

(No Model.)

3 Sheets—Sheet 1.

L. N. TONNS.

SUPPORT FOR GUN CARRIAGES.

No. 371,530.

Patented Oct. 11, 1887.

Fig. 1.

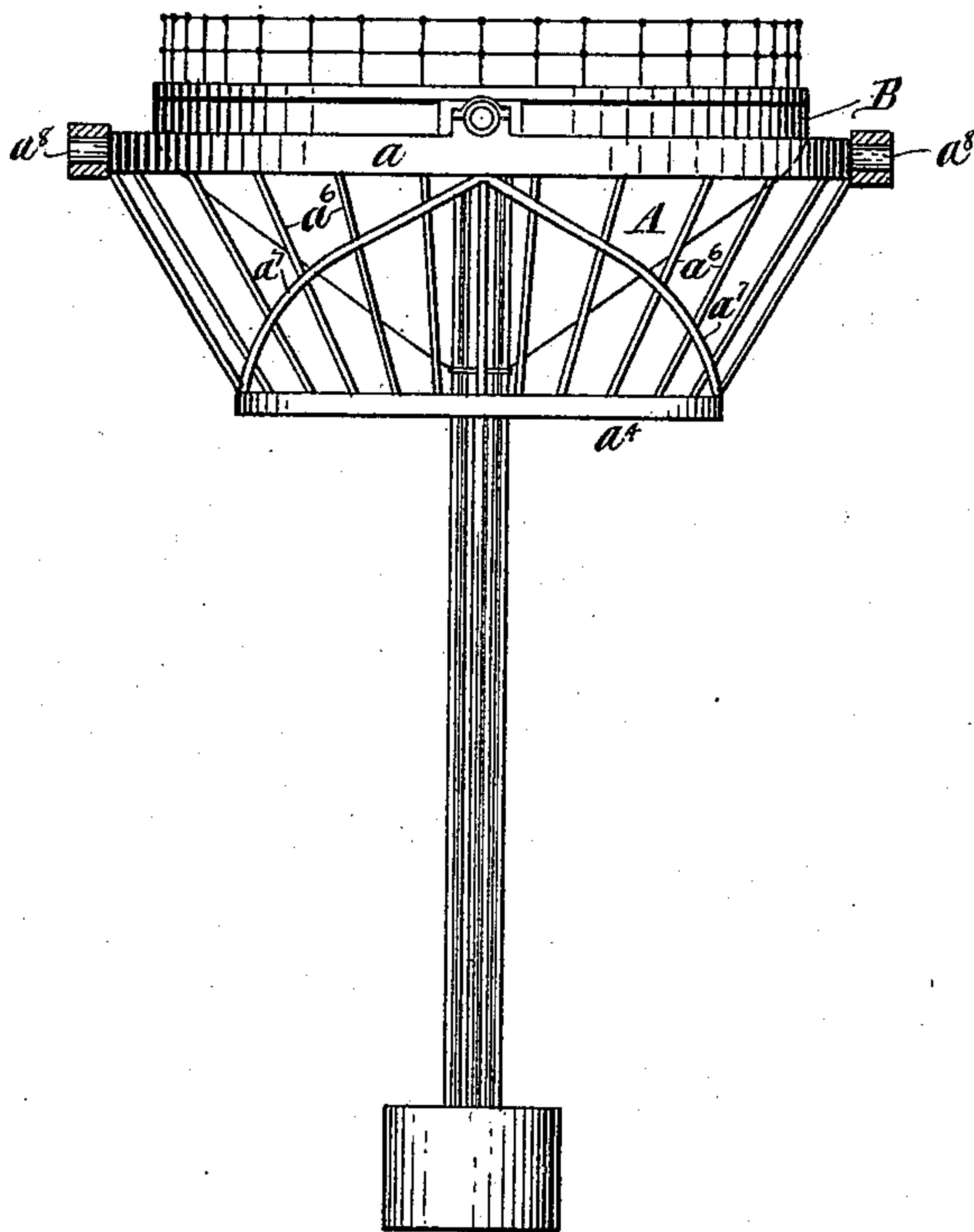
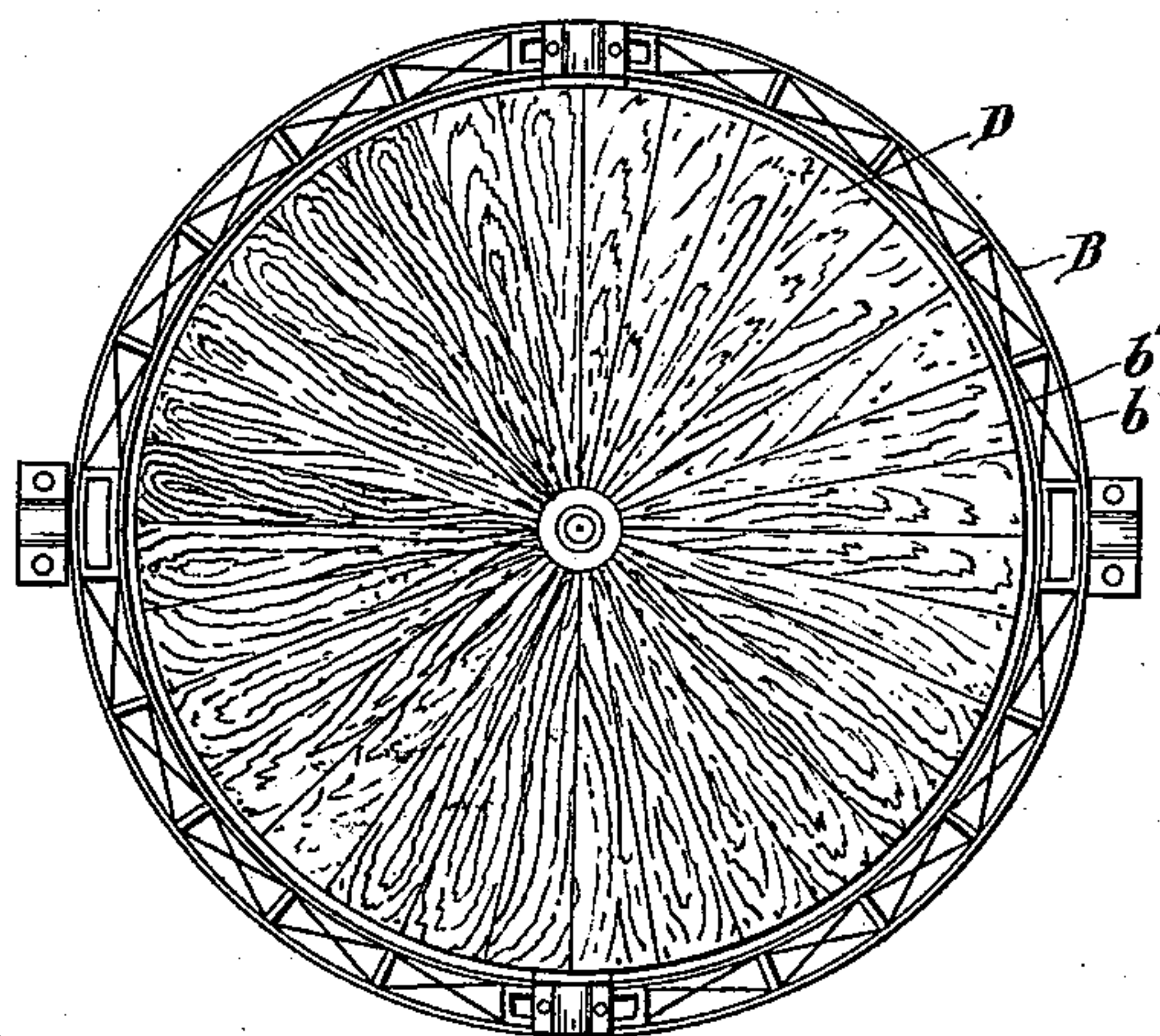


Fig. 5.



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(No Model.)

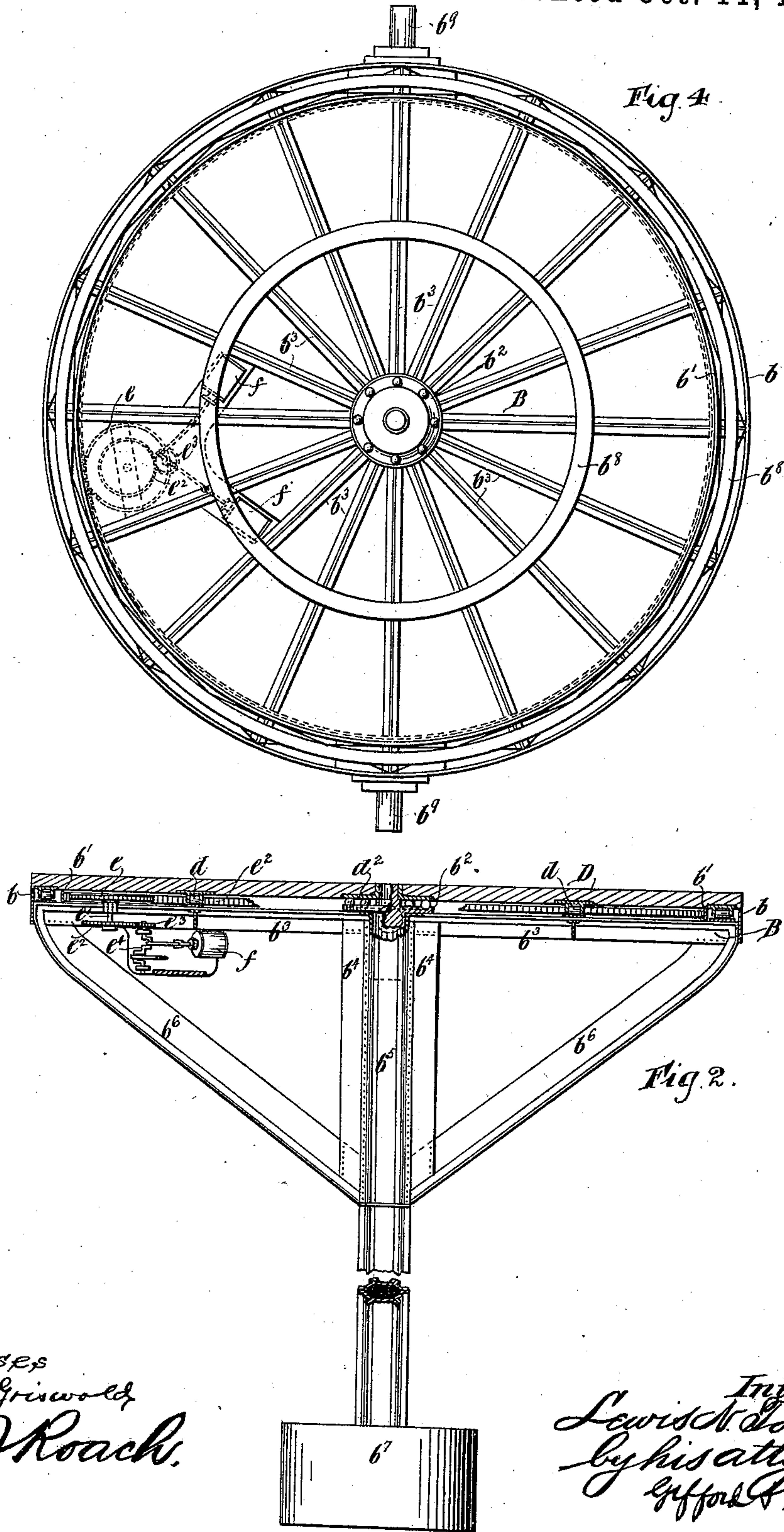
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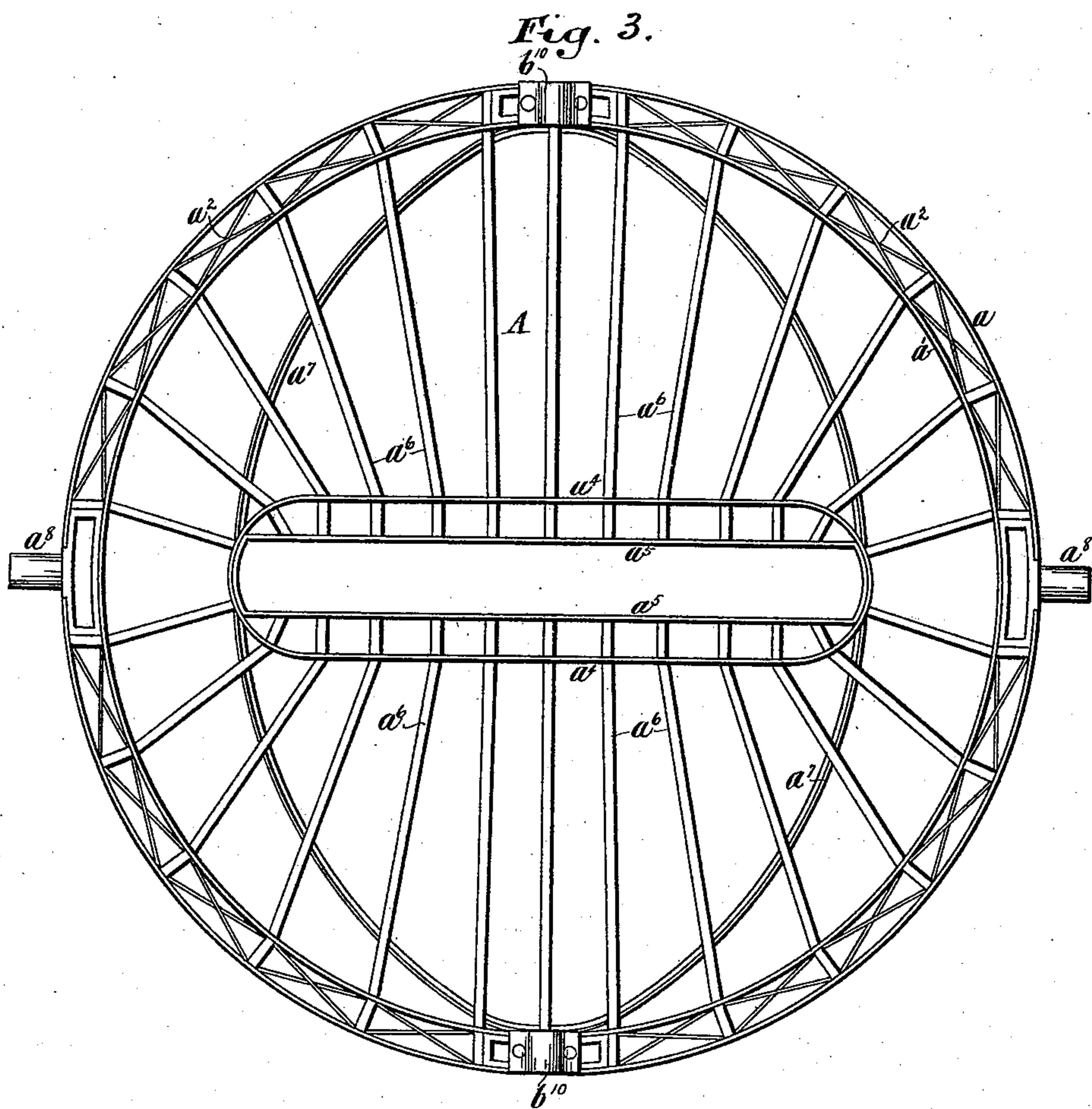
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UNITED STATES PATENT OFFICE.

LEWIS N. TONNS, OF NEW BRIGHTON, ASSIGNOR OF TWO-THIRDS TO GEORGE H. ALLEN, OF NEW YORK, AND EDWARD H. HALL, OF BROOKLYN, NEW YORK.

SUPPORT FOR GUN-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 371,530, dated October 11, 1887.

Application filed April 26, 1887. Serial No. 236,230. (No model.)

To all whom it may concern:

Be it known that I, LEWIS N. TONNS, of New Brighton, in the county of Richmond and State of New York, have invented a certain
5 new and useful Improvement in Supports for Gun-Carriages, of which the following is a specification.

My improvement is designed more especially for use on ships of war, and is for the
10 purpose of maintaining the gun as nearly as possible in a level position.

I will describe my improvement in detail, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is
15 a side elevation of my improved support. Fig. 2 is a vertical section of the same, a certain cradle being removed. Fig. 3 is a plan or top view of an outer cage or cradle employed therein. Fig. 4 is a plan or top view of a
20 swinging platform employed therein. Fig. 5 is a plan or top view of a table supported upon the swinging platform.

Similar letters of reference designate corresponding parts in all the figures.

25 A designates what I term a "cradle." It is composed of an upper ring, $a\ a'$, the latter being within the former and suitably connected thereto and braced by cross-braces a^2 , and a lower portion, a^4 , having, as shown, parallel
30 sides and rounded ends. Straight parallel braces a^5 extend between the rounded ends of the portion a^4 . Suitable upright braces, a^6 , extend between the portions $a\ a'$ and the portion a^4 , and a brace, a^7 , is shown extending circumferentially about the braces a^6 . Trunnions a^8 are suitably secured to the ring $a\ a'$
35 at opposite sides of the ring. These trunnions are journaled in suitable bearings in the deck of a ship or the floor of a gun-turret thereon,
40 and extend fore and aft the ship. When the ship rolls from side to side, this cradle will rock on the trunnions a^8 , and thus be maintained level.

B designates a platform. It has at the top
45 an outer ring, $b\ b'$, similar to the ring $a\ a'$. This platform is provided with a central cap-shaped metal piece, b^2 , which is secured to and rests upon cross bars or braces b^3 , extending radially from the center of the platform and

secured to the ring $b\ b'$ in any suitable manner. 50
These cross bars or braces are secured at their inner ends to upright angle-irons b^4 , which angle-irons are secured together and extend about and are secured to a flanged stem, b^5 . Braces b^6 extend from the angle-irons b^4 , to
55 which they are secured near their lower ends, to the ring $b\ b'$, to which they are secured near their upper ends. The stem b^5 bears at its lower end a weight, b^7 . Upon the top of the platform are secured circular tracks or rails
60 b^8 . Trunnions b^9 upon opposite sides of the platform are journaled in suitable bearings, b^{10} , on the ring $a\ a'$ of the cradle A. These trunnions extend athwart the ship. The stem b^5 extends through the opening in the bottom
65 of the cradle A, formed by the braces a^5 . When the vessel pitches fore and aft, the platform B will rock on the trunnions b^9 , and is assisted in maintaining a level by the weight b^7 on the stem b^5 , which latter moves through the space
70 just described in the lower end of the cradle A.

D designates a table made, as shown, of wood, and provided upon its under side with anti-friction rollers d , which latter rest upon the rails b^8 . The upper end of the stem d^5 extends
75 through a suitable central aperture in the cup-shaped metal piece b^2 and through a central aperture in a metal plate, d^2 , secured centrally upon the under side of the table D. This affords an additional means for preventing the
80 table from moving off from the platform B. Between the plates $b^2\ d^2$, I have shown metal balls. The plate d^2 is in contact with these balls, which tend to support the table D and assist in its rotation. A gun carriage or car-
85 riages are intended to rest upon this table, and the latter may be rotated to bring the gun or guns into any desired position. I have shown means for rotating the table, consisting in a gear-wheel, e , rigidly mounted upon the upper
90 end of a shaft, e' , which shaft is suitably supported in bearings on the frame of the platform B. This gear-wheel meshes with gear-teeth e^2 , extending circumferentially about the table D, upon the under side thereof, near its
95 outer circumference, and secured thereto in any suitable manner. The gear-wheel e derives motion from another gear-wheel, e^2 ,

keyed upon the lower end of the shaft e' , which latter gear-wheel derives motion in turn from a gear-wheel, e^3 , keyed upon a crank, e^4 , near the upper end of the latter. The upper end of the crank e^4 is journaled in the frame of the platform B, and its lower end in a step-bearing formed in the meeting ends of downwardly-extending braces or angle-irons secured at their upper ends to the frame of the platform.

The crank e^4 is, as shown, double. Any suitable means may be employed for rotating the same; but I have shown two steam-cylinders, f , the piston-rods of which are suitably connected to the crank. Steam may be supplied to the cylinders in any convenient manner.

It will be seen that by my improvement I construct a support for a gun on shipboard whereby the gun-carriage will always be maintained in an approximately level position. It is simple and strong, and not liable to get out of order, while at the same time provision is made for turning the gun and carriage about into any desired position.

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

1. A support for a gun-carriage, comprising a cradle having trunnions upon which said

cradle may rock in one direction, a platform supported upon said cradle and provided with trunnions supported on the cradle, upon which it may rock in another direction, a counter-balance-weight supported by said platform, a rotary table for primarily supporting a gun, circular rails upon the platform, anti-friction rollers upon the under side of the table and resting upon said rails, a cup-shaped middle piece arranged centrally upon the top of the platform, and metal balls within said cup-shaped middle piece, substantially as specified.

2. A support for a gun-carriage, comprising a cradle having trunnions upon which said cradle may rock in one direction, a platform supported upon said cradle and provided with trunnions supported on the cradle, upon which it may rock in another direction, a counter-balance-weight supported by said platform, a rotary table mounted upon said platform, gearing for rotating said table, and a steam-engine mounted upon the platform for operating said gearing, substantially as specified.

LEWIS N. TONNS.

Witnesses:

D. H. DRISCOLL,
JAS. D. GRISWOLD.