No. 725,276. PATENTED APR. 14, 1903.

G. A. McMENIMEN.

PRINTING FRAME.

APPLICATION FILED JUNE 5, 1902.

NO MODEL.

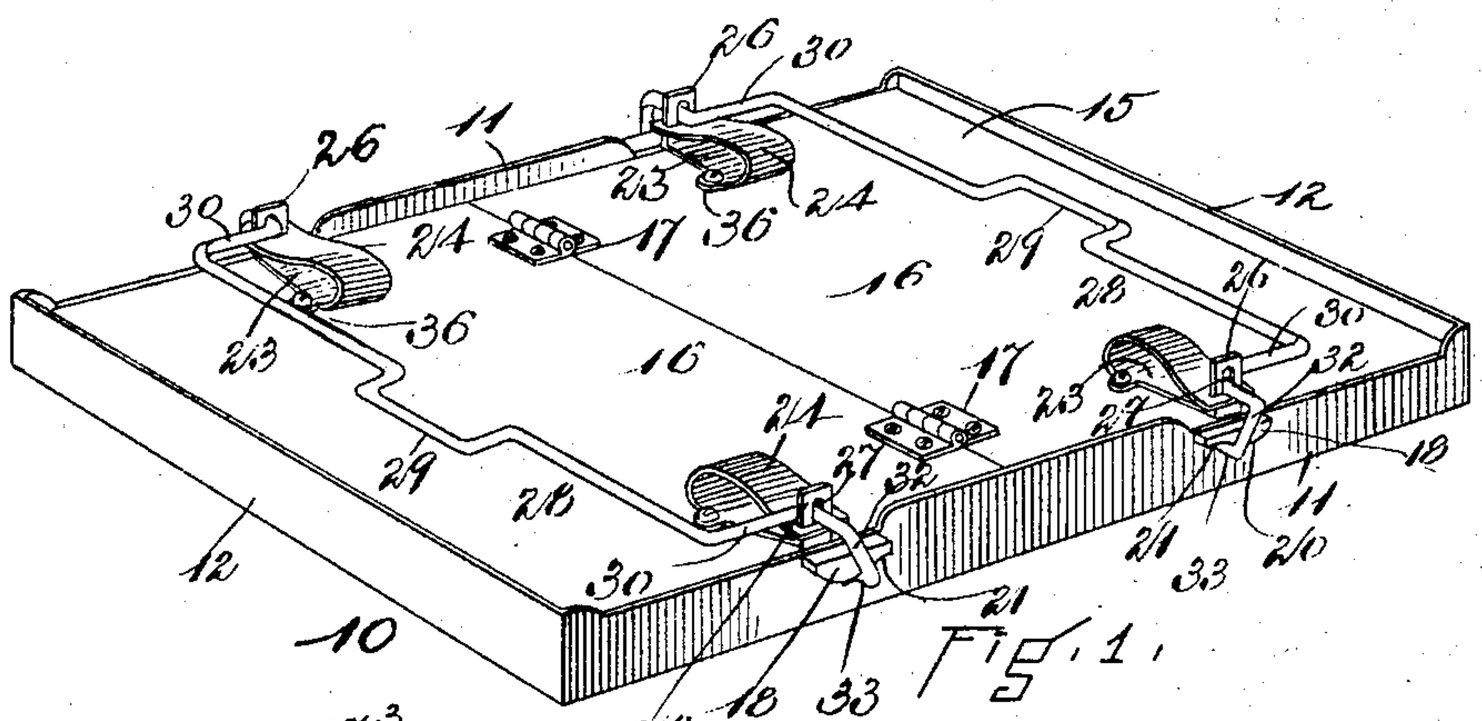

Fig. 1.

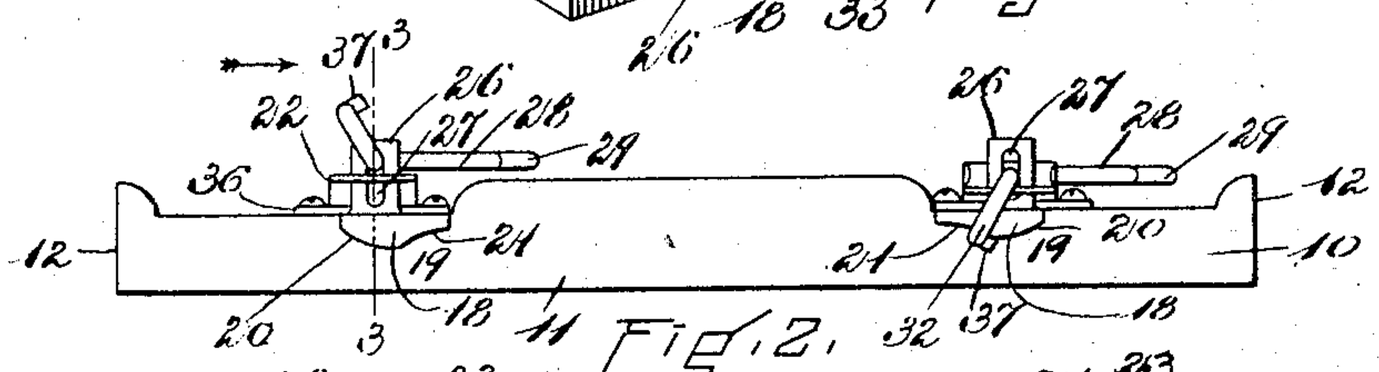

Fig. 2.

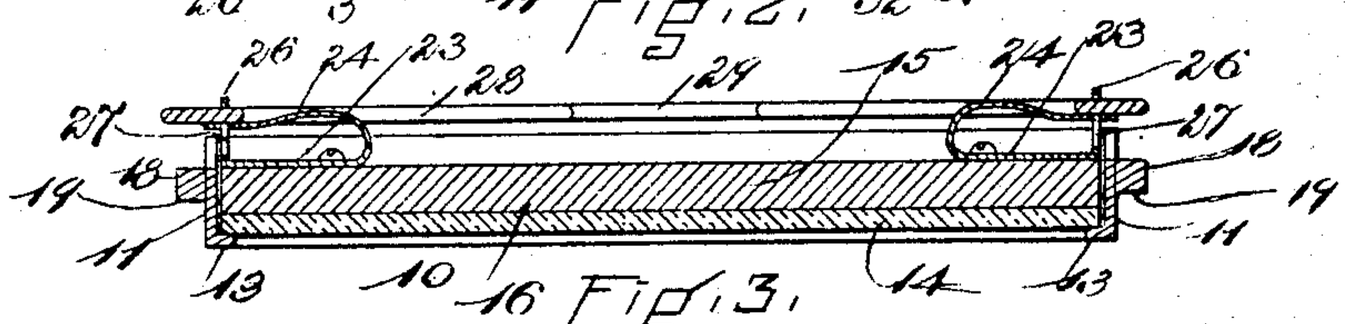

Fig. 3.

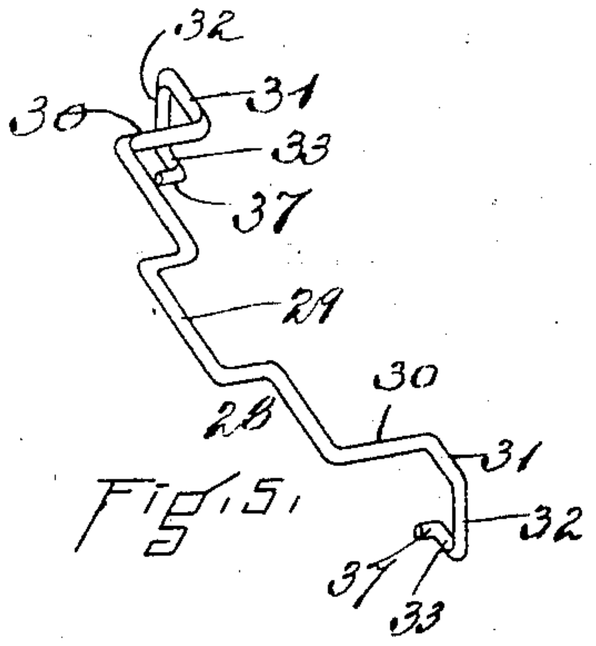

Fig. 5.

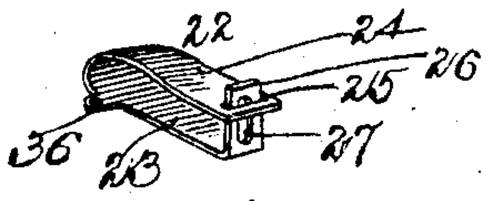

Fig. 4.

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GEORGE A. McMENIMEN, OF CAMBRIDGE, MASSACHUSETTS.

PRINTING-FRAME.

SPECIFICATION forming part of Letters Patent No. 725,276, dated April 14, 1903.

Application filed June 5, 1902. Serial No. 110,398. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. McMENIMEN, residing in the city of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Printing-Frames, of which the following is a specification.

The object of this invention is to provide a printing-frame for holding and printing therefrom glass or film photographic negatives, tracings, and the like which shall be simple, strong, and durable in its construction and easily and quickly manipulated to insert said negatives or tracings therein or to remove them therefrom.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Figure 1 is a perspective view of my improved printing-frame with the back clamped in position. Fig. 2 is a side elevation of the same with one of the clamp-rods elevated to release the pressure upon the back of the frame and the other depressed in order to bring a pressure to bear upon said back. Fig. 3 is a transverse vertical section taken on line 3 3 of Fig. 2 looking toward the right in said figure. Fig. 4 is a perspective view in detail of one of the spring clamp-posts. Fig. 5 is a perspective view of the clamp-rod shown at the left of Fig. 1.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is a printing-frame constructed in accordance with my invention, which may be formed of wood or metal, but preferably of metal, consisting of four sides 11 11 and 12 12, each side being provided with a flange 13, projecting inwardly therefrom upon the front side of the frame. The negative 14 rests upon the flange 13 and is held against said flange by a back-plate 15, consisting, preferably, of two boards 16 16, connected together by hinges 17. The frame 10 is provided with lugs 18, projecting laterally outward from opposite sides of said frame. The lower surfaces 19 of each of the lugs 18 are cam-shaped, being formed upon a convex curve at 20 and upon a concave curve at 21, for the purpose hereinafter specified.

Upon each of the subdivisions 16 of the back-plate 15 is provided a pair of spring clamp-posts, said posts being located at opposite ends of said subdivisions 16 and adjacent to two of the lugs 18. Said spring clamp-posts 22 each comprise a plate 23, provided with ears 36, through which screws are inserted to fasten said spring clamp-post to the back-plate 15. One free end of said plate 23 is provided with a horizontal slot 25 and is bent backwardly from the plate 23 to form a horizontal spring-plate 24. The other free end of said plate extends upwardly therefrom through the horizontal slot 25 and forms a guide-post 26, provided with a vertical slot 27.

A clamp-rod 28 is provided to clamp the back-plate 15 against the negative 14. Said clamp-rod 28 extends across the back-plate 15 and is preferably provided in the center with a bend forming a handle 29 and at each end with a right-angle bend 30, which when said rod is in the position shown in Fig 1—viz., clamping the back-plate 15 to the frame—extends lengthwise of said frame adjacent to and upon the inner side of the guide-post 26. Thence said rod is bent at 31 to extend in a direction substantially parallel to the main body of said rod through the vertical slots 27 until it reaches a point outside and above the lugs 18, where it is bent downwardly at 32 and again inwardly at 33 to reach beneath said lugs 18 and to bear against the cam-shaped surface 19. The rod is finally given another bend in a direction parallel to the side 11 of the frame at 37 to form a bearing-surface upon the rod when said rod is in engagement with the cam-surface 19, although this latter bend is not essential to the practical working of the device. The two clamp-rods 28 28 are duplicates of each other, but are placed upon the frame in reversed positions at opposite ends thereof.

The operation of the device hereinbefore specifically described is as follows: The back-plate 15 is placed in the frame 10, as shown in Figs. 1 and 3, resting upon the negative 14. Each of the clamp-rods is then thrown downwardly from the position shown in Fig. 2 at the left to the position shown in Fig. 1, with the portion 33 of each of said rods engaging the cam-surface 19 upon the under side of the lugs 18. During the first part of the downward movement of said clamp-rods

the bent portions 33 move along the convex curve 20, drawing the clamp-rods 28 downwardly in the slots 27, and upon further rotation of said clamp-rods said bent portions 33 arrive at the concave curve 21, forming a lock which holds the clamp-rods firmly in position until they are disconnected from the lugs by rotating the rods in the opposite direction from that hereinbefore described. As the rods are forced downwardly, as hereinbefore described, the portions 30 of said rods bear upon and depress the horizontal spring portions 24 of the spring clamp-posts 22, so that the back-plate 15 is held against the glass negative with a spring pressure on account of the springs 24 being interposed between said clamp-rods and the back-plate 15. It will thus be seen that by a single downward movement, involving a quarter-turn of the clamp-rod 28, each subdivision of the back-plate 15 is securely clamped in position against the negative with a yielding pressure.

It will be understood that the sensitized paper upon which the photographic or other reproduction is to be printed is placed between the glass 14 and the back-plate 15, as is well known to those skilled in this art.

It will be noted that the angular bent portions 30 of the clamp-rod 28 serve a twofold purpose. Bearing against the inner faces of the guide-posts 26 prevents any lateral movement of said rod with relation to the back-plate 15, and when the clamp-rod 28 is depressed, as shown in Fig. 1, the angular portions 30 bear against the upper surfaces of the spring-plates 24, forcing them downwardly as the bent ends 33 of said clamp-rod pass around the curves 20 and into the concave locking-curve 21.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the character described, a frame, a back-plate therefor, lugs fast to and projecting laterally outward beyond opposite vertical sides of said frame, and a clamp-rod extending across said back and pivoted thereto, said clamp-rod formed to engage said lugs and clamp said back-plate to said frame when a partial rotation is imparted to said clamp-rod.

2. In a device of the character described, a frame, a back-plate therefor, lugs fast to and projecting laterally outward beyond opposite vertical sides of said frame, said lugs each provided with a cam-shaped surface, and a clamp-rod extending across said back-plate and pivoted thereto, said clamp-rod formed to engage said cam-surface and clamp said back-plate to said frame when a partial rotation is imparted thereto.

3. In a device of the character described, a frame, a back-plate therefor, lugs fast to and projecting laterally outward from opposite vertical sides of said frame, springs fast to said back-plate, and a clamp-rod extending across said back-plate and pivoted thereto, said clamp-rod formed to engage said lugs and having angular bends therein to engage the upper faces of said springs.

4. In a device of the character described, a frame, a back-plate therefor, lugs fast to and projecting laterally outward upon opposite vertical sides of said frame, clamp-posts fast to said back-plate, each of said clamp-posts provided with a vertical slot, springs fast to said back-plate, and a clamp-rod extending across said back-plate and through said slots, said clamp-rod formed to engage said lugs and having angular bends therein to engage the upper faces of said springs.

5. In a device of the character described, a frame, a back therefor, and a spring clamp-post, said spring clamp-post comprising a plate fast to said back, one free end thereof provided with a horizontal slot and bent upwardly and backwardly to form a horizontal spring-plate, the other free end of said plate extending upwardly therefrom, through said horizontal slot, and provided with a vertical slot.

6. In a device of the character described, a frame, a back therefor, lugs projecting laterally outward upon opposite sides of said frame, spring clamp-posts, each comprising a plate fast to said back, one free end of said plate provided with a horizontal slot and bent upwardly and backwardly to form a horizontal spring-plate, the other free end of said plate extending upwardly therefrom, through said horizontal slot, and provided with a vertical slot; and a clamp-rod extending across said back, through said vertical slots, formed to engage said lugs and having angular bends therein to engage the inner faces of the vertical free ends of said plate and the upper faces of the horizontal free ends of said plate.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEORGE A. McMENIMEN.

Witnesses:
H. L. HARRISON,
MORRIS J. BROWN.