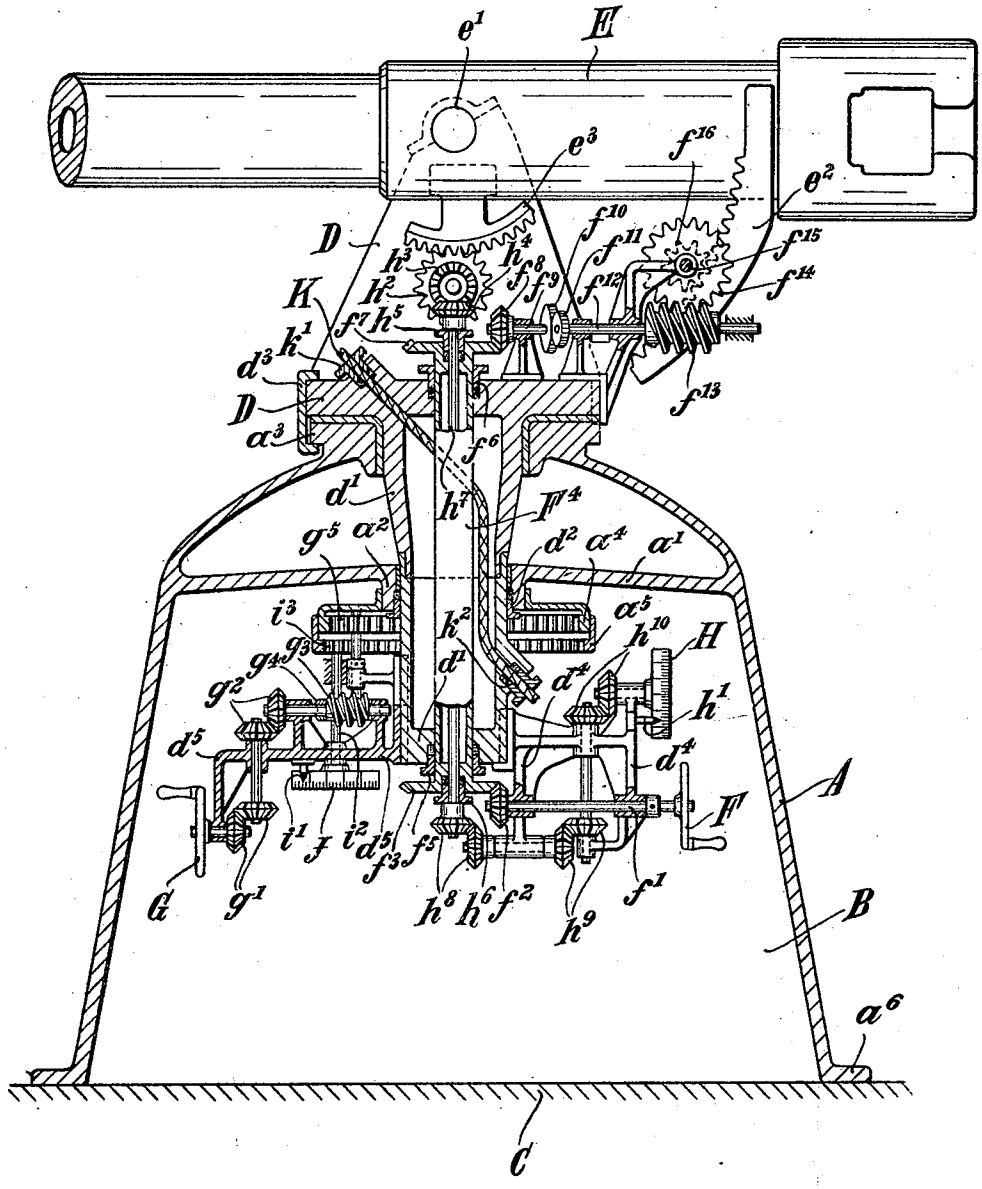
K. HALLER.

GUN WITH PEDESTAL MOUNTING.

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1,371,891. **Patented Mar. 15, 1921.**



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GUN WITH PEDESTAL-MOUNTING.

1,371,891. Specification of Letters Patent. Patented Mar. 15, 1921.

Application filed September 4, 1920. Serial No. 408,403.

To all whom it may concern:

Be it known that I, KURTH HALLER, residing at Essen, Germany, a citizen of the German Republic, have invented a certain new and useful Improvement in Guns with Pedestal-Mountings, of which the following is a specification.

This invention relates to guns with pedestal mountings and consists in the special arrangement of the pointing appliances of the gun.

The invention will be described with reference to the accompanying drawing, which shows a vertical section of the arrangement according to the present invention.

The pedestal mounting A of the gun, which is mounted, for example, on a platform C or on the pressure resisting structure of a submarine is of bell shape, the closed circumference of which together with a transverse partition a^1 provided in its upper part form a covered chamber B, which contains the pointing appliances of the gun and the apparatus for indicating the elevation and traverse imparted to the gun barrel. Accordingly the chamber B must obviously be of such dimensions, that it also affords room for the operation of the pointing appliances. This chamber B is accessible through an opening in the circumference of the pedestal A or the platform C, which opening can be closed and is not shown in the drawing. Between the foot a^6 of the pedestal A and the platform C is inserted a packing ring. The upper carriage D of the gun is adapted to rotate relatively to the pedestal A about the axis of the (hollow) pivot pin d^1 mounted thereon and carried in the upper part of the pedestal A and a ring bearing a^2 in the transverse partition a^1. The pivot pin d^1 projects into the chamber B and is packed in the ring bearing a^2 by a stuffing box d^2. Lugs (d^3), which engage underneath a flange a^3 on the pedestal A, prevent the upper carriage D from being lifted off the pedestal. The gun barrel E is carried on the upper carriage by means of horizontal trunnions (e^1).

The gun barrel is elevated by turning a hand wheel F, the horizontal shaft f^1 of which is carried on a bracket bearing d^4, mounted on the lower end of the pivot pin d^1. The rotation of the shaft f^1 is transmitted by a pair of bevel wheels f^2 f^3 to a hollow shaft F^4 carried in the pivot pin d^1. The shaft F^4, the axis of which coincides with the axis of the pivot, is packed in the pivot pin d^1 by stuffing boxes f^5 f^6. The end of the shaft F^4, which projects between the walls of the upper carriage D, carries a bevel wheel f^7, which coöperates with a bevel wheel f^8.

In the shaft f^9, which is carried on the upper carriage and carries the bevel wheel f^8, is mounted a spur wheel f^{10} which gears into a spur wheel f^{11}. The shaft f^{12} of this spur wheel carries a worm f^{13}, which gears into a worm wheel f^{14}. On the shaft f^{15} of the worm wheel f^{14} is mounted a spur wheel f^{16}, which gears into a toothed arc e^2 fixed on the gun barrel. The shafts f^{12} and f^{15} are alike carried on the upper carriage D.

The elevation imparted to the gun barrel by means of the above described pinion mechanism can be read off by the gun layer by means of fixed pointer h^1 on an elevation indicating disk H arranged in the chamber B. The disk H is driven independently of the pinion mechanism of the elevating gear from the gun barrel. For this purpose a toothed arc e^3 mounted on the gun barrel E gears into a toothed wheel h^2 mounted on the upper carriage D and the rotation of which is transmitted by a pair of bevel wheels h^3 h^4 to a shaft h^7 carried in the hollow shaft F^4 and packed therein by stuffing boxes h^5 h^6. The disk H is positively connected to the shaft h^7 by three pairs of bevel wheels h^8, h^9, h^{10}. The shafts of this gearing are carried in the bracket bearing d^4.

The traversing gear is driven by a hand wheel G, the rotation of which is transmitted by two pairs of bevel wheels g^1 g^2 to a worm g^3, which gears into a worm wheel g^4.

On the shaft of this worm wheel, is mounted a spur wheel g^5, which gears into an internally toothed gear wheel a^4 fixed on the ring bearing a^2 of the pedestal A. A bracket bearing d^5 is provided on the pivot pin d^1 for the parts G, g^1, g^2, g^3, g^4, g^5 of the gearing.

When the hand wheel G is rotated the spur wheel g^5 travels around over the fixed toothed wheel a^4, so that the upper carriage D and the gun barrel E are rotated on the axis of the pivot by means of the pivot pin d^1.

The traverse imparted can be read off on a traverse indicating disk J by the aid of a fixed pointer i^1. The shaft i^2 of the disk J,

which rotates in the bracket bearing d^5, carries a spur wheel i^3, which coöperates with an internally toothed gear wheel a^5 fixed to the gear wheel a^4 and travels around over it, when the pivot pin is rotated.

Through the hollow part of the pivot pin d^1 and in addition to the shafts F^4 and h^7 are passed electric cables K for a firing device and other purposes. These cables are packed at the point where they enter the pivot pin by a stuffing box k^1 and at the point where they emerge therefrom by a stuffing box k^2.

Claims.

1. An arrangement of the class described comprising a hollow pedestal, a pivot gun, a carriage therefor, a hollow pivot pin supporting said carriage and projecting into said pedestal, an elevating gear mounted on the gun carriage, means for operating said elevating gear positioned within said pedestal and a shaft passing through said pivot pin for operatively connecting the elevating gear and its operating means.

2. An arrangement of the class described which comprises the combination with a pivot gun and a hollow pedestal of a hollow pivot pin rotatably mounted on said pedestal and projecting therein, said gun being supported at the opposite end of said pivot pin, elevating mechanism supported adjacent the gun, means mounted within the pedestal and passing through the center of said pivot pin for operating the elevating mechanism and means also contained within said pedestal for rotating the pivot pin to traverse the gun.

3. An arrangement of the class described which comprises a pedestal, said pedestal being hollow to provide a chamber, a gun and means for traversing and elevating said gun, a hollow pivot pin supporting said gun on the pedestal, said operating means together with indicating devices therefor being contained in the hollow chamber formed by said pedestal and acting through said hollow pivot pin.

The foregoing specification signed at Essen, Germany, this 10 day of June, 1920.

KURTH HALLER.

In presence of—

HANS GOTTSMANN,

JOHANN DECKERS.