

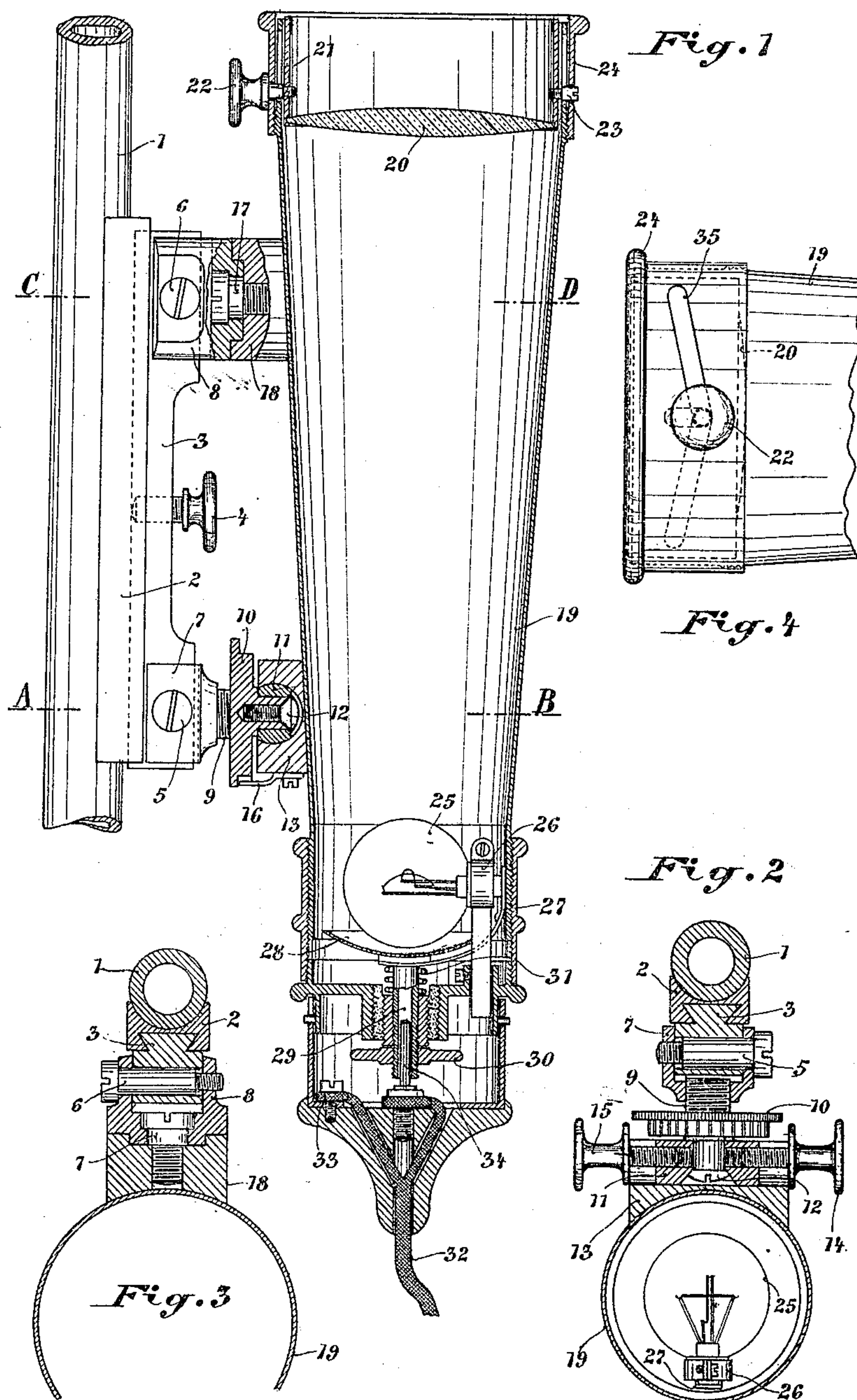
K. WEBER.

AIMING DEVICE WITH SEARCH LIGHT.

APPLICATION FILED FEB. 12, 1910.

976,416.

Patented Nov. 22, 1910.



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UNITED STATES PATENT OFFICE.

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976,416.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed February 12, 1910. Serial No. 543,482.

To all whom it may concern:

Be it known that I, KARL WEBER, a subject of the King of Prussia, and resident of 2 Euskirchnerstrasse, Cologne, in the Kingdom of Prussia, Empire of Germany, engineer, have invented certain new and useful Improvements in Aiming Devices with Search-Lights, and do hereby declare the following to be a full, clear, and exact description of the same.

My present invention relates to aiming-devices for guns, rifles and the like and particularly to that kind thereof provided with a search-light.

The object of my invention is to provide a device of this kind which shall make it possible to hit the mark with certainty even in the dark and without the aid of leaf-sight and aim. To this end the device is adjustably secured to the gun-barrel in such a manner that the source of light projected through an objective forms at the same time the hitting point of the projectile. It is therefore only necessary to execute the adjustment of the device under consideration of the ballistic curve and also of the range and to throw the beam of light upon the object aimed at.

Devices for serving the purpose mentioned above are known, but do not answer the purpose to such a degree of perfection as the practical use of such devices demands it. A device of the above mentioned kind must, in order to answer all practical demands, possess:—1. A universal, tightly securable and easily manipulatable mobility of the search-light in regard to the gun-barrel. 2. A quickly manipulatable, with certainty operatable adjustment of the search-light upon the gun-barrel for different ranges. 3. A sharp definition of the aim by means of the projected source of light. All these three conditions are most completely fulfilled by the present invention. Besides this the new device can be removed very quickly and in the most simple manner, when the weapon is to be used by daylight only.

According to the foregoing the aiming-device with search-light chiefly consists of the suspension-device, which constitutes the connection between the gun-barrel and the search-light, and the search-light itself with the source of light and the objective.

In the accompanying drawing:—Figure

1 is a longitudinal sectional view of the whole device. Fig. 2 is a vertical sectional view taken on the line A—B of Fig. 1. Fig. 3 is a similar view taken on the line C—D of Fig. 1. Fig. 4 is a side-elevation of a part of the mantle of the search-light, illustrating the manner of adjusting the objective.

On the gun-barrel 1 the support 2 is soldered or in any other suitable manner secured and carries the slide-block 3 which is removably mounted on said support dovetail fashion and may be connected with the latter by means of the screw 4. The slide-block 3 is provided with openings at its ends for the reception of the bolts 5 and 6 respectively, of which the former carries the claw 7, and the latter the claw 8 in the manner more clearly shown in Figs. 2 and 3. The claw 7 receives the easily rotatable stud-screw 9 securely connected with the disk-shaped adjusting-nut 10. The latter enters by means of a pintle into a cylindrical sleeve 11 in such a manner, that the nut 10 can be securely but rotatably united with the sleeve 11 by means of the head of the screw 12. The cylindrical sleeve 11 is adjustably held in the guide-block or socket 13 which supports one part of the search-light. Besides this the sleeve 11 can be laterally adjusted by means of the screws 14 and 15 which also serve to secure said sleeve 11 in any new desirable position. The block 13 is further provided with a pointer 16 which indicates any angular rotation of the adjusting-nut 10. The claw 8 is connected with the slide-block 3 by means of the screw 6 and supports the block or socket 18, which carries the other part of the search-light, through the instrumentality of the head of the screw 17 (Figs. 1 and 3).

The search-light itself consists of the slightly conical tube or mantle 19 which carries at its forward and wider end the objective. The latter comprises the lens 20 inserted into the short tube 21 which receives the two screws 22 and 23. The latter pass through the conical tube or mantle 19 of the search light and are guided in the slots 35 of the tube 24 in such a manner that on turning the objective the lens 20 will be moved backward or forward according to the direction of rotation. The short tube 24 is screwed to the wider end of the mantle 19 and its slots 35 are slantingly arranged on

helical lines (Fig. 4). This arrangement is chosen to make the projected picture of the source of light exactly adjustable to any desirable range in order to obtain a sharply defined aiming-point.

At the rear-end of the search-light the source of light is arranged and consists of the little incandescent lamp 25. The incandescent wire of this lamp is so arranged that by its projection a point is always sharply defined. This can be done in such a manner, that said wire forms a cross, or a little circle, polygon or the like so that the aim itself forms the center, the drawing showing the lamp filament consisting of two curved filaments which cross each other. The lamp 25 is held by a clamp-shaped spring 26 which grasps and securely holds the foot of the lamp and is conductively connected with the search-light. The second pole of the lamp stands in contact with the spring 27, which latter forms the connection of the second pole of the electric circuit in shape of a sliding-contact. In the rear of the lamps a reflector in shape of a concave looking-glass 28 is arranged and is carried by a hollow stud-screw 29 capable of being moved back and forth against the action of the spring 31. In order to bring the reflector 28 closer to the lamp 25 or to remove it therefrom it is only necessary to rotate the nut 30 and by doing so the lamp can be brought into a position which is the most suitable for the volume of light. The electric energy is introduced by means of the cable 32 of which the one branch is conductively secured at the point 33, whereas the other branch thereof is conductively connected with the spring 27 by means of the pin 34 slidingly arranged within said hollow screw 29. The electric connection between the lamp and the cable 32 can best be traced in Fig. 1. The lamp may receive its energy from a transportable accumulator, dry-batteries or the like.

For the use of the aiming-device with search-light it is first of all necessary to effect the adjustment of the firing-line or range. The lateral adjustment is effected by means of the two screws 14 and 15. In accordance with the direction of rotation of said screws, the sleeve 11 and with it the gun-barrel connected therewith will be moved to the right or to the left relatively to the search-light mantle. During this adjustment both parts are rotating in regard to each other around the screw 17. The adjustment in a vertical plane is accomplished by means of the adjusting-nut 10. The stud-screw 9 connected with this nut will raise or lower the claw 7 according to the direction of its rotation. In doing so, a raising or lowering of the search-light in regard to the gun-barrel is accomplished without the least deviation from the vertical

plane, *i. e.* the projection of the beam of light is adjustable in regard to the ballistic path of the projectile and consequently in regard to the remoteness or distance of the aim. During this rotation of the stud-screw 9 the search-light swings around the bolt 6 and simultaneously therewith screw 9 and sleeve 11 rotate slightly within socket 13, as pivot 5 swings in an arc with pivot 6 as center. The axis of rotation of said screws 5 and said sleeve 11 lie parallel with each other, as shown in Fig. 2. To save the rifleman the trouble of finding the right position of the adjusting-nut for a given range, the circumference of said nut 10 is graduated to form a scale which in connection with the stationary pointer 16 indicates the position of the search-light in regard to the range-indicating-device without any further trouble. When now the objective is so adjusted that the sharply defined picture of the projected source of light falls upon the aim, and when besides this the reflector 28 is adjusted in regard to the lamp in such a manner that the most light is produced, it will be only necessary to let the beam of light fall upon the aim to fire an absolutely certain shot.

I claim:—

1. A device of the character described, comprising a gun-barrel, a support permanently secured thereto, a slide block engaging the support, claws pivoted to the ends of said block, a search light having a pair of sockets, and means for adjustably securing the claws to said sockets.

2. A device of the character described, comprising a gun-barrel, a support permanently secured thereto, a slide-block engaging the support, claws pivoted to the ends of said block, a search light, a first socket on said search light to which one of the claws is pivoted, a second socket on the search light, a sleeve adjustably mounted in said second socket, and means for adjustably connecting the sleeve to the other claw.

3. A device of the character described, comprising a gun-barrel, a support permanently secured thereto, a slide block engaging the support, a first claw and a second claw pivoted to said block, a search light, a recessed first socket on said search light and rotatably engaged by the first claw, a slotted second socket on the search light, a sleeve adjustably engaging the second socket, and means for adjustably securing the second claw to said sleeve.

4. A device of the character described, comprising a gun-barrel, a support permanently secured thereto, a slide block engaging the support, a first claw and a second claw pivoted to said block, a search light, a first socket on said search light and rotatably engaged by the first claw, a slotted second socket on the search light, a sleeve

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adjustably engaging said second socket, and an adjusting nut rotatably mounted in the sleeve and engaging the second claw.

- 5 A device of the character described, comprising a gun-barrel, a support permanently secured thereto, a slide block engaging the support, a first claw pivoted to said block, a search light, a first socket on said light and rotatably engaged by the first
10 socket, a second claw pivoted to the slide block and having a threaded stem, a slotted second socket on the search light, a sleeve

engaging the socket-slot, a pair of adjusting screws engaging the sleeve and an adjusting nut rotatably mounted in the sleeve and engaged by the threaded stem of the second jaw. 15

Signed by me at Cologne, Germany, this 26th day of January 1910.

KARL WEBER.

Witnesses:

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