

J. KURIG.
GUN SIGHT.

APPLICATION FILED FEB. 15, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

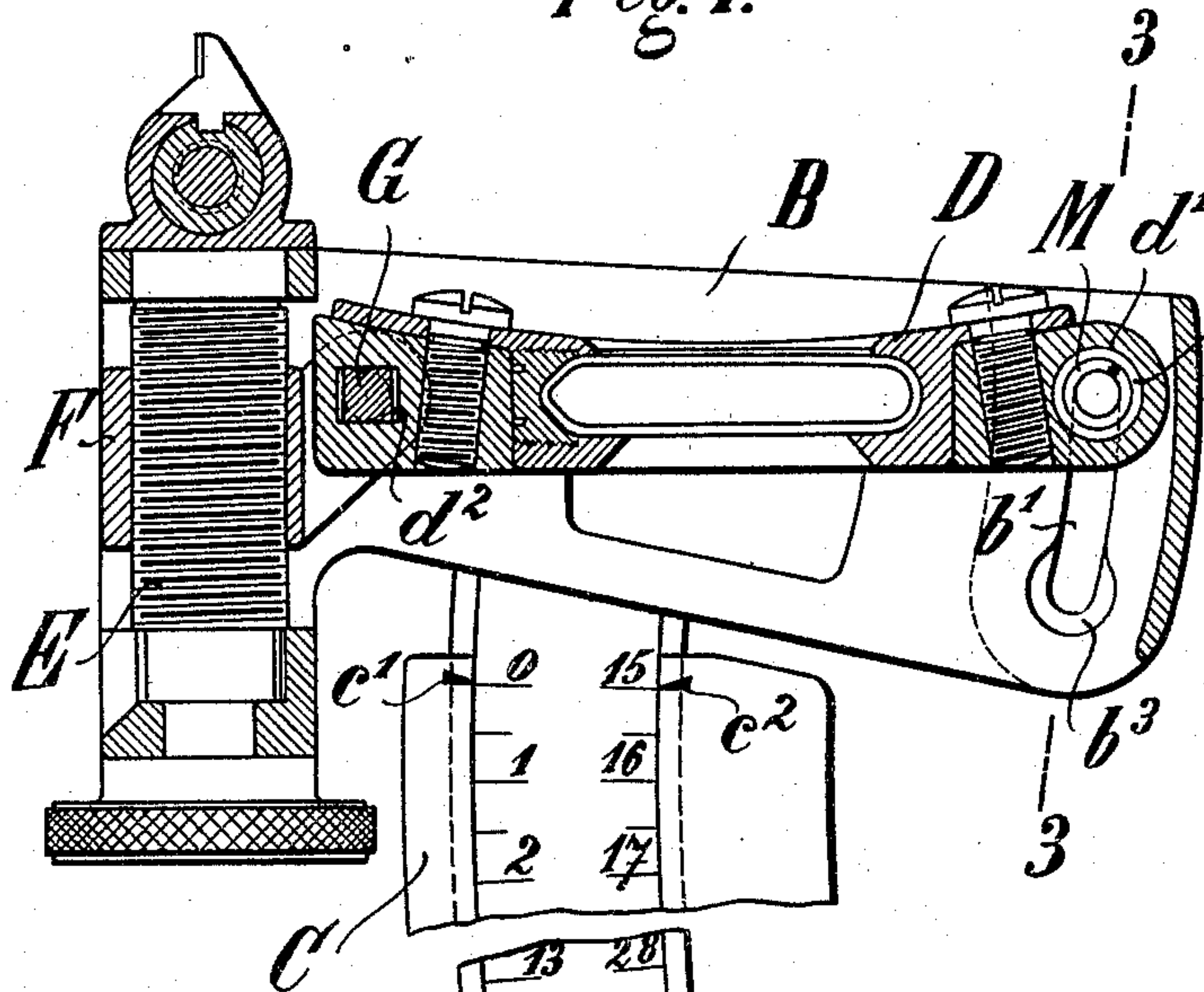


Fig. 3.

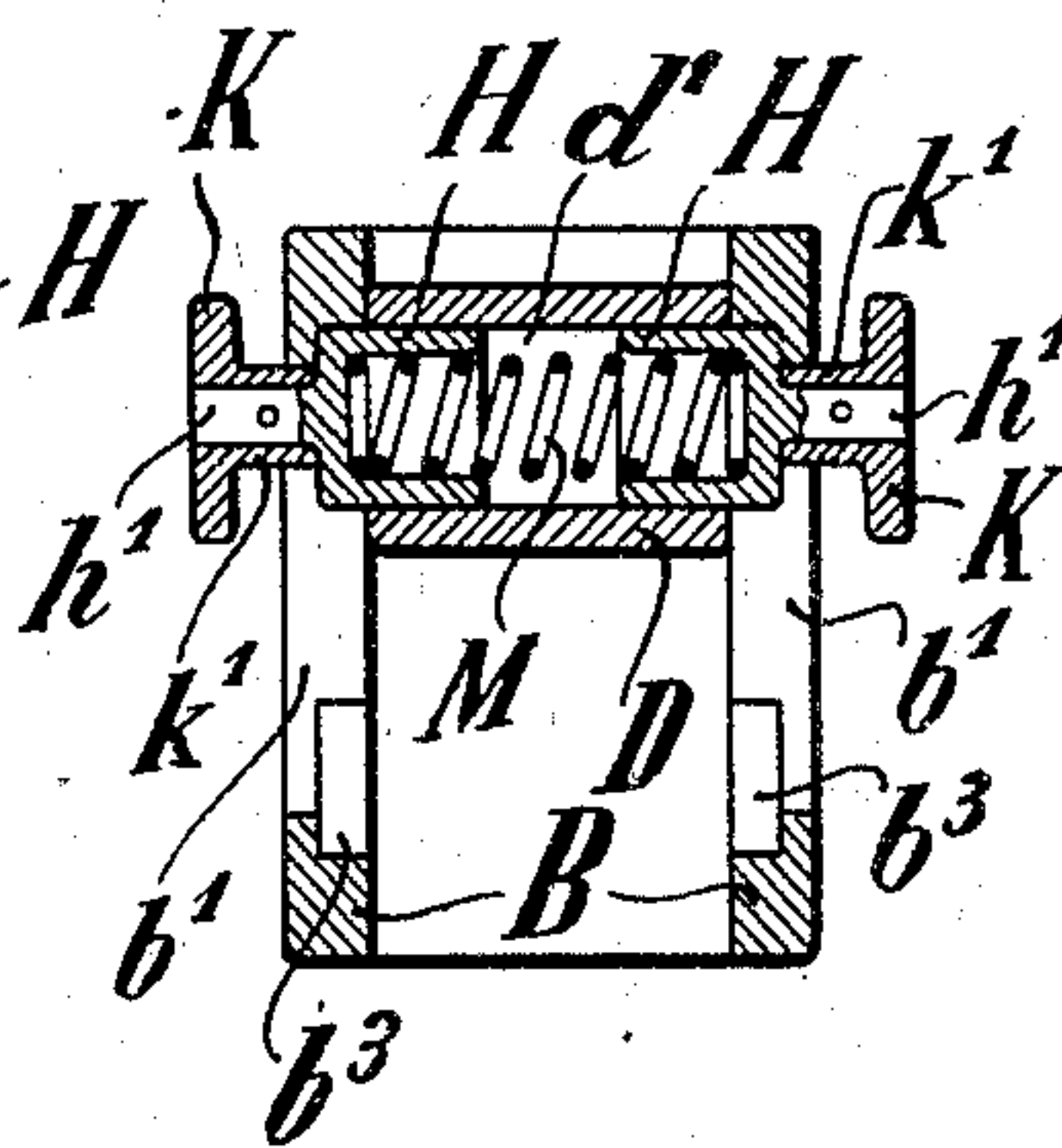


Fig. 2.

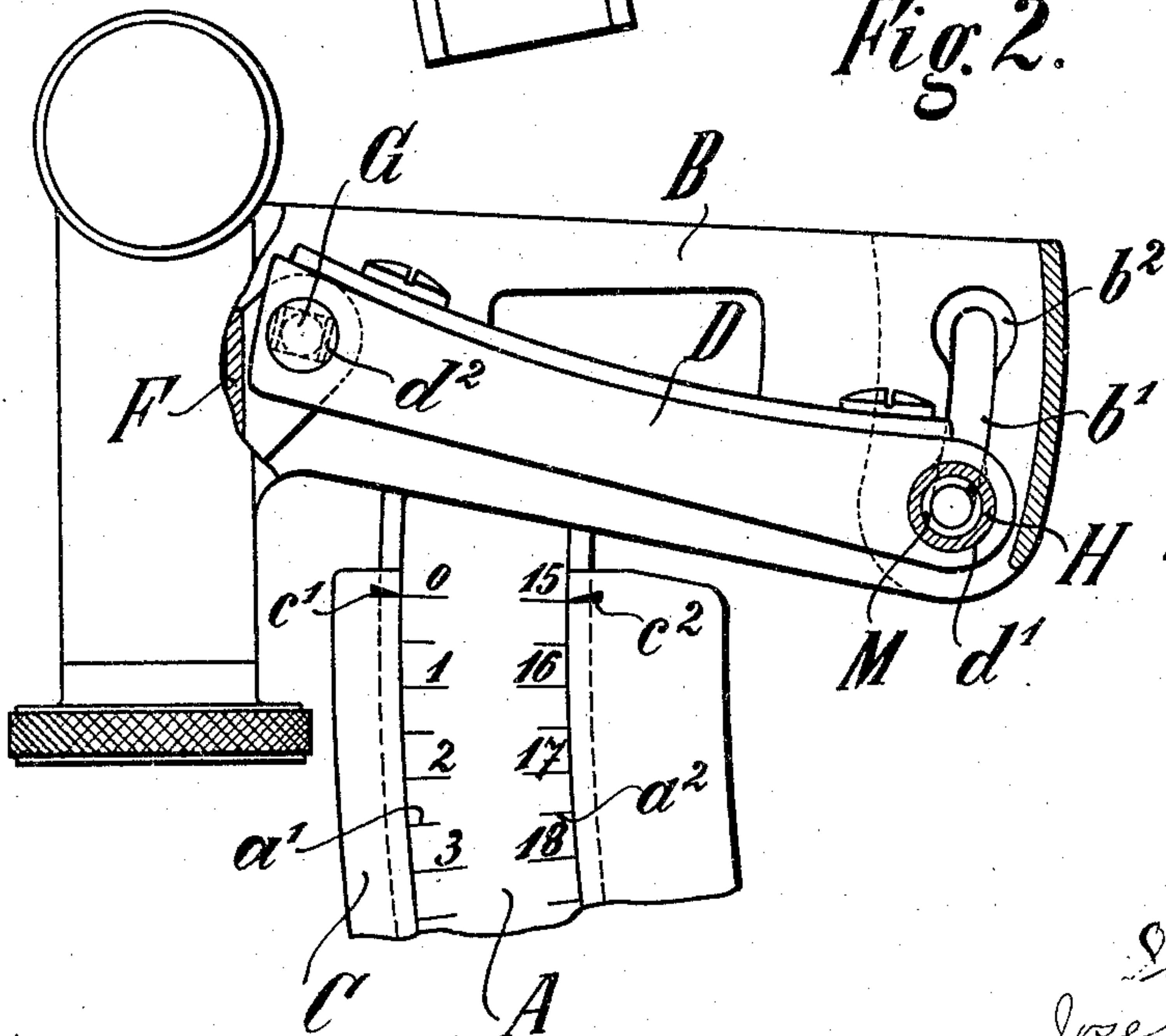
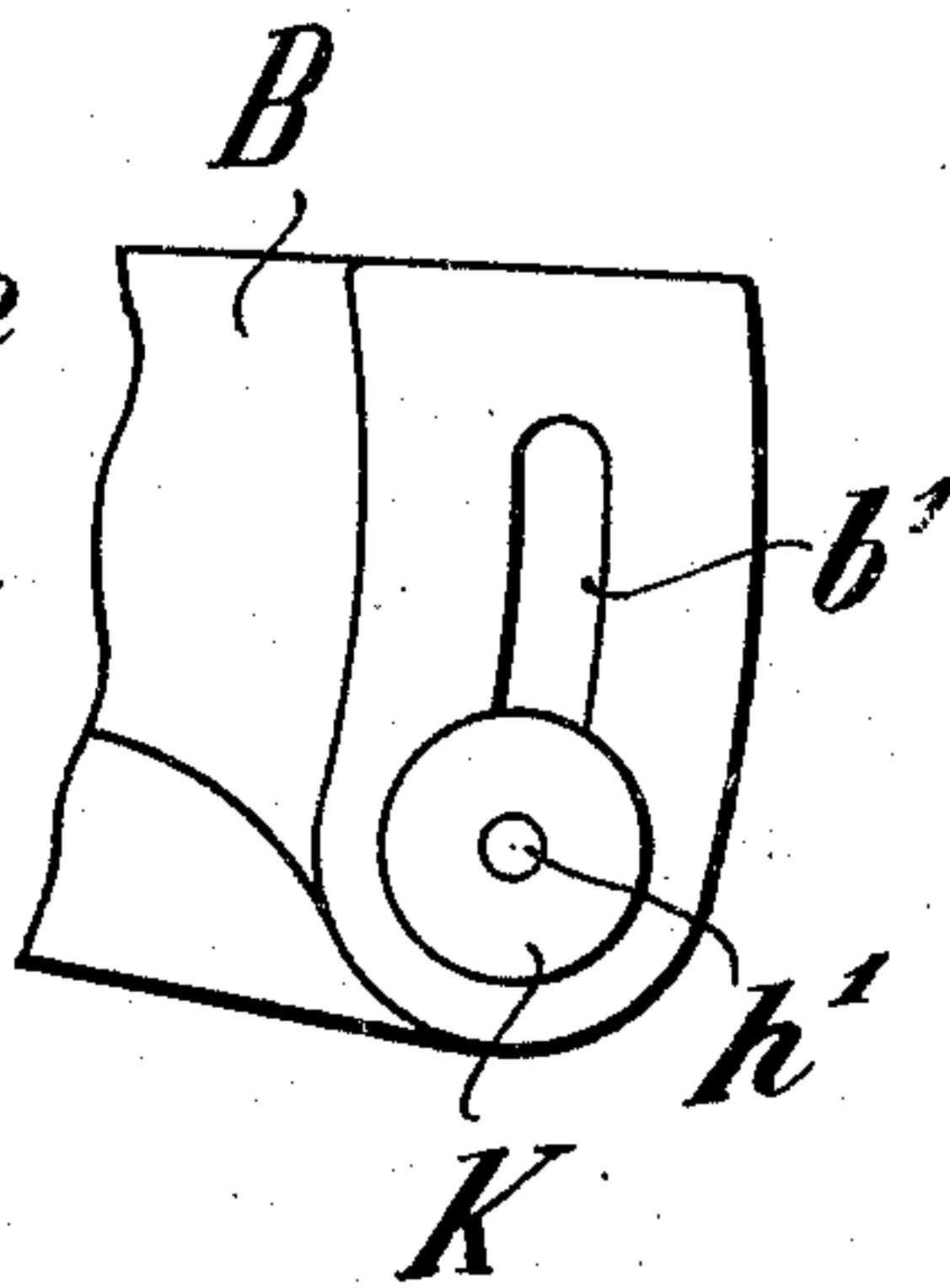


Fig. 4.



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GUN-SIGHT.

SPECIFICATION forming part of Letters Patent No. 792,274, dated June 13, 1905.

Application filed February 15, 1905. Serial No. 245,717.

To all whom it may concern:

Be it known that I, JOSEF KURIG, a subject of the Emperor of Germany, and a resident of 16 Holzstrasse, Essen-on-the-Ruhr, Germany, have invented certain new and useful Improvements in Gun-Sights, of which the following is a specification.

The present invention relates to gun-sights with levels.

In level-sights as heretofore constructed it was possible to use the sight for elevations for the adjustment of which the length of the sight-bar did not suffice. This was done by attaching a positive angle of site value to the highest sight adjustment, so that when, for instance, the highest sight adjustment was twenty degrees and the highest positive angle of site value was five degrees it was possible to use the sight for elevations up to twenty-five degrees. In such applications of the sight, however, it was not possible to eliminate the angle of site.

The present invention has for its object to provide a level-sight, in which it is possible, not only to use the level for elevations that exceed the elevations obtainable by adjustment of the sight-bar, but also to eliminate the angle of site in such instances, and the said object is attained by mounting the level in such a manner that independently of the adjustment device for eliminating the angle of site it can assume at least two different angular positions relative to the sight-bar.

Two embodiments of my improved level-sight are illustrated, by way of example, in the accompanying drawings, in which—

Figure 1 shows a vertical longitudinal section of one embodiment. Fig. 2 is a side view of the same, partly in section and with the parts shown in different positions. Fig. 3 is a section on line 3 3 of Fig. 1 seen from the left. Fig. 4 is a detail view. Fig. 5 is a side view, partly in section, of another embodiment of my invention. Fig. 6 is a section on line 6 6, Fig. 5, seen from the left.

Referring to Figs. 1 to 4, A indicates the sight-bar, which, as usual, is curved in an arc concentric to the horizontal trunnions of the

gun and is slidably arranged in a guide-box C, that is secured on the gun-barrel or on the cradle. The sight-bar is provided with two scales a' a'' , one of which, a' , has indications "0°" to "15°," while the other, a'' , has indications "15°" to "30°." For each of these scales there is a mark c' and c'' on the guide-box. In the sight-head B the level-carrier D is mounted in such a manner that for the purpose of eliminating the angle of site it is capable of receiving an angular adjustment that can be ascertained by means of a scale on the sight-head B. The said angular adjustment is effected in the ordinary manner by means of an adjustment-screw E, rotatable but incapable of longitudinal movement, a nut F movable in a straight line, and a connecting-bolt G, having a square block engaging a longitudinal slot d'' in the level-carrier D. In hitherto-known level-sights of this kind the axis around which the level turns when the angle of site is being eliminated is not capable of being changed. This axis can be shifted in the sight illustrated in Figs. 1 to 4 by means of an arrangement which will now be described. The level-carrier D is provided with a bore d' , in which are arranged two hollow cylindrical bolts H, capable of movement in the axial direction of the bore. On each bolt H is a press-knob K, Fig. 3. A helical spring M is arranged between the bolts H and tends to force them outwardly. The cylindrical parts K' , Fig. 3, of the press-knobs project through two slots b' in the outer walls of the sight-head B. The slots b' are curved in an arc that is concentric to the axis of the bolt G when said bolt or the nut F is in its central position, corresponding to the angle of site of "0°." In the inner walls of the sight-head B are a pair of notches b^2 b^3 , located at the ends of the slot b' and of the same diameter as the bolts H, so that said bolts, under the action of the spring M, can spring into the notches b^2 or b^3 . The relative position of the notches b^2 b^3 and the bolts H is so selected that the angle between the two positions Figs. 1 and 2 of the level, which are determined by the notches b^2 and b^3 , is fifteen

degrees, provided the bolt G or the nut F in both instances is in the position corresponding to an angle of site of "0°."

I will now describe the mode of operation of my improved device and assume that the level-carrier D is in the position shown in Figs. 1 and 3, in which the bolts H engage the notches b^2 in the sight-head B and which corresponds to the elevations indicated on the scale a' and to an angle of site of "0°." In this position of the level-carrier the use of the sight is similar to that of the ordinary level-sight—that is to say, the sight can be used in the ordinary way at most for elevations that do not exceed those indicated on the scale a' , in the present instance elevations of up to fifteen degrees. The elimination of the angle of site is effected, as is commonly known, by turning the adjusting-screw E. If, however, it be desired to obtain elevations in excess of the range of adjustment of the sight-bar—in the present instance elevations of over fifteen degrees—the press-buttons are pressed inwardly against the action of the spring M and out of engagement with the notches b^2 , the level-carrier D is swung downwardly until bolts H register with the notches b^3 , and press-buttons K are released, and the bolts H spring into the notches b^3 . This done, the level-carrier occupies the position shown in Fig. 2. The above-described adjustment of the level-carrier D takes place independently of the adjustment device E F for eliminating the angle of site. If subsequently the sight-bar is pushed so far down into the guide-box C that the upper line of the scale a^2 registers with the mark c^2 and if the level that is in its central position—the position corresponding to an angle of site of "0°"—is then brought into play by the crank of the elevating mechanism, the gun-barrel will be positioned at an elevation of fifteen degrees. By moving the sight-bar upwardly within the guide-box the sight may be set so that angles of elevation up to thirty degrees may be accurately imparted to the gun-barrel by using of the scale a^2 , the mark c^2 , and the level. The angle of site may also be eliminated in firing elevations of over fifteen degrees by turning the adjusting-screw E, in which case the level-carrier D swings around the longitudinal axis of the bolts H, engaging the notches b^3 . Obviously by making the sight-head B of suitable size the slots b' might be extended farther downwardly and be provided with notches in addition to the notches b^2 b^3 , and it would then be possible to bring the swinging axis of the level in other angu-

lar positions and by means of further scales on the sight-bar obtain firing elevations of over thirty degrees.

In the embodiment shown in Figs. 5 and 6 the level-carrier is adjustably arranged in a known manner on a curved guideway q' of the casing Q and can be adjusted on said casing by means of an adjusting device (screw T, nut V, having projection v , and slot p' of the level-carrier P) for the purpose of eliminating the angle of site. To equip this form of level-sight with the present invention, the casing Q by means of a gudgeon q^2 is linked to the sight-bar R and is provided with two bearing members q^3 , receiving the spring-actuated lever S. In the path of movement of the lever S the sight-bar R is provided with two notches r' r^2 . It is evident that in this embodiment also of the invention, the operation of which is self-explanatory, the level can be secured in either of two angular positions relatively to the sight-bar R and independently of the adjustment for eliminating the angle of site.

Having described my invention, what I claim as new is—

1. A level-sight for guns vertically adjustable for obtaining angles of firing elevation and having means for adjusting its level to eliminate angles of site, and means for establishing different angular positions of its level independently of said angle of site adjustment and independently of the vertical adjustment of the sight.

2. In a sight for guns, having a level, a sight-bar and an adjustment for eliminating the angle of site; means for fixing the level in different angular relations to the sight-bar; independently of said angle of site adjustment.

3. In a gun-sight vertically adjustable to obtain angles of firing elevation; a level, and means for independently adjusting the respective ends of said level.

4. In a gun-sight vertically adjustable to obtain angles of firing elevation; a level, and means for independently adjusting the respective ends of said level; the means for adjusting one end being limited to positions establishing in the level fixed angular relations to the sight, whereby the level serves to amplify the effective angular range of the sight.

The foregoing specification signed at Essen (Ruhr) this 25th day of January, 1905.

JOSEF KURIG.

In presence of—

HARRY L. MEFFORD,
FRAU PFUDEL.