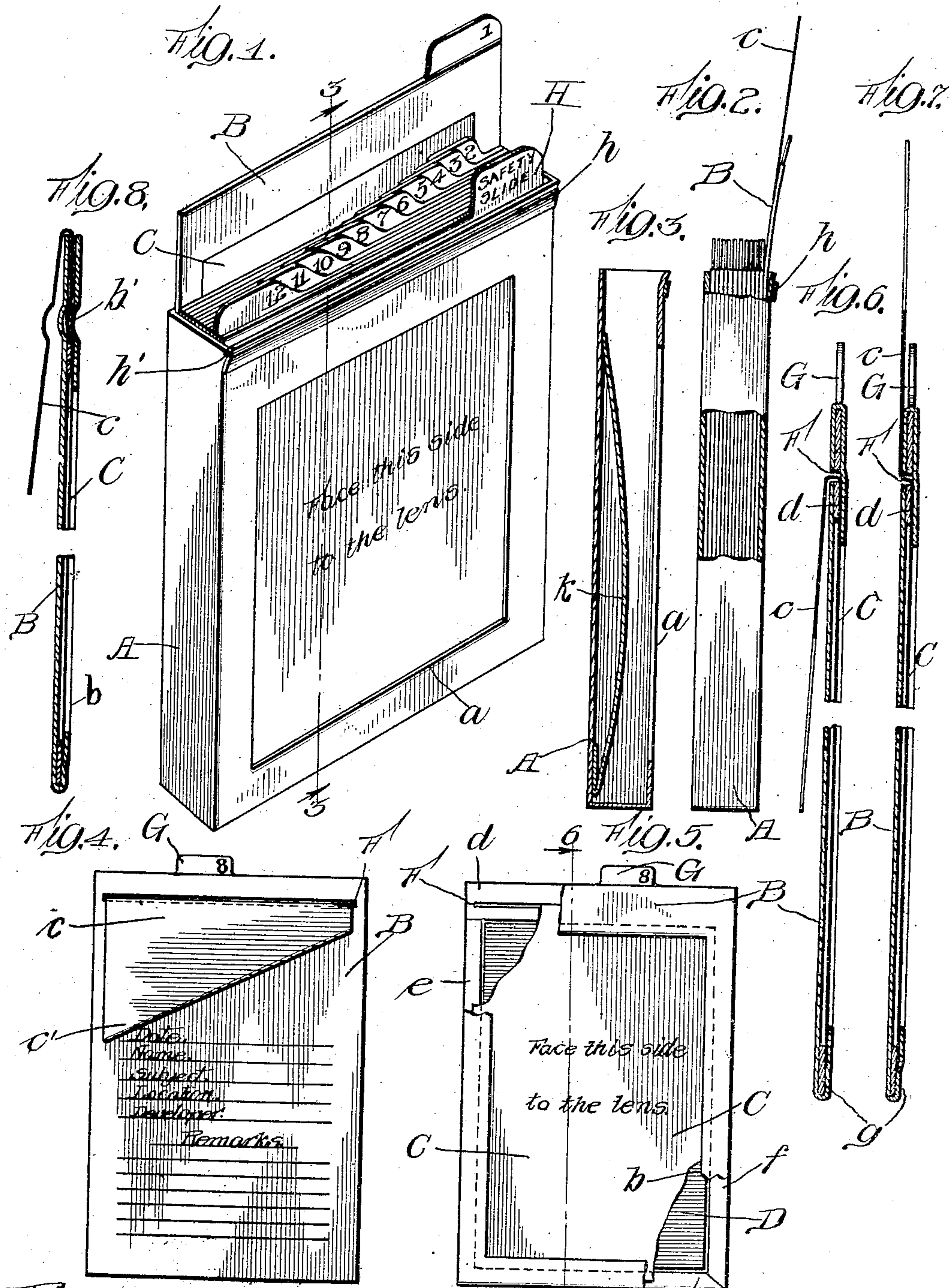


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F. WHITNEY.  
PHOTOGRAPHIC PLATE HOLDER.

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# UNITED STATES PATENT OFFICE.

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## PHOTOGRAPHIC-PLATE HOLDER.

No. 840,540.

Specification of Letters Patent.

Patented Jan. 8, 1907.

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*To all whom it may concern:*

Be it known that I, FRANK WHITNEY, a citizen of the United States, residing at Lakeside, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Photographic-Plate Holders, of which the following is a specification.

My invention relates to improvements in photographic-plate holders, using the term "plate" as applying generically to sensitized photographic films, whether mounted upon glass plates or upon thin films of celluloid or like material or upon other material. While in some respects my invention relates to such holders *per se*, it is especially available when embodied and utilized in packages constituting magazine holders for photographic plates and especially adapted for use in the form of original packages as the same are put up by the manufacturers.

One object of my invention is to provide an inexpensive, light, and reliable plate-holder.

Another object of my invention is to provide such a plate-holder in which single plates may be packed and sealed ready for market and ready for use.

Another object of my invention is to provide such a plate-holder which may not be readily refilled.

Another object of my invention is to provide a package of such plate-holders so constructed that while the plate contained in any one holder of the package may be photographically exposed at will the entire package may be safely exposed to daylight after any one or more of the plates contained therein has been exposed, thereby permitting of separate focusing and adjusting of the camera for each exposure.

Another object of my invention is to provide a package of such plate-containing holders which shall be interchangeable in a camera with a conventional plate-holder.

Another object of my invention is to provide a package of such plate-containing holders so constructed that the package shall provide a convenient and economical means for permanent filing of the developed plates for ready reference.

Another object of my invention is to provide a package of such plate-containing holders of such character that each holder may be utilized as a light-tight slide to close

the exposure-aperture of the holder behind it after the slide has been withdrawn from such rear holders.

These and such other objects as may hereinafter appear are attained by my invention, certain illustrative embodiments of which are shown in the accompanying drawings.

In one of the forms in which I have embodied my invention I provide a box or casing adapted to be inserted in an ordinary plate-holder camera in place of the usual plate-holder. This casing may conveniently consist of a carton formed of light-excluding pasteboard having an edge open for the insertion of a plurality of plate-holders and having also an exposing-aperture in one of its sides. Each of the holders of the pack consists of an envelop provided with an exposing-aperture and having a slide adapted to close said aperture and to be removed without the withdrawal of the holder from the carton. I also provide a slide of comparatively stiff opaque material which may, if needed, be inserted in front of the pack—*i. e.*, between the pack and the side of the carton having the exposing-aperture therein. Each of the holders may be provided with means projecting beyond the edge of the pack, whereby the holder may be grasped and withdrawn from the pack. The projecting means upon the holder I preferably form as a tab and mark said tab with an identifying character. The stiff opaque slide may be similarly provided with projecting means for grasping and withdrawing said slide.

In the drawings, Figure 1 is a perspective view of such a carton containing a pack consisting of twelve plate or film holders and a stiff slide. In this figure the holder at the back of the pack is shown as partly withdrawn. Fig. 2 is an elevational edge view of the same, but showing a holder as being inserted at the front of the box. In this view the edge of the box is partly broken away to expose to view the holders within said box. Fig. 3 is a vertical sectional view of the carton with the holders removed therefrom, the section being taken on the line 3 3 of Fig. 1 looking in the direction indicated by the arrows. Fig. 4 is an elevational rear view of one of the holders, on a reduced scale. Fig. 5 is a front elevational view of the same, on the same scale as Fig. 4. In this figure parts are



broken away to expose to view the plate or film within the holder. Fig. 6 is a vertical sectional view of the same, on an enlarged scale, the section being taken on the line 6 6 of Fig. 5 looking in the direction indicated by the arrows. Fig. 7 is a view similar to Fig. 6, but showing one of the parts in a different position, as will be explained hereinafter; and Fig. 8 is a vertical sectional view of a modified form of holder.

In the several figures of the drawings like reference characters indicate the same parts throughout.

In the drawings, A is the casing, consisting of a rectangular box open along one of its edges and provided with an exposing-aperture *a*. As hereinabove stated, this box is adapted to be applied to a camera in place of the ordinary plate-holder.

B is a plate or film holder consisting of an envelop of thin light material. This holder may be of any suitable material; but I prefer to construct it of tough light-excluding paper. Each of these envelops is formed with an exposing-aperture *b* and is provided with a thin and preferably flexible removable slide C, adapted to cover the exposing-aperture *b*. This slide C is preferably made of black or other light-excluding paper. Strips *d*, *e*, *f*, and *g* of cardboard or other material are arranged inside the envelop, around the edges of the latter, and serve as abutments to maintain the plate or film in proper position relative to the exposing-aperture, as clearly shown in Fig. 5, and preferably so as to permit the slide to overlap the plate, as shown. The strip *d* is shown as being of somewhat greater width than the strips *e*, *f*, and *g* and is provided with a long narrow opening or slit F. The thin slide C is provided with a flap *c*, which projects backwardly and outwardly through the slit F and a corresponding slit in the back of the envelop. So far as the simple purpose of excluding light is concerned, of course, the slide may extend out of the envelop constituting the plate-holder in any manner which will permit of the convenient removal of the slide. The tortuous exit for the slide which is shown in the drawings is merely one preferred embodiment comprising additional advantages which will hereinafter be fully pointed out. When the casing A is filled with these holders, as shown in Fig. 1, and before the plates have been exposed, these flaps *c* are turned downwardly, as shown in Figs. 4 and 6, and, if desired, may be sealed lightly or otherwise; but when a holder has been drawn from the pack this flap is turned up, as shown in Figs. 2 and 7, before the holder is reinserted at the front of the pack. The flap is thus left extending upwardly from the pack and may be readily grasped for withdrawing the slide and making the exposure. The outer edge of this flap is preferably inclined or otherwise protected, so as to

overcome the danger of its becoming caught in the exposing-aperture of the holder next behind it when the latter is drawn from the pack. The envelop B is provided with an extended tab G, which may bear upon one or both of its sides an identifying character, such as a number or letter. H indicates a slide of comparatively stiff material adapted to be inserted into the box A and when in position therein toward the front of said box to close the exposing-aperture *a* of said box and prevent the passage of light into the box through said opening. This slide is also provided with a tab which is marked for ready identification with suitable lettering. These tabs are preferably arranged in echelon, as shown in Fig. 1, so as to indicate at a glance which plates have been exposed.

In making up the pack as a package for market the slide H will prevent exposure of the plate in the outermost holder because of any accidental injury to the thin slide closing that plate.

In the preferred practice holder No. 1 will be removed from the back of the pack and inserted in front of the slide H, the flexible slide C will be removed from said holder, and the tab on said holder will appear at the forward left-hand corner of the pack and segregated from the tabs of the unexposed holders.

Referring now particularly to Fig. 1, in which the box or casing A is shown as containing a pack of holders and a stiff slide lettered "Safety-slide," the pack, as shown, consists of twelve envelops, each containing a film or plate and each provided with a projecting tab, these tabs being numbered consecutively from "1" to "12" and from the back to the front of the pack. Each tab bears the same number upon both of its sides, the tabs being offset, so that the numbers may be readily seen and so that the tab of the holder at the rear of the pack may be easily grasped for the purpose of withdrawing said holder.

*h* is a shadow-strip, which will make a light-tight joint when the carton A is inserted in a camera in place of an ordinary plate-holder in a familiar manner and will preferably be held in the desired position by the forwardly-projecting lip *h'* on the upper forward edge of the camera, which serves to provide a widened slot for the insertion of plate-holders (see Fig. 2) in the manner hereinabove pointed out.

When a plate or film holder embodying my invention is to be employed in an ordinary plate-holder camera, the carton A, with the holders and safety-slide in position therein, will be inserted into the camera in front of the ground-glass focusing-screen in place of the ordinary plate-holder. The holder bearing the figure "1" upon its tab—that is, the rearmost holder of the pack—will be drawn from the pack and reinserted in front



of the safety-slide, with the flap *c* projecting upwardly. In Fig. 2 this holder is shown as being so inserted. When it is desired to make the exposure, the slide *C* will be withdrawn and may be discarded. Thereupon plate-holder No. 2 is removed from the back of the camera and is inserted in front of plate-holder No. 1, from which the slide has been discarded, the plate therein having been exposed. Thereupon plate-holder No. 2 becomes a light-tight slide fitting snugly over the exposure-aperture of plate-holder No. 1, while at the same time plate-holder No. 2 is in position so that upon the withdrawal of the slide *C* from said plate-holder No. 2 that plate may be exposed. Thereupon the entire package may be removed from the camera and the camera may be focused before making the next exposure, or the package may be taken into a dark room and plate-holder No. 1 removed and the plate therein developed. Thus, if desired, the magazine may be operated so that one plate will always be ready for instantaneous exposure by the camera, or, if desired, the safety-slide may be reinserted in the front of the camera, so as to provide a light-tight slide covering the exposure-opening in the holder holding the last plate which has been exposed. When the plate or film in the last of the holders to be used has been exposed, the safety-slide will be reinserted in front of the pack, so as to close the exposing-aperture *a*.

Where the holders are made in the form of paper envelopes, especially where the paper is folded over at the edges of the holder, and the carton is made to snugly receive a number of holders, for which it is constructed, there will be sufficient inherent resiliency in the pack of holders to provide all of the pressure essential to provide a light-tight joint between the last plate which has been exposed and the holder or safety-slide which has been inserted in front thereof to protect such plate; but of course, if desired, the carton may be provided with any suitable special spring, such as the spring *k*. (Shown in Fig. 3.)

For the purpose of developing the plates or films any one of the series of holders may be drawn from the pack and the plate or film taken therefrom and developed, thus affording the advantage of permitting the development of any one or more of the plates or films, after the same have been exposed, without the necessity of waiting until all of the twelve plates have been exposed.

In manufacturing the individual holders they will preferably be formed of suitable paper which may be folded over, the plate being seated within the marginal strips *d*, *e*, *f*, and *g* and the flexible slide being arranged in place over the plate and so as to sufficiently overlap the marginal strips *d*, *e*, *f*, and *g* before the paper constituting the exposure side

of the holder is fastened in place. When this is done it will be found that even a thickness of paper is sufficient to form the marginal strips *e*, *f*, and *g*, so as to hold the film in position where a flexible slide may overlap said strips and extend well toward the edges of the holder. This arrangement, together with the inherent resiliency of the holder, will insure a light-tight joint between the slide *C* and the marginal portions of the holder which surround the exposure-aperture in the holder and will at the same time permit of the use of a flexible slide which shall extend out of the holder through a tortuous passage, as shown in Figs. 6, 7, and 8, thereby insuring a light-tight joint where the slide emerges from the holder and also permitting the manufacturer to put up his plates in these holders in such a manner as to protect his customer against the substitution of other plates, because while the flexible slide may be readily withdrawn after the holder has been assembled containing a plate it is for practical purposes impossible to thereafter replace said slide. Thus the manufacturer may stamp the package with his name and with the date of the plates, and it will be impossible to impose on the customer either by the substitution of old plates or of plates of a different make; also, the manufacturer will be enabled to protect his own trade by making it necessary for customers who wish to utilize such holders to purchase his plates, because it will be impossible for the purchaser of one package of plates to thereafter use the package of holders for other plates after the original plates have been exposed.

For constituting a permanent file the back of the carton may be provided with a form for making suitable entries opposite numbers corresponding to the numbers on the tabs of the individual holders, and each developed plate may be reinserted in the individual holder, inasmuch as it is of course unnecessary to reinsert the slides after the plates have been developed, and the back of the tab on the safety-slide or any suitable part of the carton, if preferred, may be marked with any suitable index character, so that if the tab be marked with the letter "A" and the index in which the record of the plates is kept indicates that a given negative may be found in "A-9" it is a simple matter to discover carton "A" and holder "9." In other words, the packages, when used as permanent files constitute a record analogous to a card-index file.

While I have shown the casing *A* as unattached to the camera and have described said casing as a box adapted to be applied to a camera or removed from the same, it is of course within the scope and spirit of my invention to form this casing as an integral part of the camera. There is, however, an important advantage incident to the use of an in-



sertible and removable casing—namely, that this casing in the form of a carton may be sent out from the factory with the filled holders properly arranged therein ready for use.

5 This carton when used with an ordinary plate-holder camera affords all the advantages incident to the use of plates in the ordinary holder, such as permitting focusing upon the ground-glass focusing-screen. At  
10 the same time with a given bulk and weight a much greater number of exposures is afforded with this arrangement, especially if films be used, than can be had with the older forms of individual plate-holder.

15 The carton A being light-tight and the safety-slide H being adapted to completely close the exposing-aperture *a* against the admission of actinic light, the device as a whole may be transported and handled without  
20 danger of the plates or films being affected and may constitute an article of manufacture and sale.

It may sometimes be desired to use the carton A with a number of holders less than  
25 the full number which said carton is designed to hold. It is therefore desirable that some means be provided for thrusting the holders against the front of the casing A. For this purpose I provide within the casing A a simple form of spring consisting of a strip of  
30 press-board or similar material *k*, secured at one end to the back of the casing A and curved so as to form a semi-elliptic spring.

If desired, the flap *c* of the flexible slide C  
35 may be sealed, so as to prevent accidental removal of the slide C and consequent exposure of the film or plate to the light. Preferably the corner *c'* of the flap will be secured to the back of the holder. After the holder has  
40 been drawn from the pack and before said holder is reinserted at the front of the pack this corner will be loosened, so that the flap may be turned up, as hereinbefore described.

In Fig. 8 I have illustrated another manner  
45 in which the flexible slide C may be mounted in the holder B so as to be readily withdrawn, but not readily returned. To attain this end, I provide a transverse groove or depression  
50 *b'* in the holder.

While, as above described, my invention is adapted to a variety of uses, it is especially  
55 useful as a magazine package of cut films, which can be cheaply put up in this form for market. My invention provides a package in which each film or plate is separately inclosed in a light-tight envelop, so that it is not subjected to any accidents of fogging, scratching, accidental exposure, deposits of  
60 dust, or other occurrences which so commonly happen to photographic plates prior to exposure, and often without detection, and it affords a ready means whereby the manufacturer and the user may both be protected as to the age, character, and make of plate,  
65 and above all it provides a magazine package

of this character which can be made absolutely interchangeable with any standard make of plate-holder and by means of which the camera may be focused on the ground-glass screen separately before each exposure,  
70 so that each plate may be given individual treatment, and the entire package may be safely removed in daylight at any time so as to permit the development of any one plate in the package.

I claim—

1. A plate-holder consisting of a paper envelop corrugated to provide an indirect  
80 slideway, in combination with a plate immovably inclosed in said envelop and a flexible slide adapted to cover said plate and to be withdrawn from said envelop through said indirect slideway.

2. A plate-holder consisting of an envelop having an exposure-opening and provided on  
85 its interior with means for centering a photographic plate with reference to the exposure-opening, said envelop being provided with a withdrawable slide arranged to overlap said centering means.

3. A plate-holder consisting of a flexible envelop having an exposure-opening and  
90 provided on its interior with means for centering a photographic plate with reference to the exposure-opening, said holder being also provided with a withdrawable flexible slide adapted to fit snugly within said envelop and so as to overlap said centering means.

4. A plate-holder, consisting of a paper envelop provided on its interior with marginal  
100 strips arranged to position a photographic plate in said holder, said envelop being also provided with an exposure-opening and with a withdrawable limp slide adapted to close said opening and to overlap said marginal  
105 strips.

5. The combination with a plate-holder provided with an exposure-opening in one side and with a slideway in the opposite side  
110 thereof, of a flexible slide adapted to close said exposure-opening and arranged to be withdrawn through said slideway.

6. The combination with a plate-holder provided with an exposure-opening in one side thereof, of a slide arranged to close  
115 said opening, said slide extending through an opening in the back of said holder and being then folded downwardly over the back of said holder.

7. The combination with a plate-holder  
120 provided with an exposure-opening in one side thereof, of a slide arranged to close said opening, said slide extending through an opening in the back of said holder and being then folded downwardly over the back of said  
125 holder, said folded-over end of said slide being tapered.

8. A package comprising a photographic plate inclosed within a light-tight envelop,  
130 said envelop being provided with an ex-



posure-opening and with a withdrawable, flexible slide within said envelop, sealed and arranged to close said opening.

9. A package comprising a photographic plate inclosed within a light-tight envelop, said envelop being provided with an exposure-opening and with a withdrawable, flexible slide arranged to close said opening, said slide being provided with a projecting end which is secured to said envelop.

10. A package comprising a photographic plate immovably inclosed within a flexible light-tight envelop, said envelop being provided with an exposure-opening and with an indirect slideway, and a sliding cover arranged to close said exposure-opening and adapted to be withdrawn through said slide-way.

11. The combination with a plate-holder provided with an exposure-opening in one side thereof, of a slide arranged to close said opening, said slide extending through an opening in the back of said holder.

12. A package comprising a photographic plate inclosed within a light-tight envelop, said envelop being provided with an exposure-opening in one side thereof and with a slideway in the opposite side thereof, and a flexible slide arranged to close said exposure-opening, and extending through said slideway in the back of said envelop.

13. A package, comprising a carton open at one edge and provided on one side with an exposure-opening, and a plurality of light-tight envelops, each envelop inclosing a photographic plate and being provided with an exposure-opening adapted to register with the exposure-opening in said carton, each envelop being also provided with a withdrawable and non-returnable slide, said package being also provided with means for holding said envelops in yielding engagement with each other and with the side of said carton.

14. A magazine plate-holder, comprising a carton adapted to be interchanged in a camera with a conventional plate-holder and provided on one face with an exposure-aperture, and a plurality of flexible plate-holders contained therein, each plate-holder containing a flexible photographic plate and being provided with an exposure-aperture adapted to register with the exposure-aperture in said carton and being also provided with a withdrawable slide adapted to close said exposure-apertures, said holders being arranged in said carton in snug contact with each other, so that each holder may serve to form a light-tight closure for the exposure-aperture in the holder behind it.

15. A pack of resilient plate-holders each having an exposing-aperture, said holders being arranged in the pack front to back, so that the exposing-aperture of one holder is closed by the unapertured side of the next

holder, a relatively stiff cover for the face of said pack, said holders being arranged to be held in snug contact with each other by their own resiliency.

16. A magazine plate-holder, comprising a carton adapted to be interchanged in a camera with a conventional plate-holder and provided in one side with an exposure-aperture, and a plurality of individual plate-holders contained in said carton, each individual plate-holder being provided with an exposure-aperture adapted to register with the exposure-aperture in said carton and provided also with a removable slide closing said aperture, each holder being provided with an exposed projecting tab bearing an index character.

17. A magazine plate-holder, comprising a casing having an exposing-aperture, and a series of resilient, light-tight holders and a sliding cover adapted to fit snugly into said casing.

18. A magazine plate-holder, comprising a casing having an exposing-aperture, a series of holders adapted to be inserted into said casing with one edge thereof exposed, each of said holders having an exposing-aperture adapted to register with the exposing-aperture of the casing and each of said holders being provided with a removable slide adapted to close said exposing-aperture, each holder being adapted to serve to close the exposure-aperture of the casing, and means for holding said holders in yielding contact with one another.

19. A magazine plate-holder, comprising a casing open along one edge and provided with an exposing-aperture in one of its sides, and a plurality of holders each having an exposing-aperture and provided with a removable slide adapted to close said aperture, said holders being adapted to be inserted into the open edge of the casing and each being provided with means projecting from said casing, whereby any one of said holders may be selected and withdrawn from said casing.

20. In a magazine plate-holder, the combination of a casing having an exposing-aperture, said casing being open along one of its edges, a plurality of envelops within said casing each provided with means extending from the open edge of said casing, said means adapted to bear a visible identifying character and to be grasped for manipulation of said envelop, and a comparatively stiff, light-excluding slide within said casing and provided with an extending tab.

21. The combination of a casing having an exposing-aperture, and a pack of envelops in said casing each containing a photo-sensitized plate, each of said envelops having an exposing-aperture and provided with an extending tab, said casing adapted to permit visible transposing of the envelops by the



withdrawal of one of said envelopes from the pack and the insertion of the same at the front of the pack.

22. The combination of a casing having an exposing-aperture, a pack of holders within said casing, each of said holders having an exposing-aperture and provided with a removable, flexible, light-excluding slide adapted to cover said aperture, each of said holders having an exposed projecting index-tab, said tabs so disposed as to offset one another, and a relatively stiff, light-excluding slide adapted to be inserted into said casing in front of the holders.

23. A pack, consisting of a series of plate-holders, each of said holders being provided with a tab, said tabs being visible and so arranged as to offset one another, whereby any one of the tabs may be readily seen and grasped for the purpose of removing a holder from the pack.

24. A pack of plate-holders, each of said holders having an exposing-aperture and being provided with a visible, projecting tab bearing an identifying character, said tabs offsetting one another so that the identifying characters are simultaneously exposed.

25. A plate-holder consisting of a paper envelop provided with an indirect slideway in combination with a plate immovably inclosed in said envelop and a flexible slide adapted to cover said plate and to be withdrawn from said envelop through said indirect slideway.

26. A pack, comprising a series of indexed holders, each of said holders having an exposing-aperture and provided with a removable, flexible slide therefor, and a relatively stiff slide having a tab thereon.

27. The combination of a magazine plate-holder comprising a casing having an exposing-aperture and a series of resilient light-tight holders therein with a resilient plate in each of said holders.

28. A plate-holder, consisting of an envelop having an exposing-aperture, and a flexible, light-excluding slide adapted to close said aperture, said envelop being provided with a slit extending across its back, through which the slide may be withdrawn.

29. A plate-holder, consisting of an envelop having an exposing-aperture and means for maintaining immovably a single plate in proper position relative to said exposing-aperture, an indirect opening leading to the interior of said envelop, and a light-excluding slide adapted to cover the exposing-aperture, said slide being flexible so as to permit its being withdrawn through said indirect opening.

30. A plate-holder, comprising an envelop having an exposing-aperture, a projecting tab upon said envelop, said tab bearing an identifying character, and a removable, flexible, light-excluding slide adapted to cover said exposing-aperture, said slide having a flap issuing from said envelop.

31. A plate-holder, consisting of an envelop provided with an exposure-opening and a dark slide for same, and a projecting tab upon said envelop, said envelop having a form printed upon its back.

32. A holder for a sensitized plate provided with an opening for the withdrawal, of a dark slide, said opening being arranged so as to form a passage at right angles to the plane of the plate, and a light-excluding slide for said holder, said slide being flexible so that it may be withdrawn through said opening.

33. A magazine plate-holder comprising an open-top casing, a plurality of separately-removable plate-holders contained therein, plate-holders being arranged in said casing in sufficiently snug contact with each other and one side of the casing to exclude light from between the separate holders.

34. A pack, comprising a series of indexed photographic plate-holders, each of said holders having an exposing-aperture and provided with a removable, flexible slide adapted to cover said aperture.

35. An indexed package of light-excluding envelopes, each containing a sensitized plate and having an exposure-opening protected by a flexible covering sliding within said envelop, and means extending from the envelop for the manipulation of said covering.

36. A magazine plate-holder comprising an open-top casing, a plurality of light-tight plate-holders, each provided with an exposure-opening and with a removable slide closing said opening, said holders being arranged in said casing in sufficiently snug contact with each other and with the end of the casing to exclude light from between the separate holders, when the slides are removed.

37. A magazine plate-holder comprising an outer casing having an exposing-aperture and another opening, a series of light-tight holders adapted to be inserted into said opening, each of said holders being provided with an exposing-aperture and a dark slide for same, each of said holders having a printed form thereon.

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