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W. O. DUMKE.
RETOUCHING FRAME.
APPLICATION FILED SEPT. 4, 1909.

Patented Aug. 30, 1910.

2 SHEETS—SHEET 1.

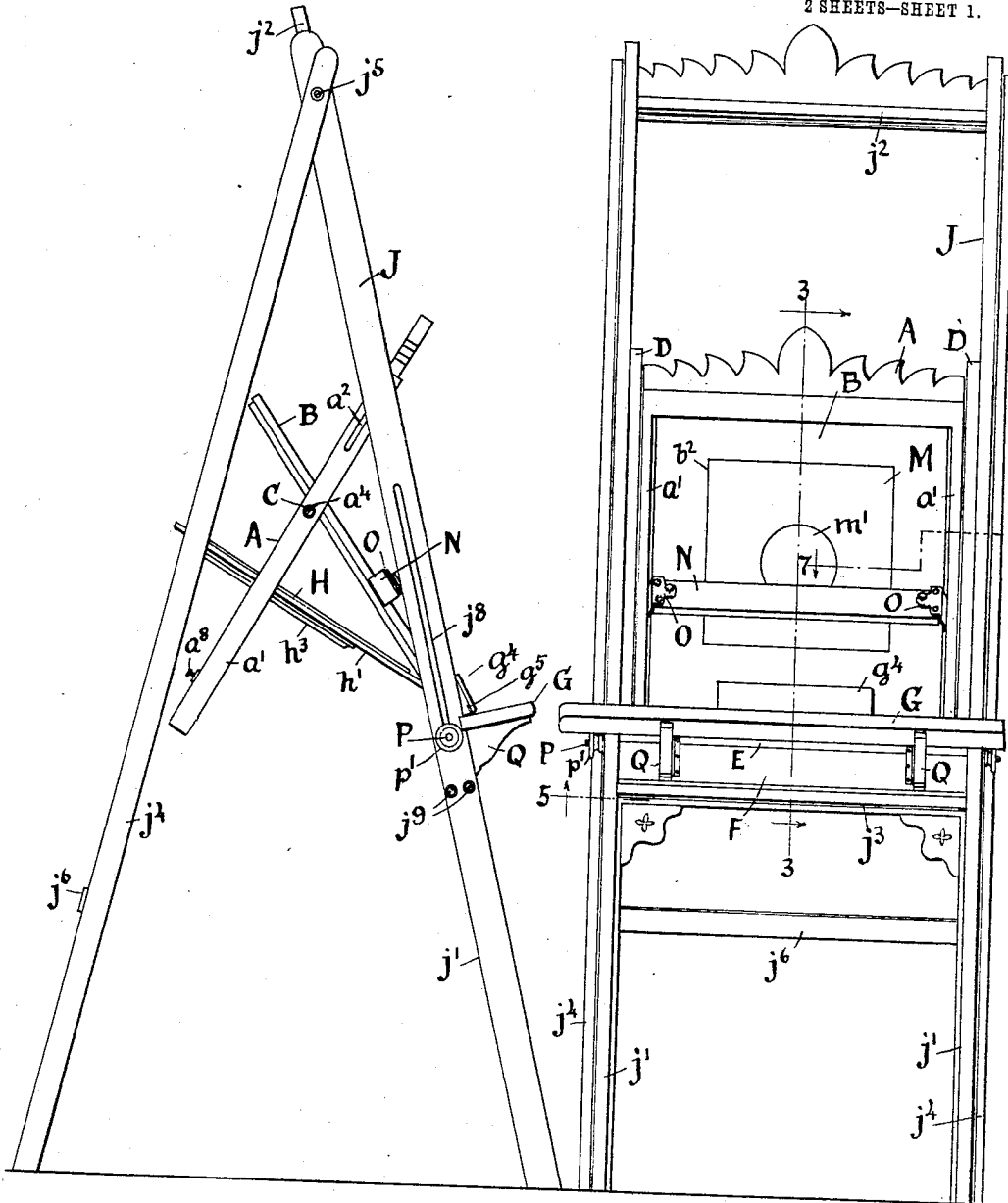


Fig. 1

Fig. 2

William O. Dumke, Inventor

Witnesses
M. R. Jungbluth

M. W. Blackburn

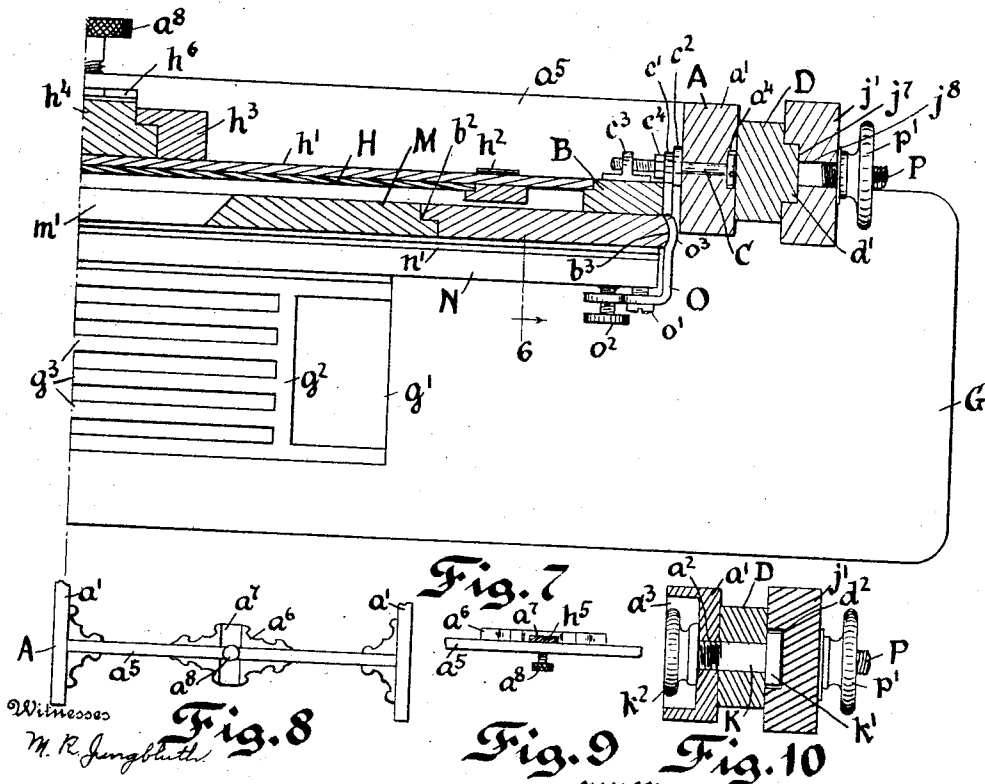
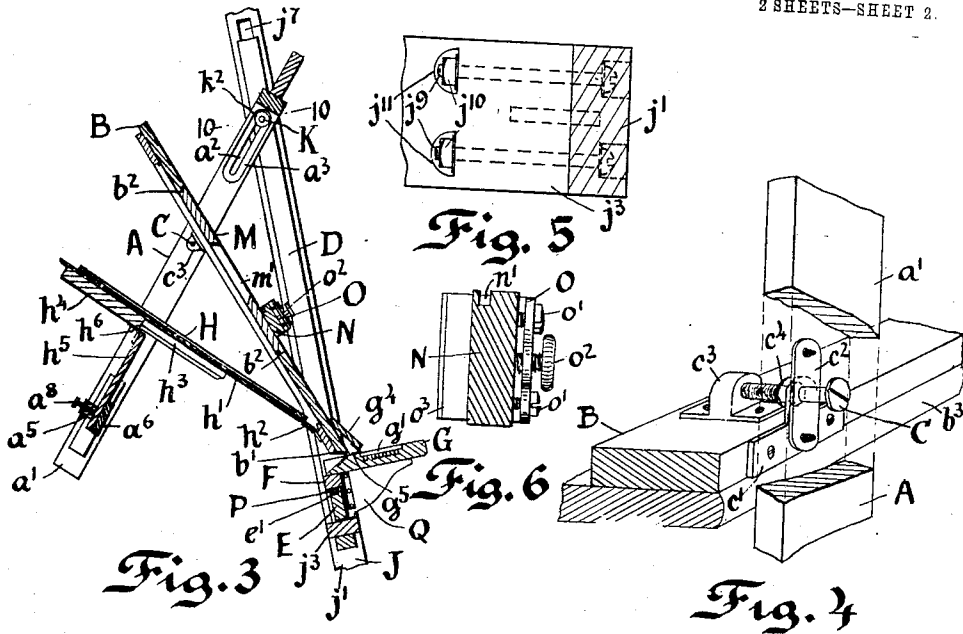
By *George W. Moore* Attorney

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M. R. Jungbluth

W. H. Blackburn

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UNITED STATES PATENT OFFICE.

WILLIAM O. DUMKE, OF MANITOWOC, WISCONSIN.

RETOUCHING-FRAME.

969,047.

Specification of Letters Patent. Patented Aug. 30, 1910.

Application filed September 4, 1909. Serial No. 516,250.

To all whom it may concern:

Be it known that I, WILLIAM O. DUMKE, of Manitowoc, county of Manitowoc, Wisconsin, have invented a Retouching-Frame, of which the following is a specification.

The object of the present invention is to provide an improved apparatus for retouching photographic negatives, coloring lantern-slides and hand-work upon transparencies in general. This work is carried on by means of a frame which supports the negative in such manner that light is transmitted through it, enabling the operator to see the picture which is being worked upon.

More specifically, the invention consists in providing an improved arrangement of parts and more numerous adjustments than are present in devices of the sort which are now in use.

My invention comprises in general a frame supporting a negative-board; elements on which this frame is pivotally and slidably mounted to enable it to be set at any angle; an adjustable mirror for reflecting the light at the proper angle to strike the negative; a sliding negative-support which can be set at any height or entirely removed by a simple manipulation; together with an easel which may or may not be used in combination with the above described parts, and which is capable of an adjustment enabling the frame to be removed therefrom; and other conveniences of construction which will be hereinafter particularly described and pointed out in my claims.

Referring to the drawings hereto appended, which illustrate the most improved form of my invention, Figures 1 and 2 are respectively a side and a front elevation of the complete apparatus; Fig. 3 is a longitudinal section on the plane 3 of Fig. 2 of the frame proper; Fig. 4 is a perspective view on an enlarged scale of the pivot-joint between the negative-frame and the main-frame; Fig. 5 is a transverse section through one leg of the easel looking up, on the plane 5 of Fig. 2. Fig. 6 is a transverse section on the plane 6 of Fig. 7, of the negative support; Fig. 7 is a transverse section through the right-hand half of the apparatus on the plane 7 of Fig. 2, looking down. Fig. 8 is a rear elevation of the lower cross-bar of the main-frame; Fig. 9 is a plan-view of the

middle part thereof; and Fig. 10 is a fragmentary transverse section through the main frame and easel on the axis of the pivot-pin K.

In these drawings the reference letters and numerals refer always to the same respective parts.

The apparatus comprises a main-frame A and a negative-frame B pivoted thereto by a pivot-screw C in the manner shown in Fig. 4 at intermediate points of each; a pair of sliding-bars D which have longitudinal ribs d' on their outer sides adapting them to slide in corresponding grooves in the easel, and are cross-connected at the bottom by cross-bars E and F and a rest-plate G, to which latter the negative-frame is pivoted by means of hinges b' ; and a mirror H, which is set in a frame or backing h' , is pivoted to the lower cross-bar of the negative-frame by hinges h^2 , and is adjustably connected with the frame A in a manner which will be described presently. To these parts are added the easel J upon which the frame-proper is adjustably mounted and from which it can be readily removed in case it is desired to use the frame upon an ordinary table.

The side-bars a' of the frame A have slots a^2 at their upper ends, in each of which runs a pin K which is fixed in a hole in the upper end of the corresponding sliding bar D, its head k' being rectangular and set in a correspondingly shaped recess d^2 in the rib d' on the outer side of the bar, while its opposite end is threaded engaged by a milled nut k^2 running in a rabbet a^3 upon the inner face of the slot a^2 ; so that neither the head nor the nut projects beyond the part within which it is fixed; by which arrangement the negative-frame is enabled to fold completely within the main-frame when the apparatus is folded up. Correspondingly the head of the screw of the pivot screw C lies flush within a recess a^4 in the side-bar a' of the main frame, so that the latter will fold inside of the sliding-bars D, as illustrated in Fig. 7. A pair of wear-plates c' c^2 are attached respectively to the member a^4 and the edges of the frame B, through holes in which plates the pivot-screw C passes and its end engages in a threaded socket-piece c^3 on the back of the frame B, enabling the movement

of the frame on the pivot to be made tight or loose as required. To hold the adjustment a lock-nut c^4 may be added.

On the back of the mirror H are fixed two longitudinal undercut strips h^3 , between which slides a member h^4 , to the lower end of which is attached a tongue h^5 by means of a hinge h^6 . To the lower cross-bar a^5 of the frame is attached a grooved piece a^6 in the manner illustrated by Fig. 8, so as to leave an aperture a^1 through which the tongue h^5 passes, and in which it slides, being retained in any desired position therein, by means of a set-screw a^8 . Thus the mirror may be set at any desired angle by simply moving the tongue h^5 and correspondingly sliding the member h^4 .

The negative-frame B is made with a rabbeted opening b^2 , in which is set a plate M, the size of which is sufficient for large photographic negatives, so that in operating on these large negatives the plate M is removed and the negative set in the groove n' in the upper edge of the cross-bar N and brought opposite the opening. The plate M has a smaller circular opening m' in its center of sufficient size for smaller negatives. In connection with this there is mounted upon the frame B a sliding-support N for the negative, said support comprising a cross-bar having a groove n' in its upper edge in which the edge of the negative rests. The bar N is connected with the frame B by means of a pair of angularly bent metal clips O at its opposite ends. Each clip O is mounted upon a pair of fulcrum-screws o' in the ends of the bar, and each strip O is provided with a clamping-screw o^2 mounted in a threaded socket in its end and pressing against the face of the bar N. The other end of the strip O is concaved, as shown at o^3 , to enable it to engage the rounded edge b^3 of the negative-frame; so that when the screws o^2 are screwed up tight, the concaved ends of the strips O are caused to grip the edges of the frame B and thus hold the negative supported in place; and in order to shift the latter it is merely necessary to loosen the screws o^2 . By a further loosening of the screws o^2 the negative-support may be removed entirely. Thus by raising and lowering the negative-support the exact portion of the negative which the operator desires to work upon will be brought opposite the hole m' in which position it will be visible by transmitted light, reflected from the mirror.

The easel J comprises a front frame consisting of a pair of upright side-bars j' connected at the top by a cross-bar j^2 and at the bottom by a detachable cross-bar j^3 ; said frame being supported by the two rear legs j^4 pivoted thereto at j^5 and connected near their lower ends by a cross-piece j^6 . The front bars j' of the easel are grooved as

shown at j^7 to receive the ribs d' of the bars D, which slide therein as hereinabove indicated. This enables the frame to be set at any desired height upon the easel; and to secure the frame in such position, as well as to clamp the parts rigidly together, I provide a bolt P which passes from one side to the other of the frame and through slots j^8 in the two front legs of the easel, and has on the outer sides of the legs clamping nuts p' . The bolt P is received within a groove e' along the upper edge of the cross-bar E, and the members E, F, G are secured together by a pair of bracket supports Q, which serve also to support the plate C. As the bars D and cross-members E, F, G and the other parts of the frame are raised and lowered, the bolt P runs in the slot j^8 , and is clamped in any desired position by the nuts p' .

The cross-bar j^3 is secured to the legs j' by means of two screws j^9 at each end, which engage nuts j^{10} set in recesses j^{11} on the under side of the cross-bar j^3 ; so that when it is desired to release the frame from the easel it is merely necessary to remove the screws j^9 , which enables the legs to spread until the bars D are released from the slots j^7 .

For convenience of use I prefer to form the rest-plate G with a recess g' in its upper side, divided by partitions g^2 , g^3 into various compartments wherein brushes, paints and other paraphernalia may be kept, said recess being provided with a cover-plate g^4 turning on hinges g^5 .

By the aid of the removable plate M and the negative support N, even the largest size of negative can be operated on, which would not be possible were the size of the aperture limited to that of the hole m' . It will be understood that to enable any part of the plate to be operated on, it is necessary to raise and lower it as well as to shift it laterally with respect to the frame, and when the largest sizes are being worked upon, the lateral shifting of which would, in the position of the drawings, be interfered with by the striking of the edges of the negative upon the side-legs j' or frame-bars a' , the frame will be folded up so that the face of the plate M and frame B will set flush with the frame A and side-legs j' in which position the negative can be shifted laterally without interference by the latter, and the mirror adjusted independently.

While I have hereinabove shown the most improved form of my invention, I wish it understood that not all of the features are essential thereto or necessarily made in the exact form shown, but various changes and modifications in the constructions as herein shown may be made without departing from the spirit of my invention, and I wish it understood therefore that the latter is not

otherwise limited than by the reasonable scope of my claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, the combination of an easel having side-legs, a pair of side-bars slidably mounted on said legs, and a main frame and a negative-frame pivotally connected by pivot joints with said bars and with each other and one of said joints being slidable with respect to one of the elements which it connects; whereby the three elements may be set at different angles with respect to each other.

2. In a device of the class described, the combination of an easel having side-legs, a pair of side-bars slidably mounted on said legs, a main frame and a negative-frame pivotally connected by pivot joints with said bars and with each other, and a mirror pivotally mounted on one of said frames and adjustably connected with the other frame.

3. A device of the class described comprising a main frame, a negative-frame, and a pair of side-bars, each of said parts pivotally connected with the other two; and a mirror pivotally mounted on one of said frames and adjustably connected with the other frame.

4. In a device of the class described, the combination of an easel having a pair of front-legs which are separably connected together, and an adjustable retouching frame slidably mounted thereon and engaging the legs of said easel in such manner that they become disengaged therefrom when said legs are separated.

5. In a device of the class described, the combination of an easel having a pair of separable front-legs, means for holding said legs together in parallel relation, and an adjustable retouching-frame having sliding-bars at the sides which are slidably engaged with said legs in such manner as to become disengaged therefrom when said legs are separated, whereby said frame may be removed from said easel.

6. In a device of the class described, the combination of a pair of side-bars, one or more pieces connecting said bars together, a negative-frame hingedly mounted on one of said pieces at its lower edge, and a main frame connected by pivot joints with said side-bars and said negative-frame; one of said joints having a slidable relation with said main frame, whereby the relative angular position between said side-bars and said negative-frame may be varied.

7. In a device of the class described, the combination of a pair of side-bars, one or more pieces connecting said bars together, a negative-frame hingedly mounted on one of said pieces at its lower edge, and a main

frame connected by pivot joints with said side-bars and said negative-frame, one of said joints having a slidable relation with said main frame whereby the relative angular position between said side-bars and said negative-frame may be varied, and said joint having means for clamping the sliding-member in any desired position.

8. In a device of the class described, the combination of a pair of side-bars, one or more pieces connecting said bars together, a negative-frame hingedly mounted on one of said pieces at its lower edge, a main frame connected by pivot joints with said side-bars and said negative-frame, one of said joints having a slidable relation with said main frame whereby the relative angular position between said side-bars and said negative-frame may be varied, a mirror hingedly mounted at its lower edge to one of the aforesaid members, and adjustable means connecting said mirror with said main frame.

9. In a device of the class described, a pair of side-bars, a negative-frame pivotally connected therewith at its lower edge, a mirror pivotally mounted on said negative-frame at its lower edge, a member connecting said negative-frame with said side-bars and having means for adjusting the angle of said negative-frame, and an adjustable connection between said member and said mirror, whereby the angular position of the mirror may be varied.

10. In a retouching-frame, a negative-support comprising, in combination with a frame, a transverse bar on the front thereof, a pair of angular clamping-strips mounted on the ends of said bar and having their ends engaging the edges of said frame, and means for drawing the ends of said angular piece up tight against the edges of said frame so as to clamp said bar in position thereon.

11. In a retouching-frame, the combination with a negative-frame of a negative-support comprising a horizontal bar on the face thereof adapted to be set at various heights thereupon, a pair of angular pieces mounted on the ends of said bar so as to have a slight pivotal movement, one end of each piece being shaped to engage the edge of said frame, and a pair of clamping-screws engaging threaded apertures in the respective pieces on the other ends thereof, said clamping-screws pressing against the face of said bar, whereby when turned up they force said pieces into engagement with the edges of said frame.

12. In a retouching-frame, the combination with a negative-frame having convex edges, of a negative-support comprising a horizontal bar disposed across the face of said frame and adapted to be supported at various heights thereupon, a pair of angular clamping-pieces loosely mounted on the free

ends of screws fixed in the ends of said bar, one end of each clamping-piece having a screw-threaded aperture therein and the other being concaved to engage the corresponding convexed edge of said frame, and a pair of clamping-screws engaging in said apertures and pressing upon the face of said bar; whereby said bar may be clamped in position on said frame.

10 13. A retouching-frame comprising a pair of side-bars, one or more transverse pieces uniting them at their lower ends, a negative-frame hinged at its lower edge upon one of said transverse pieces, a main frame pivotally connected with said negative-frame at a point midway between the top and bottom of the latter, a pair of pivots mounted on the respective side-bars above the pivot of said negative-frame and main frame, said main frame having slots in which said pivots run, and clamping-nuts adapted to secure said pivot in any desired position in said slots.

14. A retouching-frame comprising a pair of side-bars, one or more transverse pieces uniting them at their lower ends, a negative-frame hinged at its lower edge upon one of said transverse pieces, a main frame pivotally connected with said negative-frame at a point midway between the top and bottom of the latter, a pair of pivots mounted on the respective side-bars above the pivot of said negative-frame and main frame, said main frame having slots in which said pivots run, a mirror hinged at its lower edge to said negative-frame, a piece mounted to slide longitudinally upon the back of said mirror, a tongue pivotally mounted on said last-named piece and running between guiding surfaces formed in the lower cross-bar of said main frame, and a set-screw mounted on the cross-bar of said frame and adapted to clamp said tongue in any desired position.

15. The combination with an easel having parallel front legs grooved on their inner faces and slotted longitudinally, of a pair of side-bars running in the grooves, one or more transverse pieces connecting said side-bars, a transverse bolt embedded in said transverse pieces and having its ends thread-

ed and running in said slots, nuts mounted on the threaded ends of said bolt whereby it may be clamped in any desired position in said slots, and a negative-frame adjustably mounted on said side-bars.

16. The combination with an easel having parallel front legs grooved on their inner faces and slotted longitudinally, of a pair of side-bars running in the grooves, one or more transverse pieces connecting said side-bars, a transverse bolt embedded in said transverse pieces and having its ends threaded and running in said slots, nuts mounted on the threaded ends of said bolt whereby it may be clamped in any desired position in said slots, and a negative-frame and mirror pivotally connected with said side-pieces and having independent angular adjustments.

17. The combination with an easel having parallel front legs grooved on their inner faces and slotted longitudinally, of a pair of side-bars running in the grooves, one or more transverse pieces connecting said side-bars, a transverse bolt embedded in said transverse pieces and having its ends threaded and running in said slots, nuts mounted on the threaded ends of said bolt whereby it may be clamped in any desired position in said slots, a negative-frame and a mirror pivotally connected at their lower edges with said transverse pieces, a main-frame rotatably and also slidably connected with said side-bars near the upper ends of the latter, said main frame and negative-frame being pivoted together upon an axis midway of the latter, a member sliding longitudinally in guides upon the back of said mirror, a tongue pivotally connected with said last-named member and running between guiding surfaces formed on the lower cross-bar of said main frame, and a set-screw on said cross-bar adapted to clamp said tongue in position.

In witness whereof I have hereunto set my hand this first day of September, 1909.

W. O. DUMKE.

Witnesses:

HENRY CLUSEN,
J. A. GLANDER.