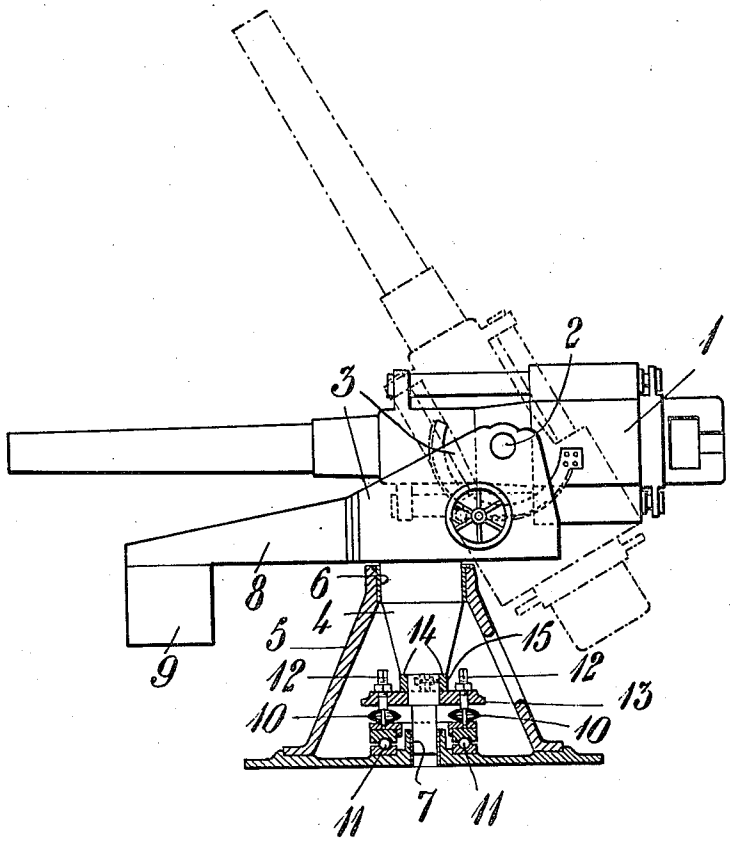
E. OLSSON.

ORDNANCE MOUNT TURNING ON A CENTRAL PIVOT.

APPLICATION FILED FEB. 23, 1916.

1,190,187. Patented July 4, 1916.



Inventor
Emil Olsson
By [illegible]
Attorney

UNITED STATES PATENT OFFICE.

EMIL OLSSON, OF BOFORS, SWEDEN, ASSIGNOR TO AKTIEBOLAGET BOFORS-GULLSPANG, OF BOFORS, SWEDEN, A COMPANY LIMITED.

ORDNANCE-MOUNT TURNING ON A CENTRAL PIVOT.

1,190,187. Specification of Letters Patent. Patented July 4, 1916.

Application filed February 23, 1916. Serial No. 79,855.

To all whom it may concern:

Be it known that I, EMIL OLSSON, subject of the King of Sweden, residing at Bofors, Sweden, have invented new and useful Improvements in Ordnance-Mounts Turning on a Central Pivot, of which the following is a specification.

The present invention has for one of its objects to provide an ordnance mount adapted to turn on a central pivot for use with heavy guns having high angles of elevation and consists in the provision of a counterweighted top-carriage and a spring and ball thrust bearing to carry the weight of the gun and the top-carriage which shall be adjustable and readily accessible for the purposes of replacing balls in the ball bearing or cleaning the latter.

In the accompanying drawing such an ordnance mount is illustrated partly in a central longitudinal section.

The gun 1 is provided in the usual manner with trunnions 2 which rest in bearings in the top-carriage 3, which by means of its pivot 4 is guided in the conical base 5.

In order that the gun 1 may be trained to high elevations the trunnions 2, which are situated in or near to the center of gravity of the gun, are placed in bearings in the top-carriage 3 some distance back of the axis of the pivot 4 and as the center of gravity of the gun does not coincide with the axis of the pivot, pressure as well as frictional resistance is caused against the sides of the vertical bearings 6, 7. This objection is overcome by the construction and arrangement of parts mentioned below.

At the front of the pivot fork or top carriage there is arranged a forwardly projecting arm 8, with a counter weight 9, so proportioned that the center of gravity of the top-carriage and gun carried thereby coincides or almost coincides with the vertical axis of the pivot.

The pivot is vertically supported by a number of Belleville springs 10, which rest upon a ball or roller bearing 11 and can be compressed corresponding to the weight of the gun and top-carriage by means of screws 12 in a ring 13, surrounding the pivot, so that the top-carriage can be brought to float freely above the upper surface of the pedestal or conical base, or to only very slightly come into contact with the said surface. The springs may be arranged above or beneath the ball bearing by which the friction caused by the weight of the gun and top-carriage is reduced to a minimum, and have for their object to protect the ball bearing against excessive stresses during the firing, the springs then yielding and permitting the top-carriage to come into contact with the upper surface of the conical base, which thus takes up the recoil.

To permit a change of balls in the ball bearing or the cleaning of the latter without the necessity of lifting the gun and top-carriage a sectional collar 15, divided into two or more parts, is placed between the ring 13 above mentioned and a shoulder 14 formed on the pivot, which shoulder transfers the weight of the gun and top-carriage to the ball bearing through the collar, ring, and spring. By loosening the screws 12 the top-carriage can be lowered to rest on the pedestal, and the weight thus taken off the collar 15, the sections of which may then be removed, and the ring 13 with the screws and the Belleville springs as well as the upper race of the ball bearing can be raised enough so that the balls can be removed or the bearing cleaned.

From the above it will be evident that the present invention permits the use of central pivot ordnance mounts for heavy ordnances with a great angle of elevation, and the construction of such ordnance mounts is simplified so as to make the bearings readily accessible.

Having now particularly described the nature of my invention and the manner of its operation, what I claim is:

1. A pivoting ordnance mount for high angles of elevation comprising a pedestal, a top-carriage pivotally mounted thereon adapted to rotate in a horizontal plane, a gun provided with trunnions near its center of gravity, bearings for the trunnions in said top carriage located rearwardly of the axis of the top-carriage pivot, and a counterweight on the forward part of the top-carriage whereby the center of gravity of the gun and top-carriage is brought to coincide with the axis of the top carriage pivot.

2. A pivoting ordnance mount comprising a pedestal, a top-carriage, a pivot vertically dependent therefrom, a ball thrust bearing, a ring concentric with said pivot, Belleville springs between said ring and the upper race of said ball bearing, screws operating in said ring upon the Belleville

springs to adjust the compression thereof, and a sectional collar between said ring and a shoulder of the pivot to transmit the load to the bearing, said sectional collar being removable whereby access may readily be had to the ball bearing.

3. A pivoting ordnance mount for high angles of elevation comprising a pedestal, a top-carriage, a pivot vertically dependent from said top-carriage and having a shoulder formed thereon, a ball thrust bearing, a ring concentric with said pivot, a plurality of Belleville springs between said bearing and ring, screws coöperating with said ring to regulate the compression of said springs, a sectional collar between said ring and said shoulder on the pivot, a gun having trunnions near its center of gravity, bearings for said trunnions in the top-carriage located rearwardly of the axis of said pivot, and a counterweight on the forward part of said top-carriage whereby the center of gravity of gun and top-carriage is brought to coincide with the axis of the pivot.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMIL OLSSON.

Witnesses:
KARTT R. SVANBERG,
G. CARLIN.