

(No Model.)

4 Sheets—Sheet 1.

J. VAVASSEUR.

GUN CARRIAGE.

No. 273,199.

Patented Feb. 27, 1883.

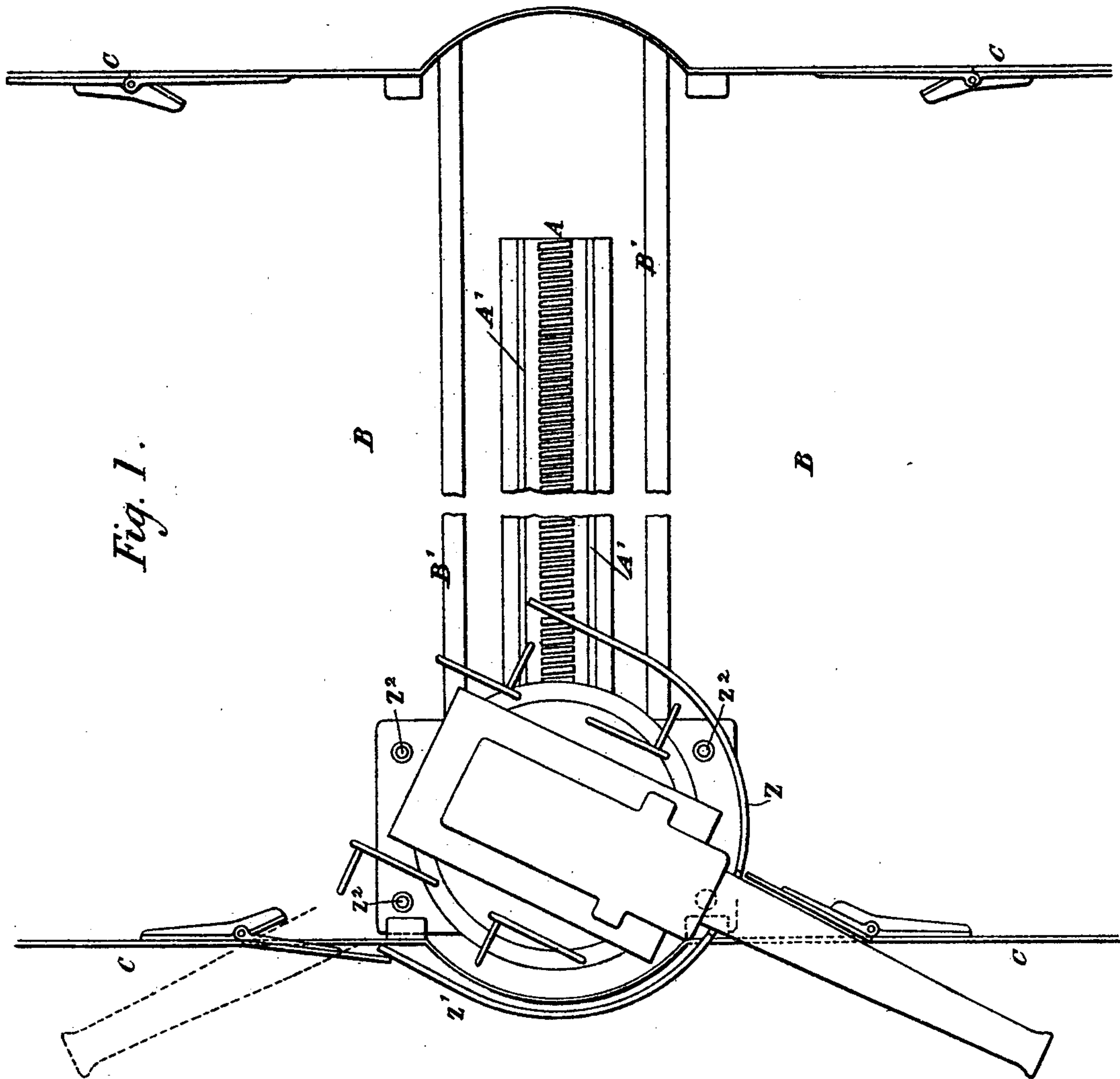


Fig. 1.

Witnesses
James Young,
Elie Holmes.

Inventor
By Atty. Josiah Vavasseur,
Baldwin, Hopkins & Bryant.

(No Model.)

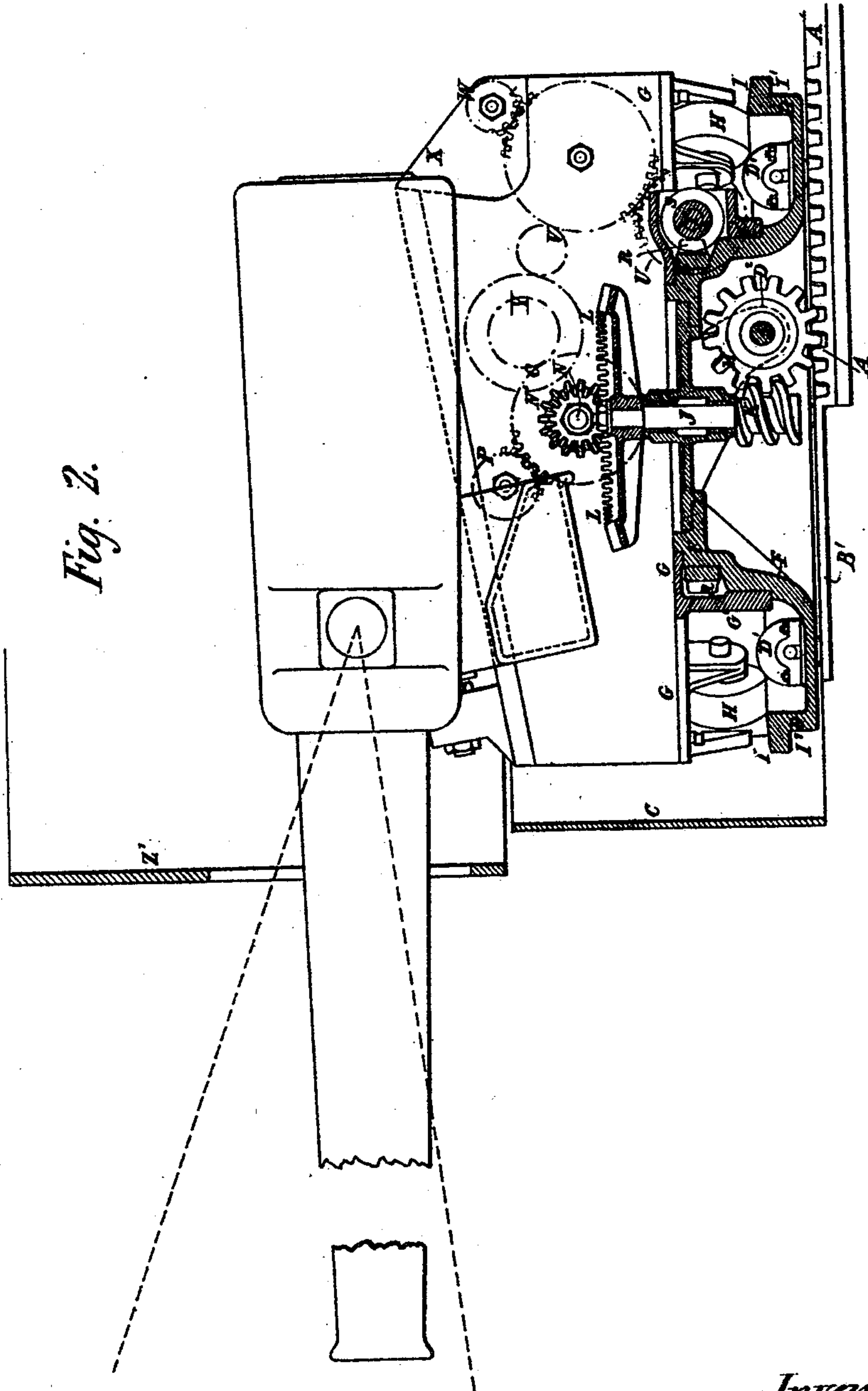
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No. 273,199.

Patented Feb. 27, 1883.



Witnesses
James Young
Ellie Holmes

Inventor
J. Vavasseur,
By Atty. -
Feldman, Hopkins & Hyatt.

(No Model.)

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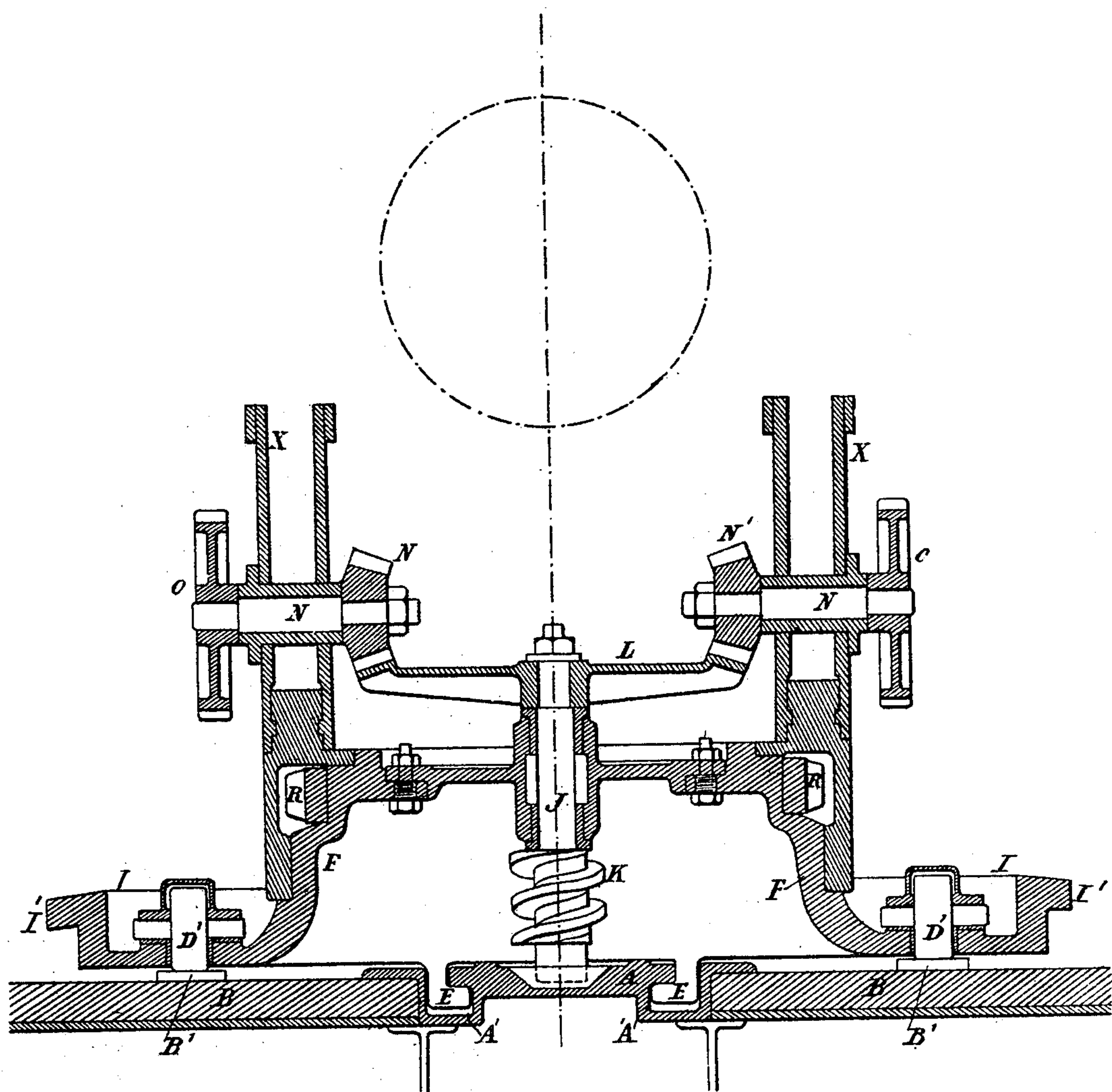
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Fig. 3.



Witnesses
James Young.
Willie Holmes.

Inventor
J. Vavasseur
By atty—
Gallun, Hopkins & Potts.

(No Model.)

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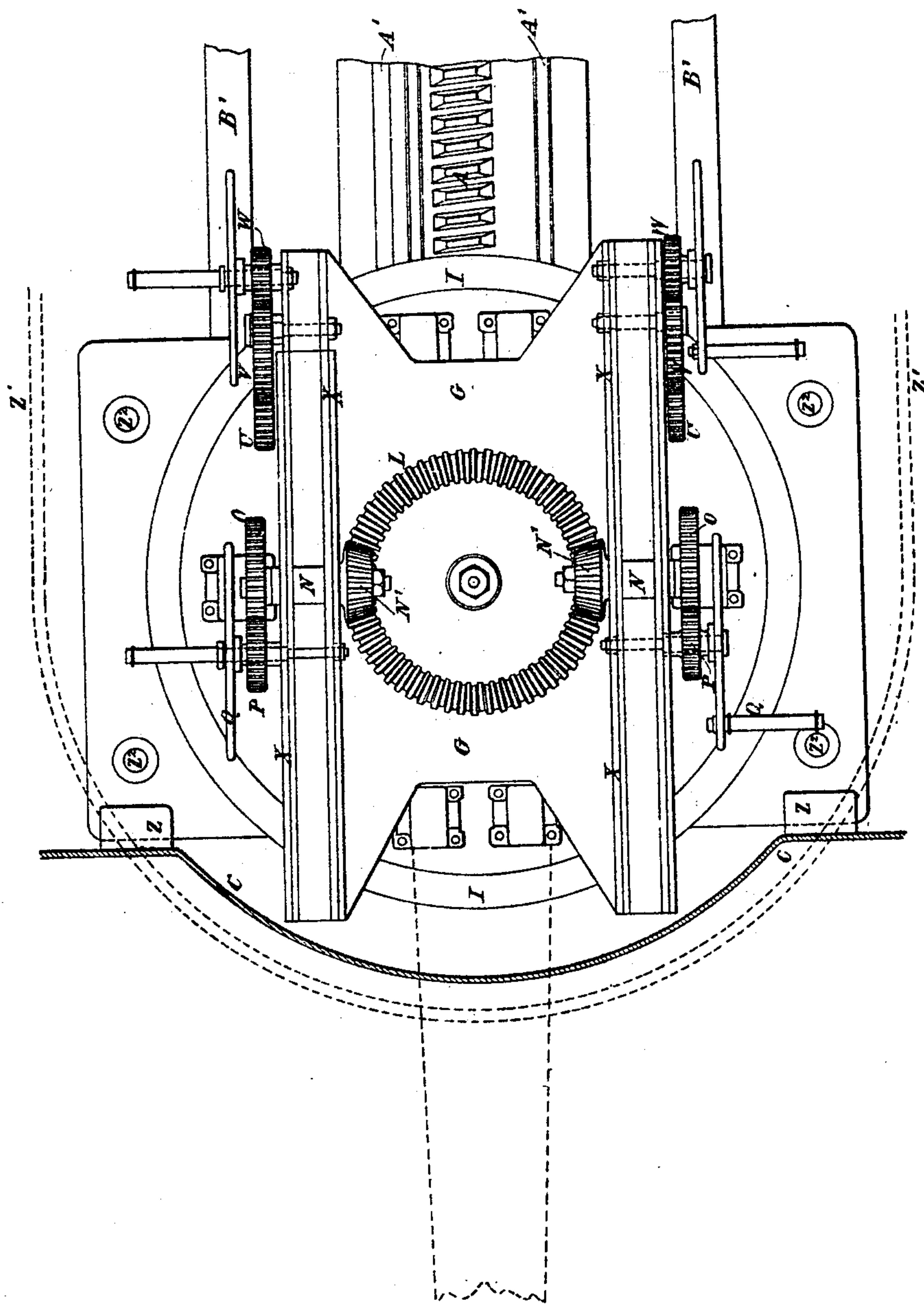
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Fig. 4.



Witnesses
James Young
Ellie Holmes.

Inventor
Josiah Vavasseur
By Atty—
Jedison Holmes & Ryton.

UNITED STATES PATENT OFFICE.

JOSIAH VAVASSEUR, OF BEAR LANE, SOUTHWARK, COUNTY OF SURREY,
ENGLAND.

GUN-CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 273,199, dated February 27, 1883.

Application filed January 3, 1883. (No model.) Patented in England October 13, 1882, No. 4,876, and in France
December 9, 1882, No. 140,284.

To all whom it may concern:

Be it known that I, JOSIAH VAVASSEUR, a subject of the Queen of Great Britain, and residing at Bear Lane, Southwark, in the county of Surrey, England, have invented certain new and useful Improvements in Gun-Carriages, (for which I have received Letters Patent in Great Britain, No. 4,876, dated October 13, 1882, and in France, No. 140,284, dated December 9, 1882,) of which the following is a specification.

In mounting guns which are required to be fired from either side or from any intermediate point between the sides of a ship, I employ a central-pivot mounting, the whole of which can be traversed by means of gear carried on the mounting in a straight or curved line along rack-racers laid across the ship's deck from port to starboard. The base-plate of the mounting I form with hook-clips on its under side to fit into correspondingly-shaped grooves formed in the rack-racers along each side of the rack. Preferably the base-plate is rectangular, and it has a short cylindrical projection standing up from its center. A ring descending from the center of the pivoting-bed fits around the exterior of this cylindrical projection, which so forms the pivot for the pivoting-bed. Rollers on the under side of the pivoting-bed may also run on a circular track formed on the base-plate concentric with the pivot. This circular track or roller path has a projecting lip on the outside, under which pass hook-clips attached to the under side of pivoting-bed. When the gun is fired these hook-clips prevent the pivoting-bed and slide from lifting or jumping up during the recoil of the gun. To the upper side of the pivoting-bed are attached the sides or cheeks of the slide upon which the carriage carrying the gun slides to and fro. A vertical spindle is mounted in bearings carried at the center of the top of the cylindrical projection of the base-plate, around which the pivoting-bed turns. Its lower end carries a worm gear-
ing with a toothed worm-wheel. This toothed wheel gears with the rack-racer laid across or along the deck. If a semicircular rack-racer

is used with the two ends of the rack-racer both on one side of the vessel, the gun can be moved not only to either side of the vessel, but can also be brought to either end of the rack-racer, and so to either one or other of two positions on that side of the vessel. On the top of the spindle is a toothed wheel, by which it can be driven. Preferably I gear with it pinions which are fast on spindles on either side of the carriage, and which turn in bearings carried by the upright plates forming the sides or cheeks of the slide. These spindles can be driven by gearing turned by crank-handles, and the mounting can thus be moved along the rack-racer. To turn the pivoting-bed and to train the gun, a worm on a horizontal axis carried by the pivoting-bed is made to gear with a ring of teeth around the circumference of the cylindrical projection of the base-plate around which the carriage pivots. By means of gearing driven by crank-handles the worm can be turned and the pivoting-bed and gun trained. By coupling this gear by intermediate wheels with the gear for traversing, all four handles could be used both for training and traversing; or, if either the training or traversing gear is disconnected, all four crank-handles could be used for effecting either the one or other operation. Thus training and traversing can go on either simultaneously or separately, and all four winch-handles can be used conjointly for both operations or for each operation. The base-plate of the mounting is provided with rollers upon which it runs when being traversed along the rack. When the mounting arrives at its firing position at either end of the rack it is no longer supported by the rollers, and clips attached to the ship's side or to the deck hold down the mounting and keep it from rising. The mounting is also prevented from then moving along the rack by drop bolts.

Figure 1 of the drawings annexed is a plan view, showing how a gun mounted as above described can be fired from either one or other side of the vessel. Figs. 2 and 3 are longitudinal and cross vertical sections on a larger scale of the gun and gun-carriage. Fig. 4 is

a plan view of the gun-carriage with the gun removed.

In these figures, A is a toothed rack, fixed across the deck B of a vessel, and level approximately with the surface of the deck. The rack is shown to be a straight rack; but in some cases it might, as before stated, be curved.

C C are parts of the side bulwarks of the vessel.

D is a rectangular base-plate, carried by rollers D', which run upon plates B', fixed above the deck. It is guided by a pair of hook-clips, E, at each end of the base-plate, fitting into correspondingly-shaped grooves A', formed along each side of the rack A.

F is the short cylindrical projection standing up from the center of the base-plate D.

G is the pivoting-bed, with a ring, G', descending from it, and embracing the cylindrical projection F, which thereby forms its pivot.

H H are four rollers mounted on the under side of the pivoting-bed. They run on the circular track I, formed upon the top of the base-plate D, concentrically with the cylindrical projection F.

I' is a projecting lip at the outer edge of the circular track I. Hooks at the two ends of the pivoting-bed G pass under this projecting lip, and keep the pivoting-bed and gun-slide from tilting or jumping when the gun is fired.

J is a vertical spindle, mounted in bearings carried by the center of the cylindrical projection F. Its lower end carries a worm, K, and on its upper end is fixed a bevel-toothed wheel, L. The worm K gears with a toothed wheel, M, which can turn upon a pin carried by a pair of arms, D², on the under side of the base-plate D. The toothed wheel M gears with the rack A, and when caused to turn travels along the rack, and carries along with it the base-plate and other parts of the gun-mounting. The toothed wheel L may be driven by any suitable arrangement of gearing. In the drawings it is shown to have gearing into it on two opposite sides bevel-toothed pinions N', carried on axes N, on each of which is also a toothed wheel, O, into which gears a pinion, P, which can be turned by a crank-handle, Q, so that by turning these handles the gun-mounting can be traversed along the rack in either direction.

R is a circular toothed rack surrounding the exterior of the cylindrical projection F. S is a worm gearing into this toothed rack, and carried by an axis, T, mounted in bearings carried by the pivoting-bed. The axis can be driven by any suitable arrangement of gearing. In the drawings it is shown to have on either end of it a toothed wheel, U, into which gears a toothed wheel, V, which can be driven by a pinion, W, turned by a crank-handle. When the axis T is turned by this gear, the pivoting-bed will be trained in one or other direction, as described. The axis of the pinions and toothed wheels N O P and axis of the pinions

and toothed wheels U V W are carried by the side plates, X, which rise up from either side of the pivoting-bed, and which form the sides or cheeks of the slide upon which the carriage carrying the gun slides to and fro.

This carriage I prefer to be of such a construction and provided with compressors of such power that the recoil of the gun may be limited to a length of, say, not more than three times the bore of the gun. Such compressors are described in the application for a patent lodged by me January 3, 1883, Serial No. 80,869.

As before stated, the gear-wheels O and V on each side of the pivoting-bed might be geared together, whenever desired, by toothed gear-wheels Y, carried by the studs on the side plates, X, and which can be slid upon their studs, so as to put them into or out of gear, as required. In this case provision would also be made for clutching or unclutching the toothed wheel O to its axis N, and also for clutching or unclutching the toothed wheel U to its axis T. In this way all four crank-handles can be used, either for traversing or training, or for both traversing and training simultaneously, if desired.

When the gun and mounting have been traversed or transported to the position from which it is desired to fire the gun, the mounting is locked in this position by drop-bolts Z². When the mounting is so locked in firing position, its base-plate may be allowed to rest on the deck of the ship, and the transporting-rollers D' so be relieved of the weight of the mounting. This may be effected by forming inclines in the roller-path B', upon which the rollers D' run. The end of the base-plate also may be made to come under projecting lugs Z, which serve to hold it down, and prevent it from lifting or jumping to an injurious extent when the gun is fired.

Z' is a shield for protecting the gun's crew against the fire of small-arms and of small machine-guns.

Having thus described my invention, I would have it understood that I claim—

1. The combination of the gun-mounting base-plate D, carrying the toothed wheel M, the straight or curved fixed rack-racer A, into which the toothed wheel M gears, the pivoting-bed G, capable of being turned around the vertical pivot F, which stands up from the top of the base-plate D, and the vertical spindle J, which passes down through the center of the pivot F, and from which motion is transmitted to the toothed wheel M, substantially as hereinbefore described.

2. The combination of the base-plate D, the circular pivot F, the pivoting-bed G, and gear for turning the pivoting-bed around the base-plate, the vertical axis J, passing down through the center of the central pivot, and gear for driving this axis from its upper end, and worm K on its lower end, gearing with the worm-

wheel M, carried by the base-plate, and which gears with a rack, A, along which the base-plate is caused to travel when wheel M is turned, substantially as hereinbefore described.

5 3. The combination of the base-plate D, the circular pivot F, the pivoting-bed G, the toothed rack R around the pivoting-bed, the worm S, gearing with the toothed rack, and carried by the pivoting-bed, and toothed gear-

ing on each side of the pivoting-bed for driving the worm S, substantially as hereinbefore described. 10

JOSIAH VAVASSEUR.

Witnesses:

E. DONN,

C. E. WALLIS,

Both of Bear Lane, Southwark, London.