May 28, 1940. M. H. JACKSON ET AL 2,202,255

SEAL PRESS

Filed Sept. 1, 1938

Fig. 1

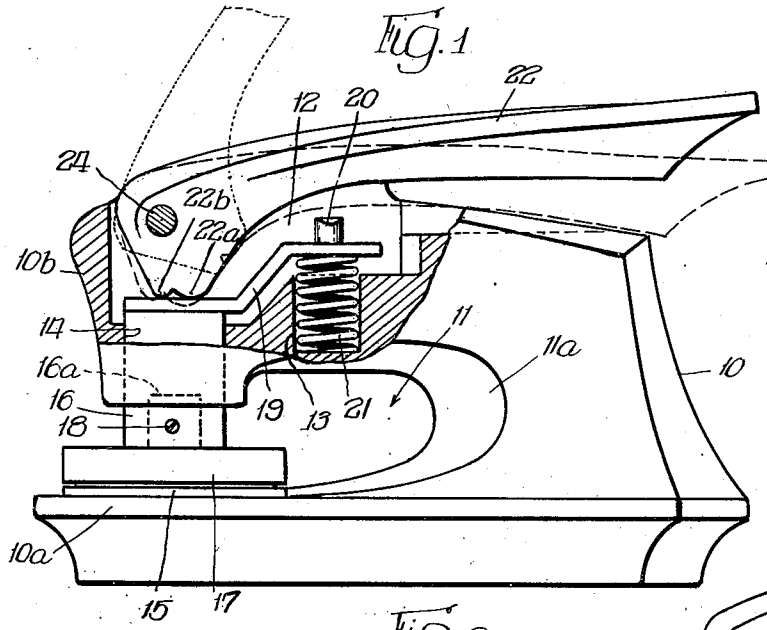


Fig. 1A.

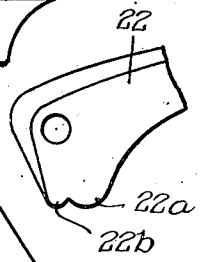


Fig. 2.

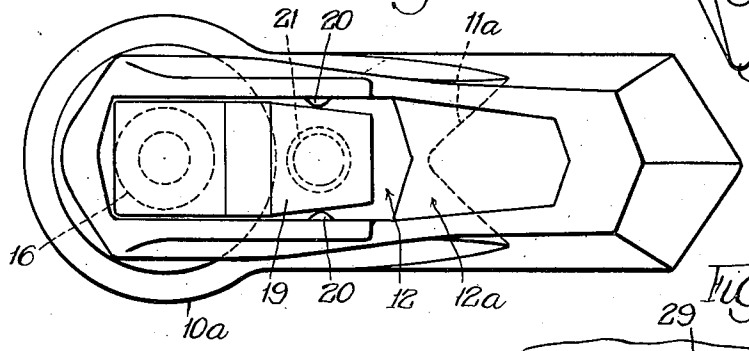


Fig. 3.

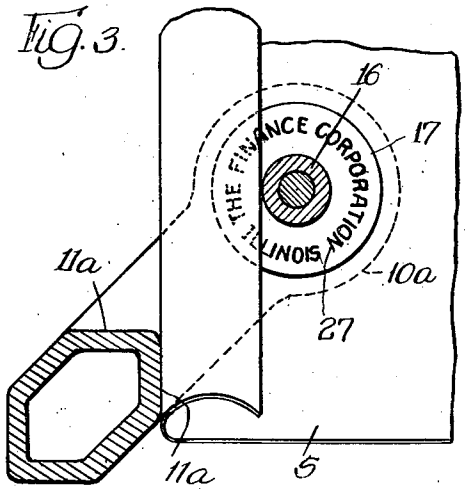
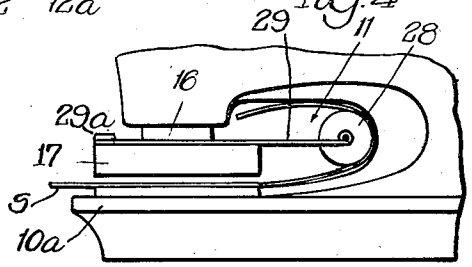


Fig. 4



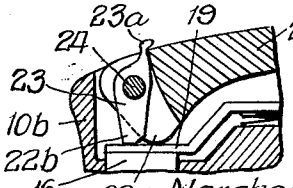


Fig. 5.

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2,202,255

SEAL PRESS

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Application September 1, 1938, Serial No. 227,878

10 Claims. (Cl. 101—3)

This invention relates to presses, such as may be employed for printing or embossing devices such as documentary seals, punches, stapling machines, or the like.

One of the objects of the invention is the provision of such a device which may be embodied in a very small size, as for the purpose of facilitating its being carried in the pocket of a garment or placed in a shallow drawer of a desk, and yet which will permit the seal impression, or other operation, to be performed upon a sheet of paper at a substantial distance from a margin thereof.

A particular object of the invention is the provision of such a device which will be quite strong, even though embodied in a small size.

A special object of the invention is the provision of a device of the sort described which is especially adapted to effect the curling or rolling of a marginal portion of a sheet of paper which is introduced between the cooperating work elements in a diagonal relationship to the press frame, thereby to facilitate the positioning of the seal impression, or other operation, a substantial distance from the margin of a sheet.

Another object is the provision of such a device which will hold the complementary seal dies close to each other, as for the purpose of preventing introduction of bodies between them when the device is not in use, yet which permits the dies to be fully opened or moved apart, when desired, without requiring any preliminary unlatching or unlocking operations.

Another object is to improve generally upon the construction of such devices for the purpose of rendering them more efficient and easily handled and more versatile and effective in operation.

Other and further objects of the invention will be pointed out or indicated hereinafter, or will be obvious to one skilled in the art upon an understanding of the following specification or upon actual use of the invention.

For the purpose of aiding in an explanation of the invention, we show in the accompanying drawing forming a part of this specification, and hereinafter described, certain forms in which it may be embodied. It is to be understood, however, that these are presented merely for purpose of illustration, and hence are not to be construed in any fashion for the purpose of limiting the appended claims short of the true and most comprehensive scope of the invention in the art.

In said drawing,

Fig. 1 represents a side elevational view, partly in section, of a seal press embodying our invention;

Fig. 1*a* is a detail showing the forward end of the operating lever in side elevation;

Fig. 2 is a top view of same with the handle or operating lever removed;

Fig. 3 is a fragmentary top view illustrating the manner in which the press effects the curling of a sheet of paper which is introduced into it in a diagonal relationship;

Fig. 4 is a fragmentary side elevational view illustrating the device equipped with an additional feature in the nature of a guide for facilitating the curling or rolling of the paper sheet; and

Fig. 5 is a detail in the nature of a longitudinal section of a portion of the device illustrating a modified feature.

The nature of the invention will be most quickly ascertained from a description of the embodiments shown in the drawing, which is as follows.

The device comprises a body member, or frame, designated by the reference numeral **10**, which may be cast of a suitable strong and light metal, and includes a lower jaw portion **10***a* and an upper jaw portion **10***b*, affording between them a throat opening **11**, the surfaces of which are beveled laterally as indicated at **11***a*. The upper jaw portion is formed with an upwardly opening cavity **12**, from which extend a cylindrical plunger bore **14** and a spring socket **13**, the latter being closed at its bottom and the bore **14** having a bottom opening disposed over the jaw **10***a*. The counter or embossed die member **15** is fixedly mounted on the jaw **10***a* concentrically with the bore **14**, and in said bore is guided, for reciprocation upwardly and downwardly, a plunger **16**. On the lower end of this plunger is mounted the intaglio die member **17** in mating or complementary relationship to the counter die **15**, said die member **17** having a central hub portion which seats in a socket **16***a* of the plunger, and is retained in place by a countersunk screw **18**, or other appropriate means.

The upper end of the plunger **16** extends into the cavity **12**, and affixed to said upper end is a pressure plate **19** which extends rearwardly from the plunger first in upwardly sloping direction and then in a horizontal direction over the spring socket **13**. Vertically extending guide ribs **20** projecting inwardly from the walls of the cavity **12** cooperate with said rearward portion of the pressure plate, and a helical spring **21** is disposed in the spring cavity **13** and bears

against said rearward portion of the plate in a manner such as to urge it and the plunger 16 upwardly.

An operating lever 22 is hinged on a pintle pin 24 above the plunger 16, said lever having a handle portion adapted to swing upwardly and downwardly over the frame member 10, and a nose portion arranged for cooperation with the upper portion of the pressure plate 19 over the plunger 16. Said nose portion is formed with a thrust element 22*a* and a holding element 22*b* (see Fig. 1*a*). These elements, and the adjacent end portion of the lever, are formed so that in the elevated position of the lever, shown in dotted lines in Fig. 1, upward movement of the plunger 16 and pressure plate 19 is accommodated so as to permit the movable die member 17 to be elevated a substantial distance above the stationary die member 15, to permit insertion of the paper between them. The relationship of the elements 22*a* and 22*b* is also such that in the "secured" or inactive position of the lever, which is illustrated in full lines in Fig. 1, both of said elements are in contact with the pressure plate 19, and it and the plunger 16 are held depressed, against the pressure of spring 21, to an extent where the movable die member 17 is quite close to the stationary die member 15, but not in actual surface contact therewith. In this position, the embossed and intaglio die portions may actually be in mesh but not in contact. In such position of the lever, the bearing or contact point of the holding element 22*b* upon the pressure plate 19 is approximately on dead center, or on a straight line between the center of the pintle post 24 and the perpendicular surface of the pressure plate.

By virtue of this relationship of the parts, the pressure of the spring 21, acting through the pressure plate 19, holds the lever 22 and the die member 17 in the secured position. However, the lever may be very easily tripped from this position, simply by moving its outer arm upward slightly to throw the element 22*b* past the dead center line, whereupon the pressure plate will become effective on the forward curved portion of the element 22*b* to rock the handle of the lever upwardly to its limit position.

In the active position of the lever 22, which is shown in dash lines in Fig. 1, its handle portion is depressed and the element 22*a*, the profile of which attains a somewhat greater distance from the pintle pin 24 than does the holding element 22*b*, is rendered effective on the pressure plate 19 to depress the plunger 16 to an extent such as to fully seat the movable die member 17 upon the stationary die member 15. This is the operation whereby the impression of the seal is embossed upon the paper, which, of course, is disposed between the two die members. The recess of the body member is continued rearwardly, as at 12*a*, to accommodate this depression of the handle portion of the lever.

By virtue of this construction, wherein the rearward portion of the pressure plate 19 is offset upwardly, a throat opening 11 of very appreciable height may be provided, while at the same time the necessary length of spring may be accommodated in the device, and the overall height of the frame may be kept relatively low. Accordingly, the device may be made of such dimensions as to be susceptible of being carried with convenience in the pocket, yet may be operated in the manner of the customary stand press, inasmuch as the frame is provided with a flat and sufficiently broad bottom portion to permit its standing, with stability, in upright position on a table or desk.

Although not limited to such use, this seal press is particularly adapted to utilize the invention forming the subject matter of our U. S. Patent No. 1,861,572, granted June 7, 1932. As will be ascertained by reference to that patent, a feature of the invention resides in orienting the die members in such relationship to the frame that the top-to-bottom axis of the legend of the dies is in a diagonal position with respect to the longitudinal axis of the press frame. As pointed out in said patent, one of the objects of that arrangement is to give the device increased versatility in permitting the seal impression to be placed upon a sheet of paper, in right-side-up position, across either a side or bottom margin of a sheet or book page. In Fig. 3 is illustrated such an arrangement of the dies in the present press, and also the manner in which the present press is particularly adapted to permit the seal impression to be placed at a considerable distance inwardly from the margin of the sheet, that is, at a distance considerably greater than the span of the frame jaws or the depth of the throat opening 11. As seen in said figure and in Fig. 1, the inner contour of the throat opening 11, in addition to being beveled laterally, as shown at 11*a*, is also smoothly curved upwardly, both on the upper surface of the lower jaw and in the inner end portion of said throat. This beveled formation 11*a* and this smooth curvature of the throat surfaces have the effect of automatically curling or rolling a sheet of flexible paper when it is pushed between the dies and into the throat to an extent greater than the depth of the throat. This curling effect on the paper is illustrated in a general fashion in Fig. 3 and also in Fig. 4, it being noted that the paper follows the contour of the throat surfaces so that it is guided upwardly and around in a smooth fashion, to avoid wrinkling and hence assure smooth and unobstructed entry of the sheet. The inserted margin may be curled to a position where it overlies the upper die member, as illustrated in Fig. 4.

For the purpose of permitting the insertion of a very considerable width of the sheet between the jaws in this fashion, it is desirable that the throat opening be of considerable extent vertically as well as horizontally, and, as pointed out above, a considerable vertical extension of the throat may be provided, and the overall height of the frame at the same time held to a minimum, by virtue of the offsetting of the pressure plate 19 in the manner above described. The horizontal depth of the throat opening beyond the die members should be at least approximately as great as the width of the die members, and this may be obtained, or augmented, by the beveling of the surfaces 11*a*.

As seen in Fig. 3, moreover, the beveled portions 11*a* are presented in such relationship that they meet, and in a manner guide, the entering margin of the paper, thus affording some assistance in properly locating the seal impression, so as to square it with the margins of the sheet. In order to afford a visual guide for thus orienting the seal impression on the sheet, the upper die member 17 may be provided on its upper surface with a duplicate 27 of a portion of the seal legend or design disposed in superimposed relationship to a corresponding portion of the seal design, as illustrated in Fig. 3 and as described more fully in our patent above identified.

As a means for further guiding and aiding in

the curling or rolling of the sheet of paper, an inner guide member may be arranged, as illustrated for example in Fig. 4. Here the inner guide member is in the form of a narrow roller 28 which is rotatably mounted on a resilient strip or arm 29 that is secured to the movable die member 17, or the plunger 16, in such fashion that the roller, when the press is in its open condition, is supported in the inner portion of the throat 11 and in association with but spaced from the upwardly curving inner surface portion of said throat. This is the position which the parts bear to each other when the sheet is inserted and, as shown in said figure, the roller 28 cooperates with the curved surface portion of the throat to guide the sheet S in an upwardly curving direction when it is fed in between them. The arm 29 being resilient, yields when the movable die member 17 is depressed, so that the roller does not offer any obstruction to the proper operation of the device. The mounting of the arm portion 29 may be provided with an index or pointer part 29*a* arranged at a proper diagonal position on top of the movable die member 17, to indicate the top portion of the seal legend and serves as a visual guide for orienting the seal impression relative to the sheet of paper.

In Fig. 5 is illustrated a modified arrangement for the securing element. In this, the securing element 22*b* is formed as the lower end portion of a thin plate 23, which is disposed in the slotted forward end of the lever 22 and is rotatably mounted on the pintle pin 24. It has a projecting handle portion 23*a*, whereby the plate may be swung so as to move the element 22*b* entirely into the slotted end of the lever, so that the lever may swing unobstructedly to its uppermost position or be pressed down to its lower limit position. When the lever is held in the lowermost position, the plate 23 may be swung so as to move the element 22*b* out of the slot, to a position where it will cooperate with the pressure plate 19 to hold the handle portion of the lever depressed and thus secure the movable die member 17 in the closed position.

We claim:

1. In a seal press, a frame having a lower jaw and an upper jaw separated by a throat opening of substantial height, a stationary die member mounted on the lower jaw, a plunger guided in the upper jaw for reciprocation vertically toward and from the lower jaw and carrying a movable die member for cooperation with the stationary die member, the upper jaw being provided with a spring socket over the throat opening, a spring seated in said socket, a rigid pressure plate fixed to the plunger and offset upwardly over the throat opening and having an end portion spaced above said plunger and extending over the spring socket and bearing upon the upper end of the spring, and a lever hinged on the upper jaw above the plunger and having a cam portion bearing upon the pressure plate above the plunger so that by operation of the lever the plunger and movable die member may be forced downwardly against the pressure of said spring.

2. In a seal press, a frame having upper and lower jaw members separated by a throat opening, a stationary die member mounted on the lower jaw member at the entrance to the throat opening, and the throat opening extending inwardly therebeyond to a distance approximating the width of the die member, a plunger mounted in the upper jaw member and reciprocable to and from the lower jaw member and carrying a movable die member for cooperation with the stationary die member, the upper jaw member being provided with a spring socket over the throat opening beyond the area of the die members, a spring seated in said spring socket, a rigid pressure plate having one end portion affixed to the plunger and extending upwardly and spaced above the first mentioned end portion and extending laterally therefrom and having its other end portion overlying the spring socket and engaging the spring, and a lever hinged in the upper die member and operable to move the plunger downwardly against the pressure of the spring.

3. A seal press having a frame formed with upper and lower jaw members separated by a throat opening and having a stationary die member mounted on the lower jaw member at the entrance of said throat opening with the top-to-bottom axis of the die disposed obliquely with respect to the longitudinal axis of the press frame, the inner end of the throat opening being a substantial distance beyond the innermost margin of the die member, and the surface portions of the frame which define said end of the throat opening being leveled obliquely away from the throat opening.

4. A seal press as specified in claim 3, and wherein the surfaces forming the inner end of the throat opening, including said beveled portions, present smoothly curving surfaces leading upwardly from the lower jaw member and thence forwardly under the upper jaw member to guide the marginal portion of a sheet of paper upwardly and forwardly when it is fed obliquely between the jaw members.

5. In a seal press having a frame formed with upper and lower jaw members separated by a throat opening and a stationary die member mounted on the lower jaw member at the entrance to said throat opening and a movable die member reciprocable upwardly and downwardly above the stationary die member across the entrance to the throat opening, an arm mounted for movement with the movable die member and extending into the throat opening, and a paper guide mounted at the inner end of said arm in association with the inner end of the throat opening.

6. In a seal press, a construction as specified in claim 5 and wherein the surfaces of the frame defining the inner end of the throat opening afford a smoothly curving contour extending upwardly from the lower jaw member and forwardly under the upper jaw member beyond the inner periphery of the paper guide.

7. In a seal press, the combination specified in claim 5 and wherein the paper guide is in the form of a roller rotatably mounted on the inner end of said arm.

8. In a seal press, the combination specified in claim 5 and wherein said arm is resiliently flexible to permit the paper guide to be moved upwardly and downwardly relative to the movable die member.

9. In a seal press, a frame, a reciprocable plunger guided in said frame, a lever hinged on said frame, spring means urging the plunger toward the hinge of the lever, said lever having a manually operable power arm extending above the frame and a pressure arm oscillable between its hinge and the plunger, said pressure arm having a thrust element and a holding element presenting surfaces for cooperation with the plunger, said surface of the thrust element ex-

tending for a greater distance from the hinge than the surface of the holding element, the plane of contact of said thrust and holding elements with said plunger supporting said lever in lowered inactive position against pressure from said spring means.

10. In a seal press or the like, a construction as specified in claim 9 and wherein the holding element is carried on a member which is movably mounted in the pressure arm of the lever and which has a handle portion extending thereabove and operable to change the angular relationship of the holding element to the thrust element.

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