(No Model.)

J. F. HEIN.

PLATE HOLDER.

No. 427,322. Patented May 6, 1890.

Fig: 1.

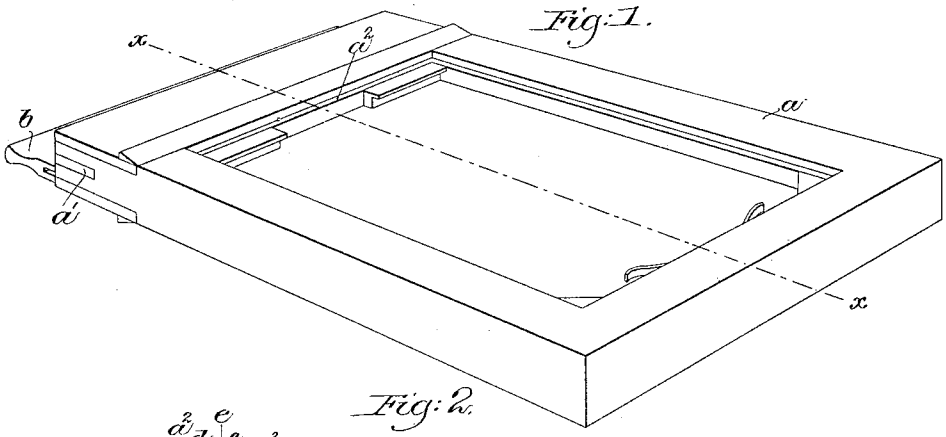


Fig: 2.

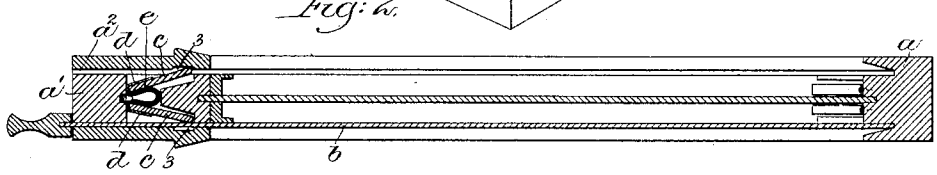


Fig: 4.

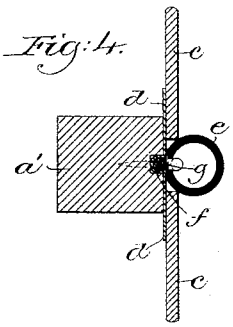


Fig: 5.

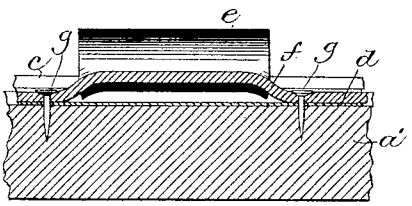
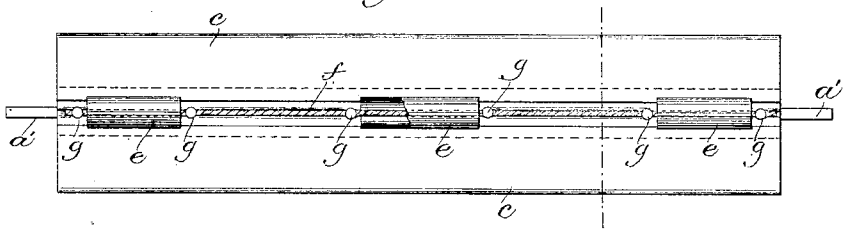


Fig: 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

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PLATE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 427,322, dated May 6, 1890.

Application filed April 27, 1889. Serial No. 308,790. (No model.)

To all whom it may concern:

Be it known that I, JENS F. HEIN, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Plate-Holders, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

Plate-holders now used in cameras as at present constructed lack efficient means by which to exclude the admission of light after the slide or slides have been removed. The entrance of light, or the "leaking in of light," as it is called, into the plate-holder after removing the slides blurs the negative, so that a clear, sharp, or well-defined picture cannot be taken.

My invention has for its object to so improve the construction of plate-holders as to prevent the entrance or admission of light through the throat of the box in which the slides move after withdrawing the slides. To do this I have provided the throat or open end of the plate-holder with a packing-section, the said packing-section in the embodiment of my invention herein contained being represented as composed of two flexible or yielding strips, preferably of wood, they having co-operating with them expanding springs, whereby the free edges of the said strips are normally pressed outwardly with a force sufficient to cause their edges to contact firmly with the inner walls of the throat in such manner as to exclude the passage of light through the slots in the throat after the slides have been withdrawn. The springs which I prefer to use and by which I have obtained the best results are made of short sections of rubber tubing.

Heretofore plate-holders have been provided at their throats with a packing composed of two practically-unyielding bars of wood hinged together along one edge, and normally kept separated at their free edges by a metallic spring of bow shape, the central portion of the spring being connected with the central portion of one of the said bars, the ends of the said spring acting against the other bar near its opposite ends; but the bars or wooden pieces referred to are too thick to yield, and they are therefore unable to bend and adapt their edges to the inner sides of the throat, especially when, as is very frequently the case, the wood composing the throat of the holder warps out of shape.

My invention consists, essentially, in the combination, with the throat of a plate-holder, of a packing-section composed, essentially, of flexible strips and co-operating expanding springs, as will be described.

Figure 1 in perspective shows a plate-holder embodying my invention, one of the slides being withdrawn. Fig. 2 is a section of the plate-holder shown in Fig. 1 in the line X, it embodying one form of my invention. Fig. 3 shows a packing-section illustrating one form of my invention. Fig. 4 is a cross-section showing the said packing-section as secured to the central bar of the throat; and Fig. 5 is an enlarged detail to be referred to, it being a partial longitudinal section through the center of the packing-section shown in Fig. 4.

The plate-holder *a* consists, essentially, of a four-sided frame having at one end a central bar *a'*, at each side of which are like slots a^2 to constitute a throat for the reception of the usual slides *b*, which are to be withdrawn when a picture is to be taken. The plate-holder herein shown is of usual shape and construction, with the exception that I have provided the throat (see Fig. 2) with cross-grooves, as 3, into which may enter the free edges of the strips *c* when the slides *b* are removed, the edges of the strips crossing the path of movement of the slide and cutting off direct access of light into the holder from its side or throat. Fig. 2 shows at its upper side one of the slides removed, and with the edge of the strip lying in the said groove 3. The strips *c* form part of a packing-section composed, essentially, of two strips *c*, preferably of wood, they being made sufficiently thin to yield or bend from end to end under the action of springs *e*, the latter causing the edges of the strips to bear firmly against the material at the inner side of the throat and within the said groove 3. The strips *c* are represented as being hinged together by a flexible hinge composed of fibrous material or of leather, as *d*, which may be glued or otherwise united to the strips. Between these

strips I have placed the springs *e*, they being made from sections of india-rubber of greater or less length, the said sections, as represented, receiving through them a binder, as *f*, preferably a piece of cord, which is secured to the cross-piece *a'*, preferably by means of nails or tacks, as *g*. These rubber springs are so interposed between the strips *c* as to cause the free edges of the strips lying in the groove *c* to contact so firmly with the inner sides of the throat as to exclude the admission of light through the throat of the plate-holder after the removal of the slides.

I claim—

1. The combination, with the throat of a plate-holder, of a packing-section composed, essentially, of flexible strips, as *c*, and a series of independent interposed tubular rubber springs, to operate substantially as described.

2. The combination, with the bar *a'* of the plate-holder, of the flexible strips *c*, hinged or joined together along one edge of the interposed tubular rubber springs, substantially as described.

3. The combination, with the bar *a'* of the plate-holder, of the flexible strips *c*, hinged or joined together along one edge of the interposed tubular rubber springs, and binders to unite the said spring to the said bar, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JENS F. HEIN.

Witnesses:
GEO. W. GREGORY,
B. DEWAR.