

No. 701,527.

Patented June 3, 1902.

HAWLEY C. WHITE & HARRIE C. WHITE.
STEREOSCOPE.

(Application filed Sept. 24, 1901.)

(No Model.)

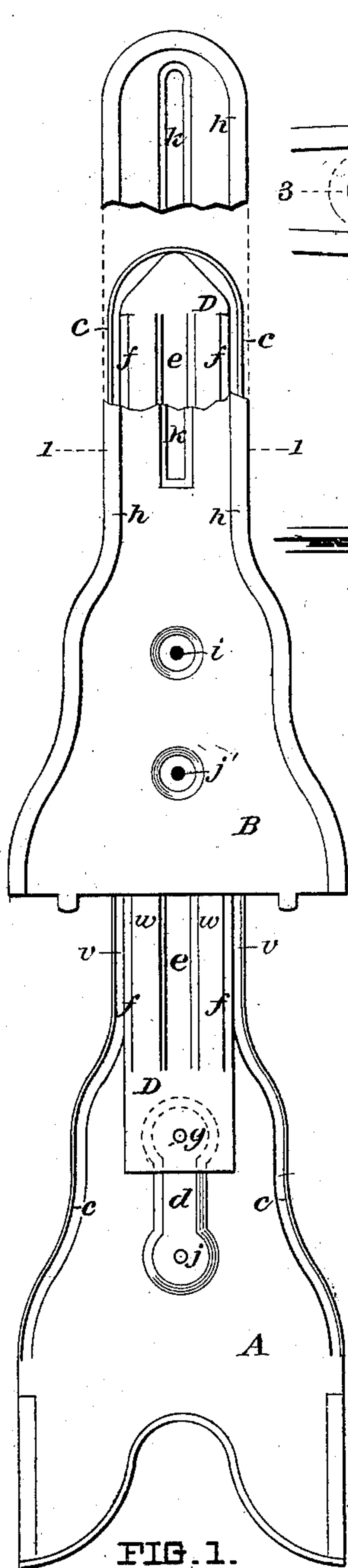


FIG. 1.

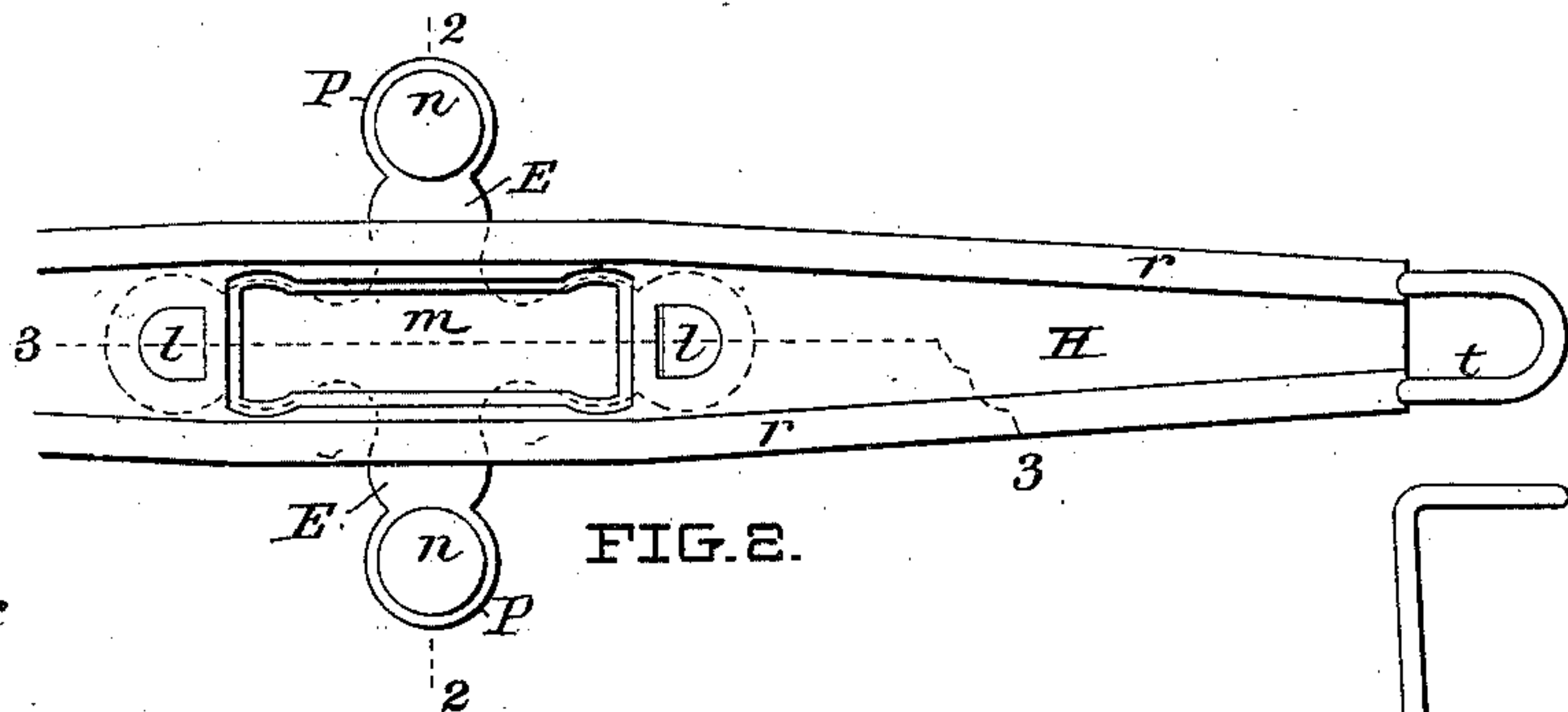


FIG. 2.

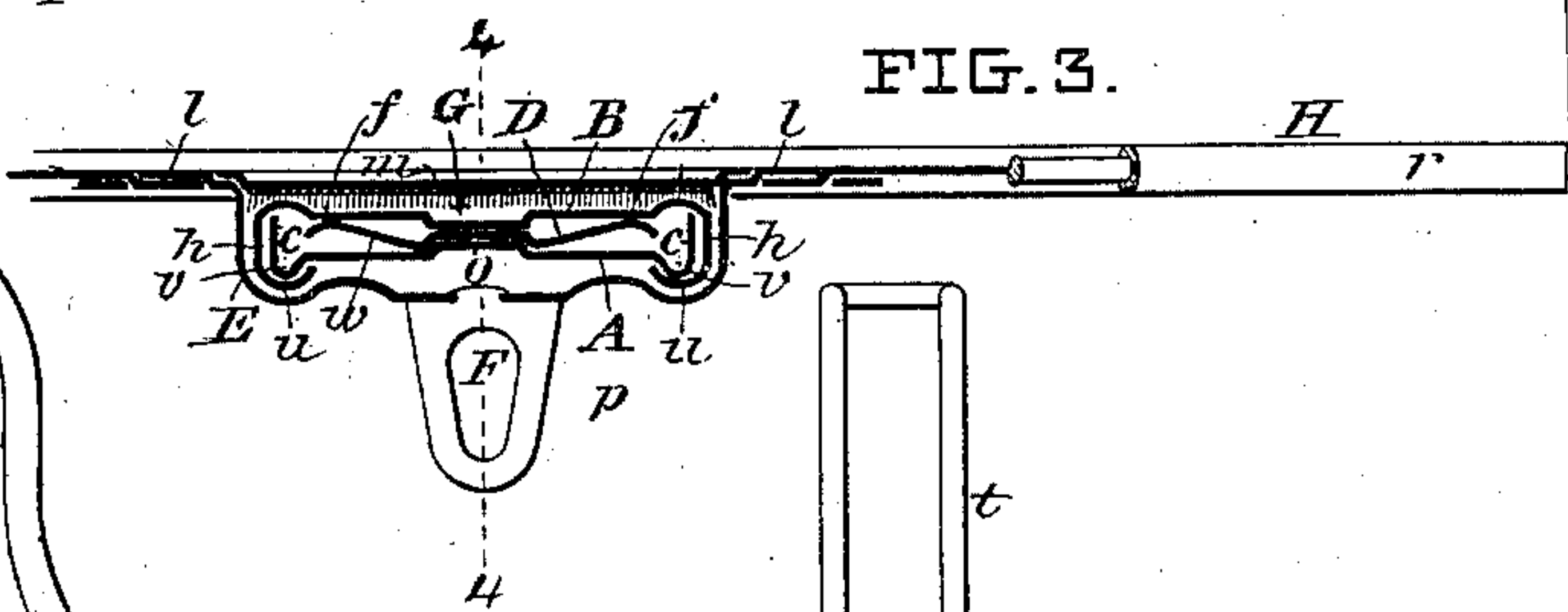


FIG. 3.

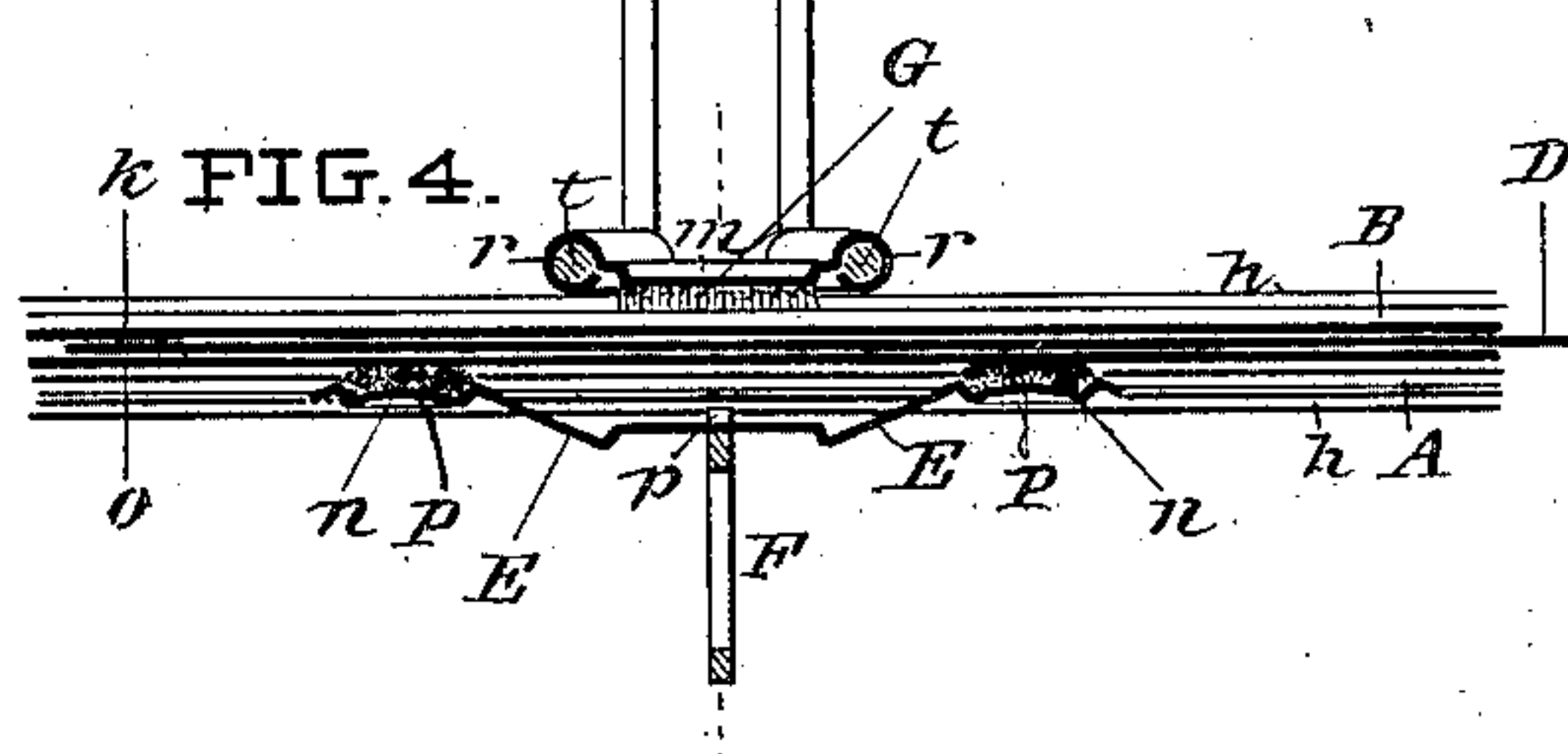


FIG. 4.

WITNESSES.

Charles H. Houghton
Releg A. Mattison

INVENTORS.

HAWLEY C. WHITE.

HARRIE C. WHITE.

BY *Franklin Scott*, ATTORNEY.

UNITED STATES PATENT OFFICE.

HAWLEY C. WHITE AND HARRIE C. WHITE, OF NORTH BENNINGTON, VERMONT, ASSIGNORS TO H. C. WHITE CO., OF NORTH BENNINGTON, VERMONT, A CORPORATION OF VERMONT.

STEREOSCOPE.

SPECIFICATION forming part of Letters Patent No. 701,527, dated June 3, 1902.

Application filed September 24, 1901. Serial No. 76,337. (No model.)

To all whom it may concern:

Be it known that we, HAWLEY C. WHITE and HARRIE C. WHITE, of the village of North Bennington, in the county of Bennington and State of Vermont, have jointly invented certain Improvements in Stereoscopes, of which the subjoined description, together with the accompanying drawings, constitute a specification.

The invention relates to improvements in the construction of hand-stereoscopes from metallic plates and embraces provisions for preventing distortion of the shaft by bending or twisting, for improving the sliding connection between the picture-holder and shaft, and for improving the construction of the picture-holder, as well as incidental improvements connected therewith.

In making hand-scopes from metallic plates which are liable to bend or become distorted by accidents or rough handling it has been found that absolute rigidity of structure is not desirable in all cases, especially so far as the shaft is concerned. In using aluminium plates for the shaft, which are closed together at their edges by locked joints, it sometimes has happened that if the shaft became slightly twisted, so as to throw the horizon of the picture out of parallelism with the line connecting the axes of the lenses, the absence of resiliency in the parts of the shaft would operate to leave a permanent set in the metal of the shaft, thus permanently distorting the instrument. It has been found that by leaving a certain amount of freedom in the joints connecting the plates of the shaft and interposing between them an elastic spring or cushion, which will tend to force the plates apart, the action of the spring or cushion tends to restore the parts to their normal relations after distortion.

The drawings fully illustrate our invention, wherein—

Figure 1 shows a plan view of the three parts which collectively make up our improved shaft, the upper plate being shown as slipped back and broken, so as to expose the parts

below it. Fig. 2 is a plan view of the upper side of the picture-holder. Fig. 3 shows a partial view of the edge of the picture-holder and a section taken on the line 1 1 of Fig. 1 and 3 3 of Fig. 2, showing a cross-section of the shaft and a partial longitudinal section of the picture-holder. Fig. 4 is a sectional view of the combined shaft and picture-holder, taken on the line 4 4 of Fig. 3.

The shaft is composed of the top plate B and the bottom plate A, which may be of aluminium or other suitable metal. A flange *c c c* is turned up at a right angle around the edge of plate A, and a longitudinal rib *o*, Fig. 3, is struck up in the center of its length. A depression *d* is also struck up from its under side as a seating for the handle-bracket, (not shown,) and it is perforated, as at *j*, for the passage of screws which fasten the handle-bracket to the shaft and also attach the shaft to the septum (not shown) in the well-known manner. The top plate B has a hollow tubular edge, as seen in cross-section at *h h* in Fig. 3, which has an inturned flange or lip *u u*, which forms a channel-seat for the peripheral rib *v v* on the under side of the plate A to rest in. Running through the center of this plate is the depressed rib or channel *k*. Between the plates A and B a spring-plate D is interposed, the office of which is to keep the two plates distended and to restore their shape if they get twisted. This is effected by the following means: The plate D is made from brass or steel spring-plate and is shaped or swaged between dies to bring the major portion of its length to the shape shown in cross-section in Fig. 3. This shape comprises a rib *e*, which is flanked by two leaves *w w*, the outer edges of which are raised and everted, so as to leave an upstanding longitudinal rib on each side, as seen at *f f*, Fig. 3. The rib *e* is shaped to fit over a similar rib *o* of the plate A and is perforated, as at *g*, opposite one of the holes in the plate A to receive a screw or pin, which serves to keep all the parts in correct position after the parts have been assembled and the screw has

been inserted to fasten the septum and the handle - bracket in place. Preferably the spring - plate should be made of material which is highly resilient in character, and the leaves *ww* should be shaped so as to require considerable compression when the parts are assembled. The shaft-plates and spring are assembled by laying the spring upon the under plate and then telescoping the two pieces into the under plate, as shown in Fig. 1. This process collapses the leaves of the spring by pressing down the bearing-ribs *ff*, Fig. 3, so that the tension produced thereby tends to separate the two plates, thereby seating the longitudinal ribs *vv* of the under plate in the flange-channels *uu* of the upper plate. No part of either of the plates and spring is soldered or otherwise fastened together along the line over which the picture-holder slides. Thus if the complete shaft is twisted or otherwise distorted, so as to put the picture-holder out of proper relation to the lenses, the action of the spring-plate D will operate to restore the parts to their true shapes and relations when the distorting influence is removed.

As the picture-holder and shaft are both made of metal and the former is adapted to slide over the latter and the effect of this sliding contact is to cause abrasion of the contacting parts, we have provided means for preventing injury to either member by providing the body of the picture-holder with a depressed tablet *m*, which is covered with some non - abrasive substance G where it comes in contact with the metal of the shaft. These provisions are shown in Figs. 2, 3, and 4. To the under side of the web H of the picture-holder the spring-clamp E is attached by the lips *ll*, which pass through the web and are closed down thereon, as shown. This clamp is of the well-known pattern, consisting of a stirrup or bridge-piece which encircles the shaft and to which the finger-piece F is attached and the spring-arms E E, which lie beneath the bottom plate. Each of these arms has a small bearing-pad P, which is covered with a non - abrasive substance like plush, cork, felt, or other similar substance. These pads find bearing in the channel *o* of the under plate, and their spring tension tends to draw the cross-bar of the picture-holder down firmly upon the shaft. The tablet *m* projects sufficiently below the web that its padding or covering will lift the beaded edges of the cross-bar off the metallic edges of the shaft and will bear on the upper surface of the plate B, thus interposing a soft cushion between the parts. Thus constructed the picture-holder may be moved forward and back over the shaft without scratching or injuring it or the cross-bar of the picture-holder.

We have here shown and described a metallic spring between the shaft-plates; but a great

variety of equivalents for metal can be utilized to effect the same purposes as are secured by the use of a metallic spring or cushion. For instance, if a strip of elastic wood, like hickory, be interposed of a thickness to fully fill the space between the plates and then the shaft be twisted the resilient quality of the wood will operate to restore the shape of the shaft. Other elastic or resilient substances can be used for the same purpose. Therefore we do not limit ourselves in any way to a metallic spring-plate such as shown.

We therefore claim as our invention the following:

1. A metallic stereoscope-shaft consisting of an upper and an under plate and united at their margins by an interlocking joint; and separated at their intermediate portions, and an interposed spring which is adapted to distend the two plates.
2. A metallic stereoscope-shaft consisting of an upper and an under plate, connected at their edges by a loose interlocking joint, and an interposed spring adapted to distend the two plates.
3. A metallic stereoscope-shaft consisting of an upper and an under plate, connected at their edges by an interlocking joint, and an interposed metallic spring adapted to distend the two plates.
4. A metallic stereoscope-shaft consisting of an upper and an under plate, connected at their edges by a loose interlocking joint, and an interposed metallic spring-plate, the longitudinal axis of which bears against the middle of one plate, and the parallel margins of which bear against the other plate.
5. A metallic stereoscope-shaft consisting of an upper and an under plate, one of which is provided with a central axial inward depression, a plate-spring having a corresponding central axial depression which fits over the depression of said plate, both upper and under plates and the spring-plate contacting along a longitudinal median line.
6. The combination in a stereoscope-shaft of the upper plate, under plate and an interposed spring-plate, the edges of the upper and under plates being united by a marginal joint adapted to permit slight movement of one member upon the other perpendicular to the plane of the shaft as a means for obviating absolute rigidity.
7. In a picture-holder the combination with the shaft of a cross-bar made from sheet metal having a longitudinally-sunken depression opposite where the bar crosses the shaft which is covered with a non-abrasive substance and projects sufficiently beyond the plane of the highest portions of the cross-bar where it lies over the shaft to break contact between the opposed naked metallic surfaces of the shaft and cross-bar, substantially as specified.
8. The combination with a stereoscope-shaft,

of a metallic picture-holder having a spring-clamp and cross-bar, whereof the bar has a sunken cushioned depression where it crosses the shaft and the clamp has springs provided
5 with cushioned tips or pads to bear against the under side of the shaft, substantially as specified.

In witness whereof we have hereto sub-

scribed our names, at North Bennington, Vermont, this 19th day of September, 1901.

HAWLEY C. WHITE.
HARRIE C. WHITE.

In presence of—

G. L. NEWTON,
A. R. WHIPPLE.