No. 754,266.

PATENTED MAR. 8, 1904.

C. WHETHAM.

PHOTOGRAPHIC PRINTING FRAME.

APPLICATION FILED DEC. 4, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

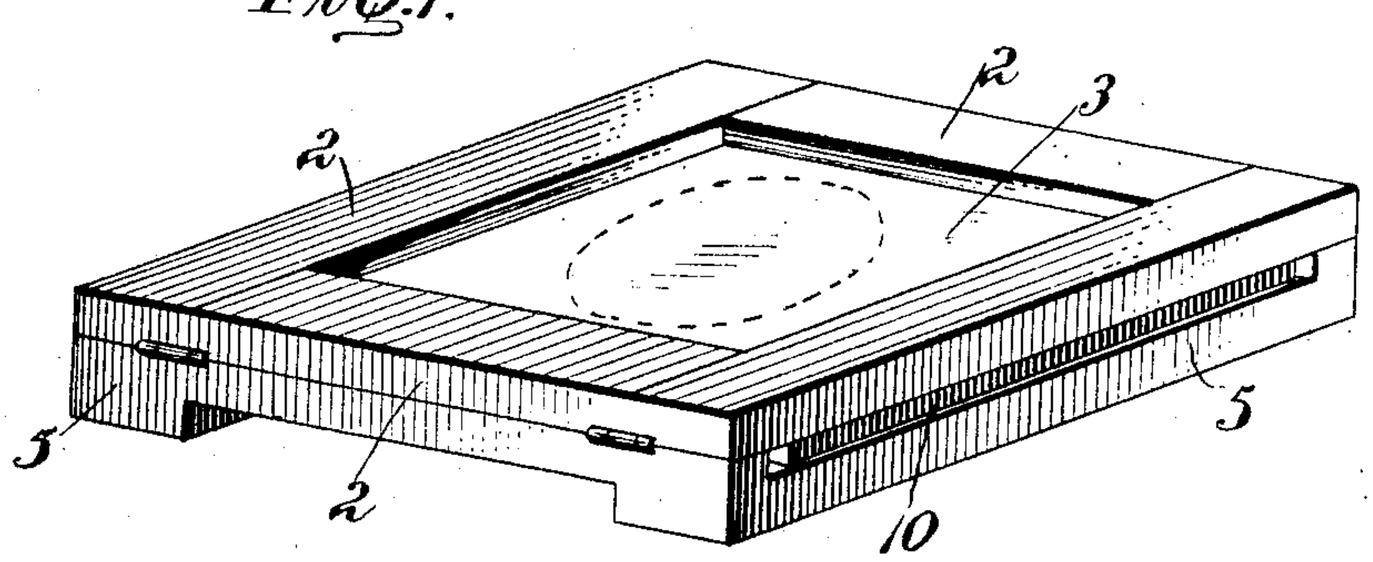



Fig. 2.

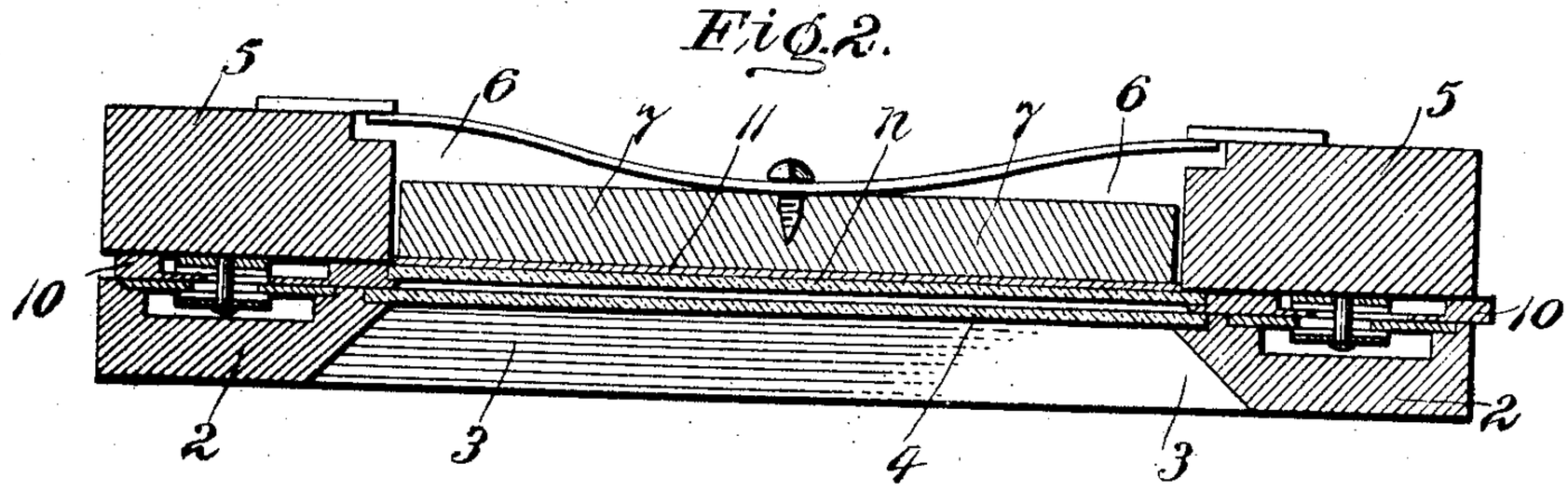



Fig. 3.

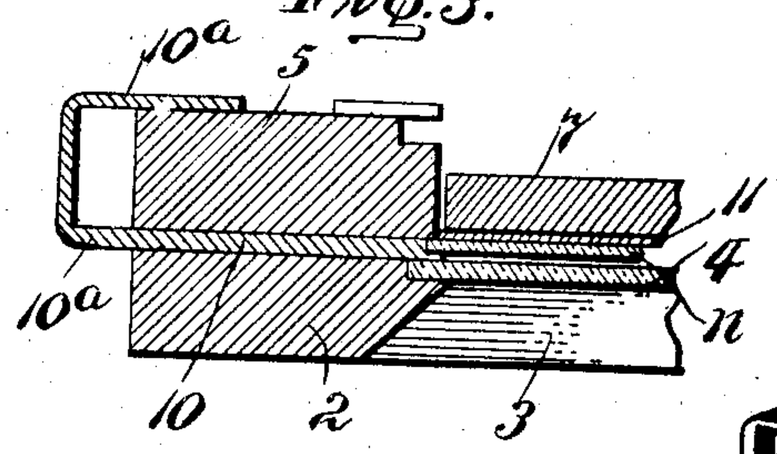
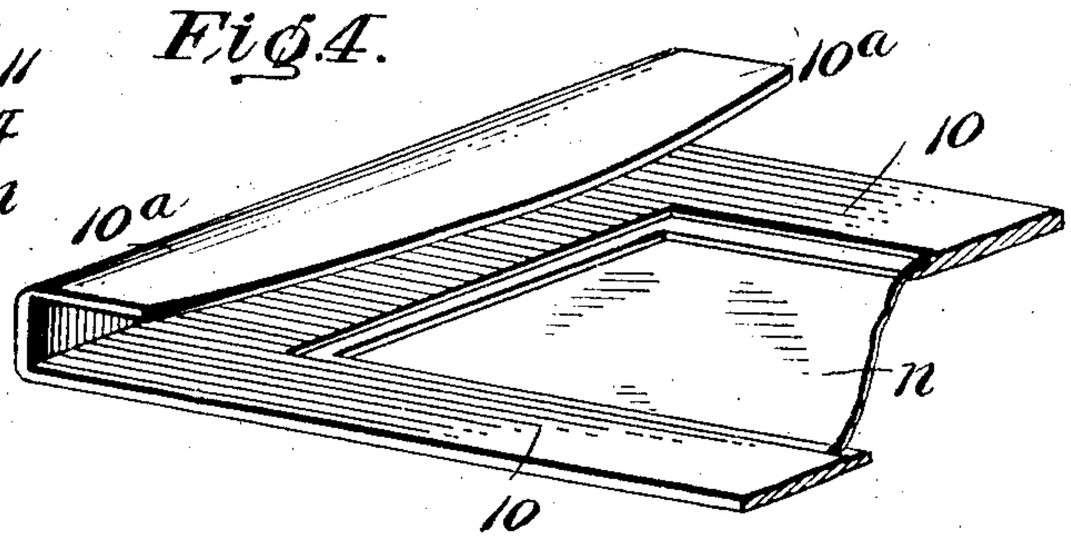



Fig. 4.




WITNESSES:

Guy C. Worthington

A. Dieterich

INVENTOR

Charles Whetham

BY

Fred G. Dieterich

ATTORNEY

No. 754,266.

PATENTED MAR. 8, 1904.

C. WHETHAM.

PHOTOGRAPHIC PRINTING FRAME.

APPLICATION FILED DEC. 4, 1902.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 5.

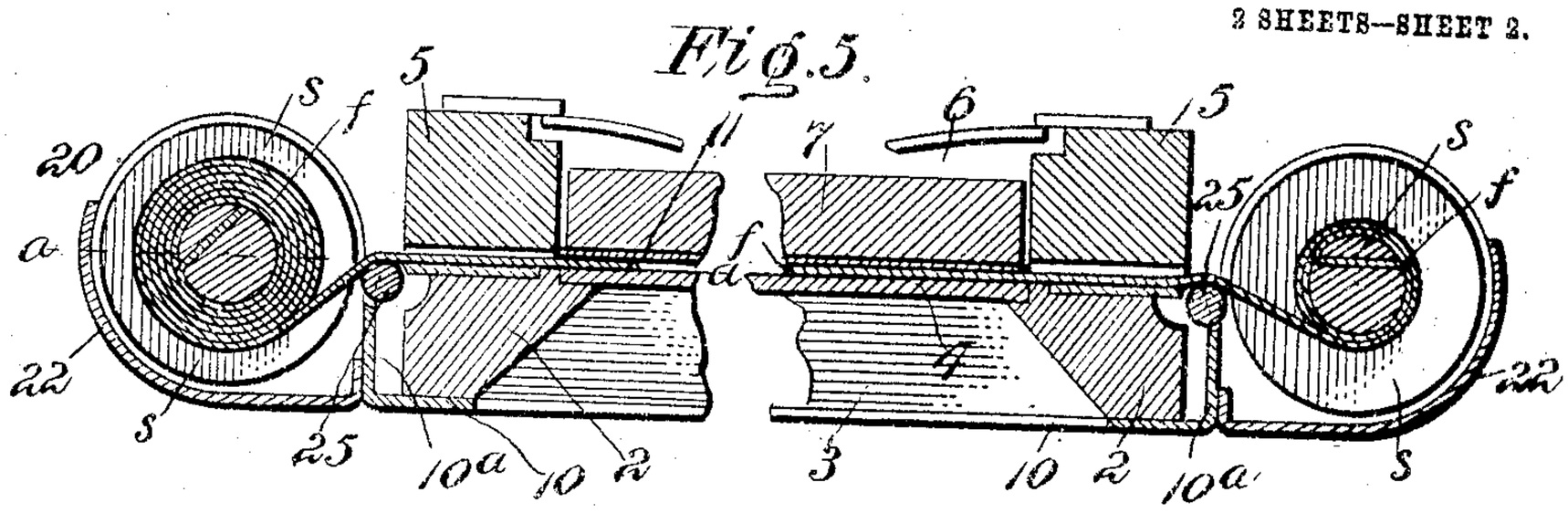



Fig. 6.

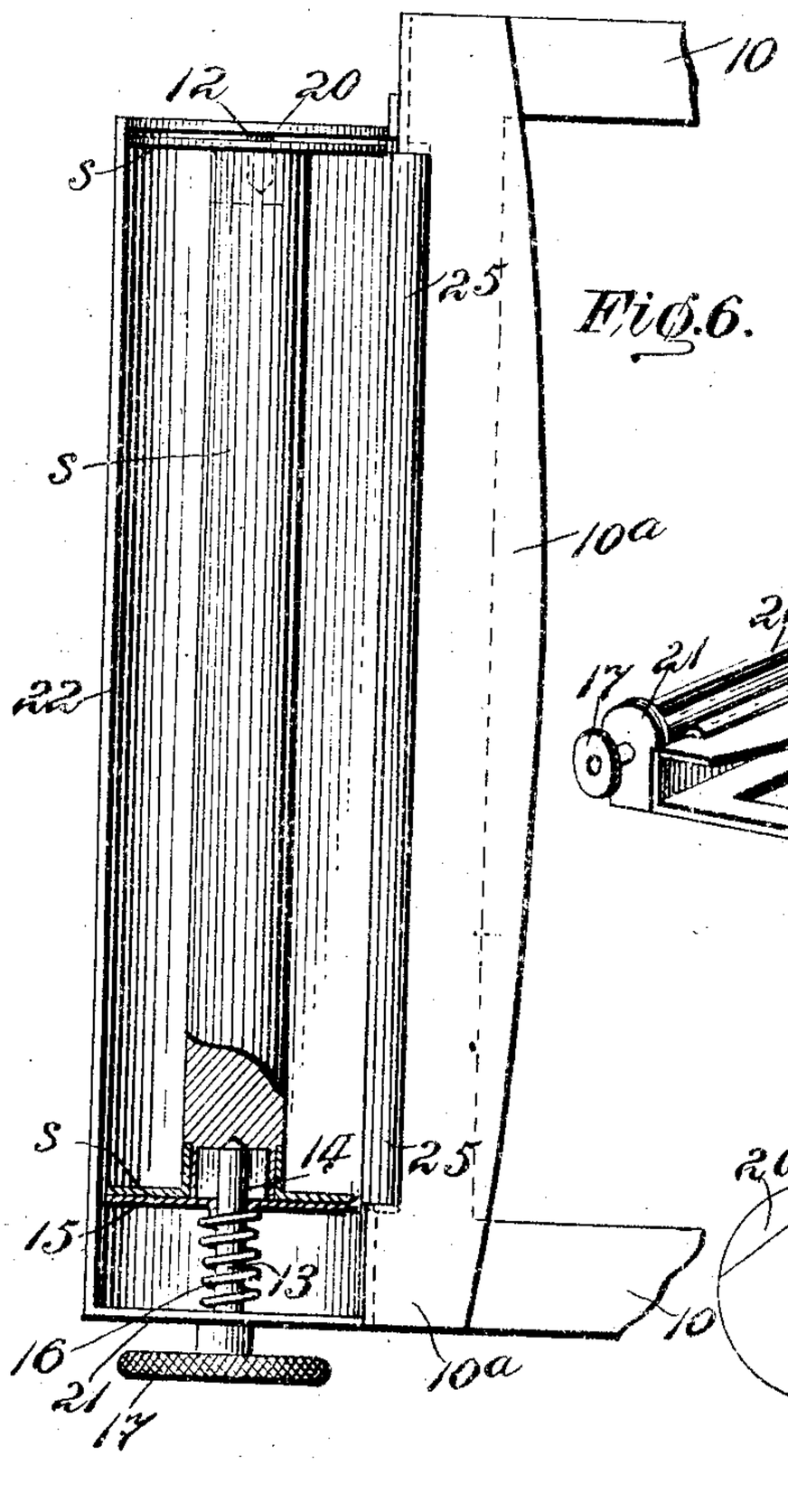



Fig. 8.

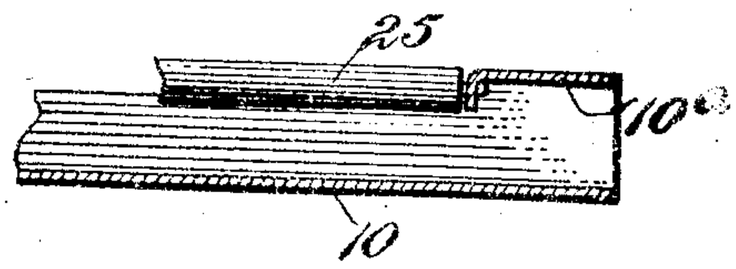



Fig. 7.

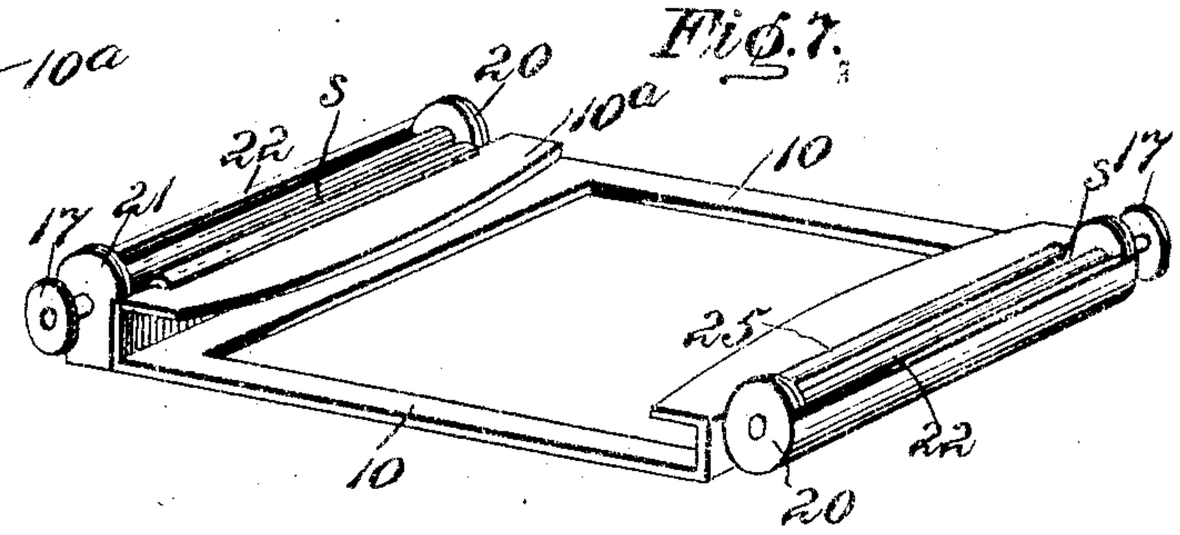
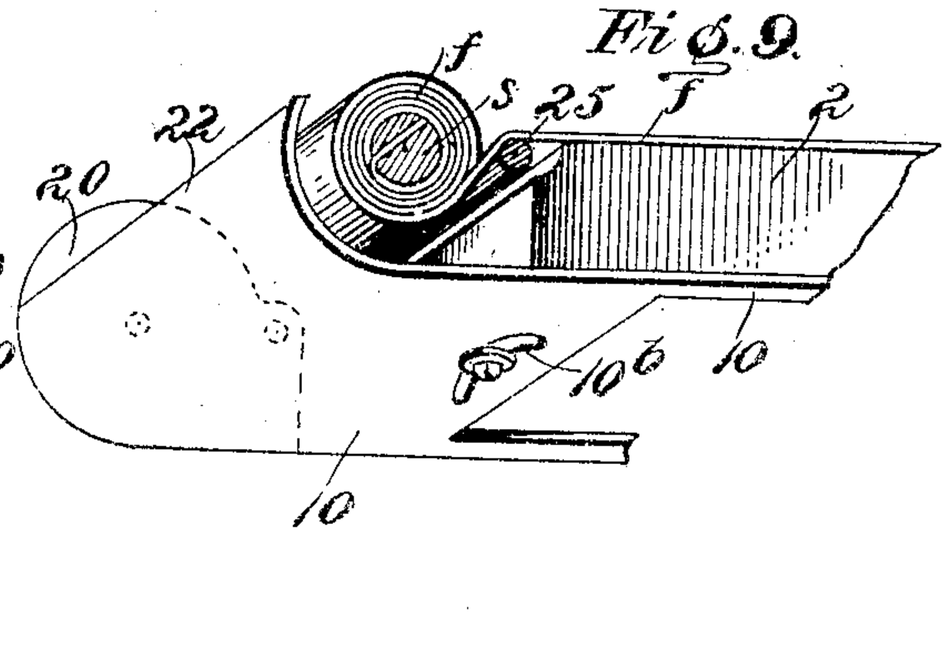



Fig. 9.




WITNESSES:
Guy C. Worthington
A. J. Dieterich

INVENTOR
Charles Whetham
BY
Fred G. Dieterich
ATTORNEY

No. 754,266. Patented March 8, 1904.

# UNITED STATES PATENT OFFICE.

CHARLES WHETHAM, OF RUSKIN, CANADA.

## PHOTOGRAPHIC-PRINTING FRAME.

SPECIFICATION forming part of Letters Patent No. 754,266, dated March 8, 1904.

Application filed December 4, 1902. Serial No. 133,860. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES WHETHAM, a citizen of the Dominion of Canada, residing at Ruskin, in the Province of British Columbia, Canada, have invented a new and useful Photographic-Printing Frame, of which the following is a specification.

My invention relates to an improvement in photographic vignetting and printing frames; and my object has been to simplify the process of vignetting or masking photographs and to facilitate and improve the present method of adjusting the negative plate or film, whether cut or roll, in relation to the positive medium.

As will be seen later, this invention is an amplification of the principle involved in my Patent No. 688,274 of December 3, 1901, on the same subject—viz., photoprinting-frames.

The improved frame consists, essentially, of three main parts—first, the front or face part to hold a mask or mat for vignetting or outlining pictures, also to hold the plain glass used with film negatives; second, a middle section to hold the negative plate or film, and, third, a back portion to receive the positive paper, film, or plate and the back closing or pressing member of the frame.

The following specification fully describes the construction and objects of my frame, reference being made to the drawings which accompany it, in which—

Figure 1 is a perspective view of the frame as it may be constructed for the printing and vignetting of photographs from negatives on glass or cut films. The view is shown face up. Fig. 2 is a cross-section of the same face down; Fig. 3, a cross-section of an alternate method of connecting the negative-bearing member to either the back or front member of the frame; Fig. 4, a perspective view of one side of such negative-bearing member detached. Fig. 5 shows in cross-section the negative-bearing member adapted to the requirements of roll-films. Fig. 6 is a plan and part section, on the plane of *a a* in Fig. 5, of the film-spool holder and part of its attaching framework; Fig. 7, a perspective view of the film-carrier-support frame detached; Fig. 8, a detail of the attachment of the film-guide roller to the carrier-support frame; and Fig. 9 is an alternative method of constructing the film-carrier-support frame and of attaching it to the printing-frame.

Throughout the drawings, 2 represents the front portions, designed to hold in its opening 3 a mat, mask, or plain glass 4, and to this portion 2 the back portion 5 is hinged or otherwise attached, so that when together a space or slot is left between them adapted to receive a negative-bearing member 10. The opening 6 in the back portion, through which the positive sheet 11 may be introduced and which is closable with the backing member 7, corresponds with that of the front, so that a mask or plate laid in the front is directly opposite to the positive paper or plate in the back.

It is obvious (see Fig. 1) that the front and back portions 2 and 5 may be in one, with the slot or space between them in the plane of the face; but I prefer to hinge them in the manner shown in the drawings as offering greater facility both in construction and manipulation.

Where the frame is required for negatives on glass or for cut films, (see Figs. 1, 2, 3, and 4,) the intermediate or negative-carrying portion 10 is an open frame recessed to receive the negative 9 and secured to either the front member 2 or the back one 5 in such a manner as to be susceptible of a limited slidable movement in the plane of the printing-surface. This may be done in any suitable manner. Figs. 1 and 2 show it connected by the friction-plate fastening patented by me and referred to in the preamble of this specification, or it may be removably secured to either 2 or 5 by bent-over edges $10^a$, adapted to engage the thickness of the member to which it is desired to connect it. Fig. 3 illustrates this construction connecting the negative-holder to the back member 5, the width between the turned-up sides $10^a$ being as much greater than that of the portion to which it is fitted as will permit the desired amount of movement in any direction in the plane of the printing-surface, thus enabling the picture on the negative to be adjusted as required to the "light" of the mask or the surface of the positive sheet 11.

A clamping means may be provided, if found

necessary, to secure the negative-frame in the position it is set; but I do not anticipate that such will be required, as the construction shown will enable the edges $10^a$ to have a sufficient resilient grip of the thickness of the member 2 or 3 to hold the member 10 firm enough to stand ordinary shock.

In the case of rolled-film negatives as the film itself carries the negative it is obviously unnecessary to provide other support between the front and back portions of the frame. All that is required then is a support that will carry the film-spools on the side members of either 2 or 5 and provide a means whereby the film may be unrolled from one spool and rolled on the other. The spool-carriers may be rigidly attached to the side members of 2 or 5; but with such a construction the adjustment of the negative would only be in either direction endwise of the film with no lateral or angular adjustment. I therefore adopt the construction illustrated in Figs. 5, 6, and 7, supporting the spools on a carrying-frame 10, having, as before, the bent-over edges $10^a$ to engage and grip the thickness of the portion it is attached to, but with this difference, that as the negative requires no support within the frame other than its own film I place the bent-over edges $10^a$ in the negative slot or space between the members 2 and 5, recessing them flush with the inner surface, and carry the cross members of the frame 10 from side to side on the outer surface of the member to which it is attached and clear of the printing-aperture. I have in the drawings shown this construction connected to the front member 2, as this is my preferred method.

In Fig. 9 I show an alternative method of constructing the film-carrying frame in which the turned-up edges $10^a$ are dispensed with, the side edges being carried out to form the spool-guards 22 and receive the ends 20 21, in which latter are secured the ends of the rollers 25. The frame 10 is then secured to face of 2 by a screw and washer in a curved slot or opening $10^b$ toward each side, thus permitting of lateral and angular adjustment, while the endwise adjustment is obtained by rolling and unrolling the film on the spools.

In Figs. 5 and 6 the film is represented by *f* and the spool by *s*. To secure and rotate the film-spools, I provide a fixed pin 12, on which the spool is free to rotate, fastened in an end-support member 20, and at the opposite end of the spool is supported by an endwise outwardly slidable pin 13, having driving wings or feathers 14, a washer or collar 15, and a controlling-spring 16, acting in compression between the washer 15 and the end-support member 21, in which the pin 13 is rotatable and endwise slidable. To the end of this pin on the outer side of the support 21 is a milled head 17, by which the film-spool may be rotated and the film rolled or unrolled.

Between the spool-supporting members 20 and 21 I provide a guard 22, partially encircling the spool to protect the film from possible injury and incidentally brace the supports and afford a means of attachment to the ends $10^a$ of the frame 10.

To insure the delivery of the film to the plane of the plate irrespective of the amount rolled on the spool, I place the axis of rotation of the spools so that the winding side is below the plate and provide a light roller 25 at the corner of $10^a$ and extending the full width of the film. This insures a free delivery over the corner without possibility of scratching the film-surface, and as the negative-surface is uppermost it is not exposed to injury while being rolled from side to side. The upper corner of $10^a$ is cut out to allow the roller to be sunk almost flush, and the rollers may be supported on small turned-down portions from the gap, as illustrated in the detail Fig. 7.

To operate the frame, the back portion is opened on its hinges. Then if it is desired to vignette or shade the margins of the picture the vignetting mat or medium is placed in the recess of the front portion 2 of the frame. A plain or film-supporting glass is then placed in the same recess or portion 2 if the negative is incorporated in a roll-film. If, however, the neagtive is on glass, it is placed in the recess provided in the intermediate portion 10 of the frame, and if the negative is a cut film a plain or film-supporting glass is placed in the recess of 10 and the cut film placed upon it. Then the negative is adjusted in relation to the opening in the vignetting-mat or to the opening in portion 5, in which the positive sheet is placed. After this adjustment the back portion 5 of the frame is closed and fastened by a spring or hook or other convenient fastener and the positive sheet is placed in the opening of 5. Then the frame-back 7 is clamped in position and the exposure made. If it is desired to sharply outline the picture, a mat or mask of the desired form may be placed between the negative and the positive sheet, as is usually done.

In my previous patent the object was to secure an adjustment of the negative to any desired position on the positive sheet. The object in this one is to provide in addition a mask or mat carrying portion of the frame to facilitate and simplify the vignetting process, while at the same time the negative-adjusting mechanism is modified to suit the requirements of roll-film. The essential principle of adjustment, however, is the same whether the negative is on glass or cut film or film-roll. The annoyance arising from curling or shifting of the thin roll-films when cut into sections and printed from separately is entirely overcome by retaining the roll form and passing the web of film across the frame, as shown in Fig. 5. My divided frame lends itself admirably to this method of printing and, moreover, provides

the requisite adjustment of the negative. Film-rolls are now usually developed without cutting. The convenience of printing also from the uncut roll and of filling and preserving the films in roll form on the original spools is rendered possible by this simple adaptation of my frame.

My intention is to provide vignetting mats or masks with transparent or partially-transparent centers of various shapes and sizes which will be gradually shaded or rendered non-actinic toward the outer margins, so that the light passing through may produce the shaded or vanishing effect desired.

Having now particularly described my invention and the manner of its operation, I declare that what I claim as new, and desire to be protected in by Letters Patent, is—

1. In a photographic-printing frame, the combination with a front portion designed to carry the light admitting and controlling medium, a negative-carrying section adjacent thereto, said front portion adapted to carry said light-controlling medium in close proximity to said negative-carrying section, and a back portion hinged to said front portion, said back portion having an opening for admitting and removing the positive sheet, and a cover for said opening adapted to hold said positive sheet against said negative, for the purposes specified.

2. A photographic-printing frame, comprising a front section, having a groove in one face, a light admitting and controlling medium mounted in said groove with its inner face flushed with the adjacent face of said front portion, a negative-carrying device adjustably secured to one of said portions, said negative-carrying device including a film-spool carrier and a negative-carrying frame, said negative-carrying frame including friction-rollers adjacent said film-spool carriers, film-carrying spools mounted in said film-spool carriers, a film mounted on said spools and passing over said friction-rollers and said negative-carrying frame and in close proximity to said light admitting and controlling medium, a back section hinged to said front section and adapted to close over a portion of said film and said light admitting and controlling medium, said back portion having an opening for the introduction of the positive sheet, and a closure member for said opening, said closure member being adapted to hold said negative in tight engagement with said light controlling and admitting medium, for the purposes specified.

3. In a photographic-printing frame consisting of two sections hinged together, one of said sections adapted to hold the light admitting and controlling medium, and the other section having an opening through which the positive medium is introduced, and a removable cover for said opening, the other of said sections having a slot or opening across one face thereof in a plane parallel to the printing-surface, and a slidable frame within said slot adapted to hold a negative in close proximity to the light admitting and controlling medium, said slidable frame being susceptible to adjustment in any direction in a plane parallel with the printing-surface, and said cover for said opening in said first-mentioned section being adapted to hold said positive medium in contact with said negative and to hold said slidable frame in engagement with said light admitting and controlling medium whereby when the said cover is in place all of the parts will be held immovable, for the purposes specified.

4. A photographic-printing frame comprising a front portion adapted to hold the light admitting and controlling medium, a back portion hinged to said front portion and adapted to hold the positive sheet or plate in such a manner that a space is left between the front and back portions and the negative-bearing frame mounted in such space and slidably connected to one of said portions in such a manner as to be susceptible of adjustment in any direction in a plane parallel to the printing-surface, said front portion adapted to hold said light admitting and controlling medium in close proximity to said negative and in engagement with said negative-bearing frame, and said back portion adapted to hold said light admitting and controlling medium and said negative-bearing frame in their proper correlative positions, for the purposes specified.

5. In a photographic-printing frame having the front and back portions divided in a plane parallel to that of the printing-surface and having a space between them adapted to hold a negative-bearing frame, an open frame recessed to hold a negative and having turned-over edges on opposite sides to engage the thickness of one of said portions, the width between such turned-over edges being such as will allow a limited slidable movement in any direction in the plane of the printing-surface.

6. In a photographic-printing frame, consisting of two sections hinged together, slots or openings in the opposite sides or end members in a plane parallel to the printing-surface, film-spool carriers opposite each slot, and means for rotating such spools whereby the film may be wound on one and unwound off the other traversing the film across the printing-surface of the frame.

7. In a photographic-printing frame consisting of a front portion carrying a light admitting and controlling medium and adapted for the support of film-negatives hinged to a back portion into which a positive sheet may be introduced and held, such connection between the portions being made as to leave a space across the printing-surface adapted to the passage of a negative-film, a film-negative-

carrying frame slidably connected to one portion in such a manner as to be susceptible of adjustment of the negative in any direction in the plane parallel to the printing-surface, and film-spool carriers secured to such frame adapted to removably hold and permit the rotation of the spools.

8. In a photographic-printing frame having a front or mask-carrying portion hinged or otherwise connected to a back or positive holding portion in such a manner as to leave a space between adapted to permit the passage of a negative-film across the printing-surface; a negative-carrier comprising an open frame 10 attached to one of said portions of the printing-frame in such a manner as to permit slidable adjustment in any direction in the plane of the printing-surface; spool holding and rotating means secured to opposite sides and comprising end bracket members 20 and 21 a fixed pin 12, a rotatable and endwise-slidable pin 13 having spool-engaging feathers 14, a spool-bearing washer 15, a spring 17 between the washer and the bracket member 21, and a spool-rotating means 17; and a roller 25 sunk flush in the corner of the turned-over edge $10^a$

9. A photographic-printing frame, consisting of a front and a back portion hinged together, said front portion adapted to carry a light admitting and controlling medium, said back portion having a groove, and an opening therethrough, of a negative-carrying device adjustably mounted in said groove and having a portion for receiving a negative, said negative and said light admitting and controlling medium adapted to lie in close proximity to each other, and said front and back portions being so arranged as to admit of inserting the negative into the negative-carrying member without removing the same from the said groove, all being arranged substantially as shown and for the purposes specified.

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

CHARLES WHETHAM.

Witnesses:

ROWLAND BRITTAIN,

RICHARD B. WARD.