

No. 782,553.

PATENTED FEB. 14, 1905.

C. F. GLOCKER.  
OPERA GLASS.

APPLICATION FILED MAY 5, 1904.

Fig. 1.

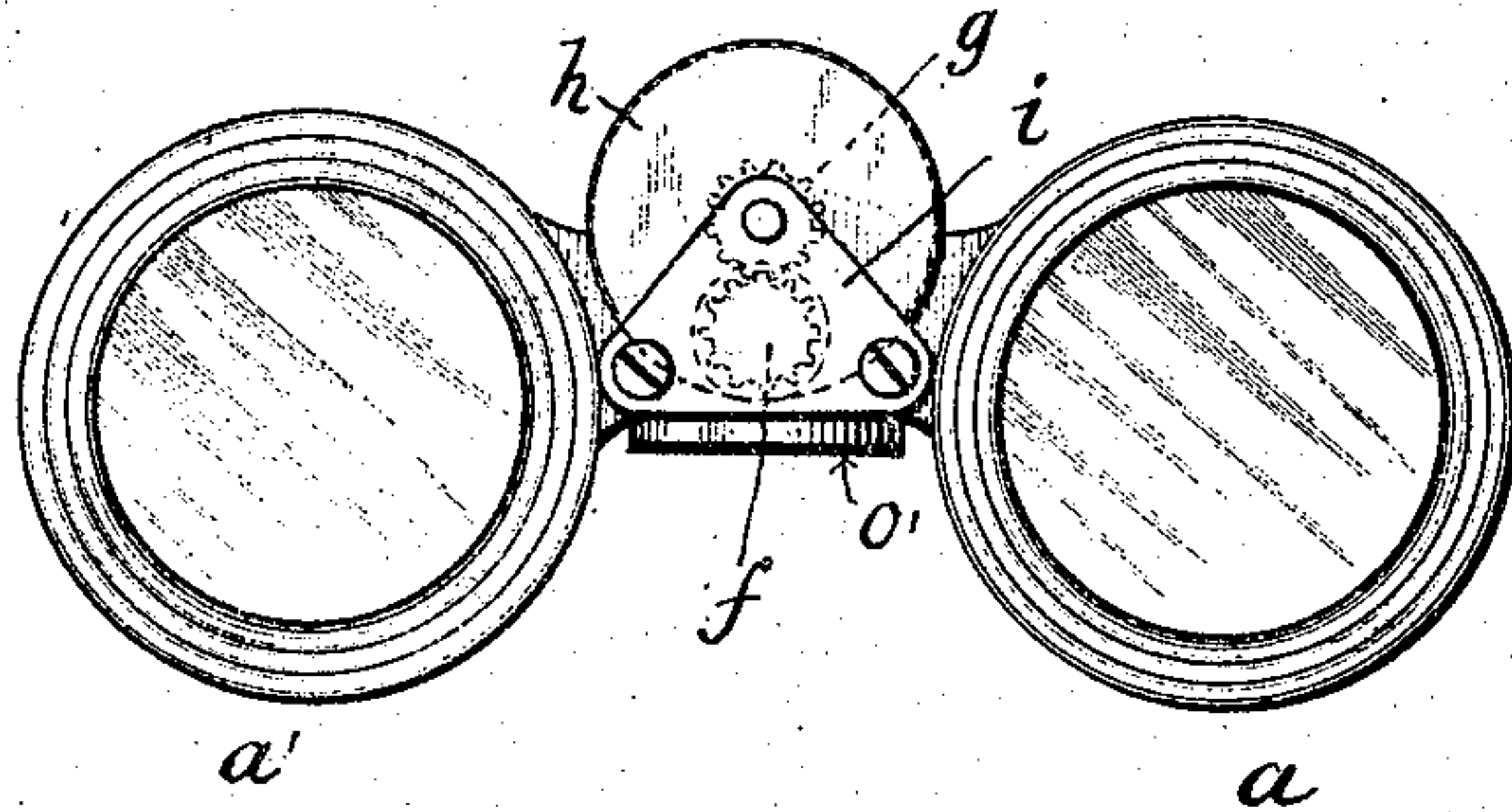


Fig. 3.

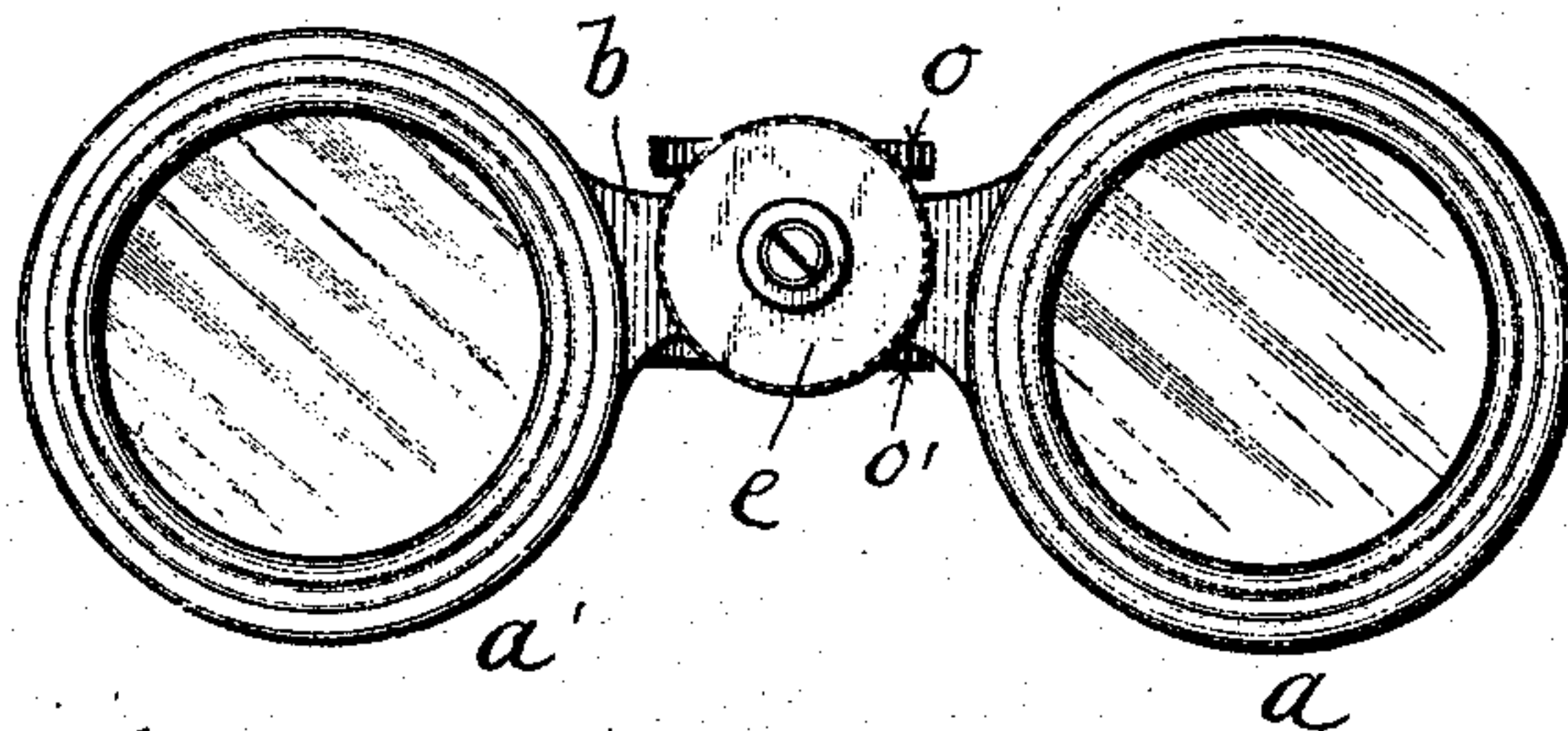


Fig. 4.

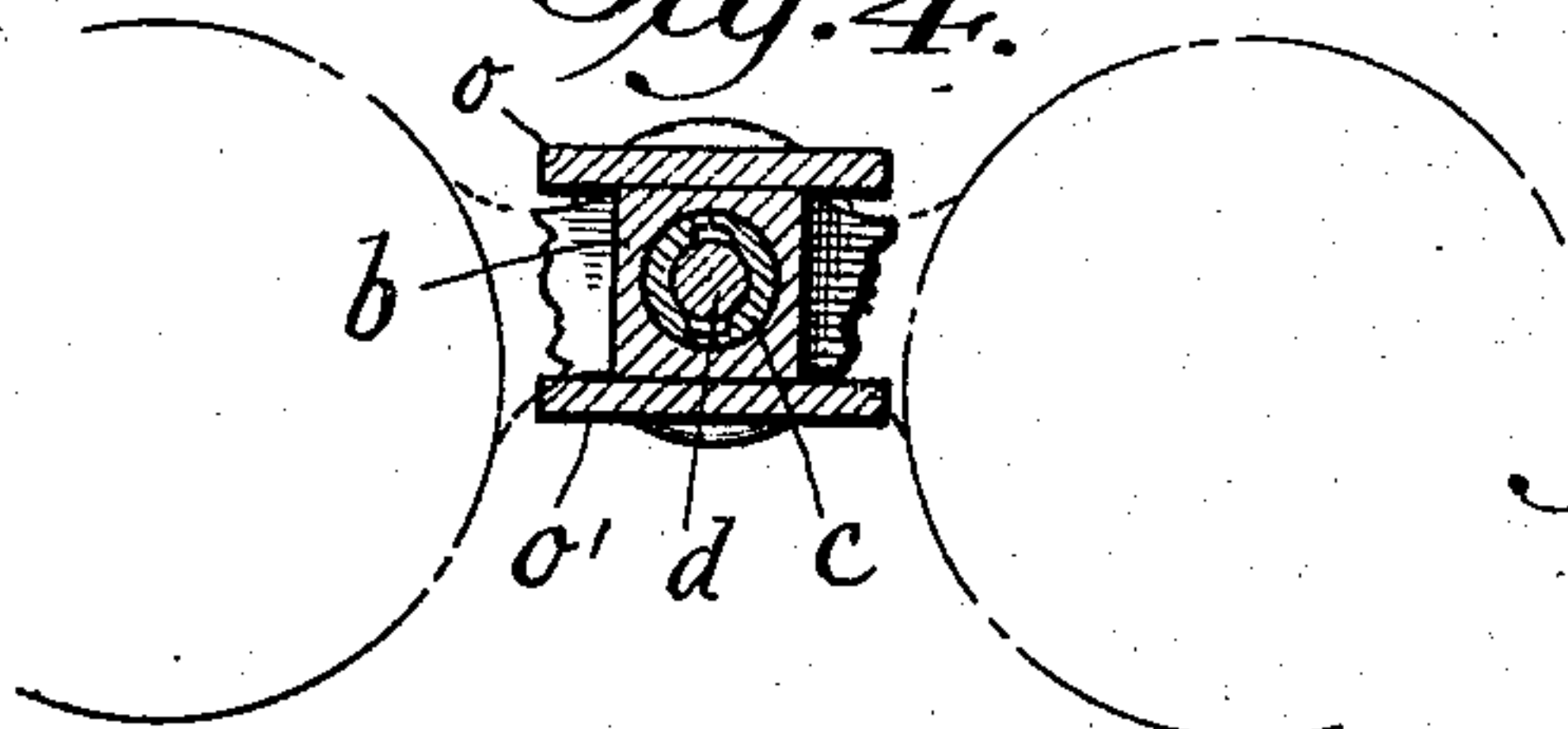
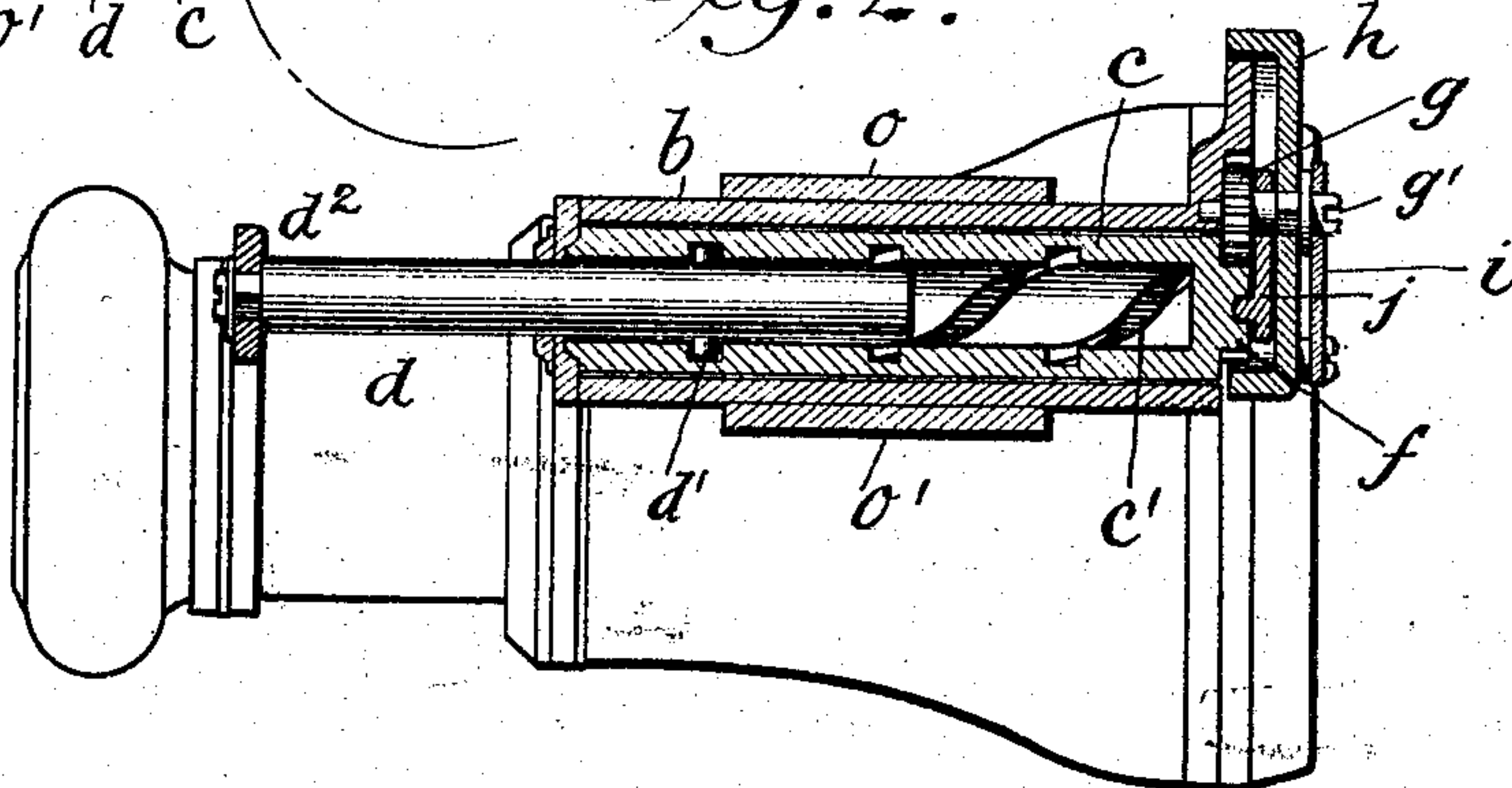


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## OPERA-GLASS.

SPECIFICATION forming part of Letters Patent No. 782,553, dated February 14, 1905.

Application filed May 5, 1904. Serial No. 206,526.

*To all whom it may concern:*

Be it known that I, CARL F. GLOCKER, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Opera-Glasses, of which the following is a full, clear, and exact description.

This invention is an improvement in opera, field, and similar glasses, the primary object of the invention being to provide a structure whereby the glass can be held steady with one hand while the focus is being adjusted by the fingers of the same hand.

It is a further object to accomplish this result without the aid of long handles or cumbersome devices.

In carrying out the invention I attach to that portion of the frame of the glass through which the focusing-screw works two substantially flat surfaces, one above and the other below, which may be grasped between the thumb and index-finger to hold the glass steadily, while with another finger of the same hand a wheel having a milled edge can be turned to effect a change of focus. The wheel is the usual appliance for rotating the screw; but as heretofore constructed it requires considerable force to rotate it, and it must be grasped upon opposite sides between the fingers and thumb in order to apply the necessary force, and this excessive force at the same time causes the glass to wobble and make vision difficult. I propose to use a freely-turning screw, so that but little power will be required to turn it, and this fact, together with the fact that a firm hold is provided upon the glass by the flat surfaces, makes it possible to perform the adjustments with scarcely any disturbing movement of the glass.

The invention will be described in detail with reference to the accompanying drawings, in which—

Figure 1 is a front elevation of one form of my opera-glass. Fig. 2 is a longitudinal section through the center of the same. Fig. 3 is a front view of a modified form, and Fig. 4 is a transverse section taken through the gripping-surfaces of the glass.

*a* and *a'* indicate the usual telescoping lens-tubes containing the usual objectives and eyepieces.

*b* is that portion of the framework connecting the two tubes and furnishing the bearing for the usual focusing-screw by which the parts of the tubes are moved with respect to each other. The construction of this screw may be of any approved style, that shown consisting of a hollow shaft *c*, having an internal groove *c'* cut spirally therein, and a rod *d*, having a spiral rib or a pin *d'* working in said spiral groove. The hollow shaft *c* is fixed with respect to the tubes carrying the objectives, while the rod is movable with respect thereto in a longitudinal direction and is attached to the portions of the tube carrying the eyepieces, as shown at *d''*. The shaft *c* is mounted in the frame in a manner to rotate freely and on its forward end has attached to it either a wheel *e*, having a milled edge, as shown in Fig. 3, or a pinion *f*, as shown in Figs. 1 and 2. In the latter case the pinion is engaged by another pinion, *g*, mounted in the frame on the stud-shaft *g'*, which carries a large wheel *h*, having a milled edge. In order to sustain the outer end of the stud-shaft *g'*, a plate *i* is secured to the frame, in which the end of the shaft has a bearing. Also between the wheel *h* and pinion *g* is a spacing-plate *j*, which has a projection affording a central bearing for the outer end of shaft *c*. It will be seen that by turning the wheel *h* the motion is communicated to the shaft *c* and the tubes carrying the eyepieces are caused to move inward or outward to change the focus of the glass. By rotating the wheel *e* also the same change of focus will take place; but the relative movement of the eyepieces with respect to the objectives is in this case more rapid than in the construction of Figs. 1 and 2. Either of these constructions affords ease of movement, so that the finger-wheels *h* and *e* can be readily rotated by pressure of one finger upon one side only of the wheel, provided the glass itself is properly sustained when the force is applied to the wheel. A further and obvious modification of the gearing would be internal gear-



teeth on the wheel *h*, meshing directly with the pinion *f*.

To the upper and lower sides of frame *b* are attached flat plates *o* and *o'*, respectively, 5 of sufficient area to form a gripping-surface for the thumb in one instance and the index finger and possibly the second finger in the other instance. These plates merely represent flat surfaces of any character and may be 10 regarded as two of the faces of a prismatic portion of the frame, and as such they may be integral with the frame *b* or applied thereto, and they may be made of ornamental appearance when desired. These gripping-surfaces 15 are so located with respect to the wheel *h* or wheel *e* that while holding them between the thumb and fingers another finger of the same hand can be used upon the rim of the wheel, which therefore renders it possible to adjust 20 the focus of the glass and hold it steady before the eyes at the same time with one hand.

In prior patents issued to me I have endeavored to produce a glass that could be manipulated in one hand; but I have in those 25 instances relied upon an extension-handle or no special handle at all, and I have never used in such cases a wheel for adjusting the focus. A wheel being desirable to afford a long movement and also for ornamental purposes, I have 30 in my present invention adopted the wheel arrangement and in combination therewith special gripping-surfaces by which it is possible to steady the glass while manipulating the wheel.

Having described my invention, I claim— 35

1. In an opera or similar glass, the combination of the lens-tubes, the frame connecting them together having a cylindrical passage therein, a focusing-screw mounted in said passage and inclosed by said frame, a finger-wheel 40 geared to said screw and flat gripping-surfaces carried by said frame enabling the glass to be held steadily in the hand while a finger of the same hand manipulates the wheel, substantially as described. 45

2. An opera or similar glass, comprising a stationary handle having flat sides whereby the glass can be held against a rotary movement, in combination with a focus-adjusting 50 finger-wheel located adjacent to and in front of said handle whereby the glass can be held steadily and the focus adjusted with one hand.

3. An opera or similar glass, comprising the usual telescoping lens-tubes, a hollow frame connecting said tubes, a focusing-screw arranged parallel to said tubes within said frame, 55 flat stationary plates secured to the upper and lower sides of said frame and adapted to be grasped between the thumb and finger and a wheel geared to said screw and adapted to be 60 turned by one finger while the said plates are in the grasp of the same hand.

In witness whereof I subscribe my signature in presence of two witnesses.

CARL F. GLOCKER.

Witnesses:

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