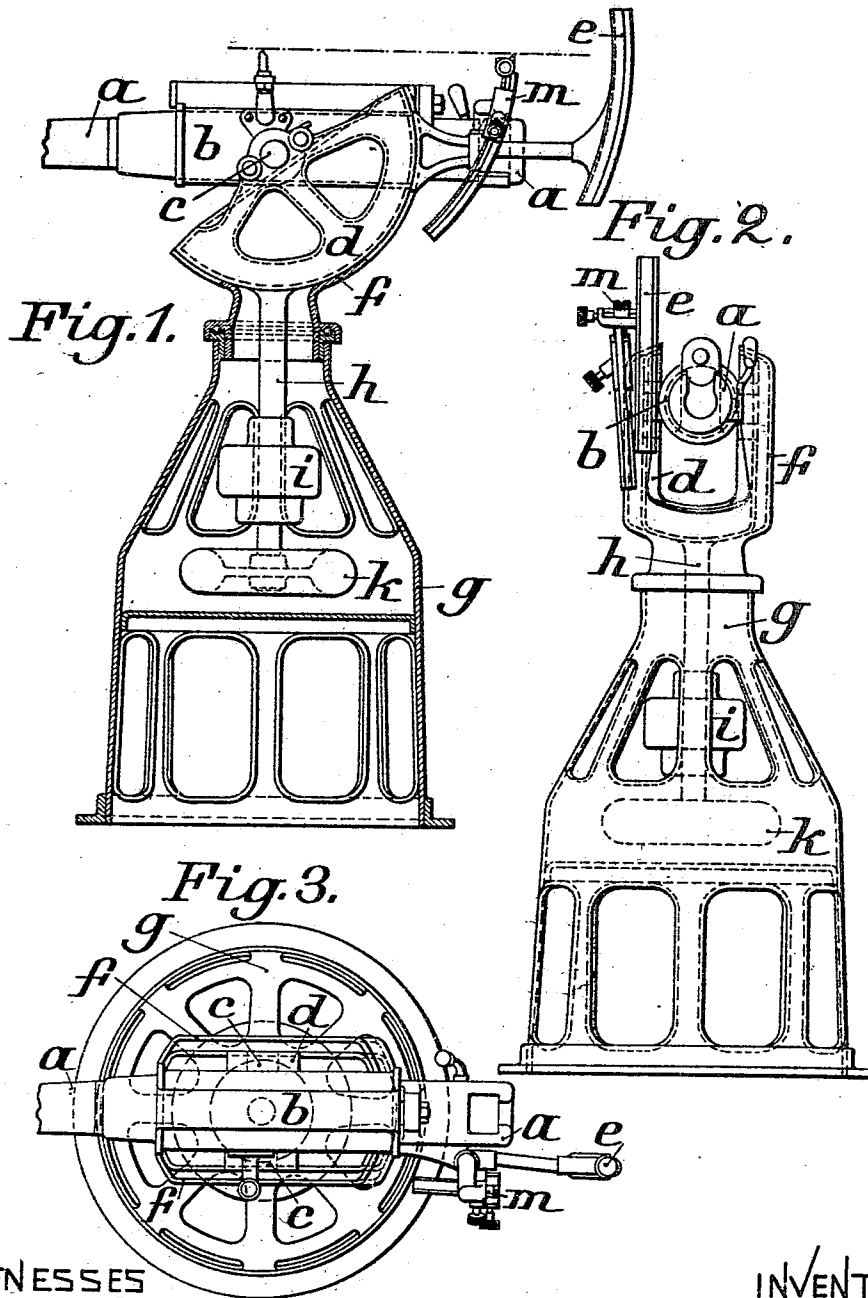


1,041,384.

Patented Oct. 15, 1912.



WITNESSES

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UNITED STATES PATENT OFFICE.

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GUN-MOUNTING.

1,041,384.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, KARL VÖLLER, engineer, a subject of the German Emperor, residing at 17 Fülcherstrasse, Dusseldorf, Germany, have invented certain new and useful Improvements in Gun-Mountings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to gun mountings for use on an oscillating base, such as on board ship, on air ships, motor cars or the like, and purports to eliminate the effect of the oscillations upon the axis of the gun barrel.

It consists therefore in a device which maintains the gun barrel in the position in space in which it has been set. For the purpose the trunnions of the gun are journaled in a carrier which has a spherical bearing surface adapted to rotate in all directions about the center of the sphere in a spherical bearing of the gun carriage. The center of the sphere lies in the resultant of the force of the recoil and in the resultant of the force due to the weight of the cradle carrier and the parts which it carries. Owing to this arrangement the force of the recoil and of gravity always acts in directions at right angles to tangents to the bearing surface of the carrier and exert no turning movement on the latter. On its underneath surface the carrier has a downward extension whereon is mounted a fly-wheel driven by a motor, a so-called gyrostat. As this gyrostat has free movement in the gun carriage it unites with the weight of the dependent extension in keeping the cradle carrier and therefore the gun barrel in one and the same position in spite of the oscillations of the gun carriage. The gun can be moved about the axis of these trunnions into any desired position of elevation in the carrier.

The accompanying drawings illustrate a construction according to the invention, Figure 1 being a side elevation partly in section, Fig. 2 a rear elevation and Fig. 3 a plan of the gun mounting.

The cradle *b* in which the barrel *a* recoils after the gun has been fired, has two lateral trunnions *c*. These are journaled in the carrier *d* so that the barrel *a* can be moved into any desired position of elevation as

compared with the cradle carrier by means of the shoulder piece *e*; in such position it may be locked by any known suitable device, not shown in the drawing. Instead of this, any known elevating mechanism that is suitable may be introduced between the cradle *b* and its carrier *d*. The outer surface of the carrier *d* is spherical and rests in a correspondingly spherical bearing surface of the independently rotatable member *f* of the carriage *g*. This bearing surface on the member *f* is so formed that the carrier can move freely in it in response to the oscillations of the carriage *g*. The rotary member *f* of the carriage *g* admits of the gun being swung horizontally to any desired position, so that by adjusting the angle of elevation or depression of the gun on its trunnions and swinging the gun horizontally by means of the rotary carriage member *f*, the gun may be quickly and accurately sighted for any range.

To the bottom of the carrier *d* is fixed a rod *h* on which is mounted a motor *i* driving a fly-wheel *k*. The weight of these parts and the moment of inertia of the motor and fly-wheel keep the carrier *d* continuously in one and the same position, however much the carriage oscillates. The sighting device *m* is mounted on the carrier *d* so that this also and the barrel, whatever its elevation may be, are kept in position and at any moment an effective shot can be fired.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In combination with a gun, a base or carriage provided with a bearing, a gun carrier having a spherically shaped journal adapted to be mounted in said bearing so as to permit free rotary movement of the carrier in all directions therein, a gyrostat supported freely from the bottom of the gun carrier to maintain the carrier in a fixed plane irrespective of the movement of the base or carriage and bearings in said carrier supporting the gun on an axis which passes substantially through a point in the resultant force of gravity acting on the gun and carrier and substantially through a point in the resultant force of recoil incident to firing, whereby substantially no turning movement is exerted on the carrier as a result of firing the gun; substantially as described.

2. In combination with a gun, a base or carriage provided with a bearing, a gun carrier having a spherically shaped journal adapted to be mounted in said bearing so as to permit free rotary movement of the carrier in all directions therein, a gyrostat supported freely from the bottom of the gun carrier to maintain the carrier in a fixed plane irrespective of the movement of the base or carriage, and trunnion bearings in said carrier at substantially the center of rotation thereof for supporting the gun on an axis which passes substantially through a

point in the resultant force of gravity acting on the gun and carrier and substantially through a point in the resultant force of recoil incident to firing, whereby substantially no turning movement is exerted on the carrier as a result of firing the gun; substantially as described. 15 20

In testimony whereof I have affixed my signature, in presence of two witnesses.

KARL VÖLLER. [L. s.]

Witnesses:

OTTO KÖNIG,

C. J. WRIGHT.