

(No Model.)

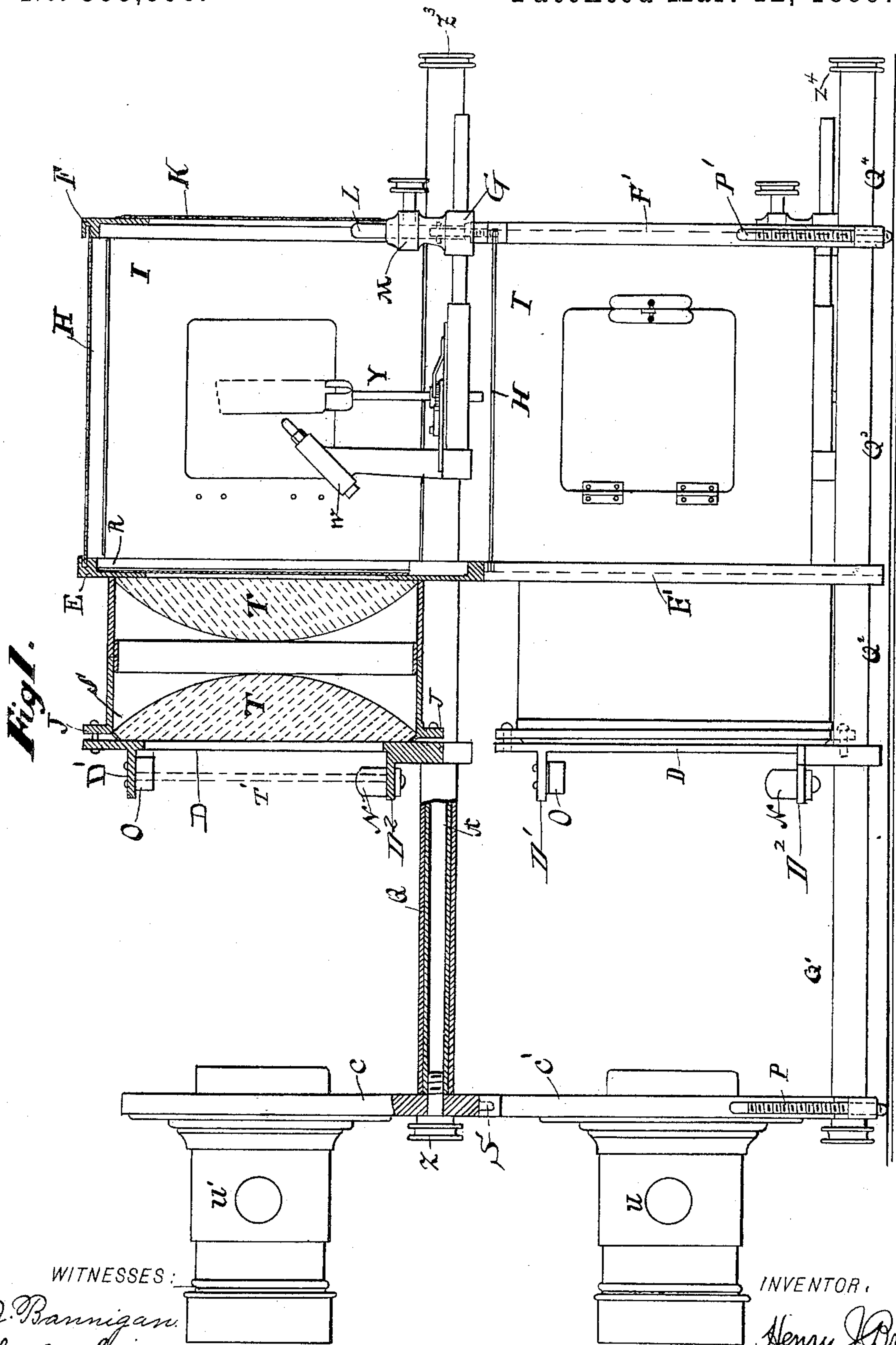
5 Sheets—Sheet 1.

H. J. BROWER.

MAGIC LANTERN.

No. 399,596.

Patented Mar. 12, 1889.



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E. J. Rannigan.
Charles Spitz

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(No Model.)

5 Sheets—Sheet 2.

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No. 399,596.

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Fig. 2.

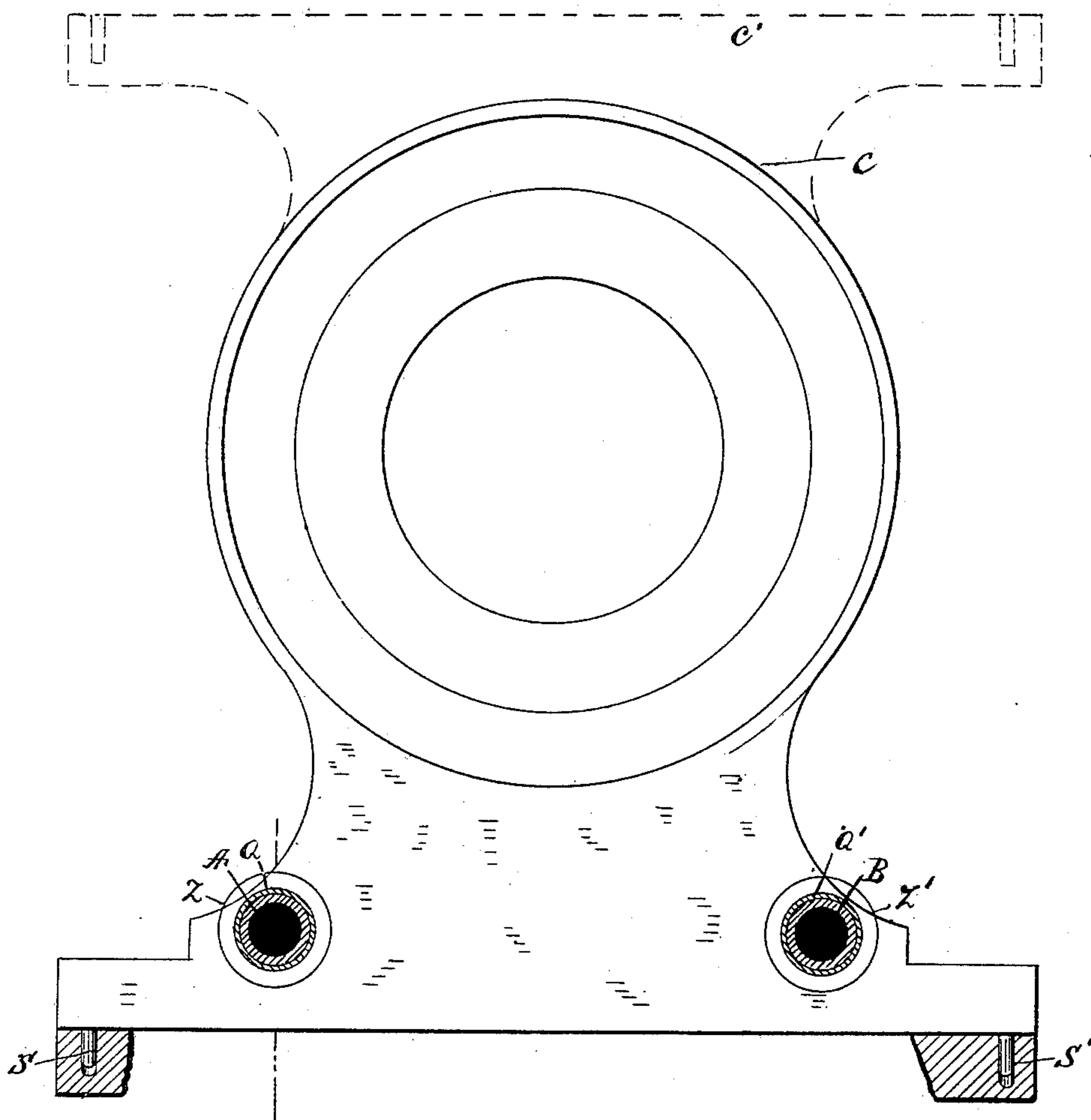
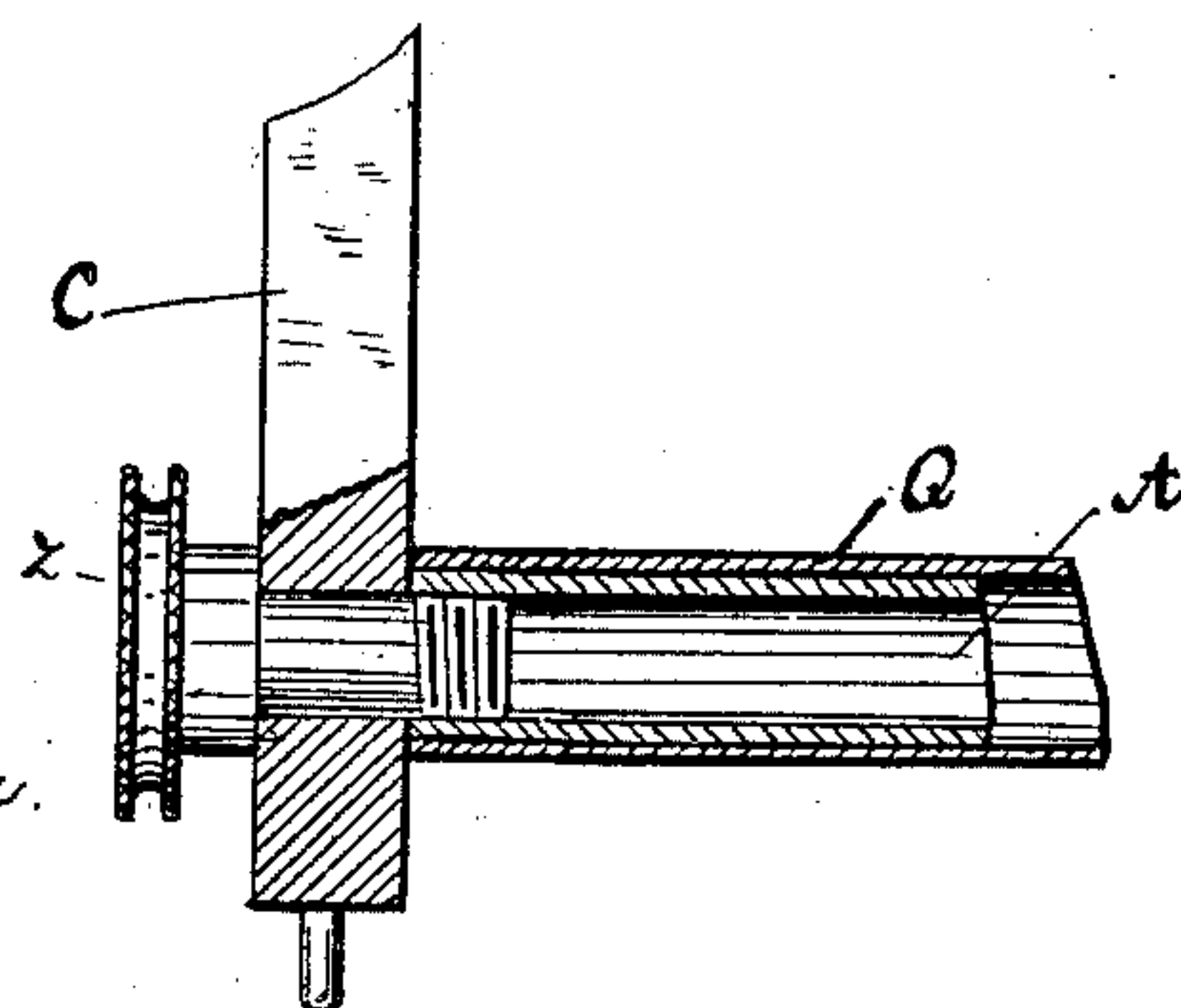


Fig. 3.



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Fig. 4. Patented Mar. 12, 1889.

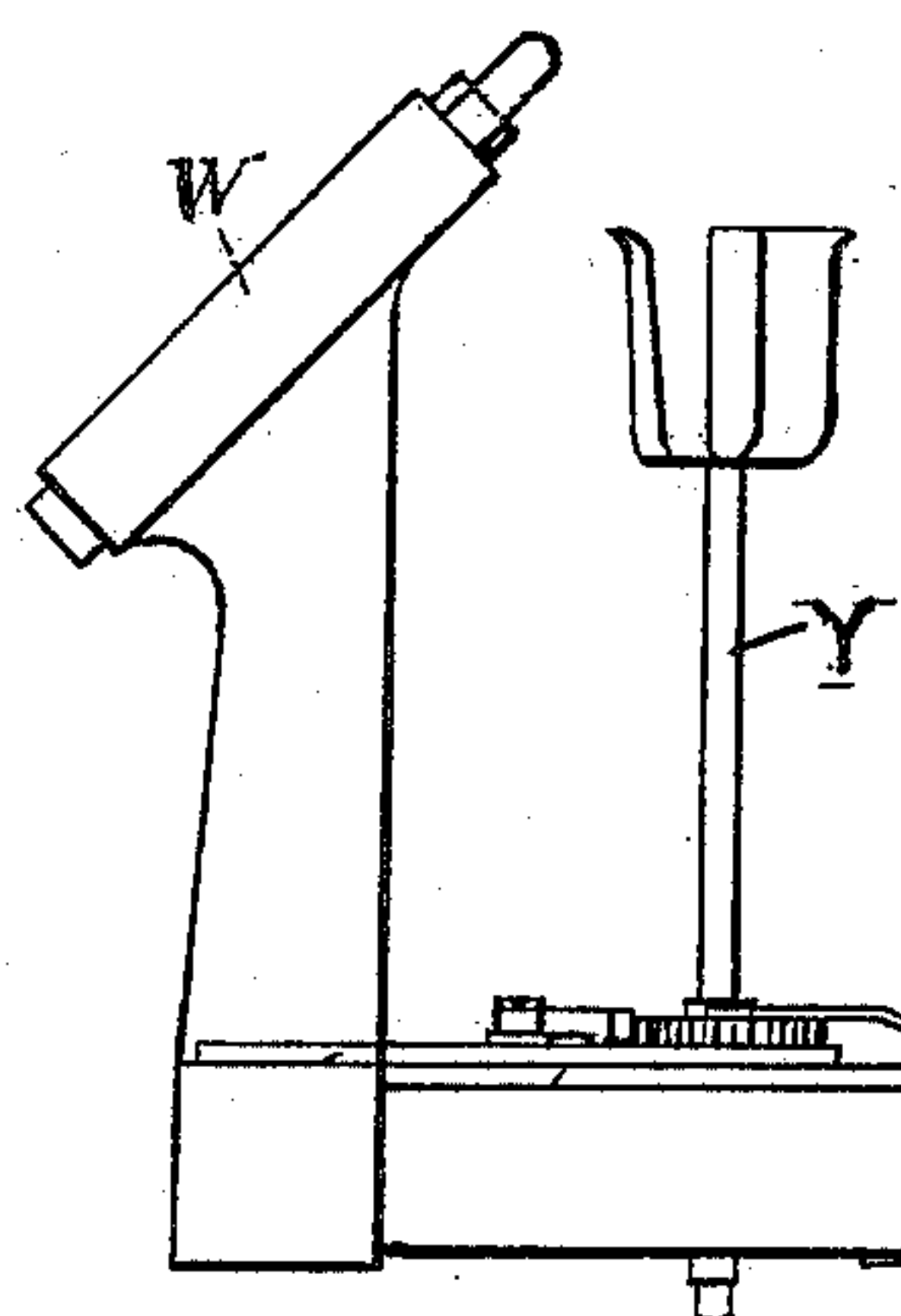
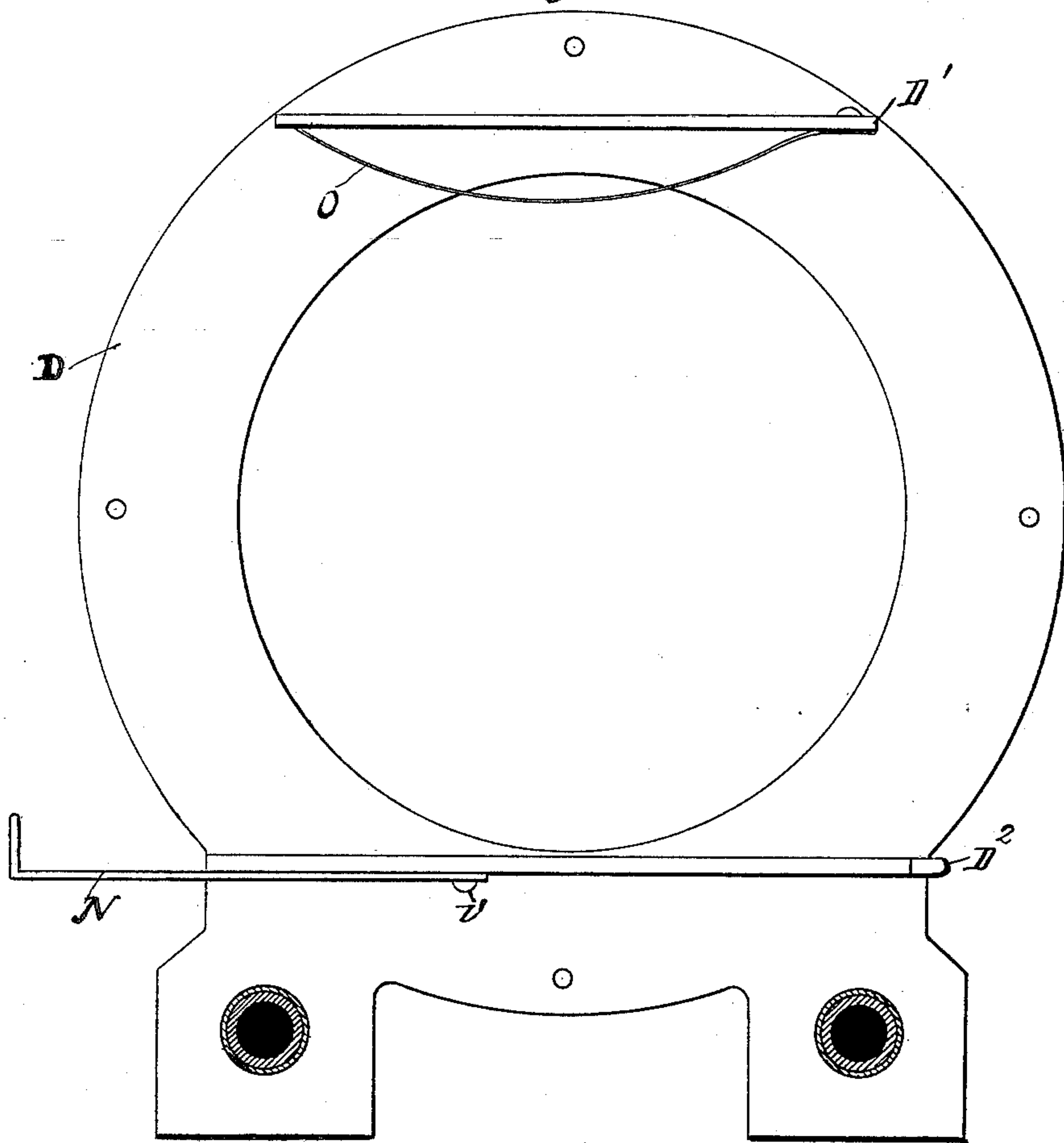
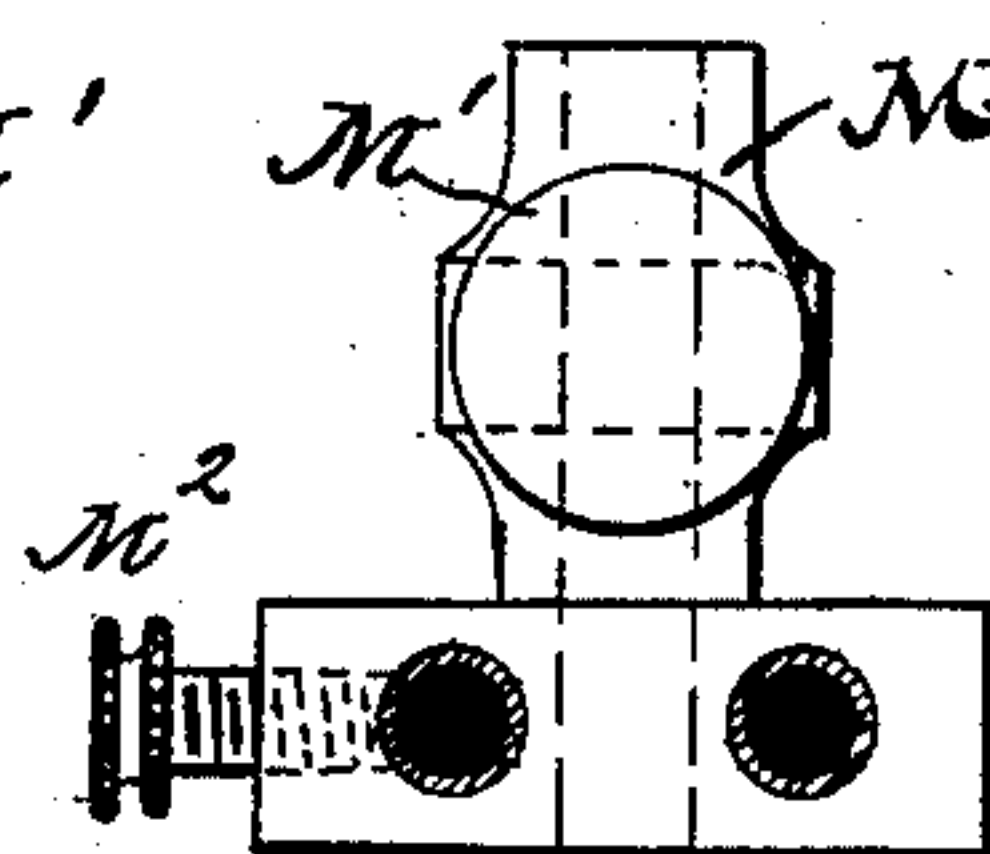


Fig. 5.

Fig. 6.



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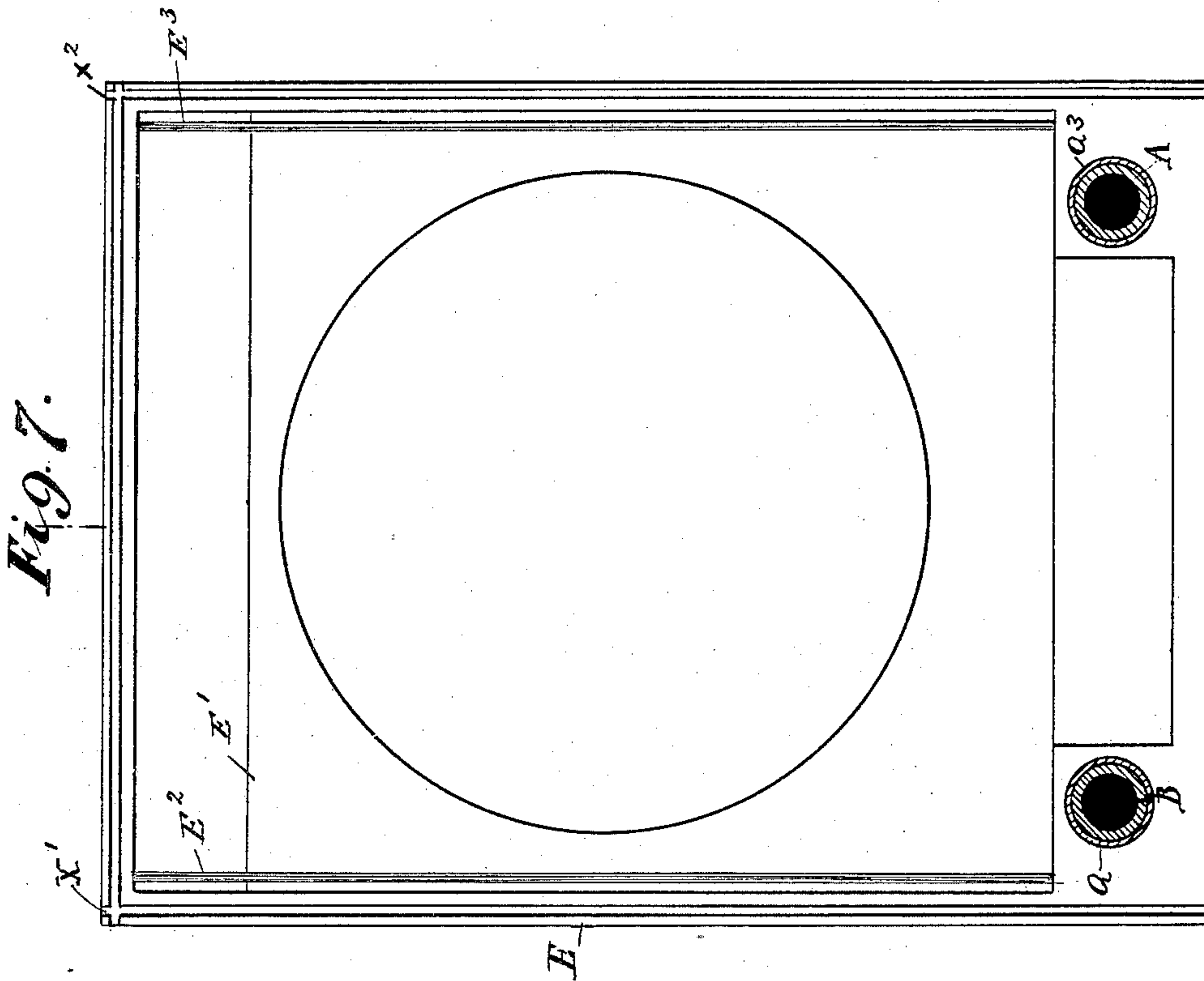
5 Sheets—Sheet 4.

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5 Sheets—Sheet 5.

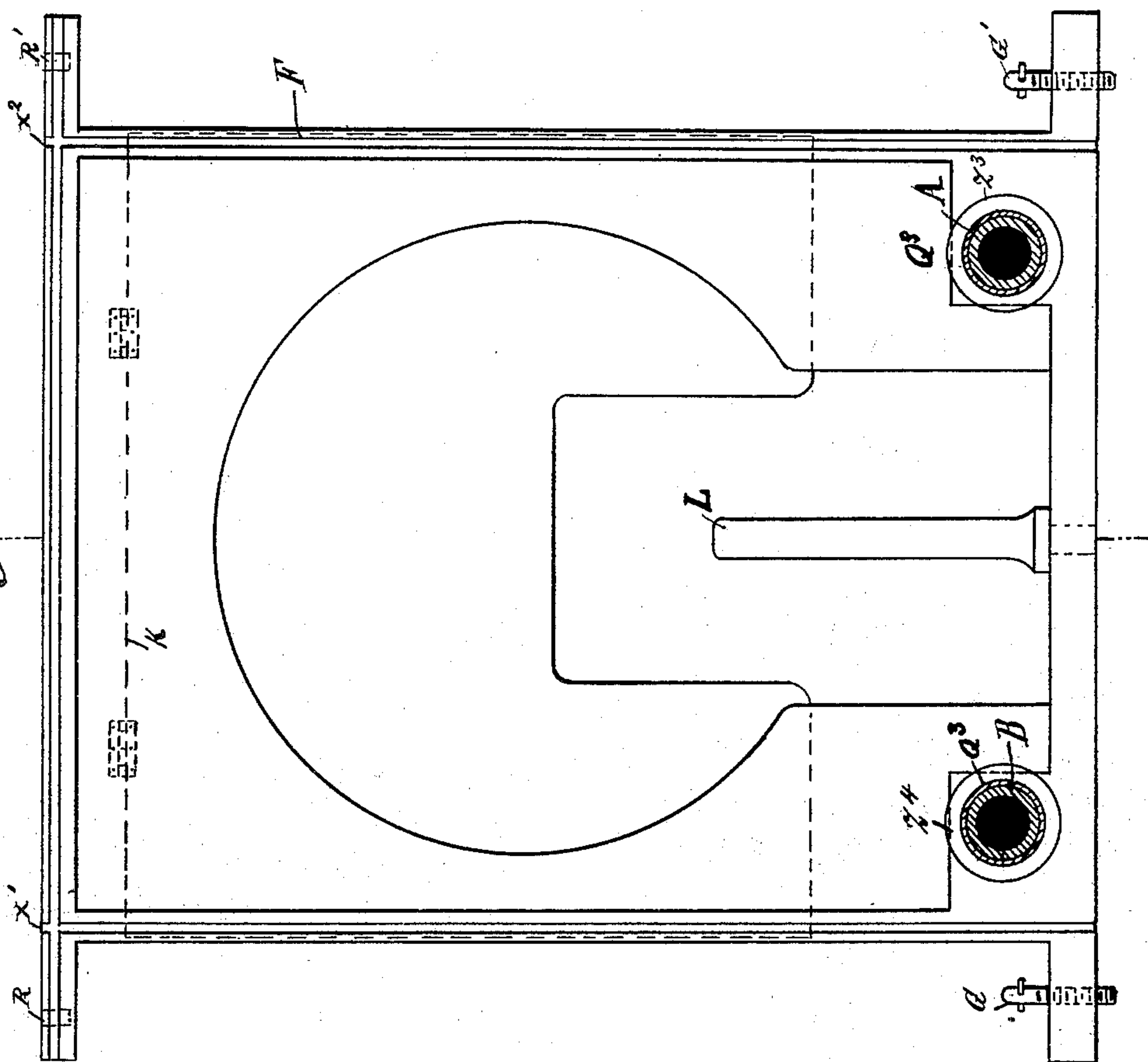
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Fig. 8



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HENRY J. BROWER, OF BROOKLYN, ASSIGNOR TO THOMAS H. McALLISTER,
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MAGIC LANTERN.

SPECIFICATION forming part of Letters Patent No. 399,596, dated March 12, 1889.

Application filed September 27, 1887. Serial No. 250,802. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. BROWER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented and produced certain new and useful Improvements in Stereopticons, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

My invention relates to improvements in the manufacture of stereopticons. Heretofore the stereopticons manufactured have been more crude and bulky than need be; and my object in this invention is to construct them in such manner that they will be easily portable, and manufacture the parts so that they may be easily and quickly put together for use or taken apart for transportation from place to place as readily, and so that when packed for transportation they will occupy a very small place or compass comparatively, and when set up for use they will be as firm and rigid as if they were permanently built, which is an important feature in instruments of this character. I attain this object by the manufacture and its several parts, as illustrated in the said drawings.

The invention consists, first, in the general construction and arrangement of the parts, as hereinafter particularly described, whereby a complete stereopticon, double or single, is obtained, which can be put together very easily and quickly without the use of nails, ordinary screws, or other permanent fixtures; secondly, in the improved tubes and slip-tubes, and milled-head thumb-screws for fastening the sections together; thirdly, in the construction of the plates with tongues, grooves, and flanges, and the mode of applying them, so that they may be slipped in and out of position readily, and fastening them in position in a strong and firm manner, and, fourthly, in the novel combination of parts whereby the several objects above mentioned are attained.

In the accompanying drawings, Figure 1 is a side elevation of my improved stereopticon; Fig. 2, a front view of the same; and Figs. 3 to 8, inclusive, are plan views of the various parts of the same.

Similar letters refer to similar parts throughout the several views.

Referring now to Fig. 1, showing the side elevation of a double stereopticon ready for use, u' is the ordinary objective lens mounted on standard c . $T T$ are the condensing-lenses, mounted between plates D and E , and held in position by being screwed to rim J , which is attached to standard or plate D . The plates E and F form two sides of the hood in which the light is confined. Sheet-iron plate H forms the top. Two sheet-iron plates (shown as I) form the other two sides of the hood. W is the jet or burner held in position by the post L . Said post L is fastened to plate F by being screwed into the lower part of said plate.

Fig. 2 gives a front view of plate c , in which are shown the ends of tubes A and B , which run the entire length of the instrument, and on which all the other parts are mounted. $Z Z'$ are milled-head thumb-screws which pass through plate c and screw into the ends of tubes A and B , thus attaching plate c firmly to tubes A and B . Slip-tubes Q and Q' are placed on over tubes A and B , one end against plate c , as shown in Fig. 3.

The dotted lines in Fig. 2 show the shape of the upper part of plate c' .

Fig. 4 shows plate D with flanges D' and D^2 for holding the picture in position. Spring O on flange D' is for securing the picture in position. Attached to flange D^2 is stop N , which centers the picture in front of plate D and in the center of the condensing-lens which is attached to the opposite side of plate D by means of collar J , which is screwed to plate D , condensing-lenses $T T$ being screwed into collar J . Slip-tubes Q^2 are the same length as the thickness of the condensers and separate the plates D and E . Plate E forms the front of the hood in which the light is placed, the condensing-lenses $T T$ being placed directly in front of the hole in plate E . On the inner side of plate E , and resting against the plate, is a sheet of mica for the protection of the condensing-lenses from the extreme heat of the lime light. The wires $E^2 E^3$ hold the mica in position. Slip-tubes Q^3 are put on tubes A and B to separate the plates E and F , making the hood the desired

size. Plate F is the last plate to put on tubes A and B. This plate forms the back of the hood, in which the light is placed. Attached to plate F by two hinges is a sheet-metal door, K, which may be opened for adjusting the light inside. Attached to the lower edge of the plate F, and in the center, is post L, on which is placed the sleeve M. Through the two arms on the lower edge of plate F are two screws, G and G'. These screws rest in openings in a corresponding plate in the lower lantern. These screws are for elevating the back end of the upper lantern, so as to register the focus of the two lanterns or registering the pictures projected from both lanterns to the same point on a screen some distance away. Slip-tubes Q⁴ are last put on, and milled-head screws Z³ and Z⁴ are then screwed into the ends of tubes A and B, which bind all the parts firmly together.

In plates E and F (shown in Figs. 7 and 8) will be seen grooves X' X², into which are slipped the sheet-metal plates I and H. I forms one side of the hood with a door. A plate similar to I forms the other side of the hood. Sheet H forms the top of the hood, with openings between sheets H and I at the top for the escape of heat and for ventilation.

Referring to Fig. 4, the stop N is attached to flange D² on plate D by means of screws v, thereby allowing the stop N to be folded over in the opposite direction, so that it may not project beyond the plate when the instrument is packed.

Figs. 5 and 6 show the jet or burner for burning oxygen and hydrogen gases combined. The two tubes of the burner are moved forward or back through the sleeve M until the light is in the proper position to the condenser, and is then fastened by means of the milled-head screw M². The sleeve M is then moved up or down on post L until the light

is directly in the center of condensers T T, and is then fastened in position by means of milled-head screw M'. The lime-cup Y is turned by means of a ratchet with arm attached. The front end of the upper lantern is held in position by means of pins in plate c (marked S and S') of the upper lantern fitting into suitable openings in the top of plate c' of lower lantern. The screws P P' (shown in Fig. 1) and their counterpart (not shown) at the bottom corners of lower lantern are for elevating or lowering the instrument to any desired point.

I have mainly described the form of the parts of one lantern. This will suffice, as the second or third lanterns would be exact counterparts thereof, with the exception of the rests and fixtures shown, which connect one to another whenever one more lantern is added.

What I claim as my invention is—

In a stereopticon, the general combination, with the lenses and burners, of metallic plates c, D, E, and F, having openings and grooves, substantially as shown, tubes A and B, on which the different plates are mounted, slip-tubes Q, Q', Q², Q³, and Q⁴, fitting on over tubes A and B and separating plates c, D, E, and F from each other, milled-head screws Z Z', fitting into tubes A and B, for holding the plates and tubes firmly together, post L, and sleeve M, for holding burner W in position, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 13th day of July, 1887.

HENRY J. BROWER.

Witnesses:

EDMOND C. BROWN,
BARKLEY WYCKOFF.