No. 678,661. Patented July 16, 1901.

G. W. HARTMAN.

PHOTOGRAPHIC PRINTING FRAME.

(No Model.) (Application filed Oct. 11, 1900.)

Fig. 1.

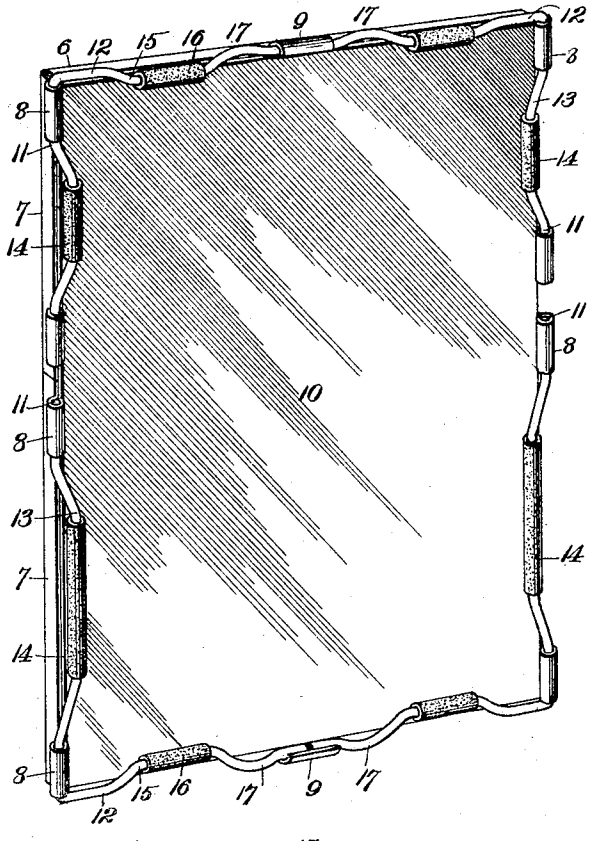


Fig. 2.

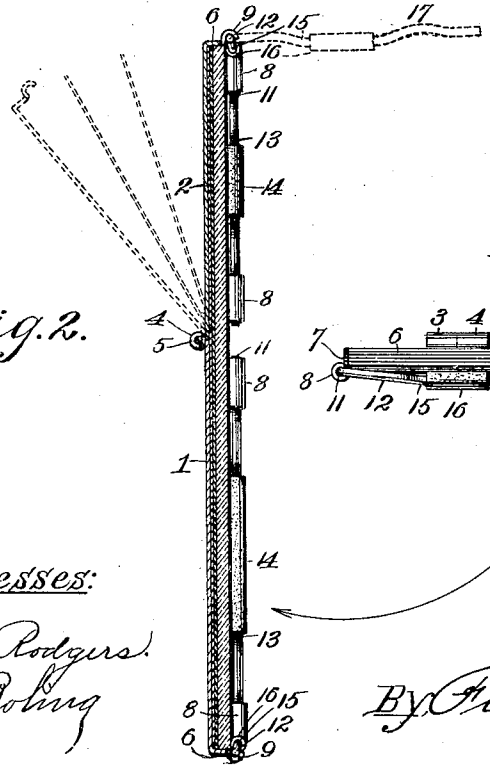
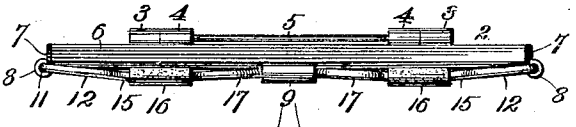


Fig. 3.



Witnesses:
H. C. Rodgers.
J. W. Boling

Inventor:
Geo. W. Hartman.
By Fischer & Thompson
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. HARTMAN, OF KANSAS CITY, KANSAS.

PHOTOGRAPHIC-PRINTING FRAME.

SPECIFICATION forming part of Letters Patent No. 678,661, dated July 16, 1901.

Application filed October 11, 1900. Serial No. 32,676. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. HARTMAN, a citizen of the United States, residing at Kansas City, Wyandotte county, Kansas, have invented a new and useful Photographic-Printing Frame, of which the following is a specification.

My invention relates to photographic-printing frames of that type embracing a back, consisting of two sections hinged together, the glass and means for holding said frame-sections rigidly in the same plane with the interposed sensitized paper and negative pressed flatly and tightly against each other and the back and glass, respectively.

One object is to produce a frame of this character which shields the edges of the sensitized paper from all light-rays except those which first pass through the image—viz., the negative—and which reliably insures the return of the print and negative after being exposed for examination to the identical positions they originally occupied. As far as I am aware no frame of the type under consideration has heretofore fully met these requirements, as they lack not only an inclosing wall to exclude light from direct access to the edges of the sensitized paper, but also means for reliably guarding against slippage of the glass, negative, and sensitized paper during examination of the "print" or while opening or closing the frame preparatory or subsequent to such examination.

A further object is to produce a printing-frame which can be opened and closed with greater convenience, ease, and despatch than others of its class.

With these general objects in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a perspective view of a photographic-printing frame constructed in accordance with my invention. Fig. 2 represents a central longitudinal section of the same, also illustrating in dotted lines the method of exposing a print for examination. Fig. 3 is an edge view of one end of the frame.

In carrying out my invention the frame is preferably constructed of sheet metal—such as galvanized iron, for instance—and as distinguished from the common type of frames, which comprise a rigid glass inclosure and a removable back, embodies a frame wherein the glass inclosure is sectional and independently movable as well as rigidly and permanently connected to the back, and consists of two sections, one larger than the other, by preference, but in other respects of like construction.

In detail, 1 designates the large, and 2 the small, section, which mate together as though formed of integral construction. These sections at their meeting edges are hinged together, preferably by forming at such edges the alined loops 3 on section 1 and 4 on section 2 and connecting said sections by the hinge-rod 5.

The glass inclosure or wall part of the structure is in the form of end flanges 6 and side flanges 7, projecting forwardly from the margins of sections 1 and 2. The meeting ends of the side flanges square together, so as to limit the movement of the sections in a forwardly direction and hold them in perfect alinement.

8 designates longitudinal hinge loops or coils formed at the front edges of flanges 7, and 9 half coils or catches formed centrally of the transverse flanges 6, said half coils or catches being disposed inwardly.

In practice the entire sheet-metal portion of the framework is adapted to be stamped out of metal, with the flanges, the coils, and the catches integrally formed therewith.

The clamps are constructed of spring-wire bent to substantially right-angle form, the longitudinal arms 11 fitting in the hinge-coils so as to turn therein, with the free ends of the transverse arms 12 adapted to engage the catches 9. One set of said arms, at least, and preferably the former, are provided with cranks 13, adapted when arms 12 are engaged with the catches to press the transparent or glass face-plate 10 firmly back against the back sections and hold the latter perfectly straight, as indicated, and in order to eliminate all chance of cracking or chipping the glass said cranks are provided with cushions 14, preferably in the form of rubber tubes, so as to apply a firm but yielding pressure un-

der such action. In large frames it may also be found desirable to provide arms 12 with similar cranks 15 and provide said cranks likewise with resilient cushions, as at 16, and in any event to facilitate the disengagement of arms 12 from the catches. The former adjacent to the latter are bent or humped outward, as at 17, so as to dispose them a sufficient distance beyond flanges 6 to permit the operator by pressure of his fingers to easily effect such disengagement. This style of frame may be placed upon a table with arms 12 thrown back, as indicated by arrows, Fig. 3, to permit the sensitized paper, the negative, and the glass to be placed therein in the order named, or the negative and sensitized paper may be placed against the glass and the frame fitted over accordingly, as the operator desires. The clamps are then swung around to position and the spring-arms 12 engaged with the catches 9, this action thus clamping the glass and frame rigidly together and in perfect alinement and securing them in this relation.

If it be desired at any time to inspect the print, the operator preferably takes the frame in his hands with the palms against the back and with his fingers applies pressure upon humps 17 and disengages the contiguous arms 12 from the catches and with practically the same movement swings said arms forward and permits the upper section to assume approximately the position shown in dotted lines, Fig. 2. The back as it falls away from the glass has a tendency to draw the print and negative with it, when the operator inserts his index-finger between the negative and print and has the latter in the most convenient position for examination without the slightest possible chance of slippage or injury to the negative. The inspection being concluded he presses said section back again, swings arms 12 inward, and secures them to the catch. It will thus be seen that the inspection may be made in an instant and with the utmost convenience, as it is entirely unnecessary, and even with a small frame undesirable, to place it upon a table or other surface, as is customary with the ordinary frames when making an inspection. With a large frame it may, perhaps, be desirable to lay it on its back on a table and then disengage the clamps at one end. In doing this the hinge compels the frame to assume approximately an inclined position with one end, usually the heavy end, resting on the table and the other end projecting upwardly, so that as the disconnection between the clamp-arms 12 of the latter and the catches is effected the latter drops down and exposes the print to a convenient examination, as will be readily understood.

Though not shown it will be understood, of course, that a sheet of blotting-paper or equivalent material should be employed as a backing for the sensitized paper in order that any irregularity of surface or variations in the thickness of the negative or paper may be accommodated. The use of this backing-sheet is of course well known, being used in practically all photographic and blue-print frames. It therefore need not be illustrated or further described in this connection.

From the above description it will be apparent that I have produced a photographic-printing frame embodying the features of advantage enumerated as desirable, and while I have illustrated and described the preferred embodiment of the invention it will be apparent that it is susceptible of minor changes without departing from the spirit and scope of the invention.

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

1. A photographic-printing frame, comprising a plurality of sections hinged together and embodying back portions and an inclosure or wall fixed to the outer and side edges of said back portions, a transparent or glass face-plate, and means for clamping said glass in the frame and the sections of the latter in alinement, with the said walls inclosing the side and edges of said glass, substantially as described.

2. A photographic-printing frame, comprising a plurality of sections hinged together and embodying back portions and an inclosure or wall fixed to the outer and side edges of said back portions, spring-clamps pivoted to said sections, a transparent face-plate to be held in the frame and the sections of latter in alinement by said clamps with the said walls inclosing the side and end edges of the glass, and catches to secure the clamps in such relation, substantially as described.

3. A photographic-printing frame, comprising a plurality of sections hinged together and embodying back portions and an inclosure or wall fixed to the outer and side edges of said back portions, a transparent face-plate to be inclosed by said inclosure or wall, and means to secure said parts in such relation with a yielding pressure, substantially as described.

4. A photographic-printing frame, comprising a plurality of sections hinged together and embodying back portions and an inclosure or wall fixed to the outer and side edges of said back portions, a transparent face-plate to be inclosed by said inclosure or wall, spring-clamps pivoted to said sections, and provided with cranks to press the transparent face-plate firmly into the frame, and catches to secure said clamps in such relation, substantially as described.

5. A photographic-printing frame, comprising a plurality of sections hinged together and embodying back portions, an inclosure or wall fixed to the outer and side edges of said back portions and catches, a transparent face-plate to be inclosed by said inclosure or wall, clamps, comprising arms pivoted to the frame and spring-arms adapted to engage said catches and hold said parts in such relation, one of

the arms of each clamp having a crank to press the transparent face-plate in and hold the sections of the frame in alinement, substantially as described.

6. A photographic-printing frame, comprising a plurality of sections hinged together and embodying back portions, an inclosure or wall, and catches, a transparent face-plate to be inclosed by said inclosure or wall, clamps, comprising arms pivoted to the frame and spring-arms adapted to engage said catches and hold said parts in such relation, one of the arms of each clamp having a crank to press the transparent face-plate in and hold the sections of the frame in alinement, said crank being provided with a cushion to apply a yielding pressure on the plate, substantially as described.

7. A photographic-printing frame, comprising a plurality of sections hinged together and embodying back portions an inclosure or wall, and catches, a transparent face-plate to be inclosed by said inclosure or wall, clamps comprising arms pivoted to the frame and spring-arms adapted to engage said catches and provided with humps adjacent thereto, and hold said parts in such relation, one of the arms of each clamp having a crank to press the transparent face-plate in and hold the sections of the frame in alinement, said crank being provided with a cushion to apply a yielding pressure on the plate, substantially as described.

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

GEORGE W. HARTMAN.

Witnesses:

H. C. RODGERS,

G. Y. THORPE.

Correction in Letters Patent No. 678,661.

It is hereby certified that in Letters Patent No. 678,661, granted July 16, 1901, upon the application of George W. Hartman, of Kansas City, Kansas, for an improvement ment in "Photographic-Printing Frames," an error appears in the printed specification requiring correction, as follows: In line 94, page 2, after the word "and" the word *end* should be inserted; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 11th day of February, A. D., 1902.

[SEAL.]

F. L. CAMPBELL,
Assistant Secretary of the Interior.

Countersigned:

F. I. ALLEN,
Commissioner of Patents.

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