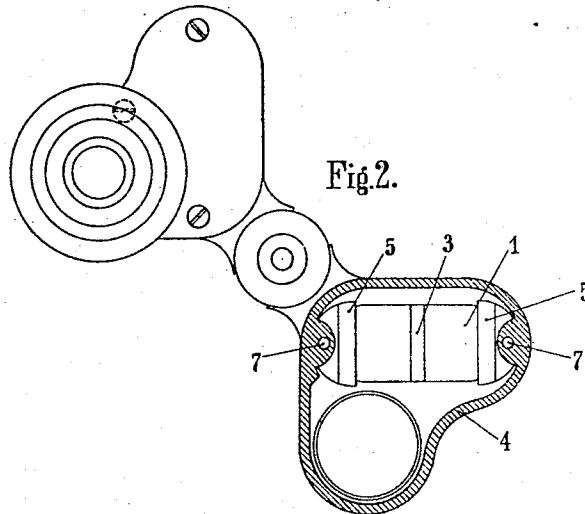
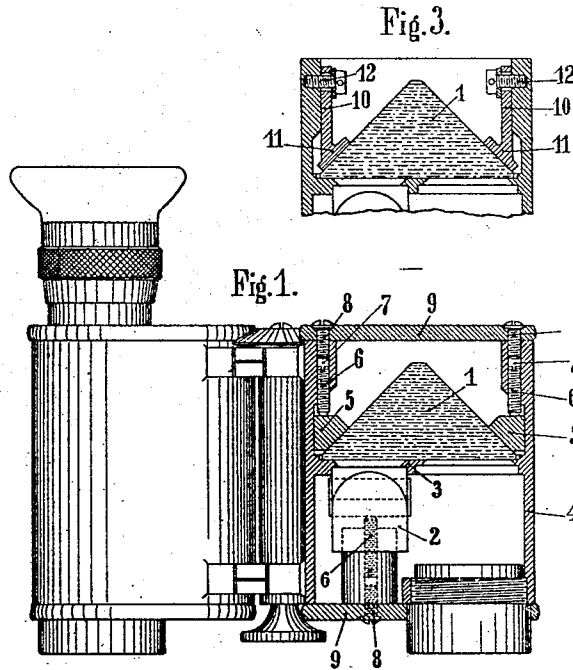


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 PRISM TELESCOPE AND SIMILAR PRISM CARRYING DEVICE AND MEANS
 FOR ADJUSTING THE PRISMS.
 APPLICATION FILED MAY 21, 1908.

904,066.

Patented Nov. 17, 1908.



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UNITED STATES PATENT OFFICE

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PRISM-TELESCOPE AND SIMILAR PRISM-CARRYING DEVICE AND MEANS FOR ADJUSTING THE PRISMS.

No. 904,066.

Specification of Letters Patent.

Patented Nov. 17, 1908.

Application filed May 21, 1908. Serial No. 494,923.

To all whom it may concern:

Be it known that I, HEINRICH JACOB, a citizen of the German Empire, and resident of Steglitz, near Berlin, Germany, engineer, have invented certain new and useful Improvements in Prism-Telescopes and Similar Prism-Carrying Devices and in Means for Adjusting the Prisms Thereof, of which the following is a specification.

This invention relates to improvements in prism-telescopes and similar prism carrying-devices and in means for adjusting the prisms thereof.

The purpose of the invention is to allow of convenient lateral displacement and adjustment of the prisms on their seats without the use of adjusting-members, which extend through the lateral walls of the casing or chamber containing the prisms. This is effected, according to the present invention, by exerting pressure on prism-surfaces which are inclined relatively to the seats of the prisms. This method of adjustment allows of using adjusting members, which are movable perpendicularly or substantially perpendicularly to the surfaces of the seats. In prism-telescopes this direction of adjustment of the adjusting members is parallel or substantially parallel to the optical axis of the telescope. The adjusting members of prism-telescopes can therefore be conveniently actuated from the ends of the telescope tubes or casing. A particularly convenient arrangement is obtained by having the prism-adjusting screws co-axial with the fixing-screws of the end-cover of the casing, since in that case no enlargement of the walls is necessary for the reception of the prism-adjusting screws.

The invention is illustrated in the annexed drawing, in which

Figure 1 shows a prism-telescope, partly in section, provided with the improved adjusting device. Fig. 2 is an end view of the telescope, partly in section, and Fig. 3 illustrates a modification of the prism-adjusting device.

The double telescope shown in Figs. 1 and 2 is provided with "Porro" prisms 1 and 2. The "Porro" prisms are mounted with their hypotenuse-surfaces on a bridge-piece 3 of the telescope casing 4. Wedge-like abutment-pieces 5 are arranged in contact with

the inclined lateral surfaces of the prisms and the ends of adjusting screws 6 abut against these abutment-pieces. The screws 6 work in holes 7 parallel with the axes of the telescope. These holes 7 are also engaged by the screws 8 which fix the covers 9.

If, for purposes of adjustment, a lateral displacement of one of the prisms is necessary, the adjusting screw 3 at the side towards which the prism is to be moved is more or less unscrewed, i. e. removed from contact with the respective abutment-piece 5, and the adjusting screw 6 at the other side is screwed towards the seat. The abutment-piece 5 in contact with the latter screw 6 is thus caused to displace the prism in the desired direction. When the prism is in the desired position the loosened adjusting screw 6 is tightened up again, so that the prism is firmly fixed. After the adjustment the covers 9 may be put on and fastened by means of the screws 8, which also enter the holes 7. The apertures which enable the adjusting devices to be actuated are thus securely closed. The final adjustment of the prisms before use may also be effected with the covers 9 in position but not screwed on, the screw-driver being inserted through the holes provided in the covers for the screws 8. Readjustment after use can also be effected in this manner, without taking off the covers, which is of a great advantage, since it prevents the entrance of dust into the interior of the telescope.

In the modification illustrated in Fig. 3, the adjusting members consist of movable plates or rods 10 which have inclined abutment-pieces or feet 11 normally in contact with the inclined lateral surfaces of the prism 1. Screws 12 pass through slots in the said plates and are screwed into holes in the walls of the prism chamber. No part of the adjusting device extends through the said walls. The adjustment is effected by thrusting one of the feet 11 against the prism while the other foot is free to move. When the prism has been properly adjusted both the parts 10 are securely fastened by means of the screws 12.

The surfaces of the parts 5 and feet 11 in contact with the prism-surfaces inclined relatively to the seat of the prism are preferably concave or recessed so that they only

make contact with the optically ineffective edge-parts of the prism.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In combination with a prism carrying optical device, such as a prism-telescope, a seat, a prism mounted thereon and having a surface inclined relatively to said seat, a casing for said seat and said prism, adjusting means for said prism mounted in said casing adapted to exert pressure on said prism-surface inclined to the prism-seat and adjustable in a direction which intersects the prism-seat.

2. In combination with a prism carrying optical device, such as a prism-telescope, a seat, a prism mounted thereon having substantially a triangular cross section with acute angles at the ends of the seat section line, a casing for said seat and said prism, and adjusting members adapted to cooperate with each of the two prism-surfaces inclined relatively to the seat surface respectively, said adjusting members mounted in said casing and adjustable in a direction which intersects the prism-seat.

3. In a prism-telescope a casing, a prism-seat transverse to the optical axis of the telescope, a prism mounted thereon, said prism having two surfaces inclined to the seat surface, each including an acute angle therewith, wedge-like members cooperating with each of said two prism-surfaces inclined to the seat respectively, said wedge-like members adapted to be adjusted in a direction substantially parallel to the optical axis of the instrument.

4. In a prism-telescope a casing, a prism-seat transverse to the optical axis of the telescope, a prism mounted thereon, said prism having two surfaces inclined to the seat surface, each including an acute angle therewith, wedge-like members cooperating with

each of said two prism-surfaces inclined to the seat respectively, an adjusting screw in cooperation with each of said wedge-like members and located in said casing parallel to the optical axis of the instrument.

5. In a prism-telescope a casing, a prism-seat transverse to the optical axis of the telescope, a prism mounted thereon, said prism having two surfaces inclined to the seat surface, each including an acute angle therewith, wedge-like members cooperating with each of said two prism-surfaces inclined to the seat respectively, said wedge-like members being concave or recessed at their surfaces directed towards the prism-surfaces in cooperation therewith and adapted to be adjusted in a direction substantially parallel to the optical axis of the telescope.

6. In a prism-telescope a casing, a prism-seat transverse to the optical axis of the telescope, a prism mounted thereon, said prism having two surfaces inclined to the seat surface, each including an acute angle therewith, wedge-like members cooperating with each of said two prism-surfaces inclined to the seat respectively, an adjusting screw in cooperation with each of said wedge-like members, screw holes in the body of the casing guiding said adjusting screws, a cover adapted to close the prism containing casing, fastening devices for said cover, holes in the body of the casing adapted to receive said fastening devices, said fastening devices receiving holes positioned in line with said adjusting screw receiving holes and substantially parallel to the optical axis of the telescope.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HEINRICH JACOB.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.