A lower gun mount, which can be mounted in a standardized way on a ship or a permanent ground foundation, is used so that a gun can be mounted with minimal effort quickly, reproducibly and without slip, and later dismounted. This standardized lower gun mount is mounted geometrically correctly on a foundation or ship by so-called standardized ISO corners, which can be fixed in place on supports specially provided for this purpose and a mounting frame that assists the mounting. This makes it possible for the gun to be mounted rigidly and without play.
ISO PALLET CONCEPT FOR A GUN

BACKGROUND OF THE INVENTION

In the integration of guns on ships or in fixed land positions, various problems are encountered with respect to the amount of work and effort involved in the installation work and with respect to the geometric reproducibility of the installation. Especially on ships, although the mounting sites for the guns are predetermined by the necessary deck fixtures, integration on the deck is very complicated. In addition, in the case of large guns, it is necessary to break through the deck.

DE 102 54 786 A1 discloses, for example, the integration of a large-caliber gun on a ship. In this connection, the turret of a land gun is installed on the ship by means of an adapter plate and a shock-absorbing gun mount. As a result of the modular construction, no significant modifications need to be made on the ship.

SUMMARY OF THE INVENTION

The object of the present invention is to allow fast and simple mounting of a naval or land gun on a ship or ground foundation.

Pursuant to this object, one aspect of the present invention resides in an ISO pallet-concept gun, having a lower gun mount, standardized corners on the lower gun mount, and supports for mounting the corners on a ship or a permanent ground foundation.

The invention is based on the idea of using a lower gun mount, which is mounted in a standardized way on the ship or a permanent ground foundation, so that the gun can be mounted with minimal effort quickly, reproducibly and without slip, and later dismounted.

This idea is based on the ISO standardization of the lower gun mount already introduced with the applicant's own Skyshield 35-mm Revolver Gun (ISO=International Organization for Standardization).

This standardized lower gun mount is now mounted geometrically correctly on a foundation or ship by means of new, so-called standardized ISO corners, which can be fixed in place on supports specially provided for this purpose, and a mounting frame that assists the mounting. This makes it possible for the gun to be mounted rigidly and without play. The modular solution acts in the tension and compression directions (during operation of the gun). Purely mechanical connection is involved, so that it is maintenance-free. In the operation of the gun, a reduction of the scattering of the gun may be expected. Another advantage is that an internationally standardized interface is created for guns on land and sea.

The invention is explained in greater detail below with reference to the specific embodiment illustrated in the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows an ISO pallet-concept gun.
FIGS. 2a-2d show individually modified supports.
FIG. 3 shows an enlarged view of FIG. 2a.
FIG. 4 shows a mounting frame.

DETAILED DESCRIPTION OF THE INVENTION

As shown in FIG. 1, an ISO pallet-concept gun 1 is fixed in place on the ISO corners 2 of the lower gun mount on one support 3 each. The ISO corners 2 have slotted holes 2.4 in their lateral faces 2.1, 2.2, and 2.3 that enclose the corners.

To realize statically determined mounting, each ISO corner 2 requires a geometrically determined support 3.1-3.4 (FIGS. 2a-2d).

The support 3.1 (FIG. 2a) is formed by two lateral faces 3.1.1 and 3.1.2 and a base 3.1.3. Each of the two lateral faces 3.1.1 and 3.1.2 has a slotted hole 3.1.4 that is equivalent to the slotted hole 2.4 of the ISO corners 2. These slotted holes 2.4 and 3.1.4 correspond to each other during the mounting/fixation of the ISO corners 2 on the support 3. Bolt connections 7 with heads 7.1 adapted to the slotted holes 2.4, 3.1.4 pass through the lateral slotted holes 3.1.4. The heads 7.1 can be relieved behind the lateral faces 2.1, 2.2 of the ISO corners 2 (see FIG. 2c). Another bolt connection 8 is integrated in the base 3.1.3 and is designed in such a way that it fits into the standardized holes of the ISO corners 2. It has a female part 9 that forces the ISO corners 2 against the respective support 3 from the inside (FIG. 3).

The support 3.3 according to FIG. 2c differs from the other supports in that only one of the two lateral faces 3.3.1, 3.3.2 has a slotted hole 3.3.4 equivalent to the slotted hole 2.4 of the ISO corners 2.

The support 3.2 according to FIG. 2d differs from the other supports in that only one of the two lateral faces 3.1.1, 3.1.2 has a slotted hole 3.1.4 equivalent to the slotted hole 2.4 of the ISO corners 2. In order to realize a statically determined mounting with the support 3.1 and 3.2, the play at the lateral faces of the support 3.2 is adjusted with a wedge X.

On the other hand, the support according to FIG. 2d has only a base 3.4 with the bolt connection 8 and the female part 9 (see also FIG. 3).

Each ISO corner 2 is positively locked by means of the bolt connection 8 in one or more directions in space, depending on the type of bearing.

FIG. 4 shows a mounting frame 10 for assisting the mounting in order to mount the holding fixtures geometrically correctly on a foundation or on a ship.

Although the present invention has been described in relation to particular embodiments thereof, many other variations and modifications and other uses will become apparent to those skilled in the art. It is preferred, therefore, that the present invention be limited but by the specific disclosure herein, but only by the appended claims.

1. An ISO pallet-concept gun, comprising:
   a lower gun mount;
   standardized corners on the lower gun mount; and
   supports for mounting the corners on a ship or a permanent ground foundation.

2. The gun in accordance with claim 1, wherein the supports are configured to positively lock the corners in at least one direction in space.

3. The gun in accordance with claim 1, wherein each support has at least one base with a bolt connection and a female part.

4. The gun in accordance with claim 1, wherein a support has two lateral faces, each of which lateral faces has a slotted hole.

5. The gun in accordance with claim 4, wherein the corners have lateral faces with a slotted hole equivalent to the slotted hole of the support, so that the slotted holes correspond to each other during mounting/fixation of the corners on the support.

6. The gun in accordance with claim 5, and further comprising bolt connections with heads adapted to the slotted holes of the corners and the slotted holes of the supports, wherein the bolts pass through the slotted holes and the heads are relieved behind the lateral faces of the corners.