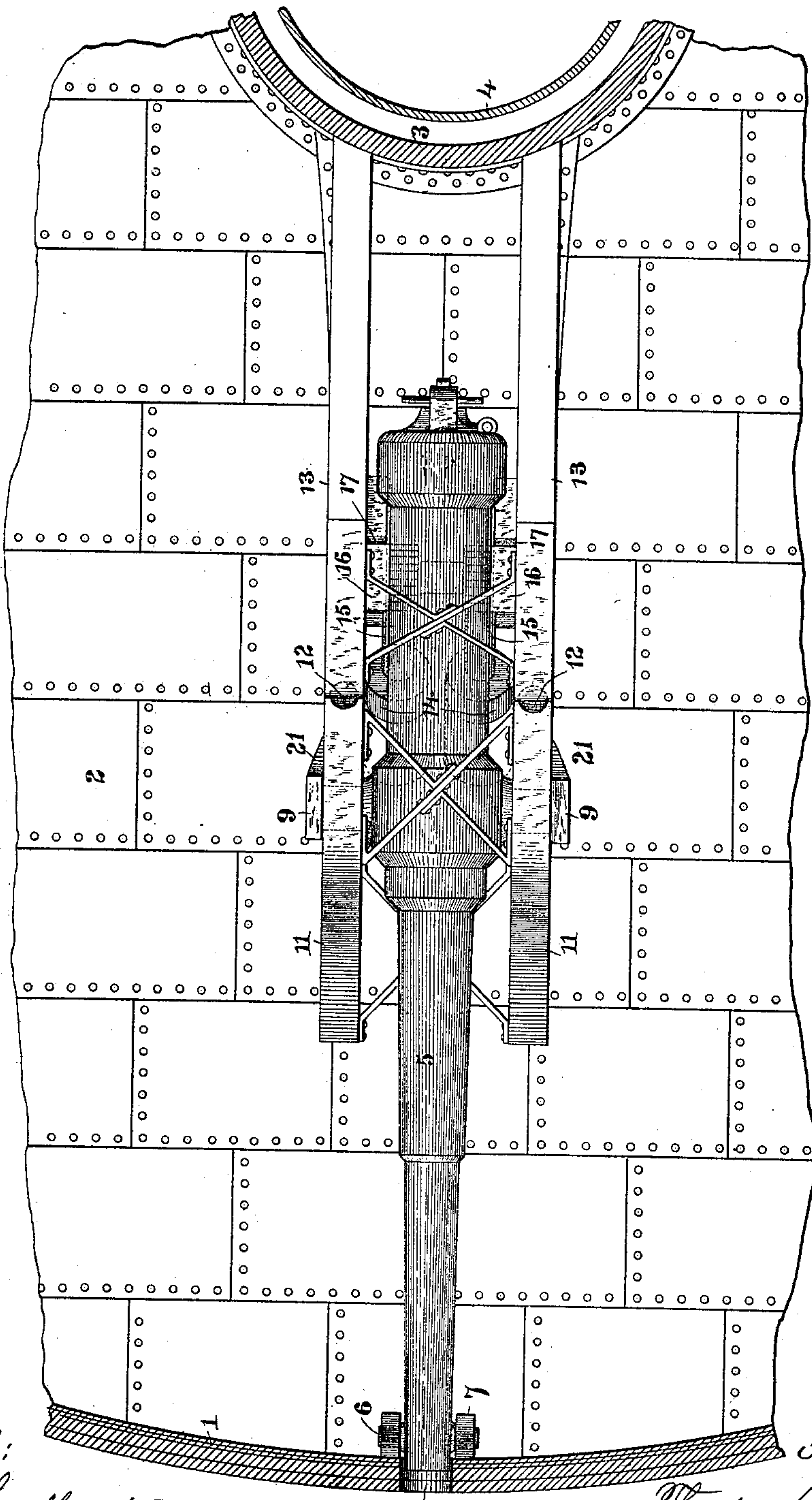
2 Sheets—Sheet 2.

T. R. TIMBY.

GUN CARRIAGE FOR REVOLVING TURRETS.

No. 344,758.

Patented June 29, 1886.



Attest:
Geo. T. Smallwood.
F. A. Loper King

FIG. II.

Inventor:
Theodore R. Timby.
By Knight Bros.
attys

UNITED STATES PATENT OFFICE.

THEODORE R. TIMBY, OF WASHINGTON, DISTRICT OF COLUMBIA.

GUN-CARRIAGE FOR REVOLVING TURRETS.

SPECIFICATION forming part of Letters Patent No. 344,758, dated June 29, 1886.

Application filed October 22, 1885. Serial No. 180,624. (No model.)

To all whom it may concern:

Be it known that I, THEODORE R. TIMBY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a new and useful Improvement in Guns and Gun-Carriages for Revolving Turrets, of which the following is a specification.

My invention relates, primarily, to the mounting of guns in a revolving turret; and it consists, in part, in pivoting a gun at the muzzle for the purpose of reducing to a minimum the area of the embrasure through which the gun is to be fired, and thereby preventing or lessening danger of a shot from the enemy entering the turret through such embrasure. The line of fire is determined by the rotation of the turret itself, the separate guns being accurately adjusted to radial lines within the turret. The angular elevation to give the required range is produced by lowering or raising the breech of the gun to any necessary extent, preferably by means of hydraulic machinery. The entire turret will sustain the recoil of each gun, as the guns are fired in succession; but, in order to take up the first shock of the recoil the upper carriage is constructed with sliding cheeks, within which the trunnions of the gun move in vertical slots, curved concentrically with the muzzle-pivots, the said cheeks bearing backward against cushions which restore the gun to its normal position after each discharge.

In the accompanying drawings, Figure I is a side elevation of a gun mounted within a revolving turret. Fig. II is a plan of the same. To the walls 1 of the tower or turret are secured floors 2, preferably as described in Letters Patent granted to me November 17, 1885. The inner or central part of the floors may be secured to a vertical cylinder, 3, (here shown in section,) within and concentric with which, but detached therefrom, is an inner well-tube, 4, for containing the firing mechanism, as I have also described in a patent granted to me November 17, 1885. The muzzle of the gun 5 is provided with strong pivot-studs 6, projecting laterally and supported in brackets 7, so as to be capable of a slight movement longitudinally to the gun. The embrasure 8, through which the gun points, requires to be but little larger than the muzzle of the gun itself, as the muzzle has no vertical or lateral movement relatively

to the said embrasure, and the angular movement of the gun is upon the center of the pivots 6, close to the tower-wall. The extremes of this angular movement are indicated in Fig. I in full and in dotted lines, respectively, the dotted lines showing the extreme lowering of the breech to effect the greatest angular elevation of the muzzle. The trunnions 9 work in vertical slots 10, which are formed concentrically with the muzzle-pivots 6 in an upper carriage or cheeks, 11, which have a limited sliding movement in or on the floor 2, such movement being taken up by cushions 12, supported by fixed abutments 13, formed of flanged plates of great strength, securely bolted together and to the floors above and below. The cushions 12 are preferably formed solid of gum elastic and canvas or other material, and may be a foot in diameter, more or less, and of any desirable length, and rest in recesses in the rear edges of the cheeks 11 and the front of the abutments 13, respectively. The effect of this device is to permit a slight instantaneous longitudinal movement to the gun at the moment of firing, and restore it instantly to its normal position.

The breech of the gun is raised and lowered by a pair of hydraulic rams, each consisting of a cylinder, 14, the piston-rod 15 of which is jointed at its upper end to a cross-head, 16, working in inclined guides 17. The breech of the gun rests in a saddle, 18, supported by rollers 19 on the cross-head 16. The hydraulic pistons 15 and guides 17, within which the cross-heads 16 work, are inclined backward, as represented, so that the shock of firing is not sustained in any degree by the hydraulic jacks 14. The water-pipes 20, through which the hydraulic jacks are worked, may be connected with a common pressure-main for raising and lowering the guns simultaneously until the desired elevation is approximately reached, after which the connection with the main will be cut off and the guns adjusted individually by separate water-cocks operated by hand, so as to give the desired elevation accurately to each individual gun. The elevation is indicated by a pointer, 21, on one of the trunnions 9, working over a scale, 22, on one of the cheek-pieces 11 of the upper carriage.

Having thus described my invention, the

following is what I claim as new therein and desire to secure by Letters Patent—

1. A gun supported at the muzzle by pivots sliding in ways or bearings to permit a slight recoil movement, and having trunnions working in vertical guides, by which the recoil is sustained.
2. The combination of a gun, 5, supported by pivots at the muzzle and elevating apparatus at the breech, the trunnions 9, the sliding cheek-plates or upper carriage, 11, in which the trunnions work, and cushions 12, interposed between the sliding cheek-plates 11 and rear abutments, 13.
3. A gun supported at the muzzle by pivots and at the breech by elevating apparatus, in

combination with an index working in an arc concentric with the muzzle-pivots, to show the angle of elevation, as explained.

4. The combination of the gun 5, supported at the muzzle by pivots 6 and at the breech by elevating apparatus, the sliding trunnions 9, between the muzzle and breech-supports, the cheeks 11, having guideways for the trunnions concentric with the muzzle-support of the gun, the scale along the said guideway, and the pointer secured to an adjacent movable part of the gun, substantially as set forth.

THEODORE R. TIMBY.

Witnesses:

OCTAVIUS KNIGHT,
GEO. L. WHEELOCK.