

No. 829,422.

PATENTED AUG. 28, 1906.

H. N. OTT.  
MICROSCOPE.  
APPLICATION FILED MAR. 12, 1906.

Fig. 1

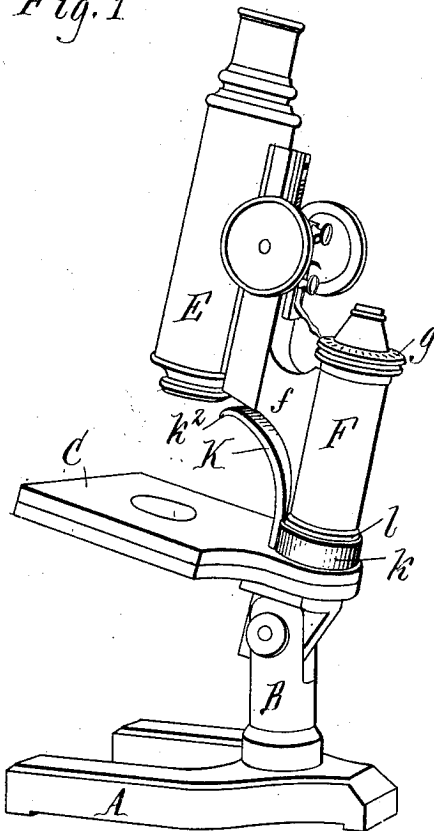


Fig. 2.

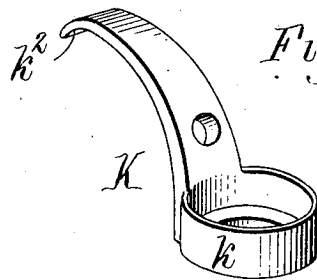
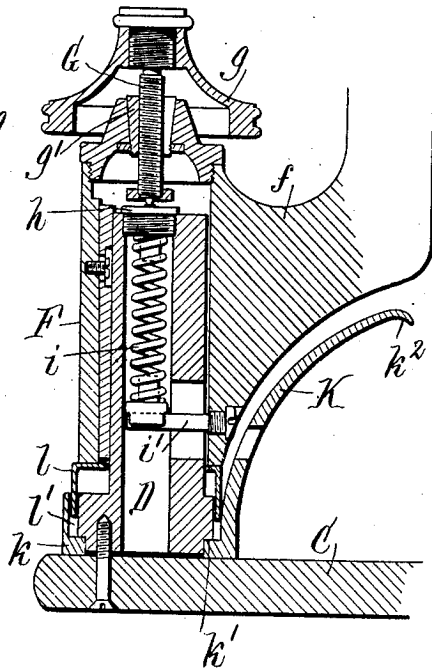


Fig. 3.

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## MICROSCOPE.

No. 829,422.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed March 12, 1906. Serial No. 305,533.

*To all whom it may concern:*

Be it known that I, HARVEY N. OTT, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Microscopes, of which the following is a specification.

This invention relates to microscopes of that kind in which the lens-tube is carried by an arm projecting laterally over the stage from a body which is movable toward and from the stage on a column or prism and is adjusted by a micrometer or fine-adjustment device connecting the body and the supporting column or prism. The body is usually cylindrical and, with the laterally-projecting tube-carrying arm, affords a convenient part by which to grasp the instrument when moving and lifting it, and notwithstanding the fact that pressure and wear are thus thrown on the delicate fine-adjusting device careless persons are very prone to thus grasp the instrument in handling it.

The object of this invention is to provide such microscopes with a handle or part so connected to the stand and located with respect to the body that if it is attempted to lift the instrument by the body said handle will be grasped and will support the weight of the heavy lower portion of the stand and relieve the fine-adjusting device of any pressure and also prevent any movement of the body on its supporting part which could result in injury to the fine-adjusting device.

This object is accomplished in the preferred embodiment of the invention by securing to the base of the supporting-prism for the body a slender handle or horn which projects upwardly and forwardly substantially parallel with and close to the front of the body and under side of the tube-carrying arm, so that it will necessarily be grasped when taking hold of the body and which will not appreciably add to the size and cost of the instrument or alter the lines and appearance thereof.

In the accompanying drawings, Figure 1 is a perspective view of a microscope provided with a handle embodying the invention. Fig. 2 is an enlarged fragmentary sectional elevation thereof, showing said handle and the fine-adjusting device. Fig. 3 is a perspective view of the handle detached.

Like letters of reference refer to like parts in the several figures.

A represents the base, B the pillar, C the stage, D the supporting prism or column for the body, E the lens-tube, and F and *f*, respectively, the tube-carrying body and arm, of a microscope of well-known construction. The tube-carrying body is slidable toward and from the stage on the supporting prism or column, as usual, and is adjusted by a micrometer or fine-adjusting device of some ordinary or suitable sort.

In the instrument illustrated in the drawings an adjusting-screw G, provided with a graduated cap or head *g*, works in a screw-threaded nut *g'*, fixed at the upper end of the tube-carrying body and bears at its lower end on a hardened block or plug *h*, secured to the upper end of the prism D, against which it is yieldingly pressed to prevent lost motion by a spring *i*, which is located in a chamber in the prism and bears at its upper end against the plug *h* and at its lower end on a stud *i'*, secured to the body and projecting into the spring-chamber through a slot in the prism. The handle to be described does not in any wise depend upon this construction of the fine-adjusting device, and any other suitable means for this purpose could be employed. In the instrument shown the stage and prism are hinged to the pillar for inclining the tube; but this feature also is unessential to the invention.

K represents the handle or horn forming the subject of this application. The term "horn" is employed to designate a slender projecting piece as distinguished from a loop or handle having a hole for the insertion of the hand. In the construction shown this handle or horn is provided at its lower end with a ring *k*, which surrounds the lower end of the supporting prism or column for the tube-carrying body F and is rigidly secured between a shoulder *k'* on the prism and the stage C; but the handle could be secured to the prism or any other suitable part of the lower supporting portion of the stand in any convenient manner. The lower or front face of the tube-carrying arm curves upwardly and forwardly from the lower end of the body to the tube, and the handle or horn is preferably, though not necessarily, of substantially like curvature and is located close to said

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face, being also preferably about as wide as said face and provided at its upper extremity with a downturned hook or portion  $k^2$  to prevent the slipping of the handle in the hand.

5 The handle is preferably formed to follow and stand close to the under or front side of the tube-carrying arm, whether the latter is curved, as shown, or of other shape. Consequently when a person grasps the body of the  
10 instrument to lift it the fingers encircling the body will bear against the handle K and the latter and the prism or lower part of the stand to which it is connected will bear the weight of the instrument instead of the body and  
15 the body will not be raised on the prism, with the result in the construction shown of falling when released and hammering the adjusting-screw G on its end bearing on the prism and wearing or stripping the threads thereof or of  
20 the nut. The handle K relieves the body of practically the entire weight of the supporting part of the stand.

A dust-flange  $l$  is commonly provided at the lower end of the body to enter a groove  $l'$   
25 at the base of the prism to exclude dust from the bearing-faces within the body, and where the handle K is used the groove  $l'$  is preferably formed between the securing-ring  $k$  of the handle and the base of the prism. This  
30 feature can be employed or not, as desired.

I claim as my invention—

1. The combination of a tube-carrying part, a support on which the same is movable, and a slender horn-like handle secured to said  
35 support and extending adjacent to said tube-carrying part and adapted to be grasped with said part by the hand when closed about said part to carry the weight of said support, substantially as set forth.

40 2. The combination of a support, a tube-carrying part movable on and projecting laterally from said support, and a handle secured to said support and arranged beneath and adjacent to said tube-carrying part, substantially as set forth.

3. The combination of a support, a tube-

carrying part movable on and projecting laterally from said support, means for adjusting said tube-carrying part, and a handle secured to said support and arranged beneath and  
50 adjacent to said tube-carrying part, substantially as set forth.

4. The combination of a supporting-column, a body slidable on said column and having a laterally-projecting tube-carrying arm, and a  
55 handle secured to said column and projecting upwardly beside said body and outwardly beneath said arm, substantially as set forth.

5. The combination of a support, a body movable on said support and having a laterally-projecting tube-carrying arm with a  
60 curved lower face, and a handle secured to said support and curved substantially parallel with the lower face of said arm, substantially as set forth.

6. The combination of a support, a body movable on said support and having a laterally-projecting tube-carrying arm, and a handle secured to said support and extending  
70 beneath said arm and having a downturned portion at its upper end, substantially as set forth.

7. The combination of a supporting-column, a body slidable on said column and having a laterally-projecting tube-carrying arm, and a handle arranged beneath said arm and  
75 having a securing-ring encircling said column, substantially as set forth.

8. The combination of a supporting-column, a body slidable on said column and having a laterally-projecting tube-carrying arm, a handle arranged beneath said arm and having a securing-ring encircling said column, and a dust-flange on said body adapted to enter an annular space between said ring and  
85 said column, substantially as set forth.

Witness my hand this 8th day of March, 1906.

HARVEY N. OTT.

Witnesses:

EDWARD C. HARD,  
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