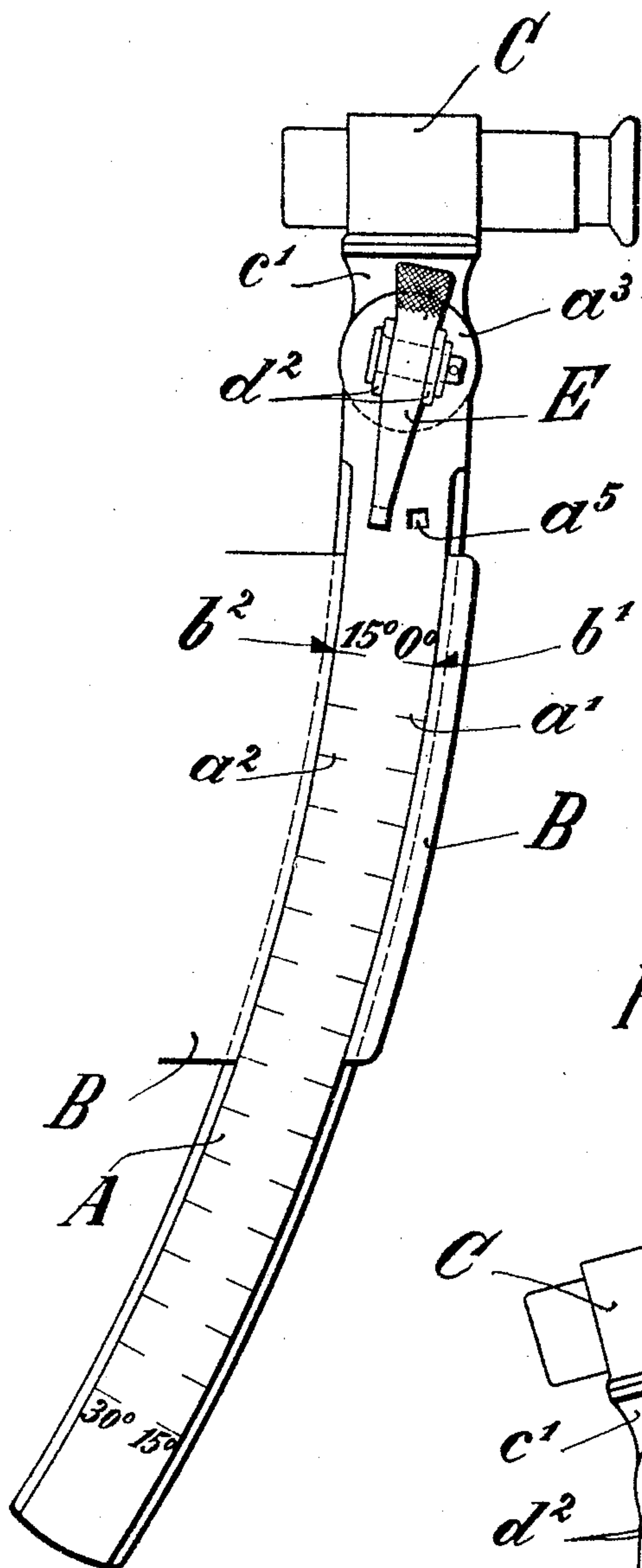


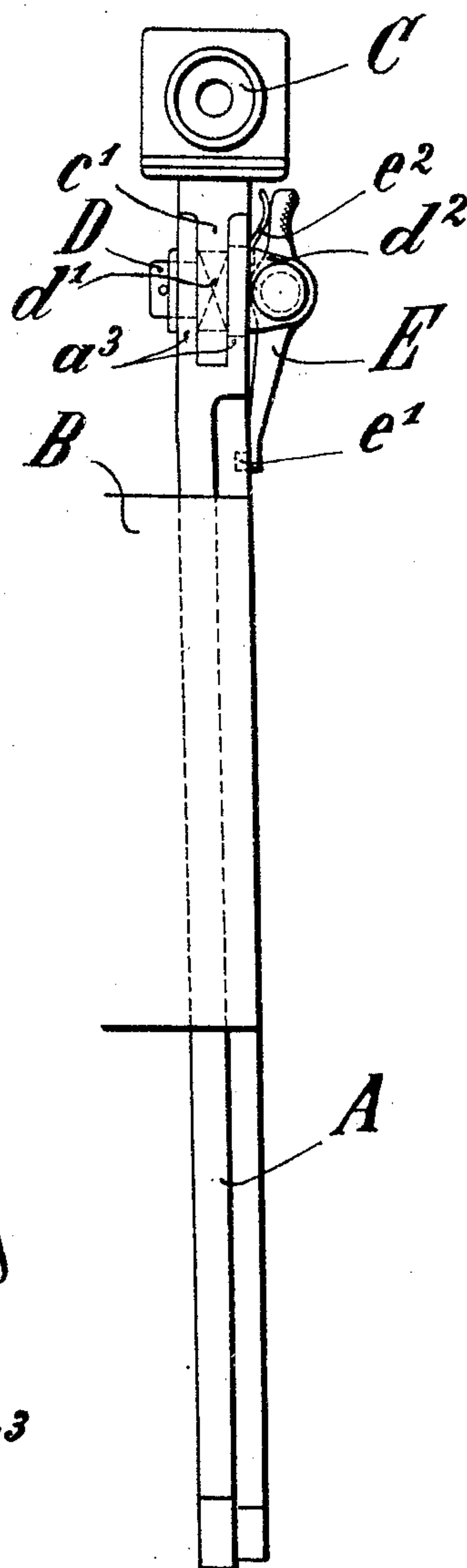
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ORDNANCE SIGHT.  
APPLICATION FILED FEB. 15, 1905.

2 SHEETS—SHEET 1.

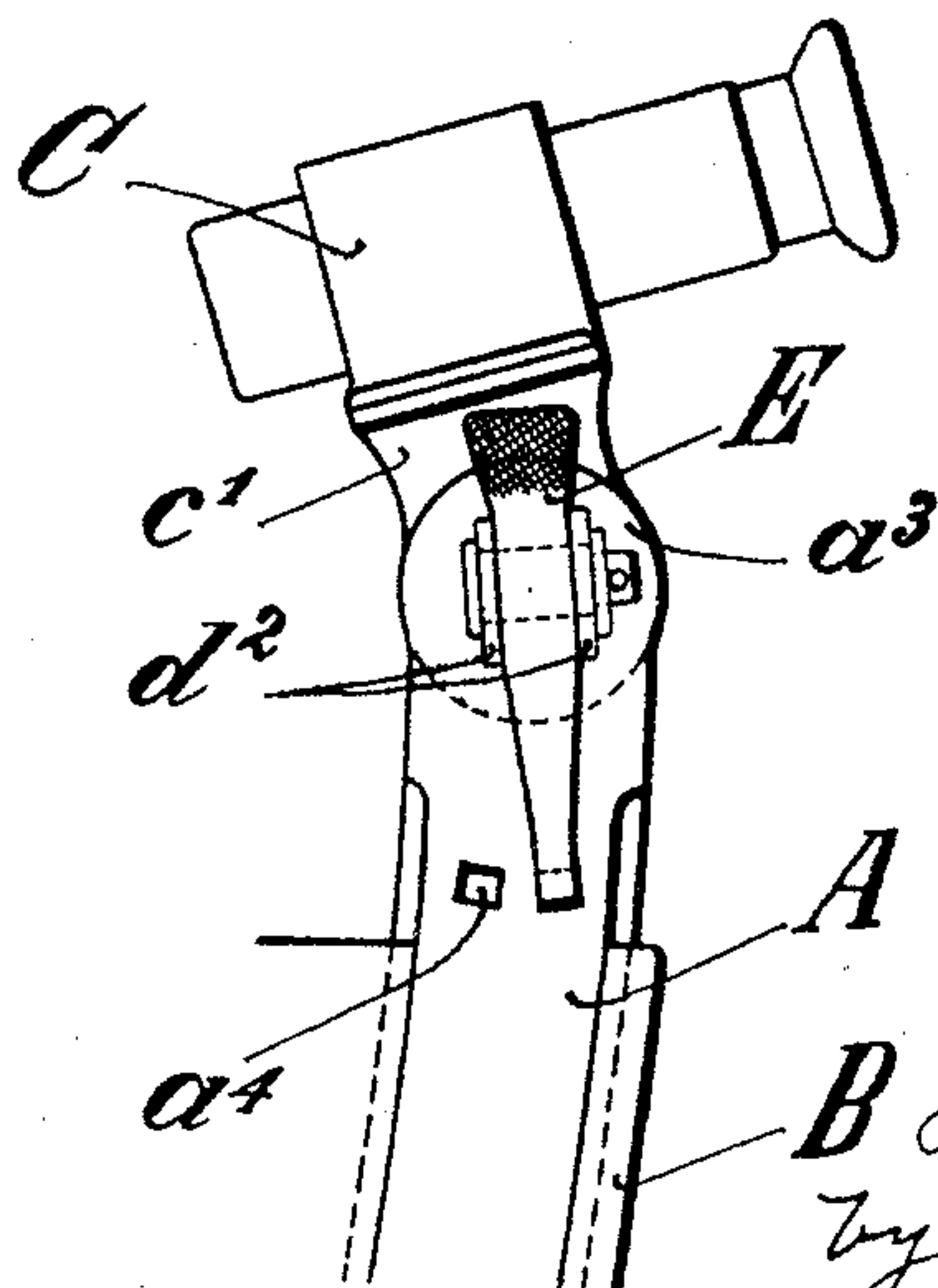
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



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2 SHEETS—SHEET 2.

Fig. 5.

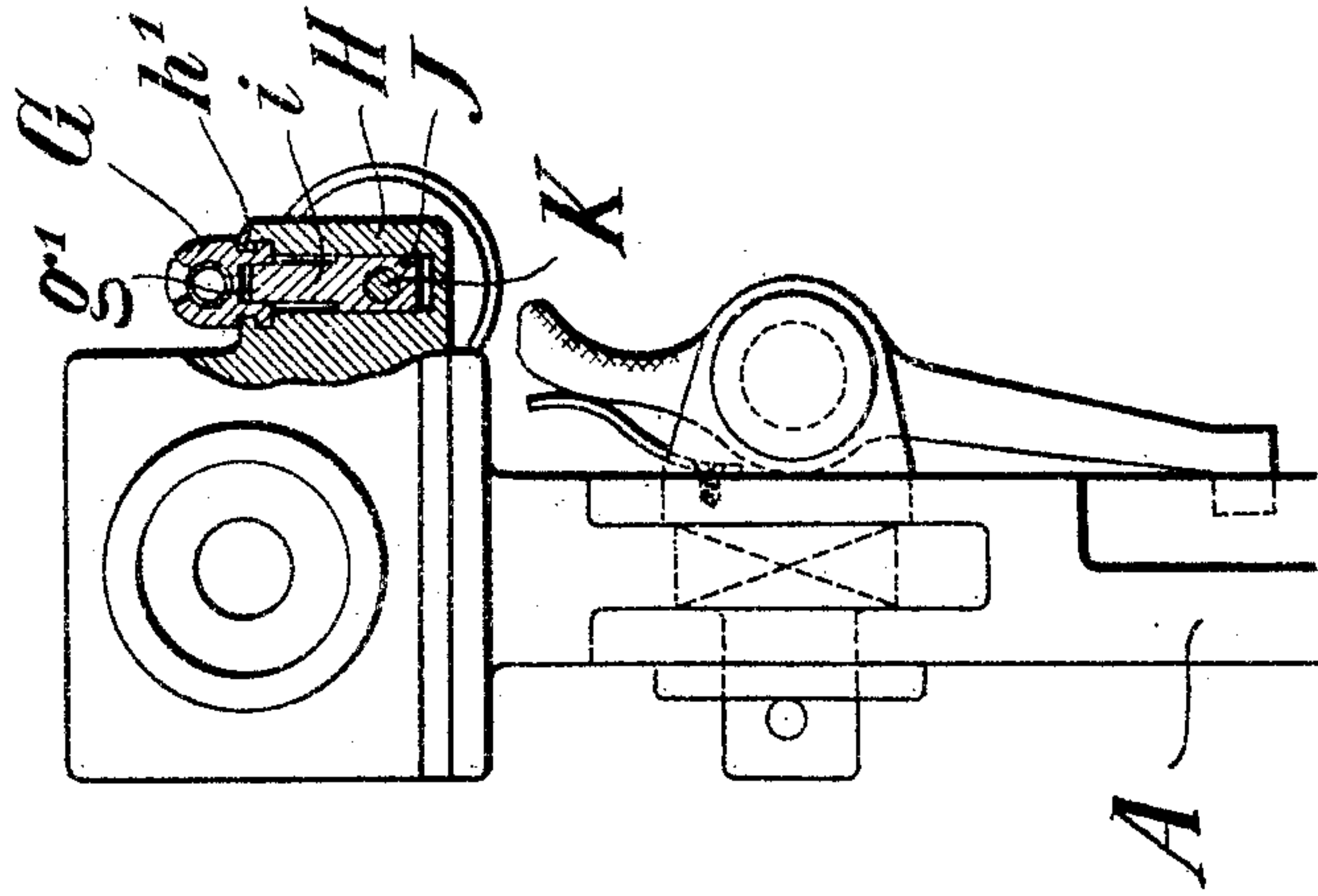
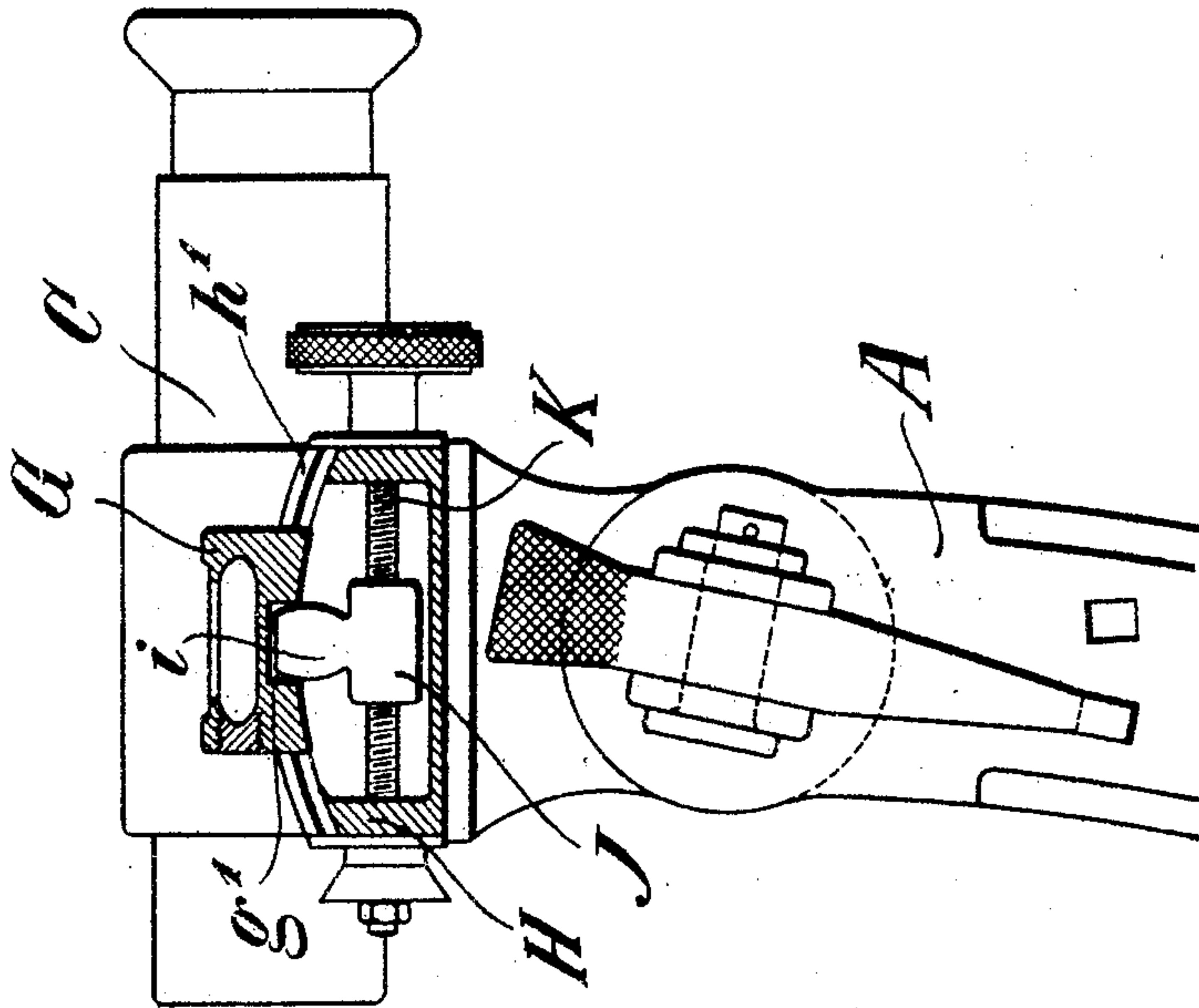


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## ORDNANCE-SIGHT.

No. 798,349.

Specification of Letters Patent.

Patented Aug. 29, 1905.

Application filed February 15, 1905. Serial No. 245,716.

*To all whom it may concern:*

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

The present invention relates to an ordnance-sight having a sight-bar that is adjustable in a guide-box in an arc concentric with the horizontal trunnions of the gun and provided with a sight device (telescope or the like) determining of itself the sighting-line. When sights of this kind have heretofore been constructed for adjustment to great elevations—for instance, beyond twenty-five degrees—the sight-bar had to be very long, and when drawn out for adjustment to high angles of elevation the center of gravity is so far above the guide-box that the sight-bar will vibrate when the gun is discharged, and this vibration will gradually cause looseness between the sight-bar and the guide-box, with consequent impairment of accuracy in sighting.

The object of the present invention is to provide a sight for high angles without the drawbacks above mentioned; and the invention consists in mounting the sight device so as to swing relatively to the sight-bar in the vertical plane of the sighting-line, the sight device being capable of being secured in at least two positions, which bear a predetermined angular relation to each other, and the range of vertical adjustment of the sight-bar being made to correspond to an angle that is less than the greatest angle of elevation for which the sight is to be used.

In the accompanying drawings, in which two embodiments of the invention are illustrated by way of example, Figure 1 shows a side view of one embodiment of the gun-sight. Fig. 2 is a front view of Fig. 1. Fig. 3 shows the upper part of the sight shown in Fig. 1 with changed position of the sight device. Fig. 4 shows a side view, partly in section, of another embodiment of the invention; and Fig. 5 is a front view, partly in section, of the embodiment shown in Fig. 4.

Referring to Figs. 1 to 3, A is the sight-bar curved, as usual, in an arc concentric with the horizontal trunnions of the gun. The sight-bar is slidably arranged in the guide-box B, which is secured on the cradle or on

the gun-barrel. The sight-bar is provided with two concentric scales  $a'$   $a''$ , of which the one,  $a'$ , has indications "0°" to "15°," while the other,  $a''$ , has indications "15°" to "30°." On the guide-box B there is a mark  $b'$   $b''$  for each of the scales. A sight-telescope C is linked, by means of a bolt D, to the upper end of the sight-bar in such a manner that it can be angularly adjusted relatively to the sight-bar in a vertical plane through its optic axis, (the sighting-line.) To that end the bolt D is non-rotatably connected with a lug  $c'$  of the sight-telescope by means of angular shank  $d'$  and is journaled in two eye members  $a^3$ , projecting from the upper end of the sight-bar and straddling the lug  $c'$ . One end of the bolt D is bifurcated to receive a lever E, journaled in the bifurcations, the office of which lever is to secure the sight-telescope C in its different positions relative to the sight-bar. For this purpose one arm of the lever E is provided with a tooth  $e'$ , adapted to engage two notches  $a^4$   $a^5$  in the sight-bar, the relative positions of these notches being so selected that the two positions in which they respectively secure the sight-telescope, Figs. 1 and 3, stand at an angle of fifteen degrees to one another. A spring  $e^2$  tends to keep the tooth  $e'$  of the lever E in engagement with the notch  $a^4$  or  $a^5$ .

I will now describe the method of using the gun-sight, assuming that the sight-telescope is in the position shown in Figs. 1 and 2, in which tooth  $e'$  on lever E engages in notch  $a^4$  and holds the telescope so that its angle of elevation is correctly indicated on scale  $a'$ . While the lever is in this position the sight can only be used for elevations that do not exceed those indicated on scale  $a'$ —in the present instance elevations up to fifteen degrees. If it is desired to obtain an elevation of more than fifteen degrees, the lever E is pressed against the action of the spring  $e^2$  out of engagement with the notch  $a^4$ , the sight-telescope is thereupon turned until the tooth  $e'$  of the lever E registers with the notch  $a^5$ , when the lever is released and the tooth  $e'$  enters said notch. This done, the sight-telescope occupies the position shown in Fig. 3, in which it has an initial elevation of fifteen degrees, attained through the use of its hinging-joint, and any further elevation acquired through adjustment of the sight-bar will necessarily be added to its elevation already



attained. If, then, the sight-bar is lowered in the guide-box B till the upper line of the scale  $a^2$  registers with mark  $b^2$ , the position of the sighting-line will correspond to an elevation of fifteen degrees, and by moving the sight-bar upwardly relatively to the guide-box the sight-telescope can be brought into positions corresponding to elevations up to thirty degrees. Obviously the sight-bar, by virtue of the above-described arrangement, is shortened to about half the length of the sight-bar as used when the scale from "15°" to "30°" is arranged in continuation of and on the same arc as the scale from "0°" to "15°."

It is of course not absolutely necessary to use two concentric scales, as the indications "15°" to "30°" might be placed on the same scale as the indications "0°" to "15°"—i. e., "15°" might be placed in parentheses at the side of "0°," "16°" at the side of "1°," and so on, this arrangement necessitating one scale only. It is further obvious that the nature of the invention would not be altered by providing additional notches for the tooth  $e'$  of the lever E on the upper end of the sight-bar, thus making it possible to place the sight device in other angular positions and obtain elevations of more than thirty degrees by means of further scales on the sight-bar.

The embodiment shown in Figs. 4 and 5 differs from the sight as above described in having the casing of the telescope C provided with a suitable level attachment for ascertaining or eliminating the angle of site, this attachment consisting mainly of a curved guideway  $h'$ , on which the level-carrier G is adjustably arranged. K is a screw-spindle that is rotatably arranged within the casing H and held from longitudinal movement within the same. On the screw-spindle K is a nut T, having a projection  $i$  engaging a recess  $g'$  in the level-carrier G. The method of using this sight is exactly the same as described in connection with the sight illustrated in Figs. 1 to 3. Inasmuch, however, as the level in this case partakes of the swinging movements of the telescope without changing the angle which it forms with the sighting-line, the sight can be used directly as a level-sight, also in cases where the sight is adjusted to elevations of above fifteen degrees. If the level were mounted on the sight-bar A independ-

ently of the telescope, such as very often is the case, and it was desired to use the sight as a level-sight for elevations over fifteen degrees, and the sight and its sighting device had been adjusted to such elevations, it would further be necessary to provide a special device for turning the level at an angle of fifteen degrees. The arrangement shown in Figs. 4 and 5, however, does away with such special device.

The object of the invention might further be attained, with the level mounted on the sight-bar A, by swinging the level independently of its device for eliminating the angle of site and transmitting the swinging movement of the sighting device to the level by means of gear-wheels or the like.

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

1. A gun-sight having the sight-bar adjustable for firing elevations, and a sight device determining of itself the sighting-line mounted on the sight-bar and capable of changing its angle relatively to the sight-bar in the vertical plane of the sighting-line.
2. In a gun-sight, the combination with the sight-bar, of a sight device mounted on the sight-bar and capable of being swung in a vertical plane relatively to the sight-bar and means for securing the sight device in different angular positions on the sight-bar.
3. In a gun-sight, the combination with the sight-bar, of a sight device mounted on the sight-bar and capable of being swung in a vertical plane relatively thereto, and a level device partaking of the swinging movements of the sight device.
4. In a gun-sight, the combination with a guide-box, a sight-bar movable in said guide-box, a sight device mounted on said sight-bar, and means for changing the angular position of the sight device relatively to the sight-bar.
5. A gun-sight having a vertically-adjustable bar and a sighting device having an angular adjustment relatively to and in the plane of the bar.

The foregoing specification signed at Essen-on-the-Ruhr this 25th day of January, 1905.

JOSEF KURIG.

In presence of—

HARRY L. MEFFORD,  
MRS. PFUDEL.