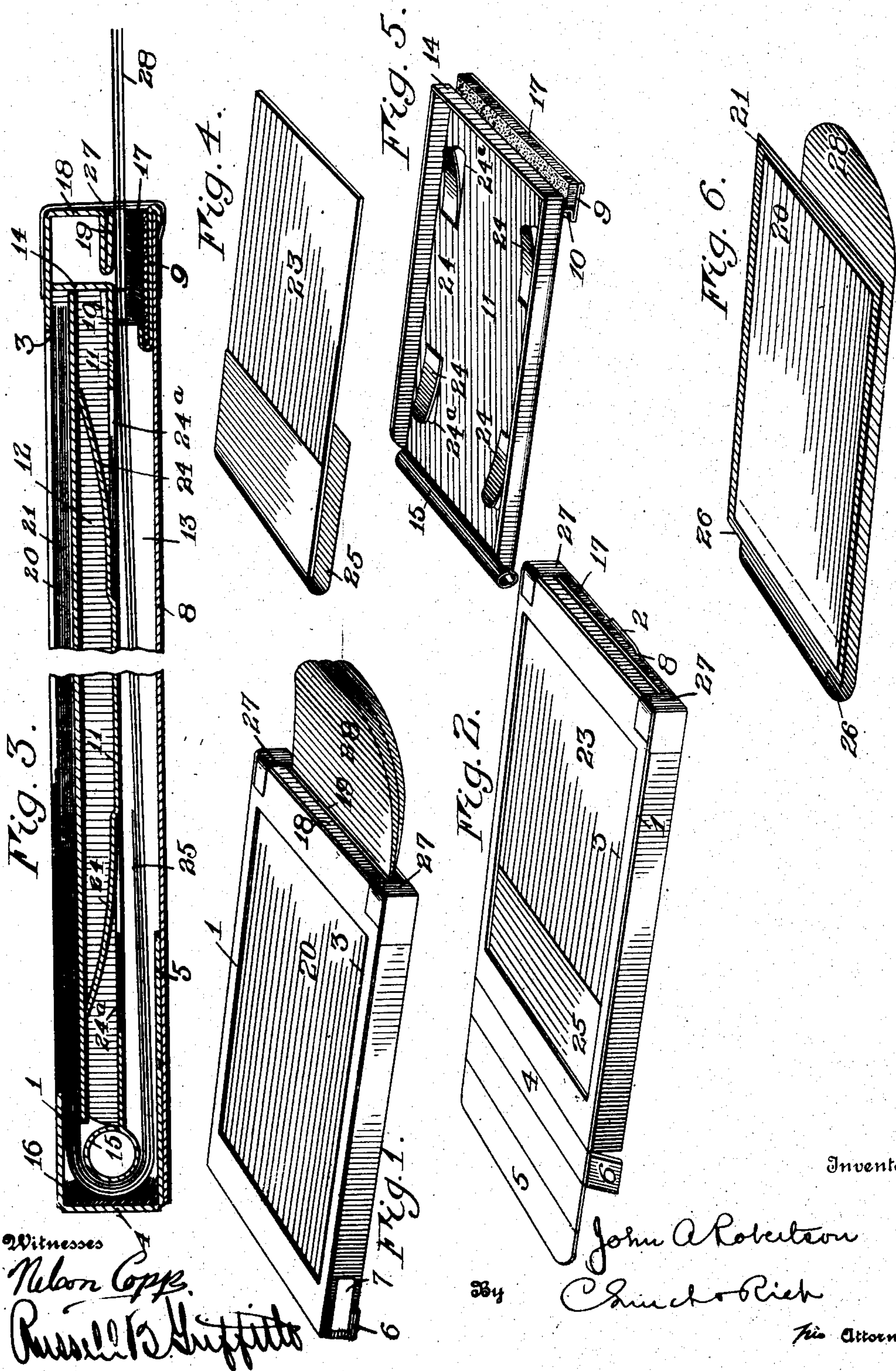


J. A. ROBERTSON.  
 PHOTOGRAPHIC FILM PACK.  
 APPLICATION FILED OCT. 2, 1907.

917,136.

Patented Apr. 6, 1909.





# UNITED STATES PATENT OFFICE.

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## PHOTOGRAPHIC-FILM PACK.

No. 917,136.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed October 2, 1907. Serial No. 395,484.

*To all whom it may concern:*

Be it known that I, JOHN A. ROBERTSON, of Rochester, Monroe county, and State of New York, have invented certain new and useful Improvements in Photographic-Film Packs; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to photography and particularly to the use in photographic cameras of flat, flexible films as distinguished from roll film, and it has for its object to provide an improved form of light tight container for such films, forming a package therewith which may be safely handled during the successive exposures without recourse to the dark room, my improvements being directed particularly to the light excluding devices and to the means for automatically bringing the successive films into the proper focal plane.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a perspective view of a film pack constructed in accordance with my invention and ready for use. Fig. 2 is a similar view thereof after the exposures have been made and showing the manner in which the pack is opened. Fig. 3 is a longitudinal central section on Fig. 1. Fig. 4 is a detail perspective of the follower board. Fig. 5 is a similar view of the partition member which separates the exposed from the unexposed films and Fig. 6 is a similar view of one of the films with its backing and manipulating device.

Similar reference numerals in the several figures indicate similar parts.

The manner in which a pack of this character is inserted in the camera and its general uses will not be described herein as they are well known in the art.

The pack illustrated as an embodiment of my invention comprises a flat casing 1, preferably formed of a single piece of opaque material such as heavy paper having its edges joined at 2 upon what may be termed its rear wall 3, and provided upon its oppo-

site broad face with an exposure opening 3 in the front wall. An extension 4 thereon forms one end of the package secured by a flap 5 extending within the casing and by flaps 6 on the outside and frangible plasters 60 or gummed strips 7.

To the edge of the rear wall 8 at its opposite end is preferably secured, as by crimping, a metal plate 9 having projecting ears 10 at either extremity which are attached to and support one end of a partition member 11 arranged within the casing and dividing it into an exposure chamber 12 adjacent the opening 3 and a dark chamber 13. The exposure chamber is sealed by a spacing flange 14 at the attached end of the partition, while at the opposite end the latter is provided with a rounded or rolled portion 15 adjacent the end 4 of the receptacle. This end wall is covered on its inner side with a strip of pile fabric 16 or similar yielding material, the hairs or fibers of which engage the roll 15 and form a light seal, at the same time preserving a communicating passage between the two chambers. The plate 9 at the opposite end is also fitted with a similar seal 17 to prevent an opening occurring between the ears 10. In opposition thereto, I arrange an additional light excluding device which I prefer to form from an extension 18 of the material of the casing which also constitutes the end wall of the latter, being also secured by pasters 27. The extremity or edge of this extension I crease or fold upon itself substantially in the manner shown to form an expanding closure 19 which, by reason of the slight elasticity of the material, yields under contact.

The films 20 in a plurality of separate sheets, are arranged in the exposure chamber 12 and each is mounted upon a backing 21 (Fig. 6) continuous with a manipulating tab 28 which passes over the end 15 of the partition, through the chamber 13 and between the ears 10 on the plate 9 and thence exteriorly, together with an opaque cover sheet which normally closes the exposure opening and protects the films before their use. Between the films and the partition is provided a follower board 23 which holds the films compact and presents the outer one in the proper focal plane for exposure, that is, coincident with the front wall adjacent the opening, through the yielding pressure of a plurality of resilient arms 24. These



latter I prefer to provide by striking up portions of the partition member as clearly shown in Figs. 3 and 5, for which reason the latter should be formed of an elastic material, such as thin sheet steel, which material will also contribute to strengthen or stiffen the pack as a whole. This construction at the same time provides an opening 24<sup>a</sup> in rear of each arm, and as the latter preferably extend in a slight curve to individually contact the follower at but a single point, these curved portions are accommodated within the openings when the arms are at a maximum compression induced by filling the chamber 12 to its full capacity. The free movement thus provided for affords greater resiliency than would result if the arms were allowed to be flattened against the partition, besides giving greater capacity to the exposure chamber because the springs are forced within or through the openings 24<sup>a</sup> when the film has completely filled the said chamber.

At one end of the follower board is attached an opaque sheet 25, preferably of thin, smooth, black paper, which is passed over the roll 15 between the latter and the manipulating tabs 21, one of the functions of which sheet is to form a covering upon the roll offering less friction to the passage of the sheets.

In operation, the protective sheet normally covering the exposure opening is first withdrawn by means of its projecting tab, passing over the end 15 and through the dark chamber 13 which presents the first film for exposure. After exposure this film is withdrawn in the same manner through the seal 16 to the dark chamber, its backing being provided with shoulders 26 which engage the ears 10 on the plate 9 when it has reached its final position, at which time the tab is brought against the edge of the said plate and torn off. During these operations the seal 19 is always closely pressed against the surface of the tab, as well as the seal 17, as will be understood from the previous description. The films are all successively withdrawn in this manner, each in turn exposing another until all occupy the chamber 13 when the pack is ready to be opened for developing, the sheet 25 on the follower board forming a smooth, even covering for the rolled end 15 of the partition to prevent the last film from catching as it goes over. It will be noted that when the chamber 12 is sufficiently full to cause the arms 24 to project slightly through the openings into the chamber 13, the latter is empty and as it is filled the contents of the other are diminished so that the arms return and in no way interfere with the capacity of either chamber. Their range of movement is thereby enlarged without increasing the size of the casing which is desirable in a device such as

this where all parts must be included within the smallest possible compass. The films are presented for exposure in a flat and firm position it being desirable to provide four arms as shown, to move the follower uniformly and attain this end.

On the whole, the device described is neat and compact and may be manufactured at a low cost to perform efficient service which is a valuable consideration, as the pack is usually destroyed when the contents are ready for development.

I claim as my invention:

1. The combination with a casing, of a partition member composed of elastic material arranged therein forming exposure and dark chambers respectively within the casing, a follower arranged within one of said chambers and a compression member normally engaging the follower and comprising a resilient arm struck up from the material of the partition member to form an opening in rear thereof, said arm being movable through the opening from one chamber to the other.

2. The combination with a casing provided with a film chamber and with an opening leading from said chamber to the exterior of the casing and a film manipulating member extending through the opening, of a light excluding device arranged adjacent the opening and comprising a tongue of sheet material creased or folded upon itself to form an expanding closure within the opening in yielding contact with the surface of the film manipulating member.

3. A film pack comprising a casing of sheet material provided with a film chamber and with an opening leading from said chamber to the exterior of the casing, a film manipulating member extending through the opening and an integral tongue or extension upon the material of the casing adjacent the opening therein, said extension being creased or folded upon itself to form an expanding closure within the opening in yielding contact with the surface of the film manipulating member.

4. In combination with a casing and a partition member therein having a rounded portion at one end and secured to the casing at the other to form an exposure chamber and a dark chamber communicating with said exposure chamber, of a film arranged in the exposure chamber, a manipulating device attached thereto and extending over the rounded end of the partition, a follower arranged between the latter and the film, and a sheet of smooth flexible material attached to the follower and extending over the rounded end of the partition beneath the manipulating device.

5. The combination with a casing and a partition member composed of elastic material therein having a rounded end and



forming an exposure chamber and a dark chamber communicating with said exposure chamber, said partition being provided with a resilient arm struck up from the material thereof to form an opening in rear of said arm, of a film arranged in the exposure chamber, a manipulating device attached thereto and extending over the rounded end of the partition, a follower arranged between the film and the arm and a sheet of flexible material attached to the follower and extending over the rounded end of the partition beneath the manipulating device.

6. The combination with a casing, of a partition member rigidly secured thereto at one end to form an exposure chamber and a

dark chamber communicating therewith, said partition consisting of a single sheet of resilient material provided with a roll at its free end and having an arm struck up from its body forming an opening in rear thereof through which said arm is adapted to pass from one chamber to the other, a film arranged in the exposure chamber and a manipulating device attached thereto and extending over the rounded end of the partition.

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Witnesses:

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