

L. BORSUM.
 PHOTOGRAPHIC PLATE HOLDER.
 APPLICATION FILED FEB. 28, 1907.

916,911.

Patented Mar. 30, 1909.

FIG. 1

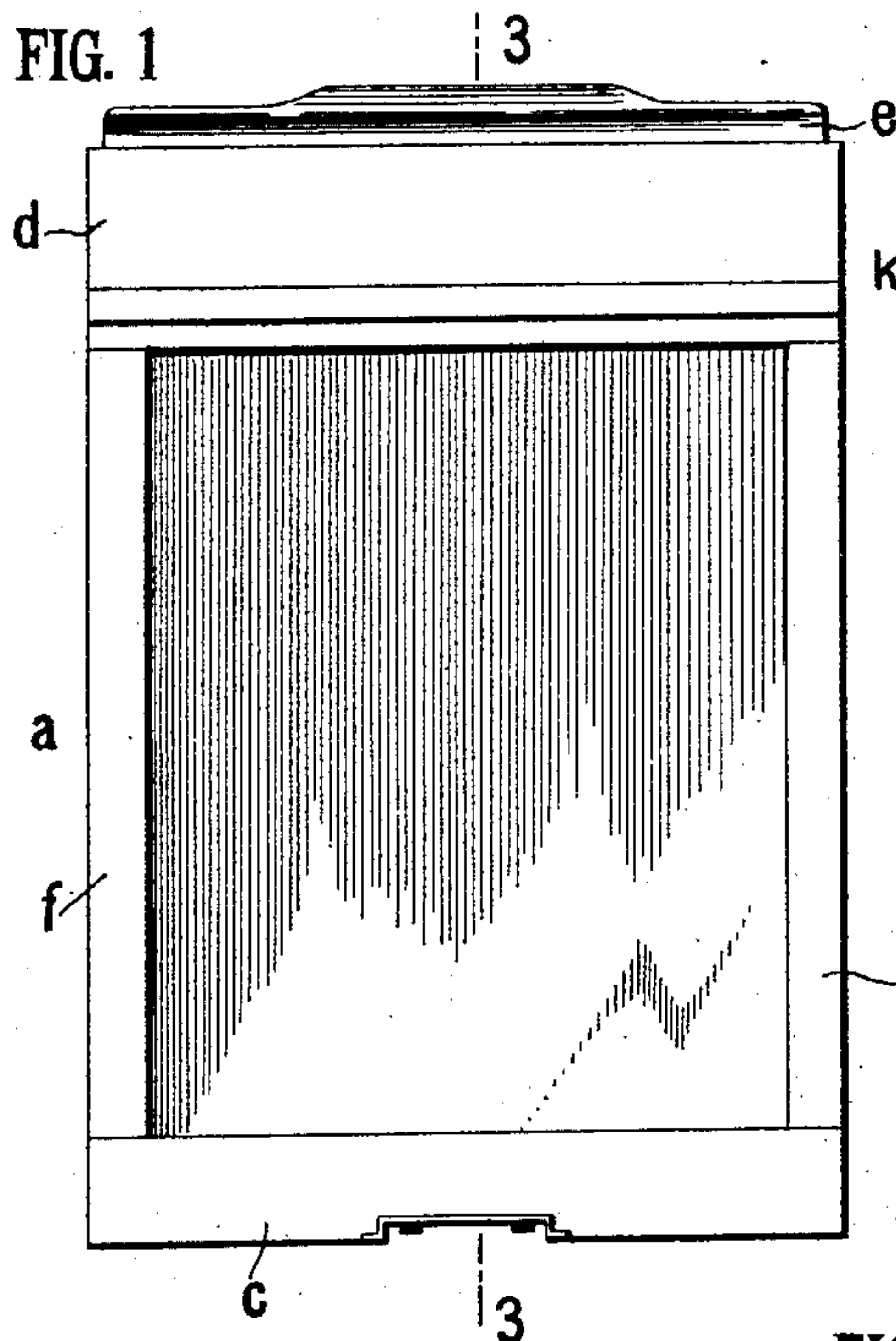


FIG. 2

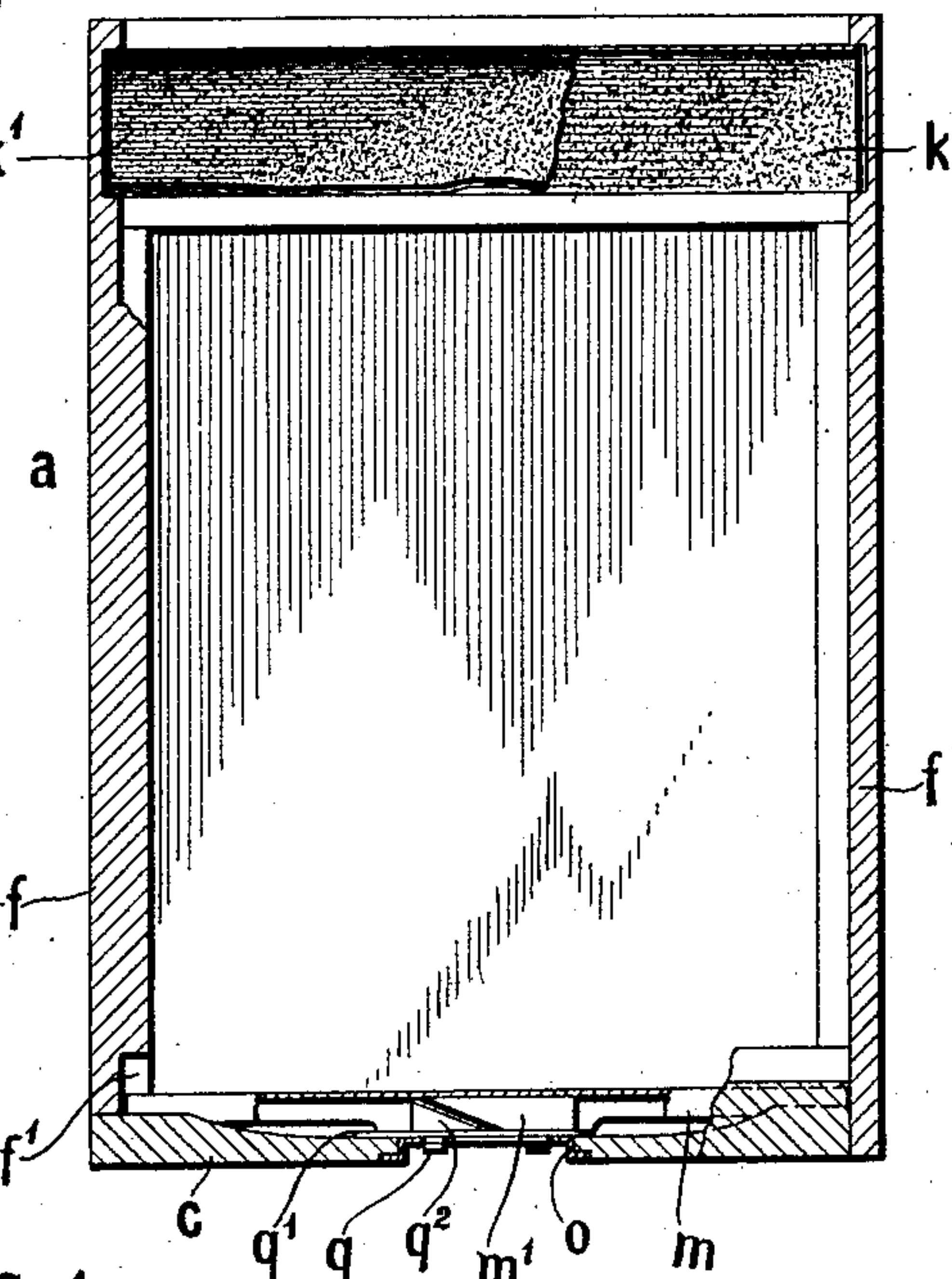


FIG. 4

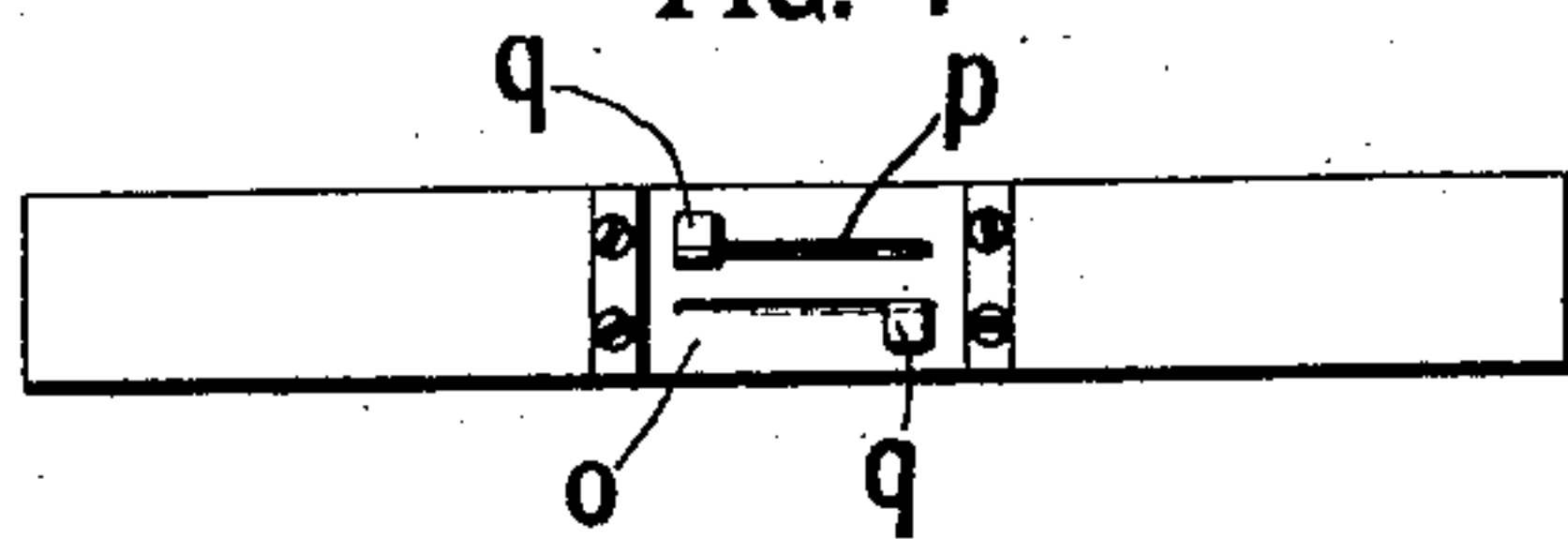


FIG. 7

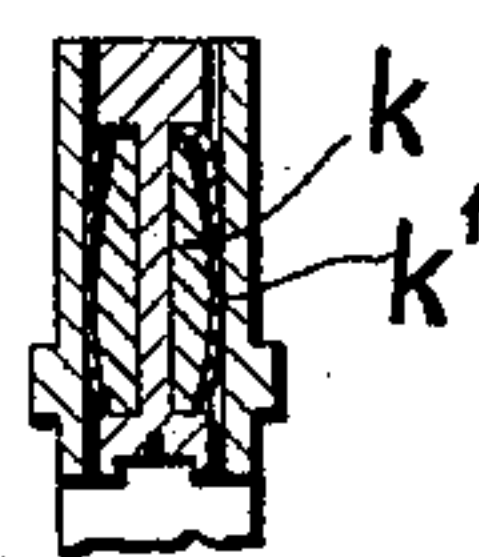


FIG. 3

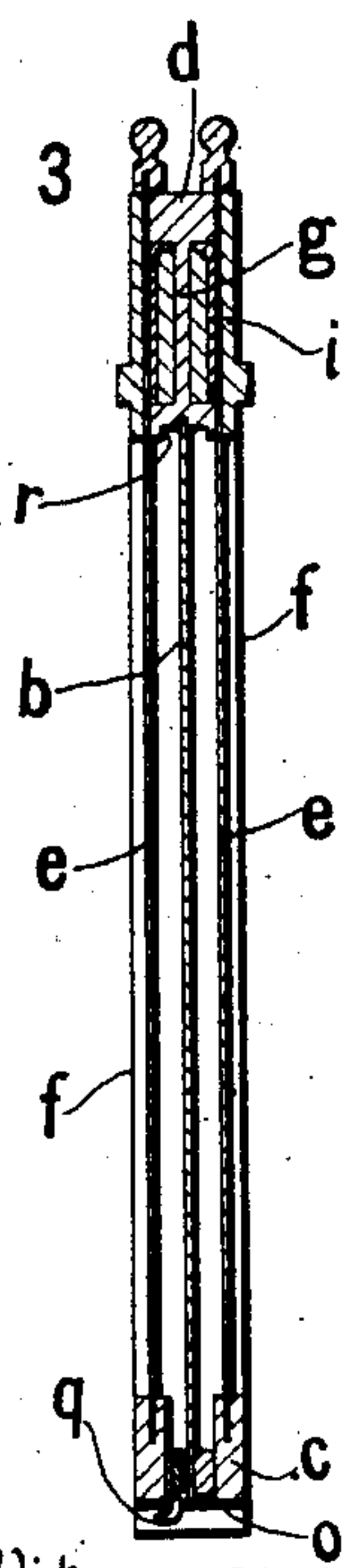


FIG. 5

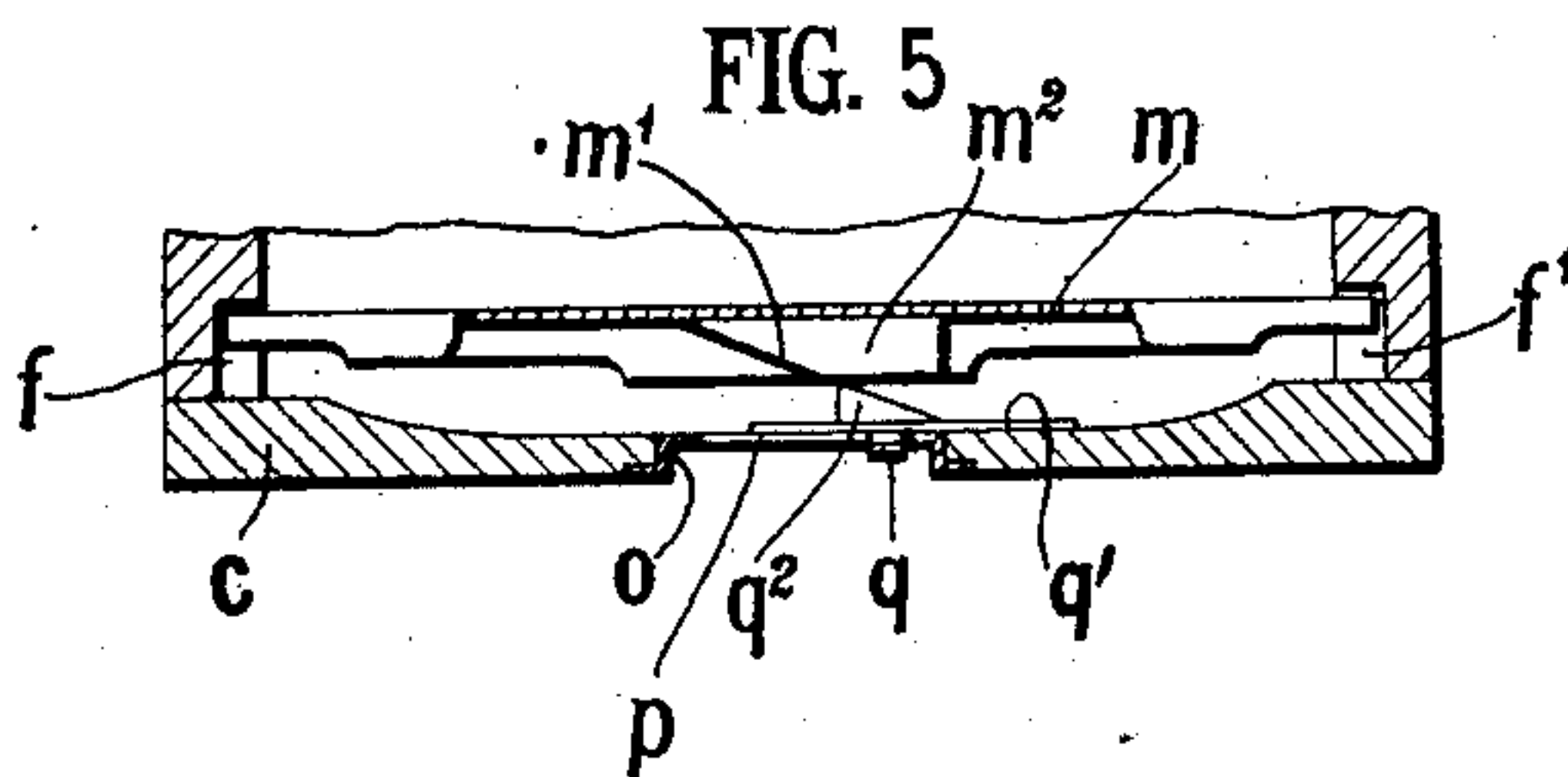


FIG. 8

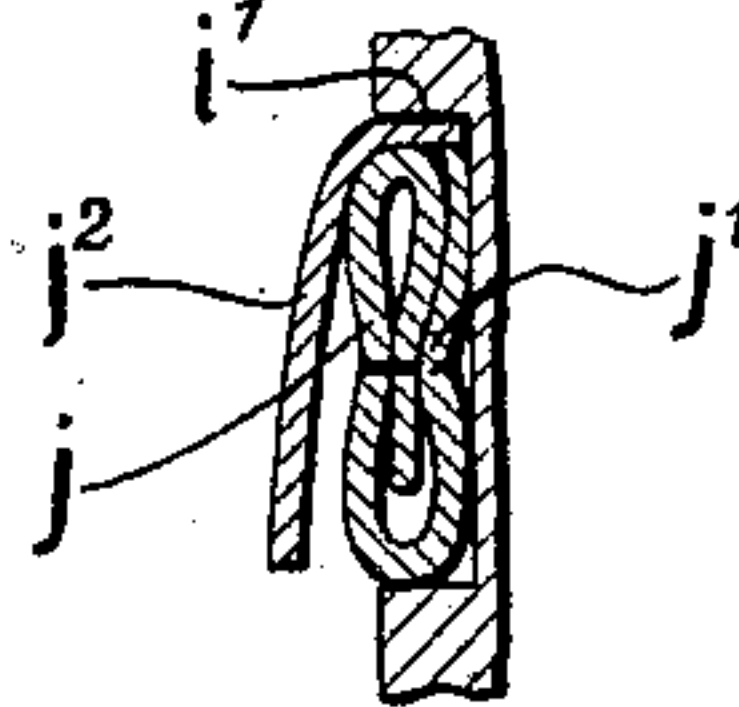


FIG. 10

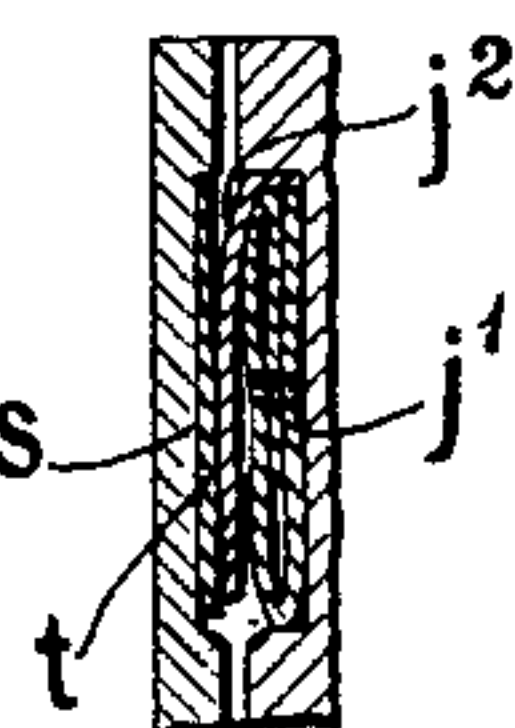


FIG. 6

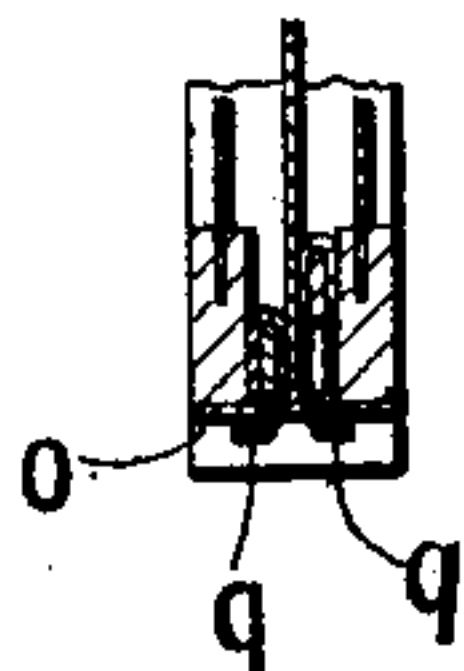
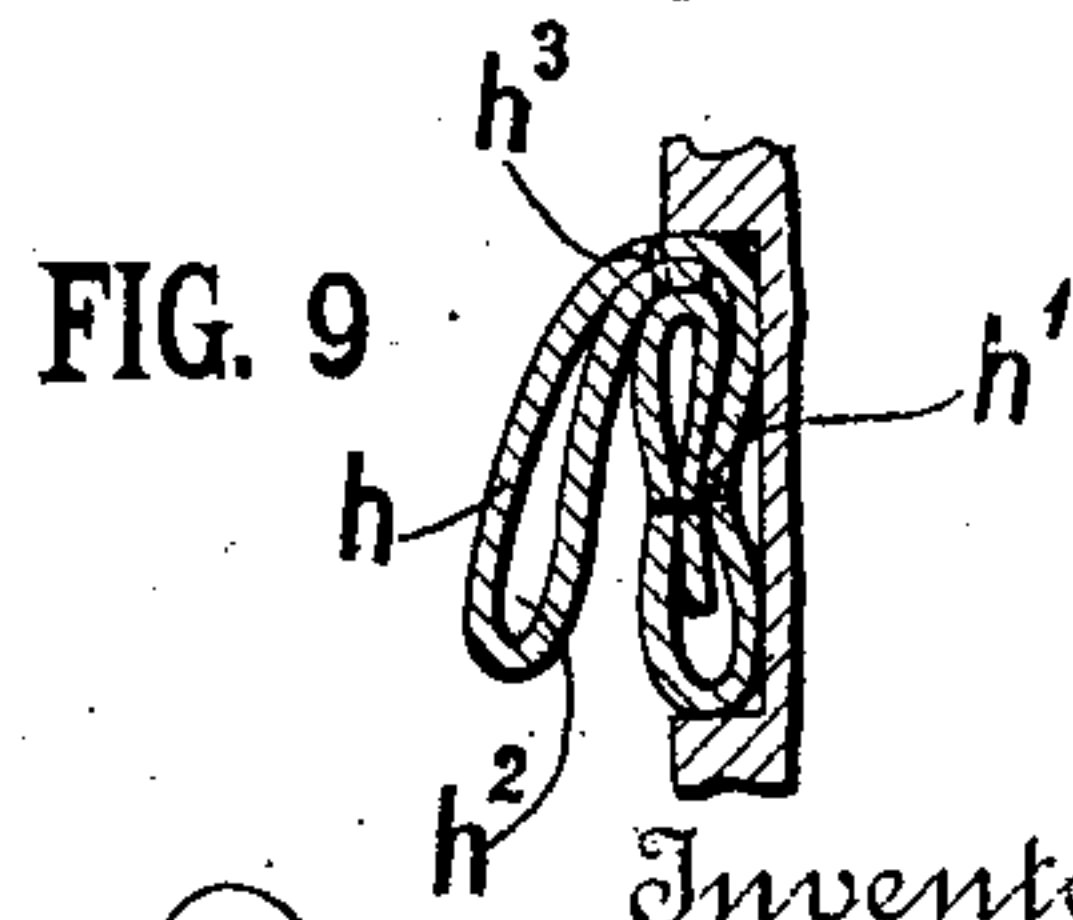


FIG. 9



Witnesses
 Near P. A. Doring.
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UNITED STATES PATENT OFFICE.

LOUIS BORSUM, OF PLAINFIELD, NEW JERSEY.

PHOTOGRAPHIC-PLATE HOLDER.

No. 916,911.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed February 28, 1907. Serial No. 359,880.

To all whom it may concern:

Be it known that I, LOUIS BORSUM, a citizen of the United States of America, residing in Plainfield, county of Union, State of New Jersey, have invented certain Improvements in Photographic-Plate Holders, of which the following is a specification.

This invention comprises an improved means of protecting the plate within the holder from light when the slide is drawn for exposure of the plate, and also novel means for locking the plate in its receptacle in the holder.

In the accompanying drawings, Figure 1 is an elevation; Fig. 2, a section parallel with the plane of the holder; Fig. 3, a transverse longitudinal section on the line 3, 3, of Fig. 1; Fig. 4, an elevation of the inner end of the holder; Fig. 5, a section similar to Fig. 2 of the inner end of the holder; Fig. 6, a transverse section through Fig. 5; Fig. 7 is a detail of Fig. 3, showing the slide removed; Figs. 8, 9 and 10 are respectively detailed sections showing modifications of the light excluding means for protecting the plate when the slide is drawn.

The frame *a* of the double holder shown is of ordinary or appropriate construction being provided with the usual central septum or partition *b*. The inner end piece *c* of the frame and the outer cap or frame piece *d* are provided as usual with seats or passages for the slides *e*, *e*, which also as usual fit in grooves in the side pieces *f*, *f*, of the frame. The outer end piece or cap *d* is formed with two transverse cavities of substantial width, of which the partition *g* forms the bottoms, that are closed or covered on their outer sides by the slides *e* when in position. This general construction is one that is common. To prevent light from entering the holder and striking the contained plate or plates, particularly when the slide is withdrawn, there is placed in each of these cavities a light excluding device having adequate resilience or elasticity. In Fig. 9 this device *h* is composed entirely of a strip of cloth doubled upon itself so that the thickness lying in the cavity is composed of three layers of fabrics united by a line of stitching *h'*. The free edge of the strip is then folded back upon itself as at *h*² the edge being secured by a line of stitching *h*³ thereby forming a free

flap. When the slide is inserted, the free flap composed of double thickness of the fabric and the three layers of fabric secured in the recess by cement or otherwise are compressed. When the slide is withdrawn there is sufficient reaction of the fabric due to its inherent resiliency to carry it into contact with the outer wall *i* of the cap or outer end piece of the holder.

Fig. 8 shows an elastic pad *j* folded so as to afford three layers of fabric seated in the recess and united by a line of stitching *j'*. The light excluding flap *j*² in this instance is composed of a separate piece of fabric cemented at its edge to the outer end wall *i'* of the chamber. This flap overlies the resilient pad *j* and the whole device behaves in the same way described in connection with Fig. 9. Of course, other modified arrangements incident to the employment of a fabric of suitable resiliency may be adopted.

In Figs. 3 and 7, the light excluding device is composed of a single strip *k* of felt co-acting with which is the overlying flap *k'* similar to that *j*², Fig. 8. The strip of felt may be of such width as that when forced into the recess, it will be crowded outwardly, its center portion being thrown outward so as to give a convex contour transversely of the strip.

Fabrics that experience has demonstrated to be practical and efficient for the purpose described are hair-cloth of good quality and all wool serge woven from hard twisted strands or yarns. Where the free flap is separate from the elastic pad, it may, of course, be of any appropriate light excluding cloth or material of sufficient flexibility and softness since its outward-pressure against the outer wall of the cavity is due to the reaction or resiliency of the pad. When felt is employed, it should be, to obtain the best and most lasting effects, all wool and of good quality. Fibers of wool have considerable elasticity and "life". Flat or sheet material other than fibrous or woven materials and of suitable resiliency may be used.

In all cases, I prefer to use double or opposed light excluding flaps between which the slide passes. This constitutes an important part of this invention. It is illustrated in Fig. 10 as associated with the arrangement shown in Fig. 8. The inner face

of the head of the cap d opposite the recess in which the resilient pad k , j or h is seated is recessed as at s . This recess is quite shallow and in it at or adjacent its outer edge is secured the edge of a flexible light-excluding flap t free at its inner edge as shown. This flap is preferably made of some closely woven flexible fabric such as black cloth of an appropriate character and when the slide is removed, the surfaces of the flap t and the opposed flap k' or j^2 or h come into contact and effectually exclude light. When the slide is inserted it passes between the two flaps s , j^2 and owing to the character of the surfaces and their width the sensitive plate is most effectually protected from light rays. This arrangement of additional flap may be used in conjunction with any of the flaps illustrated or with any other desirable arrangement or construction of flap.

To lock a plate in the receptacle in the holder, I have provided a laterally movable cross or locking bar occupying the extreme outer end of the plate receiving receptacle and move the bar laterally, to lock the plate, by means of a wedge actuated by a slide accessible at the inner end of the plate holder. The best manner now known to me of carrying out this part of the invention is shown in the drawing. At the inner end of each plate holding receptacle, the side bars f of the frame are recessed as at f' to receive and guide the transversely arranged locking bar m . This bar, as illustrated, is composed of a strip of metal bent upon itself so as to be gutter-like or U-shaped in cross section, its open face being turned toward the inner end of the plate holder. Within the groove or gutter so formed is provided an outwardly inclined wedge surface m' which may be conveniently provided by soldering or otherwise securing within the groove of the bar a piece of sheet metal m^2 of appropriate shape. On the inner end piece c of the frame is seated a counter sunk plate o provided with a slot p through which extends the bent over end q of a projection carried by short narrow sliding plate or bar q' working against the inner face of the end piece c and carrying a wedge piece q^2 cooperating with the inclined or wedge face m' of the locking bar. When the slide is moved to the position shown, for instance, in Fig. 5, the cooperating wedge faces m' , q^2 move the locking bar outwardly and crowd the outer end of the plate in the holder under the shoulder r at the outer end of the plate holding chamber. When the slide piece q is pressed in reverse direction, the locking bar may move inwardly or away from the edge of the plate so that the latter is released and may be readily removed from the holder.

There is one slide for each of the two

plate holding chambers shown in the drawing and as illustrated they are arranged by preference to work in opposite directions.

I claim:

1. A photographic plate holder provided with a slide and having a transverse cavity across the outer face of which the slide lies when in position, a resilient pad of woven material seated in the cavity and a flap connected with the pad whose free edge is nearest the inner end of the plate holder.
2. A photographic plate holder provided with a slide and having a transverse cavity across the outer face of which the slide lies when in position, and a resilient body and flap secured in the cavity and folded upon itself so as to afford a plurality of thicknesses of fabric forming a pad seated in the cavity and a flap whose free edge is nearest the inner end of the plate holder.
3. A photographic plate holder provided with a slide and having a transverse cavity across the outer face of which the slide lies when in position, and a resilient body seated in the cavity formed of woven material and having integral therewith a flap whose free edge is nearest the inner end of the plate holder.
4. A photographic plate holder provided with a slide and having a transverse cavity across the outer face of which the slide lies when in position, a resilient body composed of fibrous material and a flap cooperating therewith and whose free edge is nearest the inner end of the plate holder.
5. A photographic plate holder provided with a slide and having a transverse cavity across the outer face of which the slide lies when in position, and a light excluder seated in the cavity and comprising a resilient pad composed of flat resilient material folded to afford a plurality of layers without a projecting edge and a flexible light excluding flap having its outer edge secured adjacent the outer wall of the cavity.
6. A photographic plate holder provided with a slide and a transverse cavity disposed on both sides of the slot through which the slide passes and light excluding flaps arranged in such cavity respectively on opposite sides of the slide slot and whose free edges are nearest the inner end of the plate holder.
7. A photographic plate holder provided with a slide and having in the outer end or cap transverse recesses on each side of the slide slot and opposed light excluding devices mounted in the two recesses consisting of flat flexible material having the free ends nearest the inner end of the plate holder normally tending to approach each other.
8. A photographic plate holder, provided with a slide and having transverse recesses in the outer end or cap on opposite sides of the slide slot and light excluding flaps of

textile material mounted in the respective recesses and whose free ends normally tend to approach each other.

5 9. A photographic plate holder provided with a slide and having in the outer end or cap transverse cavities of considerable breadth on each side of the slide slot and flexible light excluding flaps secured in the respective recesses adjacent the outer sides

thereof free at their inner edges and having 10 their outer edges secured in the respective recesses.

In testimony whereof, I have hereunto subscribed my name.

LOUIS BORSUM.

Witnesses:

L. F. BROWNING,
E. F. WICKS.