Oct. 13, 1925. 1,557,085

F. PILLER

DAYLIGHT PLATE CHANGER

Filed Oct. 10, 1923

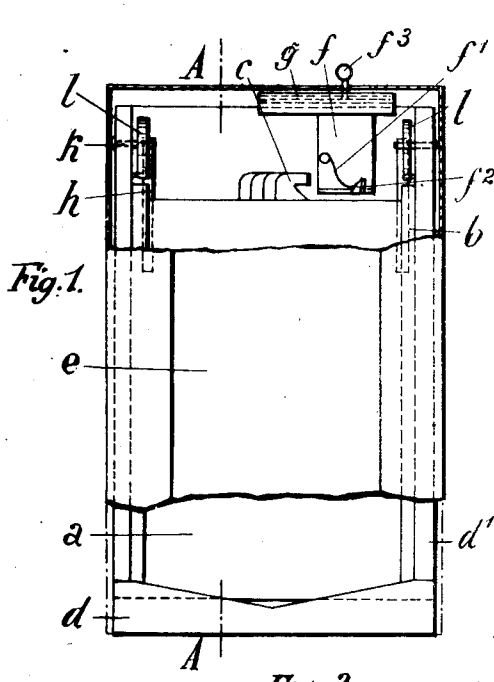


Fig. 1.

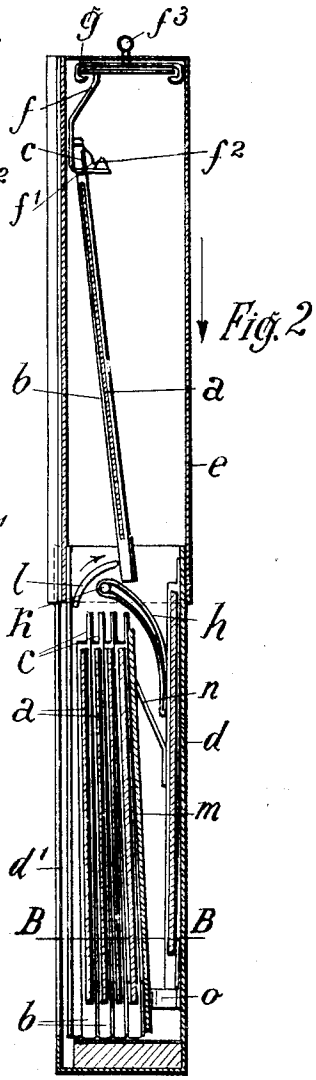


Fig. 2

Fig. 3

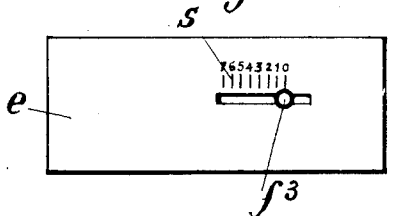
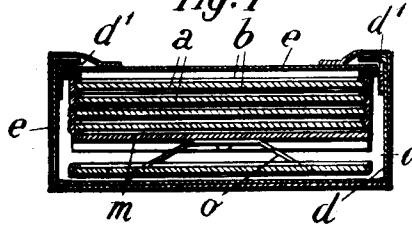


Fig. 4



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Patented Oct. 13, 1925. 1,557,085

UNITED STATES PATENT OFFICE.

FRANZ PILLER, OF MUNICH, GERMANY.

DAYLIGHT PLATE CHANGER.

Application filed October 10, 1923. Serial No. 667,624.

To all whom it may concern:

Be it known that I, FRANZ PILLER, a citizen of the German Republic, residing at Munich, Germany, have invented certain new and useful Improvements in a Daylight Plate Changer (for which I have filed applications in Germany on the 23rd of October, 1922, and on the 19th of Febr., '23), of which the following is a specification.

This invention relates to a daylight plate or film changer in which the plates mounted in pile are coupled with the protecting case and changed by the pulling out and pushing in of this case. A device of this type has already become known in which the plate (or film) to be changed drops, after the pulling out of the changer case, by its own weight upon the bottom of the camera. The next following plate drops at the changing upon the preceding plate and behind the pile of plates which have not yet been exposed and so on. For changing the camera must be brought into horizontal position. In order to permit of the changing to be effected in any position the plate pulled up is, according to the invention, pressed by springs over guide bars which direct the plate to the rear when the changer case is being pushed in.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the understanding that while on the drawing one embodiment of the invention is disclosed, the invention is not confined to any strict conformity with the showing of the drawings, but may be embodied in any manner which does not make a material departure from the salient features of the invention.

In the drawing:

Figure 1 shows the plate holder closed, partly in section to expose the interior. Figure 2 is a longitudinal section on line A—A, with the parts in drawn-apart position. Figure 3 is a top view of the box, and Figure 4 is a cross-section on line B—B of Figure 2.

The daylight plate changer consists of the cardboard case *d* for the plate pack and of the protecting case *e* adapted to be pushed over the case *d* and opaquely guided in a double fold d^1 of the cardboard case *d*. In the protecting case *e* a holder *f* of angular cross section is arranged which is designed to catch the hooks *c* of the plates and which by means of a handle f^3 may be adjusted in a guide *g*. A scale *s* (Fig. 3) is marked on the outer surface of the end plate of the daylight plate changer. The horizontal arm of the angular holder *f* is on the path along which the hooks *c* of the plates move.

On the two side walls of the changer case *d* curved guide bars *h* are pivotally mounted on abutment pins *k*, and above the guide bars elastic rearwardly directed tongues *l* are fixed. The back plate *m* has longitudinal blade springs *n* and a transverse blade spring *o* at the lower end.

The manipulation and operation of the daylight plate changer is as follows:—

If the handle f^3 of the angular holder *f* stands at zero no plate can be changed. For the changing of the first plate which has been exposed, the holder *f* must be displaced so that it grips under the hook of the front plate. When the protecting case *e* is pulled up the plate, the hook *c* of which has been gripped by the holder *f*, is pulled up together with its frame *b* and the elastic tongues *l* remain stretched until the plate has been moved beyond the abutment pins *k*. As soon as the lower end of the plate is free the plate is pushed back by the tongues *l* (Fig. 2) so that it hangs above the guide bars *h*. When the changer case *e* is now pushed back over the cardboard case *d* the plate on the holder *f* slides along the back of the guide bars *h* so that it gets behind the pack of unexposed plates. The angular holder *f* pushes upon the plate held by it until the hook *c* of the plate slips off said holder which is now ready to grip the next following plate. The plate which has been stored behind the plate pack rests upon the transverse blade spring *o* so that it slightly projects over the upper edge of the plates in the pack. This is important, as the next following plate is thus prevented from getting on top of the plate which has just been stored, the freshly exposed plate being inserted in front of the preceding plate.

The lateral edges of the box *d* present a groove d^1 for guiding the cover plate and to close the same to the admission of light. It will be noted that the plate lifting member, or engaging member *f*, which operates in the guide-way *g* through the proper manip-

ulation of knob f^3, is provided with a laterally extending lower end portion carrying an upstanding nose f^2. This nose extends into the path of staggered hooks c. On changing the first plate or film by drawing out the box e, the hook c will pass over the nose f^2 and be retained on said member f by the spring f^1. Upon shoving back the box 3 the hook c at first is still retained by the spring f^1, later to slide along the beveled nose f^2 and then be freed from said member f whereby the plate can slide down on the members h as heretofore set forth.

I claim:—

1. A daylight changer for plates or films comprising in combination a cardboard case for the plate pack having double guide folds, a protecting case guided in said double folds, a plate holder of angular cross section adjustably mounted in the upper end of the protecting case and designed to engage with the front plate in the pack when said protecting case is in the lowered position, curved blade springs on the side walls of the cardboard case for pushing the front plate of the pack backward when the same has been lifted by the holder, and rearwardly projecting bars pivotally mounted on the side walls of the cardboard case and designed to guide the plate lifted by the holder to the rear part of the case when the protecting case is being pushed down over the cardboard case.

2. A daylight changer for plates or films comprising in combination a cardboard case for the plate pack having double guide folds, a protecting case guided in said double folds, a plate holder of angular cross section adjustably mounted in the upper end of the protecting case and designed to engage with the front plate in the pack when said protecting case is in the lowered position, curved blade springs on the side walls of the cardboard case for pushing the front plate of the pack backward when the same has been lifted by the holder, and rearwardly projecting bars pivotally mounted on the side walls of the cardboard case and designed to guide the plate lifted by the holder to the rear part of the case when the protecting case is being pushed down over the cardboard case, and a transverse blade spring in the rear part of the cardboard case at a convenient distance above the bottom end designed to serve as support for the exposed plate.

3. A daylight changer for plates or films comprising in combination a cardboard case for the plate pack having double guide folds, a protecting case guided in said double folds, a plate holder of angular cross section adjustably mounted in the upper end of the protecting case and designed to engage with the front plate in the pack when said protecting case is in the lowered position, curved blade springs on the side walls of the cardboard case for pushing the front plate of the pack backward when the same has been lifted by the holder, and rearwardly projecting bars pivotally mounted on the side walls of the cardboard case and designed to guide the plate lifted by the holder to the rear part of the case when the protecting case is being pushed down over the cardboard case, a slide on which the plate holder is fixed movably mounted in the top of the protecting case which has a slit, a scale marked on the top of the case near the slit and a handle of said slide projecting through said slit.

In testimony whereof I affix my signature.

FRANZ PILLER.