No. 714,413. Patented Nov. 25, 1902.

C. H. STEVENS.

PHOTOGRAPHIC PRINTING FRAME.

(Application filed June 12, 1902.)

(No Model.)

Fig. 1.

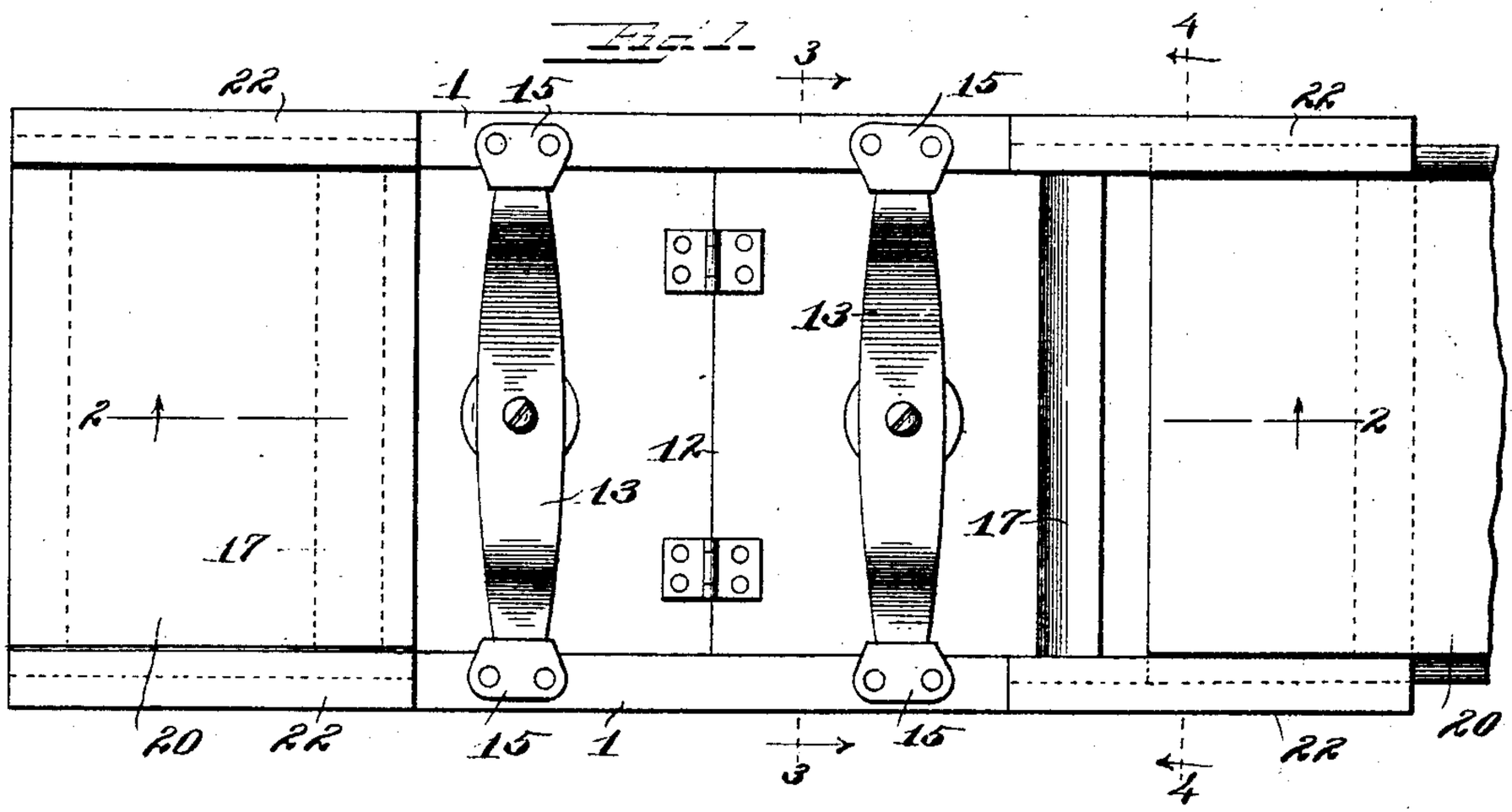


Fig. 2.

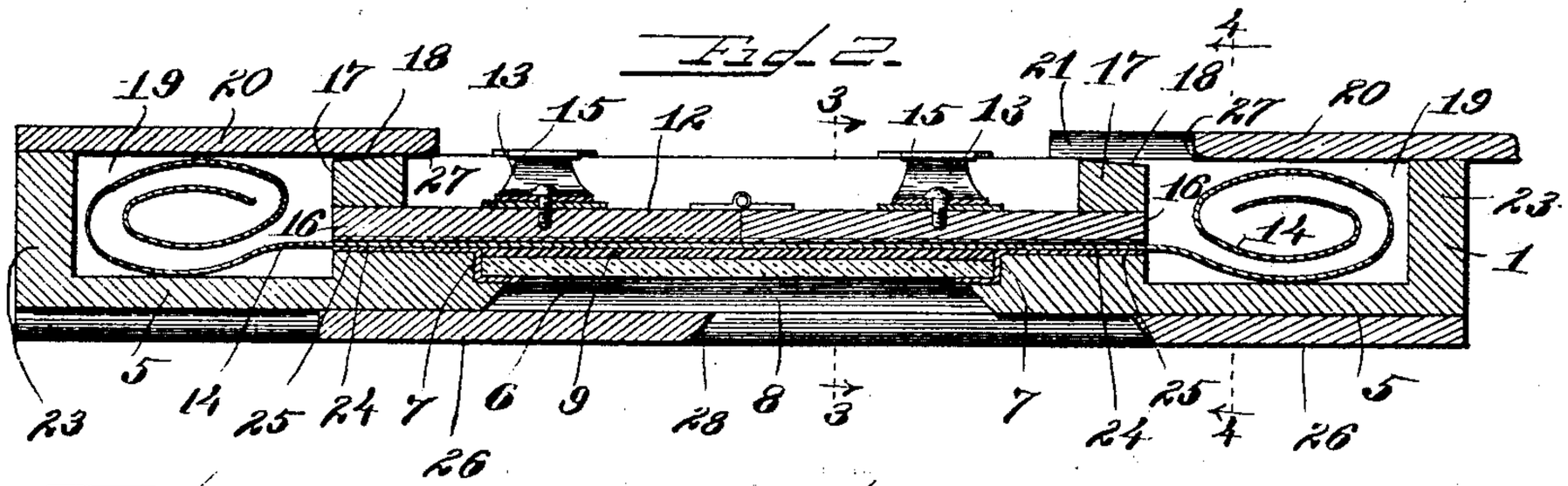


Fig. 5.

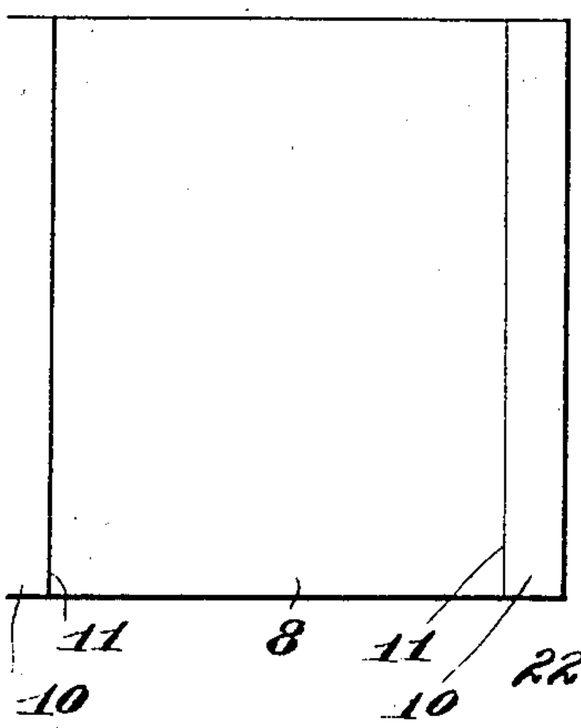


Fig. 3.

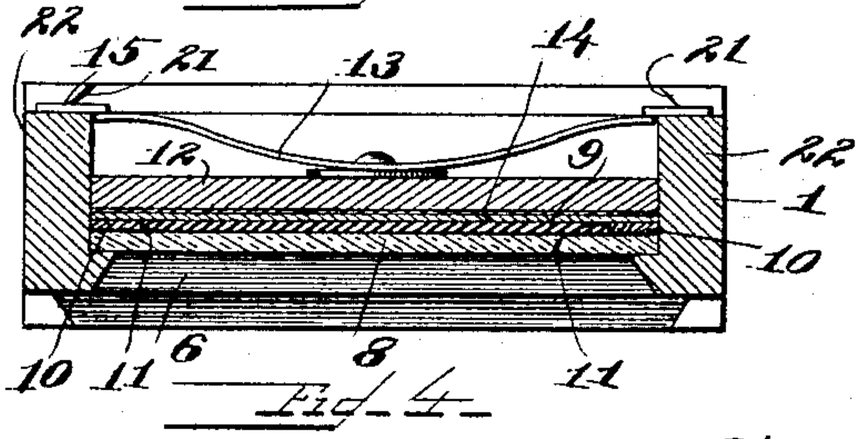
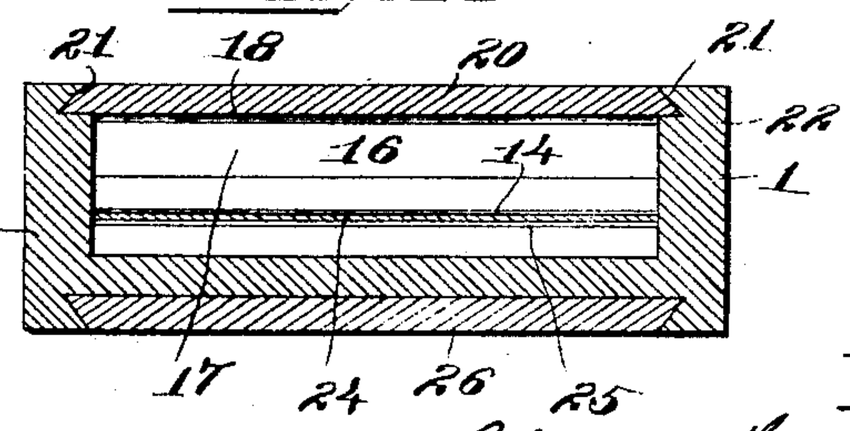


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES H. STEVENS, OF CHICAGO, ILLINOIS.

PHOTOGRAPHIC-PRINTING FRAME.

SPECIFICATION forming part of Letters Patent No. 714,413, dated November 25, 1902.

Application filed June 12, 1902. Serial No. 111,316. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. STEVENS, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Photographic-Printing Frames, of which the following is a specification.

My invention relates to that class of photographic-printing frames which is particularly adapted for use in printing panoramic views or other continuous pictures from a series of separate negatives.

The main objects of my invention are to provide a printing-frame of this class having improved, simplified, and inexpensive construction, to avoid such creasing, marking, or bending of the photographic-printing paper as will indicate where two prints are joined, and to provide for conveniently printing views from a certain size of negative regardless of whether such negative was taken with the longest dimension of the plate vertical or horizontal. I accomplish these objects by the device shown in the accompanying drawings, in which—

Figure 1 is an elevation of the back of a printing-frame constructed according to my invention, one of the slides being shown partly open and partly broken away. Fig. 2 is a longitudinal section of the same along the line 2 2 of Fig. 1. Fig. 3 is a transverse section of the same along the line 3 3 of Figs. 1 and 2. Fig. 4 is a transverse section along the line 4 4 of Figs. 1 and 2. Fig. 5 is a plan of the plate for supporting the negatives.

The construction shown consists of a rectangular frame 1, having in its front wall 5 a rectangular aperture 6. This aperture is preferably made square, having a length and breadth slightly less than the longest dimension of the size of plate for which the frame is constructed. The edges of the aperture 6 on the inner face of the wall 5 are provided with a recess 7, which serves as a seat for the glass plate 8. The glass plate 8 serves as a support for the negative 9 and is square, being of the same length as the negative and exactly fitting the recess 7 in the wall 5. Strips of cardboard 10 of less thickness than the negative are secured to one face of the glass plate 8 and provide shoulders 11, whose distance apart correspond to the width of the negative 9 and which serve to prevent the negative from shifting sidewise.

A back 12, consisting of two parts hinged together and provided with spring locking-tongues 13, as is usual in devices of this class, serves to hold a strip of sensitized paper 14 into close contact with the negative 9. The springs 13 engage the clips 15 at the sides of the frame 1. The ends 16 of the back 12 are provided with cross-pieces 17, having their upper faces 18 beveled, as shown in Fig. 2. The frame 1 is continued longitudinally a considerable distance beyond each of the ends 16 of the hinged back 12 to form the pockets 19, which are closed by the slides or covers 20. The slides 20 are seated in grooves 21 in the side walls 22 of the frame 1 and engage the ends 23 of said frame and the cross-piece 17 of the hinged back in suitable manner to make the pockets 19 light-tight when the slides 20 are in their closed position.

The recess 7 is made of less depth than the combined thickness of the glass plate 8 and the negative 9 to insure a straight lead for the sensitized paper 14 and avoid the danger of creasing same at this point. An apron 24 is secured to the inner face 25 of the front wall 5 of the frame 1 at each end of the aperture 6. The apron 24 is of opaque material and serves to cover the edges of the glass plate 8 and the negative 9, thereby preventing light which may be refracted through said edges from reaching the sensitized paper 14.

The edges of the aperture 6 are flared outwardly toward the front of the frame 1, as shown. Blending-slides 26 are slidably mounted on the front wall 5 and are movable across the aperture 6 for the purpose of vignetting the prints at the lines of junction between two negatives, as will be hereinafter described.

In operation the negative is placed in the position shown in the drawings behind the glass plate 8, and the sensitized paper is arranged in suitable position behind said nega-

tive. The hinged back 12 is now clamped into position by means of the spring-tongues 13, and the projecting ends of the sensitized paper are coiled into the pockets 19, as indicated in Fig. 2. The slides 20 are pushed into engagement with the surfaces 18, as indicated at the left of Fig. 2, closing the pockets 19 against light. The inner corners 27 of the slides 20 are slightly rounded, as shown. This insures a wedging action between the slides 20 and the cross-pieces 17, which is necessary, since there is a slight variation in the position of the cross-pieces 17, due to varying thickness of negatives and sensitized paper. One of the screens 26 is now moved across the aperture 6 to the line in the picture along which it is desired to join the two prints. The front of the frame is now exposed to diffused light and a print is made. Since the light spreads in all directions, that part of the print which is under the screen 26 will be gradually reduced in tensity from the edge 28 inwardly, as is well known in this art. When the paper has been printed to the desired intensity, the hinged back 12 is removed and the succeeding negative is placed in position within the frame. The sensitized paper is now moved so that the print thereon exactly registers with the overlapping parts of the picture on the new negative. The back 12 is now replaced, the slides 20 closed, and the screen 26 on the opposite side of the frame is used for vignetting. The proper manipulation of the vignetting-screens to obtain a perfect blending of the prints along the line of junction is easily learned after a few experiments. If some of the negatives were taken with their longest dimension vertical, while others were taken with that dimension horizontal, it is only necessary when joining prints from such negatives to give the plate 8 a quarter-turn, thus instantly adjusting the frame to suit the changed disposition of the negative.

It will be seen that some of the details in the device shown may be altered without departing from the spirit of my invention. I therefore do not confine myself to such details, except as hereinafter limited in the claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A photographic-printing frame, comprising a frame-body; a front wall forming a part of said frame-body and having therein an aperture of less length than that of the interior of said frame-body, and having in its inner face an offset around the edges of said aperture and adapted to receive a negative and support same over said aperture; a removable hinged back for holding a sheet of sensitive paper in contact with the negative, said back being of considerably less length than said frame and having a cross-piece secured to each of its ends; and a cover at each end of the frame-body slidably secured to same and adapted to bear upon the adjacent cross-piece; said cross-pieces and the bearing-faces of said covers being oppositely formed to have a bevel or wedge like contact, substantially as and for the purpose specified.

2. A photographic-printing frame, comprising a frame-body; a front wall forming a part of said frame-body and having therein an aperture of less length than that of the interior of said frame-body, and having in its inner face an offset around the edges of said aperture and adapted to receive a negative and support same over said aperture; a removable hinged back for holding a sheet of sensitive paper in contact with the negative, said back being of considerably less length than said frame and having a cross-piece secured to each of its ends; and a cover at each end of the frame-body slidably secured to same and adapted to bear upon the adjacent cross-piece; said cross-pieces being beveled for contact with the bearing-faces of said covers, substantially as and for the purpose specified.

Signed at Chicago this 10th day of June, 1902.

CHARLES H. STEVENS.

Witnesses:
BLANCHE MICHAEL,
WM. R. RUMMLER.