Dec. 13, 1927. 1,652,499

C. T. SCHWAB, JR

DEFLECTION VERNIER FOR MACHINE GUNS

Filed Oct. 30, 1924

Fig. 1.

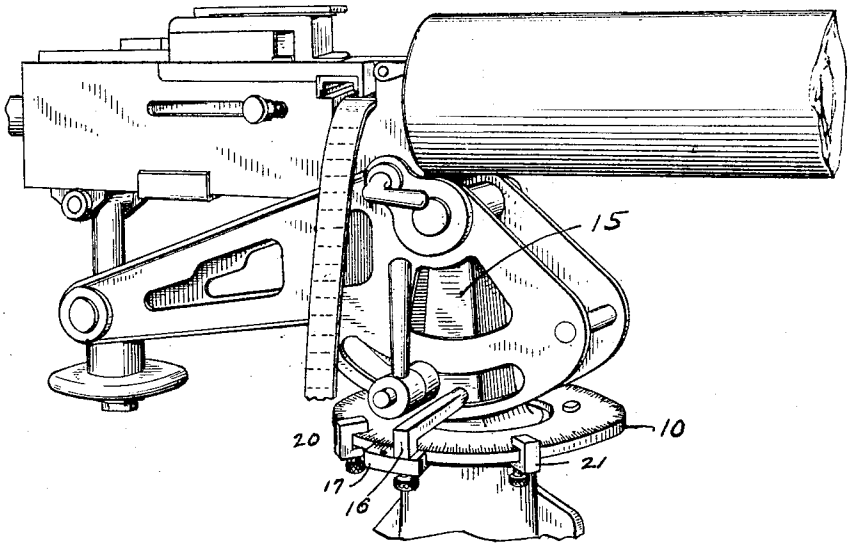


Fig. 2.

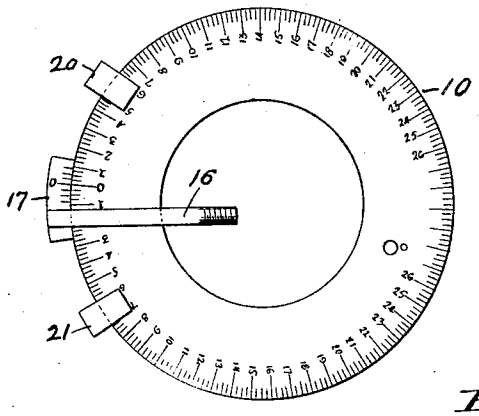


Fig. 3.

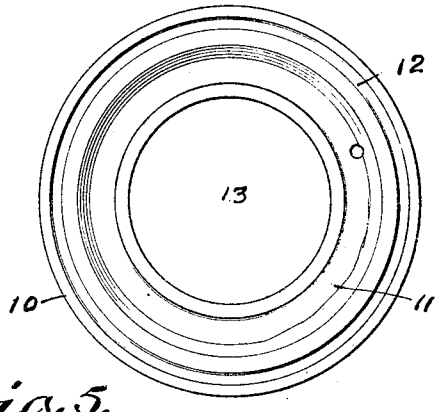


Fig. 5.

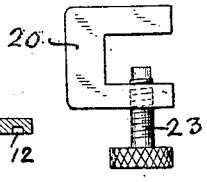


Fig. 6.

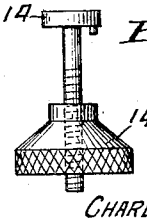
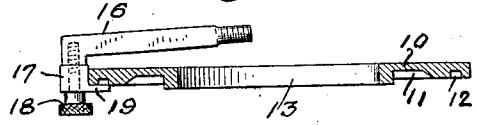


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES T. SCHWAB, JR., OF CUERO, TEXAS.

DEFLECTION VERNIER FOR MACHINE GUNS.

Application filed October 30, 1924. Serial No. 746,740.

The present invention has been designed particularly for use in connection with the Browning machine gun, which is well known to the forces constituting the defense of the United States, and the said invention resides in certain devices which enable deflection to be very accurately determined in mils., and which will permit reading of the deflection in a direct and simple manner.

The construction in which the features of the invention have been embodied, and by means of which the results desired are attained, will now be specifically described, and the novelty thereof pointed out in the appended claim.

In the accompanying drawing:

Figure 1 is a view in side elevation, partly perspective, showing parts of the mounting of a machine gun, with my improvements in position thereon.

Fig. 2 is a plan view of the graduated plate, with the vernier and stops thereon.

Fig. 3 is a bottom plan view of the plate showing some co-operating features of construction.

Fig. 4 is a view in side elevation of the vernier, and showing also a section on the diameter of the plate.

Fig. 5 is a view in side elevation of one of the stops.

Fig. 6 is a view in side elevation of the clamp for positioning the plate.

Referring to the drawing, the numeral 10 indicates a plate or disc which is designed to replace the usual graduated ring of the machine gun. The said plate is preferably made from cold rolled brass, and the face of its circular margin is divided into six hundred and forty equal spaces, each space comprising ten mils. In forming the graduations, each ten spaces, or one hundred mils., is indicated by an elongated line to which a numeral is applied, the numerals running from 1 to 64 inclusive. The plate 10 is formed upon its underside with a concentric groove 11 and a like outer groove 12, and also with a large central opening 13.

The said plate is placed over the head of the gun tripod, the groove 11 positioning the plate thereon, the clamp 14 through the thumb nut 14′ serving to hold the plate in its adjusted position. The standard 15 of the gun mounting is then positioned upon the head of the tripod.

The vernier constructed as a radial arm 16 is threaded at its inner end into the standard 15, and overlies the plate 10. At its outer end, the radial arm of the vernier carries a plate 17 which is graduated into twenty spaces, running right and left from zero, which graduations correspond to eighteen of the spaces upon the graduated plate 10, so that readings of one mil. can be taken. A thumb screw 18 is threaded into the underside of the outer end of the vernier, and acts to clamp the vernier plate 17 in position upon the arm 16, the said plate 17 having an inwardly extending finger 19, which guides the plate 17 at the underside of the plate 10.

Stops 20 and 21 are positioned upon the plate 10 at each side of the vernier, such stops carrying thumb screws 23, the points of which move in the outer groove 12 formed upon the underside of the plate 10, and which are adapted to be set by engaging the points of the screws with the plate. The purpose of the stops is to permit the gun to be moved through certain angles in laying down barrages, for night work, and as a basis for determining additional angles.

I have found by actual use that the invention greatly facilitates direct firing where the target or object is invisible, but the location of which can be ascertained by triangulation. The number of mils. in the angle between the reference point and the object being determined, the gun is aimed at the reference point, and the plate 10 is moved until the zero on the plate coincides with the zero on the vernier. The plate 10 is then clamped to the tripod by means of the clamp 14, and the gun is moved through such number of mils. as the relative positions of the reference point and the object require; and the gun is then clamped to the tripod and fired.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States, is:

A deflection vernier for machine guns, comprising a graduated movable plate positioned upon the tripod of the gun and having a zero point in its scale, a radial arm attached to the gun mounting, a vernier car-

ried at the end of the said arm and likewise having a zero point in its scale, the zeros of such scales co-inciding when the gun is aimed at the reference point, means for securing the said plate in the position to which it has been moved, and means for clamping the arm and vernier in position upon the plate preparatory to firing after it has been moved the required distance as indicated by the said scales.

In testimony whereof, I have signed my name at College Station, Texas, this 21 day of October, 1924.

CHARLES T. SCHWAB, JR.