

June 30, 1953

T. H. KRUEGER
DRY MOUNTING PRESS

2,643,699

Original Filed July 29, 1948

2 Sheets-Sheet 1

Fig. 1

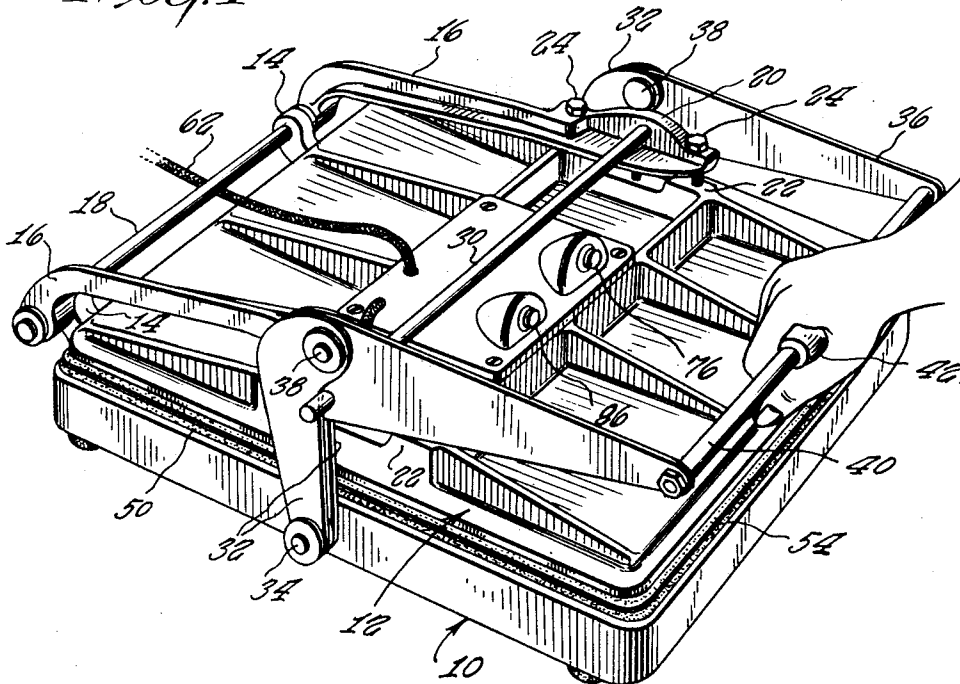
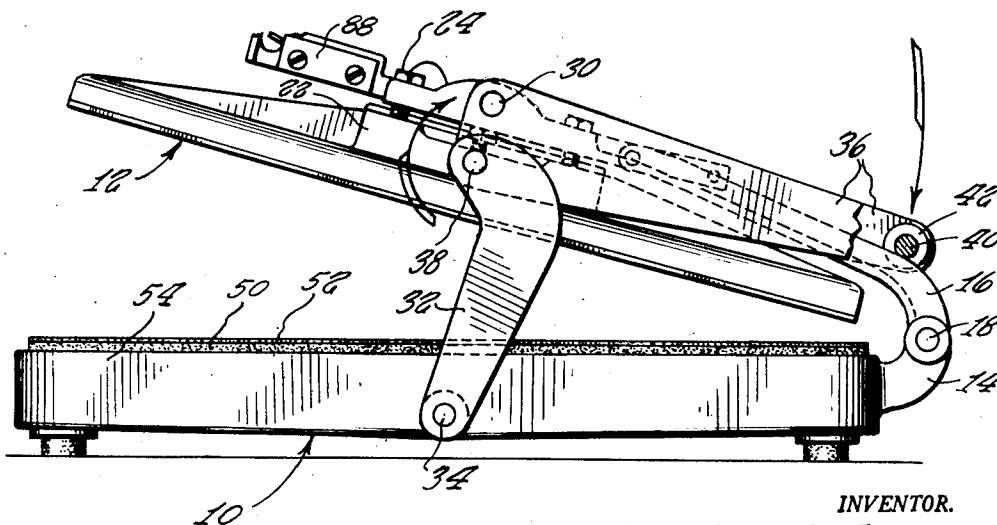


Fig. 2



INVENTOR.

Theodore H. Krueger
BY

Moses, Holte, Crows + Berry
ATTORNEYS

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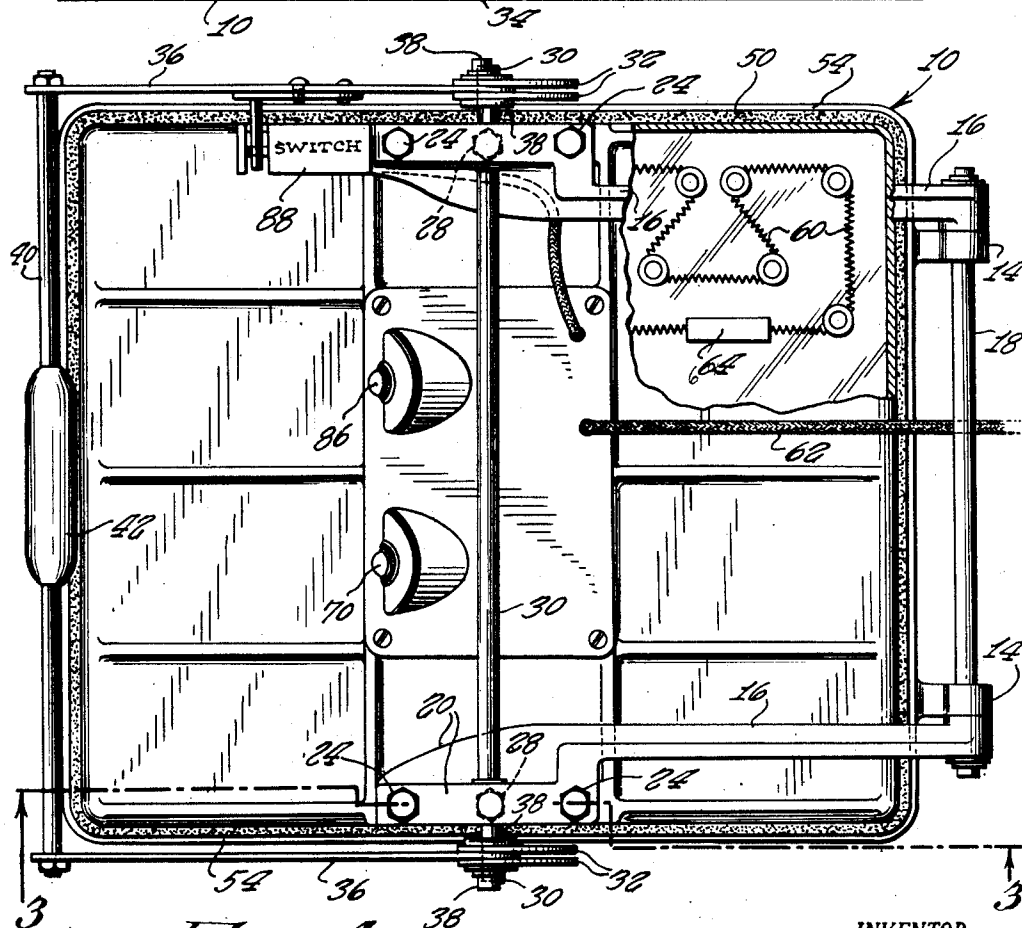
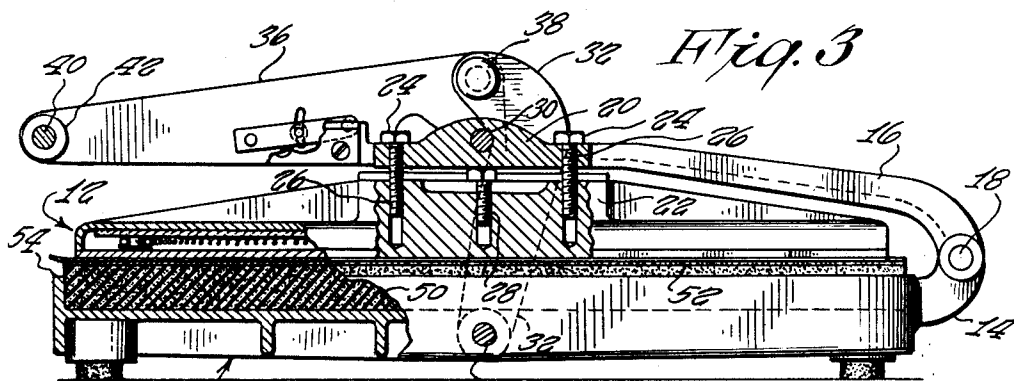


Fig. 4

INVENTOR.
Theodore H. Krueger
BY
Moses, Holte, Crows & Berry
ATTORNEYS

UNITED STATES PATENT OFFICE

2,643,699

DRY MOUNTING PRESS

Theodore H. Krueger, Stratford, Conn., assignor
to Seal Incorporated, a corporation of Con-
necticut.

Original application July 29, 1948, Serial No.
41,378. Divided and this application August 22,
1950, Serial No. 180,734

8 Claims. (Cl. 154—1)

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This invention relates to mounting presses, and particularly to the type of presses commonly called dry mounting presses which are used for the mounting of photographic prints and the like by means of a heat sealing adhesive. Such an adhesive may conveniently be applied in the form of a heat sealing mounting tissue which is placed between the print and the mounting card or sheet, heat and pressure being applied by the press.

If satisfactory results in the mounting of photographs are to be secured by the use of dry mounting presses, it is important that the right amount of heat be supplied, and that it be supplied for the correct period of time. It is also important that a form of press be employed which will apply the requisite pressure uniformly over the entire surface of the print.

This application is a division of my application for patent, Serial No. 41,378, filed July 29, 1948, which application is directed primarily to the means utilized for insuring that the press is heated to the right temperature and that the heat be maintained for the correct period of time. The subject matter of the present application relates to the structural characteristics of the press irrespective of what means may be employed to control the heat.

It is an object of the invention to provide a press which will apply uniform pressure over the entire print and mount irrespective of the exact thickness of the print or mount or of slight irregularities in such thickness.

It is also an object of the invention to provide a simple and effective press construction in which an effective degree of pressure can be uniformly applied with a minimum of effort on the part of the operator.

It is a further object of the invention to provide a press construction which is very simple to operate and inexpensive to build.

Other objects and advantages of the invention will appear in the course of the following description of a preferred embodiment of the invention chosen to illustrate the principles thereof.

In the accompanying drawings

Figure 1 is a perspective view of a press embodying the invention;

Figure 2 is a side elevation of the press with the platen in raised position;

Figure 3 is a view partly in side elevation and partly in longitudinal vertical section on line 3—3 of Fig. 4; and

Figure 4 is a top plan view of the press with portions of the platen broken away.

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Referring to the drawings in detail, the press comprises a bed 10 and a platen 12 which for convenience are preferably hinged together as for example by a hinge construction comprising ears 14 on the bed, and hinge arms 16 pivoted to the ears 14 by a shaft 18 and connected to the platen 12 at opposite ends of a transverse axis extending substantially across the center thereof. In the construction shown, the arms 16 are provided with heads 20, heads 20 being connected to bosses 22 near the side edges of the platen by means of cap screws 24. These cap screws 24 pass freely through unthreaded holes 26 in the heads 20 so that some play is permitted to the platen enabling it to level itself properly when pressed against the bed. A third cap screw 28 is provided at each side of the platen screwing into the boss 22 and having its head bearing against the under side of the head 20 on the adjacent arm 16. The construction permits the platen to be adjusted vertically by screwing or unscrewing the screws 28 and correspondingly loosening or screwing up the screws 24.

The heads 20 carry a cross bar 30, the ends of which project laterally. This cross bar crosses the platen at or near its center line and constitutes the actual means for transmitting pressure to the platen when the press is closed. Such pressure is applied by means of hook shaped toggle links 32, a pair of which are preferably provided at each side of the bed, pivoted thereto by pivot pins 34, and by a pair of toggle levers 36, one at each side of the bed, such toggle levers being pivoted to the ends of the toggle links 32 by pivot pins 38. The toggle levers 36 have holes therein which fit over the projecting ends of the cross bar 30. The free ends of the toggle levers 36 are connected by a cross bar 40 provided with a hand grip 42. The proportions of the toggle members and relative location of the centers are such that when the toggle levers are swung forward to pressing position, as shown in Figs. 1, 3 and 4, the line joining the axis of pivots 38 and pivots 34 lies to the left of the axis of shaft 30, so that the press is locked closed. When the toggle levers are swung to a rearward position as shown in Fig. 2, the press is open and the line joining the pivots 38 and 34 again passes to the left of the axis of shaft 30 so that the press will stand in open position.

In the construction described, it will be seen that the hinge arms 16 merely carry the platen whether in its open or closed position as they swing around the hinge shaft 18. The actual closing pressure forcing the platen against the

bed is not transmitted through the hinge shaft 18, but is applied directly by the toggle mechanism to the cross bar 30 at the center of the platen. This tends to equalize the pressure on the platen and also relieves the hinge shaft 18 of strain so that a very light hinge construction can be utilized.

The bottom face of the platen is preferably a smooth, hard surface. The bed of the press is preferably provided with a deeply resilient surface to cooperate with the face of the platen so as to insure an even distribution of pressure over the print and mount which are placed between the platen and the bed. In the preferred construction of bed illustrated, the latter is provided with a thick body 50 of resilient material, preferably sponge rubber, upon the upper surface of which is preferably secured a layer of felt 52. The bed 10 may conveniently be formed with a marginal flange 54 so as to provide a recess or box-like formation to receive the sponge rubber body 50. The sponge rubber body projects sufficiently above the top edge of the flange 54 to provide for full resilient action.

The platen is provided with electrical heating means of a suitable character, such as the usual resistance coils 60, supplied from the flexible cable 62. The resistance circuit may be provided with an automatic thermostatic control element 64 of usual construction which maintains the platen at the desired approximate constant temperature once the current is turned on.

In order to warn the operator not to use the press until it has reached the necessary temperature a "go-ahead" signal 70 is preferably provided. A timing signal is also preferably provided by which the operator can tell just how long to keep the press closed in order to secure the optimum results. A visual indicator for such a timing signal is shown at 86. A switch is also shown at 88 which automatically places the indicator in operation when the platen of the press is closed. These features are not covered herein as they are fully described and claimed in application, Serial No. 41,378 above referred to. If for any reason the temperature of the platen falls below the safe operating temperature, then the light 70 will go out, warning the operator not to use the press. The light is preferably provided with a distinctively colored lens 76 which is usually green to indicate a safe operating condition.

While I have illustrated and described in detail one preferred form of my invention, it is to be understood that changes may be made therein and the invention embodied in other structures. I do not, therefore, desire to limit myself to the specific construction illustrated, but intend to cover my invention broadly in whatever form its principles may be utilized.

I claim:

1. A photographic mounting press, comprising a bed, a platen, hinge members hinged to the bed to which the platen is adjustably secured, toggle links pivotally connected to opposite sides of the bed near the longitudinal center thereof, toggle levers pivotally connected to the toggle links, means for manually operating said toggle levers, and means for pivotally connecting the toggle levers to the hinge members at points so near to the longitudinal center of the platen that a substantially balanced closing pressure is applied by direct action of the toggle levers without substantial strain on the hinge connection between the bed and platen.

2. A photographic mounting press comprising a bed, a platen, hinge members hinged to the bed to which the platen is adjustably secured, toggle links pivotally connected to opposite sides of the bed near the longitudinal center thereof, toggle levers pivotally connected to the toggle links, means for manually operating said toggle levers, means for pivotally connecting the toggle levers to the hinge members and platen at points approximately at the longitudinal center of the platen, the axes of the pivotal connections between the toggle links and the bed, the toggle links and the toggle levers, and the pivotal connections between the toggle levers and hinge members being such that when the toggle levers are moved into a position to close the press, the axis of the pivotal connection between the toggle levers and the hinge members passes the line joining the other two pivoted axes so that the press is automatically held in closed position.

3. A photographic mounting press comprising a bed having a resilient flat surfaced body thereon and a flat surfaced platen cooperating therewith, hinge arms hinged to the bed, means for connecting the platen to said hinge arms so as to permit limited relative movement between the platen and hinge arms, toggle links pivotally connected to opposite sides of the bed near the longitudinal center thereof, toggle levers pivotally connected to the toggle links, means for manually operating said toggle levers, and means for pivotally connecting the toggle levers to the hinge arms at points approximately over the longitudinal center of the platen.

4. A photographic mounting press comprising a bed and a platen having cooperating plane surfaces, at least one of said surfaces being highly resilient, hinge members hinged to the bed, adjustable means for connecting the platen to the hinge members, said means being adjustable to vary the distance between the platen and the bed when the press is closed, said means also permitting limited movement of the platen with respect to the hinge members, toggle mechanism including links pivotally mounted at each side of the bed, and toggle levers pivoted to the links and pivoted to the platen near the longitudinal center thereof so as to cause the platen to engage the bed with a substantially balanced pressure.

5. A photographic mounting press comprising a bed and a platen having cooperating flat surfaces, at least one of which is resilient, hinge arms pivoted at one end of said bed and extending over the platen, adjustable connections between said arms and the platen, toggle links pivotally connected to opposite sides of the bed near the longitudinal center thereof, toggle levers pivotally connected to the toggle links, means for pivotally connecting the toggle levers to the hinge arms at points near the longitudinal center of the platen, and a cross bar connecting the outer ends of said toggle levers and providing means for manually operating the same.

6. A photographic mounting press comprising a bed plate having a marginal flange therearound, a sponge rubber block mounted on said bed plate within said flange and providing a resilient bed surface for the press, a flat surfaced platen mounted above said bed surface, means for heating the platen, hinge arms pivoted to one end of the bed plate and extending over the platen beyond the center thereof, a shaft carried by said arms and extending over the approximate center of said platen, toggle links

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pivotally connected to opposite sides of the bed plate near the longitudinal center thereof, toggle levers pivotally connected to the toggle links and to the ends of said shaft, a cross bar connecting the outer ends of the toggle levers and having a hand grip centrally located thereon by which the toggle levers may be manually operated, and adjustable screw means for connecting the ends of the hinge arms to the platen.

7. A photographic mounting press, comprising a bed, a platen, hinge members hinged to the bed to which the platen is adjustably secured, toggle links pivotally connected to opposite sides of the bed near the longitudinal center thereof, toggle levers pivotally connected to the toggle links, means for manually operating said toggle levers, and means for pivotally connecting the toggle levers to the hinge members at points so near to the longitudinal center of the platen that a substantially balanced closing pressure is applied by direct action of the toggle levers without substantial strain on the hinge connection between the bed and platen, said toggle levers being swingable through an angle of at least 180° so as to move the axis of pivotal connection of the toggle levers to the platen from a point under the pivotal axis of the toggle levers to the toggle links to a point in which the pivotal axis of the toggle levers to the platen is over the pivotal axis of the toggle levers to the links, whereby in the first position of the toggle levers the platen will be locked in closed position and in the second position of the toggle levers the platen will be held in open position.

8. A photographic mounting press, comprising

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a bed and a platen having cooperating plane surfaces at least one of said surfaces being highly resilient, the other of said surfaces being provided with heating means, toggle links pivotally connected to opposite sides of the bed near the longitudinal center thereof and extending upwardly therefrom at each side of the platen, toggle levers pivotally connected to the upper ends of the toggle links and to opposite sides of the platen so near to the longitudinal center of the platen that a substantially balanced closing pressure is applied by direct action of the toggle levers, said toggle levers being swingable through an angle of approximately 180° so as to move the axis of pivotal connection of the toggle levers to the platen from a point under the pivotal axis of the connection of the toggle levers to the toggle links to a point in which the axis of pivotal connection of the toggle levers to the platen is over the axis of the pivotal connection of the toggle levers to the links whereby in the first position of the toggle levers the platen will be locked in closed position and in the second position of the toggle levers the platen will be held in open position.

THEODORE H. KRUEGER.

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