

(No Model.)

H. B. HENNEMANN.

ADJUSTABLE PHOTOGRAPHIC PRINTING FRAME.

No. 454,433.

Patented June 16, 1891.

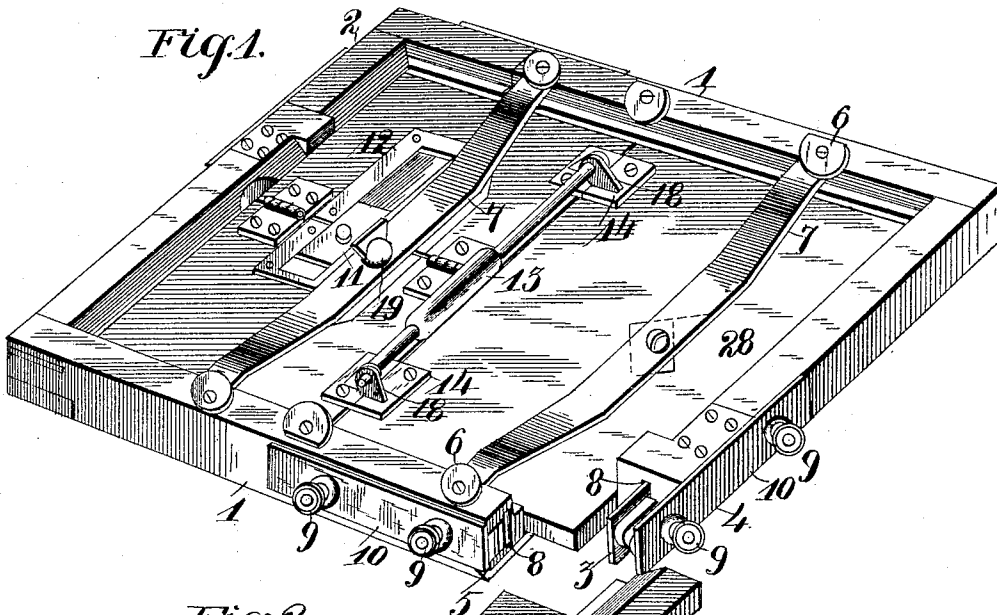


Fig. 2.

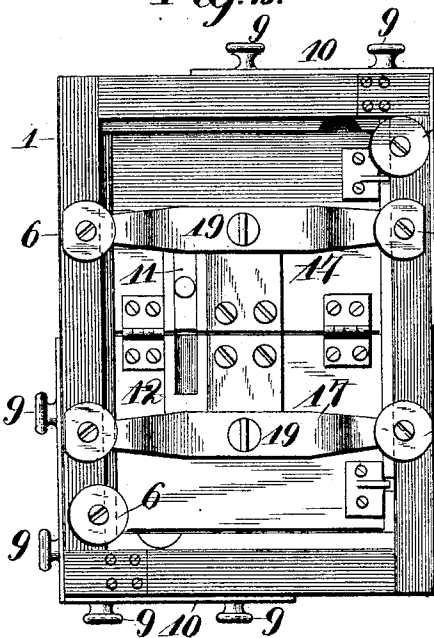


Fig. 3.



Fig. 4.

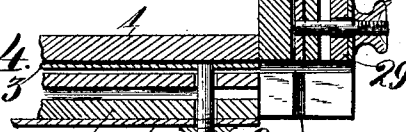


Fig. 5.

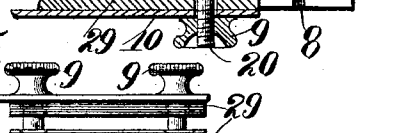


Fig. 6.

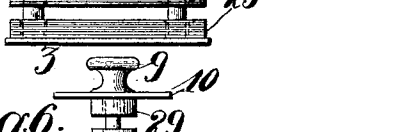


Fig. 7.



WITNESSES:

W. S. Ballou.
E. E. Longan

INVENTOR

Henry B. Hennemann

BY *Kidder & Kidder*

ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY B. HENNEMANN, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF
TO FRED HEILMANN, OF SAME PLACE.

ADJUSTABLE PHOTOGRAPHIC-PRINTING FRAME.

SPECIFICATION forming part of Letters Patent No. 454,433, dated June 16, 1891.

Application filed December 24, 1890. Serial No. 375,694. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. HENNEMANN, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Adjustable Photographic-Printing Frames, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in adjustable photographic-printing frames; and it consists in the novel arrangement and combination of parts, as will be more fully hereinafter described, and designated in the claims.

In the drawings, Figure 1 is a perspective view of my complete invention with one of the extensible corners detached. Fig. 2 is a top plan view of the frame reduced for the reception of an ordinary cabinet picture. Fig. 3 is a side elevation with one of the sides broken away, showing the sliding clamp. Fig. 4 is a horizontal section taken on the line *xx* of Fig. 3. Fig. 5 is a side elevation of one of the sliding clamps detached. Fig. 6 is a front elevation of the same. Fig. 7 is a longitudinal section of the connecting-bar which I employ in carrying out my invention.

The object of my invention is to construct a photographic-printing frame capable of being enlarged or reduced for taking in different sizes of negatives, thereby obviating the necessity which has heretofore existed of using separate frames for different sizes. The frame or device is so constructed that when it is enlarged or reduced in size it still retains all the elements of substantiality as would exist in a frame of different size constructed in the ordinary manner.

Referring to the drawings, 1 represents the stationary parts (or pieces) of the frame, and 2 the detachable corners by which when they are conjoined to the stationary part of the frame said frame is enlarged, or being detached therefrom the dimensions are diminished. The terminal portions of the stationary parts of the frame are provided with T-shaped grooves 8, in which the base-plates 3 of adjustable sliding clamps 4 are adapted to freely move. One of the ends of the station-

ary pieces 1 of the frame is provided with an angular recess 5, adapted to receive a corresponding projection formed on the ends of the adjustable detachable corners 2, whereby when said corners are conjoined a more rigid connection is effected.

6 indicates cleats secured to the stationary pieces of the frame in any suitable and mechanical manner, the function of which is to hold the ends of the semi-elliptic springs 7 in a compressed position.

The stationary portions of the frame, as well as the detachable corners, are provided with internal recesses, which serve the ordinary functions of the recesses made in ordinary printing-frames—to wit, the upper recess is to permit the introduction of the ends of the semi-elliptic springs under the cleats, and the lower answers for the reception of the compression-plate 28. Said compression-plate may be made in different sections and hinged together, after the usual construction. The terminal portions of the detachable extensible corners 2 are also provided with T-shaped grooves, in which the base-plates 3 of the sliding clamps 4 are adapted to move.

When it is desired to reduce the size of the frame, which is effected by detaching the corners 2, the operator should unloosen the thumb-screws 9, the function of which is to hold the upper plates 10 of clamp-pieces 4 to the base-plates 3 thereof, the impinging contact between plates 10 and the exterior surfaces of the detachable corners is reduced, and the detachable corners can then be removed. After the detachable corners have been removed the stationary parts 1 of the frame can be put together by the aid of the clamp-pieces, after the same manner that the detachable corners are conjoined to the same.

One end of each of the stationary pieces 1 of the frame is provided with an internal T-shaped groove, in which the base-plates 3 of the sliding clamps are adapted to be inserted in their functional operation. As a natural consequence, when the frame is reduced to corresponding size to receive the negative of an ordinary cabinet-sized picture, only one of the compression-plates is needed. This compression-plate can be used when the frame is

enlarged. Although it is hinged together it is made rigid by a sliding bar 11, which is adapted to move in a plate 12, secured to said compression-plate. The compression-plate used when the frame is reduced is hinged to a compression-plate of practically the same dimensions as when the plate is enlarged, and is hinged thereto by means of adjustable bar 13.

14 indicates plates which are secured to the compression-plate in any suitable and mechanical manner. Said plates are provided with perforated projections 18, through which the ends of the adjustable bar 13 are adapted to be inserted, thereby holding them together in a hinged position. The adjustable bar 13 is composed of two sections adapted to move in a small cylindrical tube 15. Between these sections a spiral spring 16 is interposed, whereby yielding connection is formed between the two sections.

17 represents smaller semi-elliptical springs adapted to be used in holding the compression-plate in its normal position when the frame is reduced. When the frame is enlarged, these small semi-elliptical springs can be removed and a large semi-elliptical spring 7 substituted in lieu thereof.

19 represents the thumb-screws, by which springs 17 and also spring 7 are held to the compression-plate in their normal position.

The sliding clamps 4 are composed of base-plates 3 and upper plates 10, as hereinbefore stated. To plates 3 and 10 smaller bars 29 are secured, which bars are adapted to move in grooves 8. Plates 3 of the clamp-pieces have screw-threaded stems 20 secured thereto and adapted to receive thumb-screws 9, whereby said plates 3 and 10 can be drawn together and hold the parts interposed between them in a substantial manner.

Having fully described my invention, what I claim is—

1. An adjustable photographic-printing frame consisting of stationary and detachable pieces, the terminal portions of which are provided with T-shaped grooves, and means

for holding the said stationary and detachable pieces together, substantially as set forth.

2. In an adjustable photographic-printing frame, a T-shaped sliding clamp for holding the stationary and detachable pieces together, substantially as set forth.

3. In an adjustable photographic-printing frame, a sliding clamp consisting of a base-plate adapted to move in suitable grooves formed in the terminal portions of the stationary and adjustable pieces of said frame, an upper plate provided with a bar adapted to move in said grooves, and means for drawing said upper and lower plates together, thereby holding the pieces of the frame interposed between them rigidly and substantially together, substantially as set forth.

4. In an adjustable photographic-printing frame, a sliding clamp consisting of a base and an upper plate, each of which is provided with a bar, and a lower plate additionally provided with screw-threaded stems adapted to receive thumb-screws for holding the stationary and detachable pieces of said frame together.

5. In an adjustable photographic-printing frame, an adjustable bar for hinging the compression-plates together, substantially as set forth.

6. In an adjustable photographic-printing frame, an adjustable bar composed of two sections yieldingly connected for hinging the compression-plates together, substantially as set forth.

7. In an adjustable photographic-printing frame, an adjustable bar consisting of two sections, a tube for receiving the ends of said sections, and a spiral spring interposed between the ends of the same, whereby said sections are yieldingly connected, substantially as set forth.

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

H. B. HENNEMANN.

Witnesses:

E. E. LONGAN,
A. M. EVERIST.