(No Model.)

2 Sheets—Sheet 1.

T. R. TIMBY.

REVOLVING TOWER FORTIFICATION.

No. 413,581. Patented Oct. 22, 1889.

FIG. I.

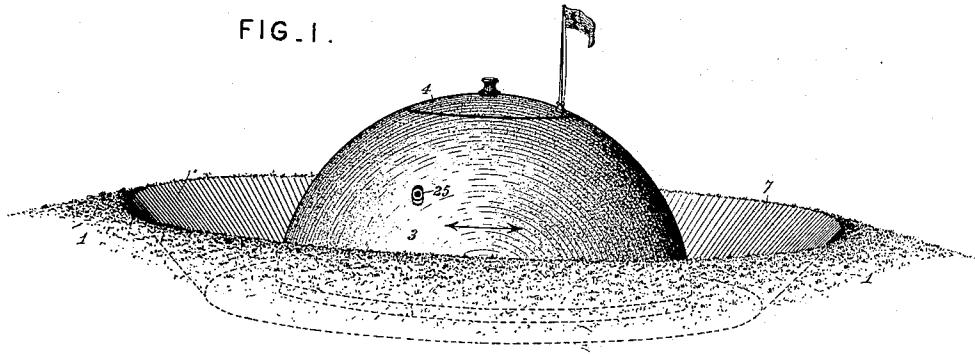
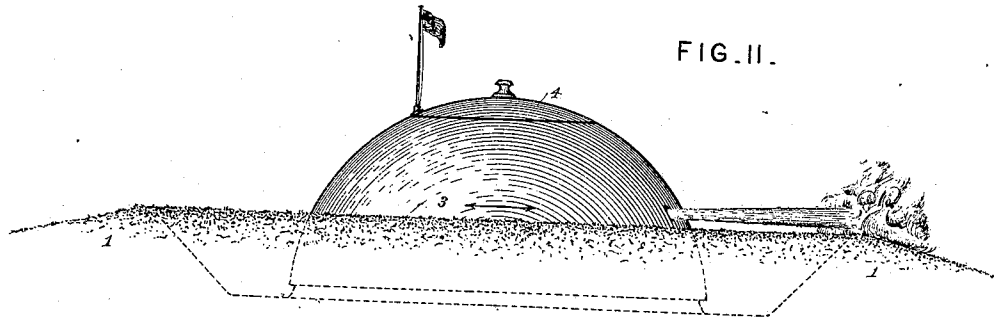


FIG. II.



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(No Model.)

2 Sheets—Sheet 2.

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FIG. III.

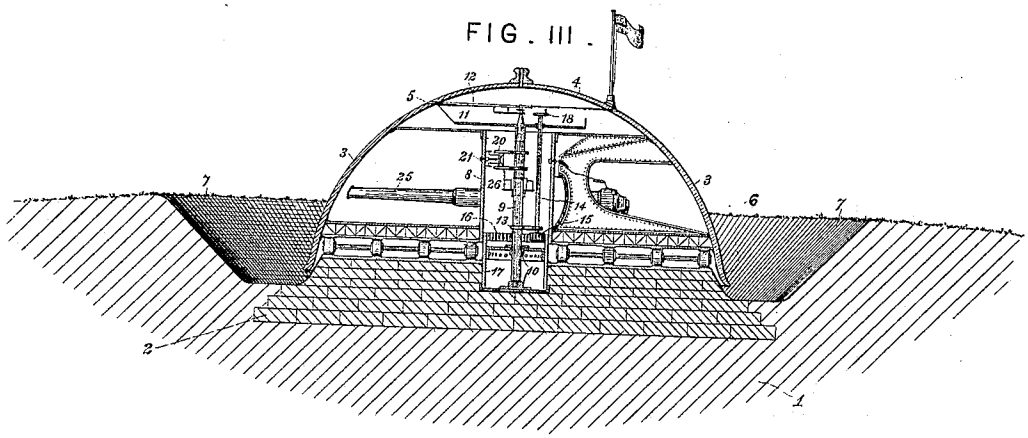
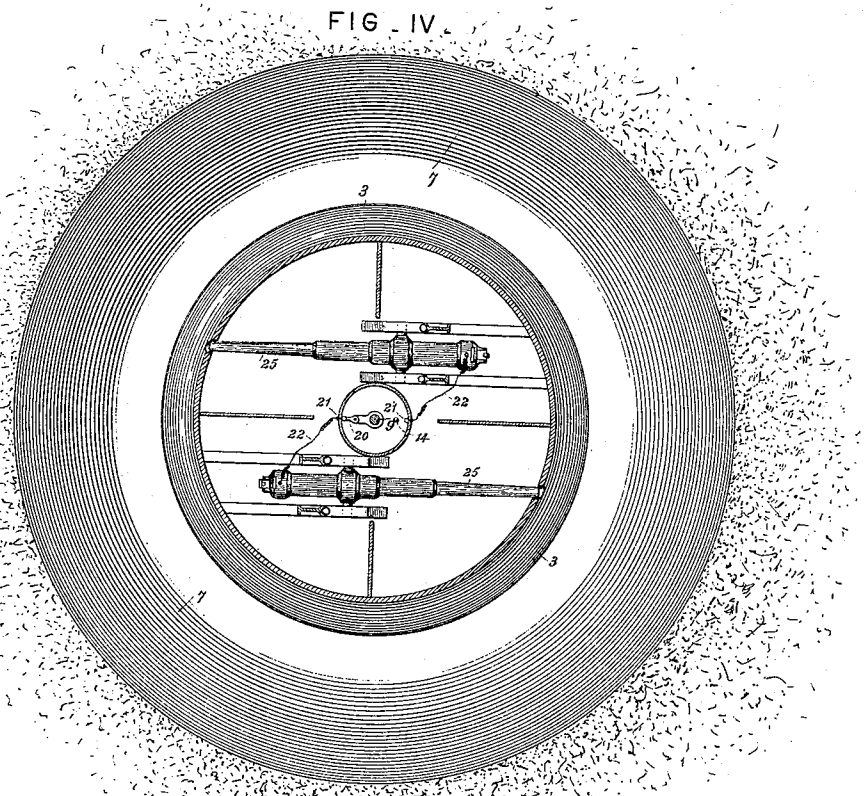


FIG. IV.



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UNITED STATES PATENT OFFICE.

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

REVOLVING-TOWER FORTIFICATION.

SPECIFICATION forming part of Letters Patent No. 413,581, dated October 22, 1889.

Application filed June 4, 1889. Serial No. 313,089. (No model.)

To all whom it may concern:

Be it known that I, THEODORE R. TIMBY, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Revolving-Tower Fortifications, of which the following is a specification.

My invention relates to revolving-tower fortifications of the general nature and description set forth in Letters Patent heretofore granted to me, the present improvements being applicable to towers on land, and the object is to put larger guns in a smaller radius and at the same time sight and fire the guns from a central point above the gun-floor.

To these ends the invention consists in arranging two oppositely-pointed guns parallel and on opposite sides of the center, providing a sighting-platform on the central shaft above the guns, having means of rotation independent of the turret and carrying a telescope and relatively-arranged electrical firing mechanism, whereby the guns are automatically fired successively when brought into line with the sighting-telescope, and mechanism for operating the several parts, including certain incidental details of construction, all of which will be fully described with reference to the accompanying drawings.

In said drawings, Figure I is a perspective view from the exterior of my improved tower. Fig. II is an elevation of the same. Fig. III is a vertical axial section. Fig. IV is a horizontal section above the guns.

1 represents the ground or other support upon which the revolving tower is located, a suitable foundation 2 being provided for supporting the tower.

3 represents the mole or outer casing, having the upper cap 4, with a surrounding look-out-opening 5, and a lower edge 6, which extends down sufficiently within the moat 7 to overlap the upper portion of the foundation. Within the tower or mole is a central well-hole 8, in which is mounted a vertical shaft 9, having suitable bearings 10, said bearings being located in the lower stationary portion of the well 17.

11 is a sighting-platform carried by the upper portion of the vertical shaft 9, and above it, on the end of the shaft, is mounted a telescope or other sighting-glass 12, the object-glass being located in such relation to the out-look-opening 5 as to be protected by the mole, but at the same time to afford a constant and unobstructed view through the glass. The shaft 9, with its parts, is normally stationary; but to provide for the rotation thereof with the sighting platform and glass the shaft 14, mounted in the bracket 13 below and in the platform 11 above, and having a lower gear-wheel 15 intermeshing with the inner corrugated edge 16 of the lower stationary portion 17 of the well-hole, is provided. On the upper end of the shaft 14 is mounted a hand-wheel 18, and by it the shaft 14, with the gear-wheel 15, may be revolved, thus causing the rotation of the shaft 9, with the parts carried thereby, by means of the bracket 13, rigidly secured thereto.

20 represents a circuit-closing device fixed upon the shaft 9 and rotated therewith, said circuit-closer having a contact-point adapted to receive the corresponding point 21 to close the circuit 22, which controls the firing mechanism on the guns 25.

26 is an electric battery carried by the central shaft and supplying the circuit 22.

It will be observed that the upper portion of the well-hole 8 revolves with the mole and guns, the mole being mounted on suitable friction-rolls, as fully shown and described in patents previously granted to me. The circuit-closing device bears a fixed relation to the telescope, so that when the telescope is sighted at an object the circuit-closing device is in such position as to close the circuit and fire the guns when they have sufficiently rotated to be brought to bear directly upon the object at which the telescope is sighted.

Another important part of my invention is the method of arranging the guns in a tower of the above description. In such a tower I prefer to mount two guns tangentially on opposite sides of the central well-hole, so that they will be parallel and pointing in opposite directions. The contact-points 21 are also on opposite sides of the well-hole in a line parallel to the guns. The sighting-telescope is located midway between the two guns, and an important advantage arises from this location in that the smoke of the firing does not

interfere with the sighting of the telescope, being either to the right hand or to the left, instead of directly beneath.

Another advantage of great practical importance resulting from the arrangement of the guns in parallel position and pointing in opposite directions is that I am enabled to apply and utilize my revolving-tower system with automatic firing with guns of more than double the length and capacity in a tower of given diameter than is possible with the radial arrangement of the guns shown and described in my patents, No. 36,593, September 30, 1862, and No. 330,642, November 17, 1885, while at the same time I retain to the fullest extent all the advantages of sighting and rapid and accurate automatic firing by having the guns in parallel position and pointing in opposite directions, so as to be discharged as they successively reach the same exact line of direction, and with guns thus arranged in parallel position and pointed in opposite directions no change is necessary in the sighting and firing mechanism. This latter feature distinguishes my invention from any of the numerous examples of guns arranged in parallel position and pointing in the same direction—as, for example, in the patent of Eads, No. 38,038, March 31, 1863.

For the above reasons I do not herein claim any mode of mounting guns in radial position in revolving-tower fortifications, this having been fully shown and described in my earlier patents above referred to; nor do I claim any arrangement of the guns pointed in the same direction, as this exists in the Eads patent referred to and many other well-known examples.

It will further appear that the parallel or tangential arrangement of large guns presented in opposite directions enables them to be fired automatically and successively under my improved system without the discharge of one gun impairing the accuracy of fire of the other, whereas with guns arranged in pairs presented in the same direction after the common mode, unless they be discharged simultaneously with absolute concurrence, the discharge of the first is liable to seriously impair the accuracy of fire of the second. I am thus by my improved arrangement enabled to maintain to the fullest extent the rapidity of fire which exists with paired guns of revolving turrets as now used, and at the same time to greatly increase the accuracy of fire, and also to increase the effectiveness of the fire by maintaining a constant succession of discharges upon a given or chosen line with the greatest practicable rapidity for an indefinite period.

It will furthermore be seen that my improved mode of mounting guns side to side on opposite sides of the central well of a revolving tower and pointing in opposite directions causes the said guns to mutually and exactly counterbalance one another in all positions of the tower, the centers of gravity of the guns being at all times diametrically opposite each other with relation to the axis on which the tower turns.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A revolving-tower fortification provided with guns pointing in opposite directions and arranged side to side in parallel position on opposite sides of the central well or axis of the tower, causing said guns to mutually counterbalance each other and to be brought successively and alternately to a determined line of fire, all as herein explained.

2. In a revolving-tower fortification, the combination of guns mounted in parallel position side to side on opposite sides of the central well or axis of the tower and pointing in opposite directions, and the sighting-platform and its accessories, as shown and described, supported on a central shaft and adjustable in position at the will of the operator.

3. In a revolving turret or other support, the combination of a central well-hole, the parallel oppositely-pointed guns mounted on either side thereof, electrical firing mechanism upon the guns, and suitable electrical supply and fixed contact-brush adapted to close the circuit with the firing mechanism, located on the fixed portion, whereby the guns are fired automatically and in succession.

4. In a revolving tower, the combination of a central well-hole, oppositely-pointed guns mounted in parallel position side to side on each side of the well-hole, firing mechanism on the guns, a shaft fixed relatively to the rotation of the turret, and means carried by said shaft for operating the firing mechanism at desired intervals, all substantially as herein described.

5. In a revolving turret, the combination of the two parallel oppositely-pointed guns located side to side at equal distances from the center, suitable firing mechanism upon the guns, and a fixed mechanism adapted to fire the guns successively as each reaches a predetermined position, all substantially as herein set forth.

6. The combination, in a revolving turret, of a number of guns mounted side to side, pointed in opposite directions, and having suitable firing mechanism, a central shaft carrying means for operating the firing mechanism, and a sighting-platform, said shaft and platform being adjustable at will.

THEODORE R. TIMBY.

Witnesses:
OCTAVIUS KNIGHT,
HERVEY S. KNIGHT.