

No. 705,706.

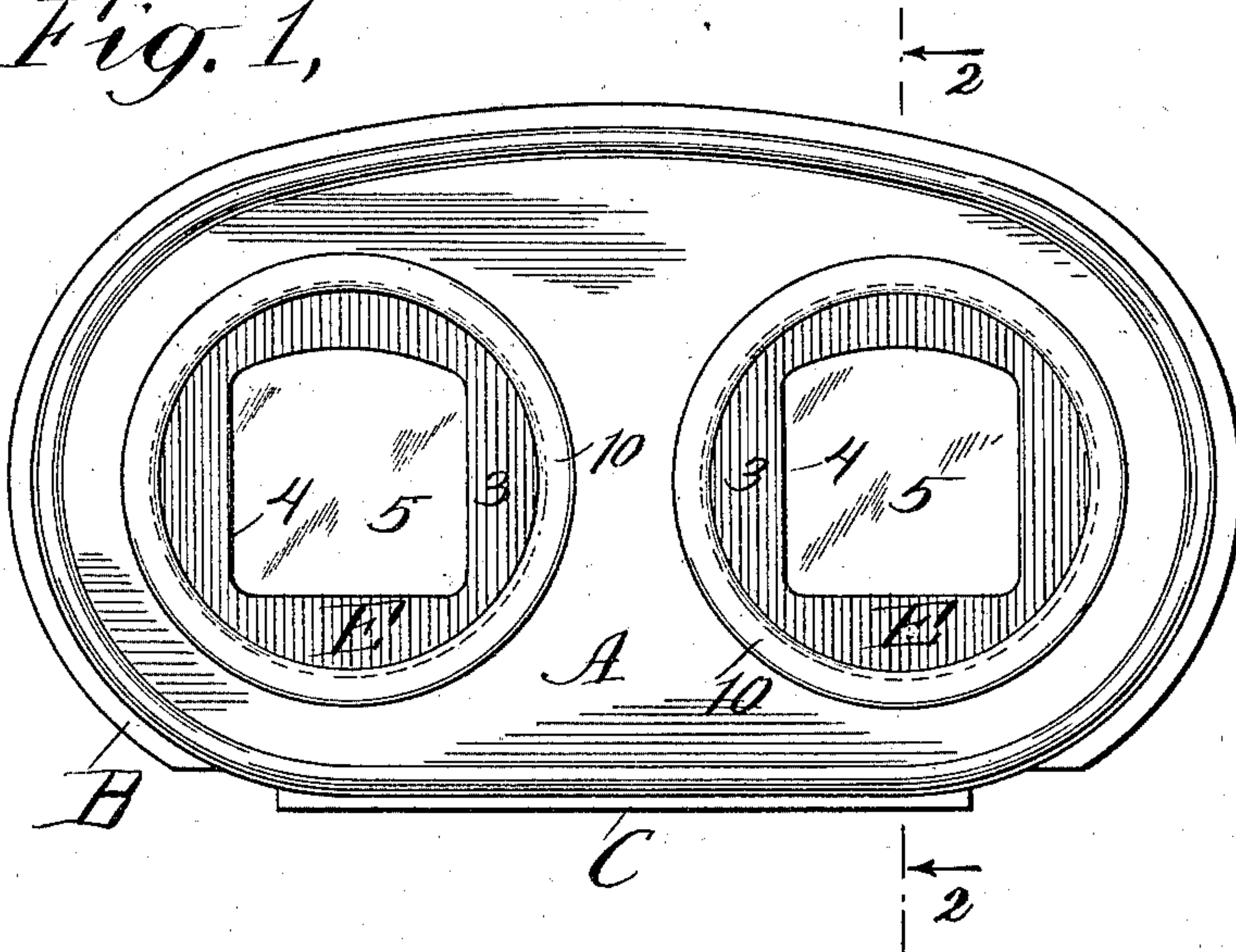
Patented July 29, 1902.

H. E. RICHMOND.  
STEREOSCOPE.

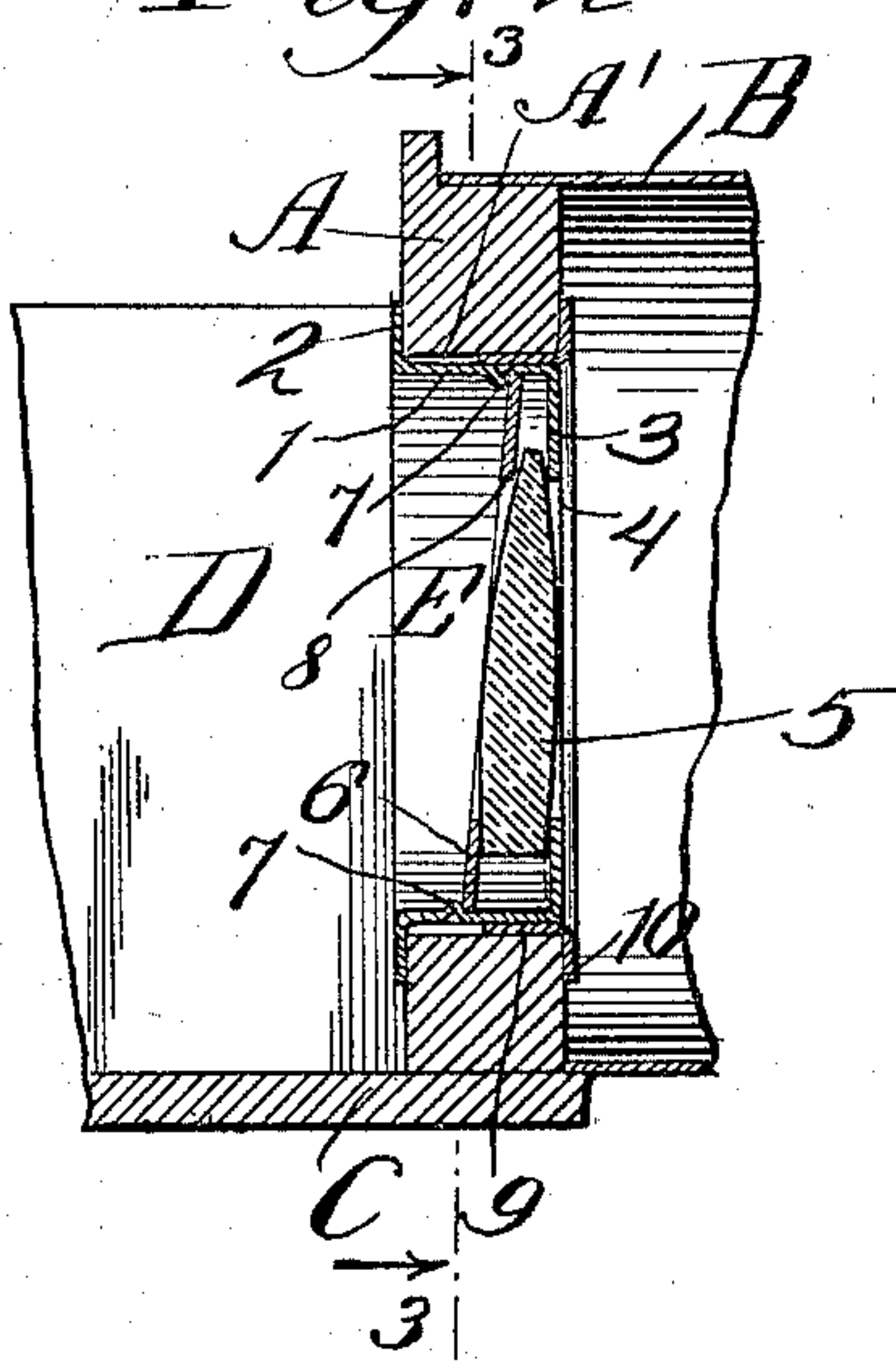
(Application filed Nov. 4, 1901.)

(No Model.)

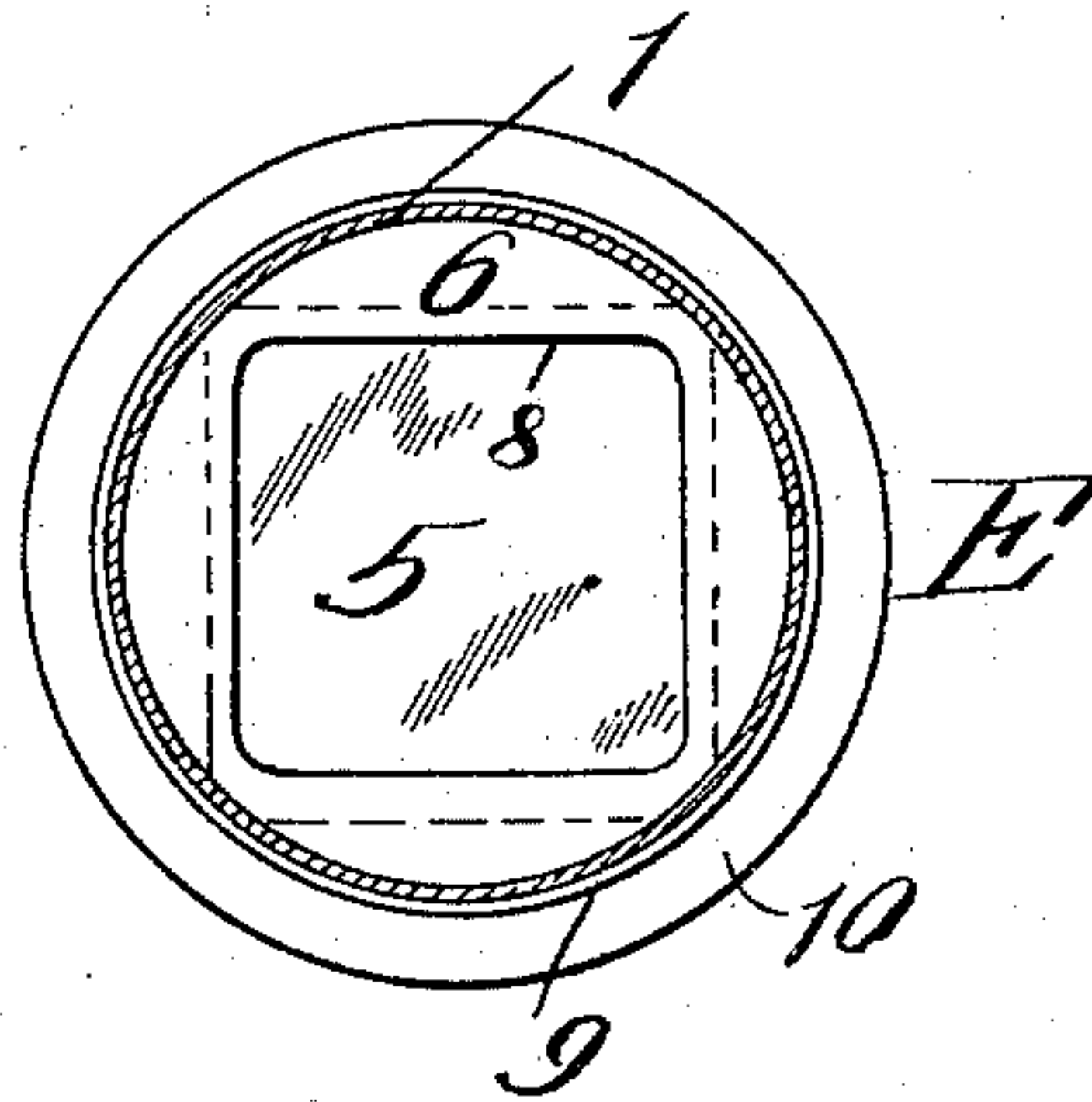
*Fig. 1,*



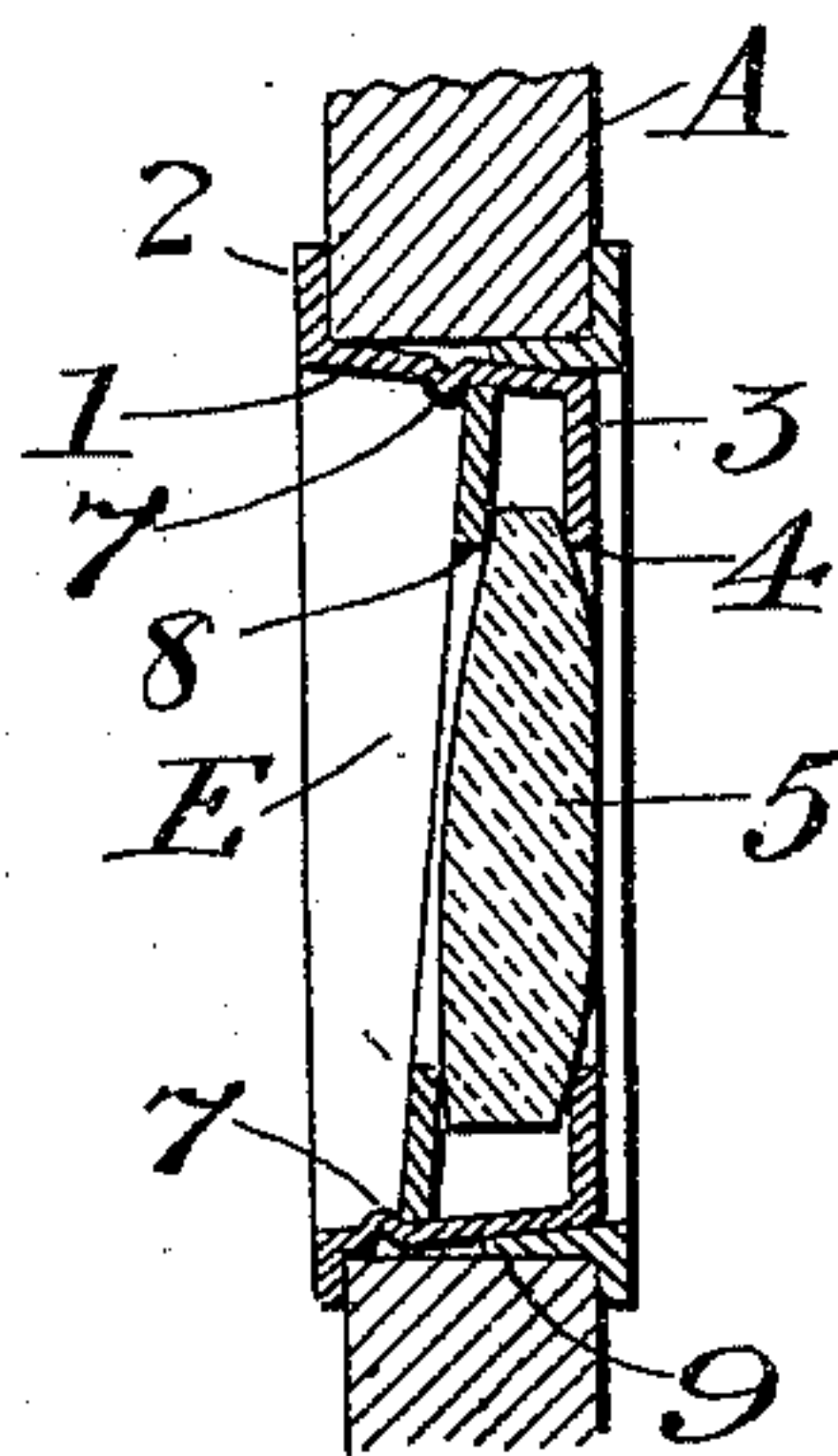
*Fig. 2*



*Fig. 3*



*Fig. 4*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY E. RICHMOND, OF WESTWOOD, NEW JERSEY.

## STEREOSCOPE.

SPECIFICATION forming part of Letters Patent No. 705,706, dated July 29, 1902.

Application filed November 4, 1901. Serial No. 80,976. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. RICHMOND, residing at Westwood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Stereoscopes, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in stereoscopes, and especially to the lens-frame thereof. Heretofore as a rule the holders of the lens-frames, which were made of wood, were built of separate pieces, and a square opening was left in the holder, into which the lens was wedged in place. This manner of making the holder is not only expensive, but in wedging the lens in place sometimes the parts of the holder were sprung, and also owing to the contraction and expansion of the wood the lens became loose and worked out of the holder. Attempts have been made to overcome these objections in a wooden holder by making said holder in one piece and to cut holes therein in which the lens-frames for carrying the lens were fastened; but, so far as I am aware, there has been no successful device of either of these types, owing to the expense of making and the manner of mounting the frame in the holder.

It is the object of my invention to overcome the objections in the construction of said lens-frames and to make a frame that may be easily and cheaply constructed and that can be readily attached to a wooden holder and when attached hold the lens-frame in place.

With these ends in view I will now set forth my invention in detail, the invention being illustrated in the accompanying drawings, which form a part of this specification.

In the drawings, in which the same letter or reference-numeral designates the same part in the different views, Figure 1 is a rear view of a stereoscope, showing the lens in the frame and mounted in a circular opening in the holder. Fig. 2 is a vertical longitudinal section through the holder and one of the lens-frames, taken on the line 2 2, Fig. 1. Fig. 3 is a cross-section of one of the lens-frames, taken on the line 3 3, Fig. 2. Fig. 4

is also a cross-section of one of the lens-frames, showing the tapered form of ring.

The part lettered A represents the lens-frame holder, having an opening A' therein. B is the hood of the stereoscope, C the shaft, and D the partition, all of well-known construction.

My improved lens-frame is represented by the reference-letter E. This frame is made of metal and preferably of aluminium, so that it may be easily stamped into the proper shape and at small cost. It consists of the ring 1, which may be slightly tapered. This ring has an outer annular rim or flange 2, which rests against the forward or outer surface of the frame-holder A when the frame is in place. The other end of the ring has an internally-projecting sheet or flange 3, having an opening or sight 4 therein, which is preferably substantially square, as shown in the drawings. One face of the lens 5 rests against the inner face of this flange when the parts are assembled. The part marked 6 is a mat which rests against the other face of the lens to hold the said lens in place in the frame. The outer edge of this mat conforms to the shape of the ring, and the diameter thereof may be slightly greater than the internal diameter of the ring at that part where the mat is seated, so that the mat may fit tightly within the ring and hold the lens in place. In order, however, to more securely hold the mat, the rim of the ring may be indented inwardly just back of and close against the mat, as shown at 7. This mat also has a substantially square opening 8 therein to conform to the opening in the sheet or flange 3.

9 is a ring whose internal diameter is slightly less than the outer diameter of the ring, so that it may fit tightly over the ring 1. The ring 9 has an outer extending flange 10, which rests against the inner surface of the frame-holder A when the frame is in place.

The lens is secured in the frame and the frame secured in the holder in the following manner: The lens 5 is placed in the ring 1 with one of its faces resting against the flange 3. The mat 6 is then put in the ring and pressed against the other face of the lens. In order, however, to more securely hold the mat in place, the ring is indented after the



mat is inserted just in the rear of and close up against the mat, as shown at 7. This ring is now inserted in the opening A' in the frame-holder with its flange 2 resting against the  
 5 outer face of said holder. The ring 9 is now placed over the outer end of the ring 1 and pressed down over said ring until its flange rests against the inner face of the holder A. Owing to the fact that the outer ring is slightly  
 10 smaller internally than the outside of the ring 1, the two rings will fit close together and be tightly held within the holder.

This device, it is seen, is very simple and is easy to construct and may be easily and  
 15 readily assembled and when assembled will securely hold in place the lens-frame, as actual construction has demonstrated.

It is clear that minor changes may be made in the device as shown and described with-  
 20 out departing from the spirit of my invention. The shape of the lens or ring may be changed to some other form from that shown, and other means may be used to secure the lens in place in the frame, and I therefore do  
 25 not limit myself to the exact construction shown and described.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

30 1. In a stereoscope, a lens-frame holder, a ring having an inwardly-projecting part or flange against which the lens may rest, a mat for holding the lens in place, a projection in the ring for holding the mat in place, and an  
 35 outwardly-projecting flange on the ring resting against the holder.

2. A stereoscope lens-frame, consisting of a ring having an inwardly-projecting part or flange against which a lens may rest, means  
 40 for holding the lens in place, and another ring over one end of the first-mentioned ring.

3. A stereoscope lens-frame consisting of a ring having an inwardly-projecting flange against which the lens may rest, a mat for  
 45 holding the lens in place, and another ring surrounding the first-mentioned ring.

4. In a stereoscope, a lens-frame holder having an opening therein, a ring having an inwardly-projecting flange against which the

lens may rest, a mat for securing the lens in  
 50 place, an outwardly-projecting integral flange on the ring resting against the outer face of the holder, and means for securing the ring within the holder.

5. In a stereoscope, a lens-frame holder  
 55 having an opening therein, a ring in the holder having an inwardly-projecting flange against which the lens may rest, a mat in the ring to hold the lens in place, outwardly-projecting  
 60 flanges on the ring resting against the outer face of the lens-frame holder, an outer ring surrounding the first-mentioned ring and having an outwardly-projecting flange, the said  
 65 outer ring adapted to hold the inner ring in place in the lens-frame.

6. In a stereoscope, a lens-frame holder  
 70 having an opening therein, an inner ring adapted to be secured in the opening in said holder, said ring having an inwardly-projecting flange against which one face of a lens  
 75 may rest, a mat adapted to press upon the other face of the lens and hold the lens in place, inner projections on the ring to hold the mat in place, an outwardly-projecting  
 80 flange on said ring adapted to rest against the outer face of the frame-holder, an outer ring fitting tightly over the inner ring and having a flange adapted to rest against the inner face of the holder and hold the inner ring in place in the holder.

7. In a stereoscope, a lens-frame holder  
 85 having an opening therein, a tapered ring in the holder having an inwardly-projecting flange against which the lens may rest, a mat in the ring to hold the lens in place, out-  
 90 wardly-projecting flanges on the ring resting against the outer face of the lens-frame holder, the outer ring surrounding the first ring and having an outwardly-projecting flange, the said outer ring adapted to hold  
 the inner ring in place in the frame.

In testimony whereof I affix my signature in the presence of two witnesses.

HENRY E. RICHMOND.

Witnesses:

ELMER UNDERWOOD,  
 H. M. SEAMANS.