March 7, 1933. E. BAUMGARTEN ET AL 1,900,008

STAMPING PRESS

Filed April 19, 1929 2 Sheets-Sheet 1

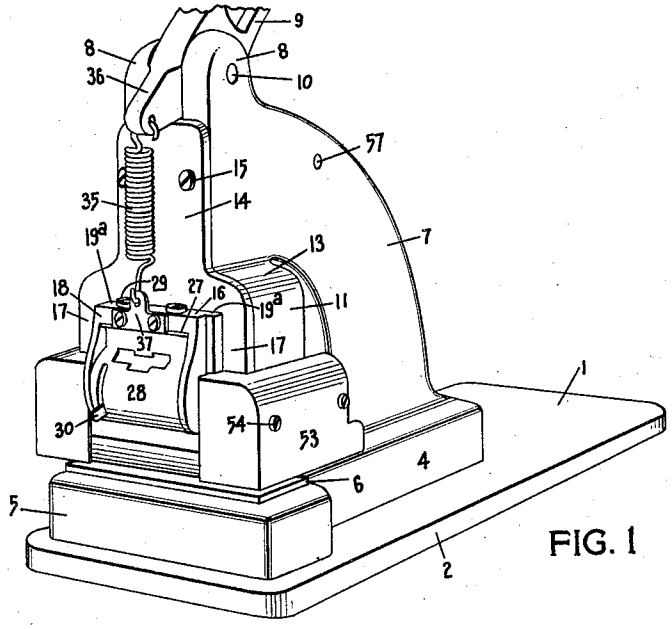


FIG. 1

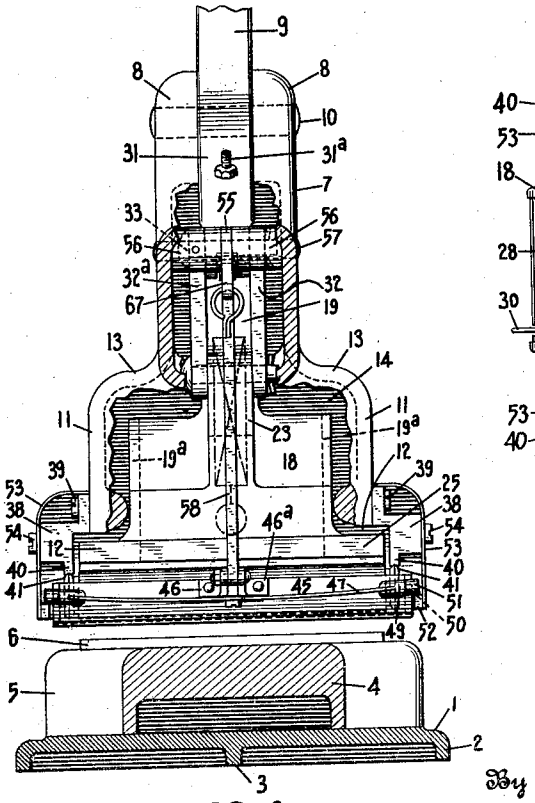


FIG. 2

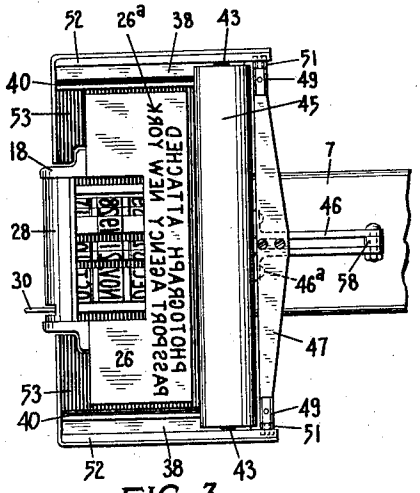


FIG. 3

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STAMPING PRESS

Filed April 19, 1929 2 Sheets-Sheet 2

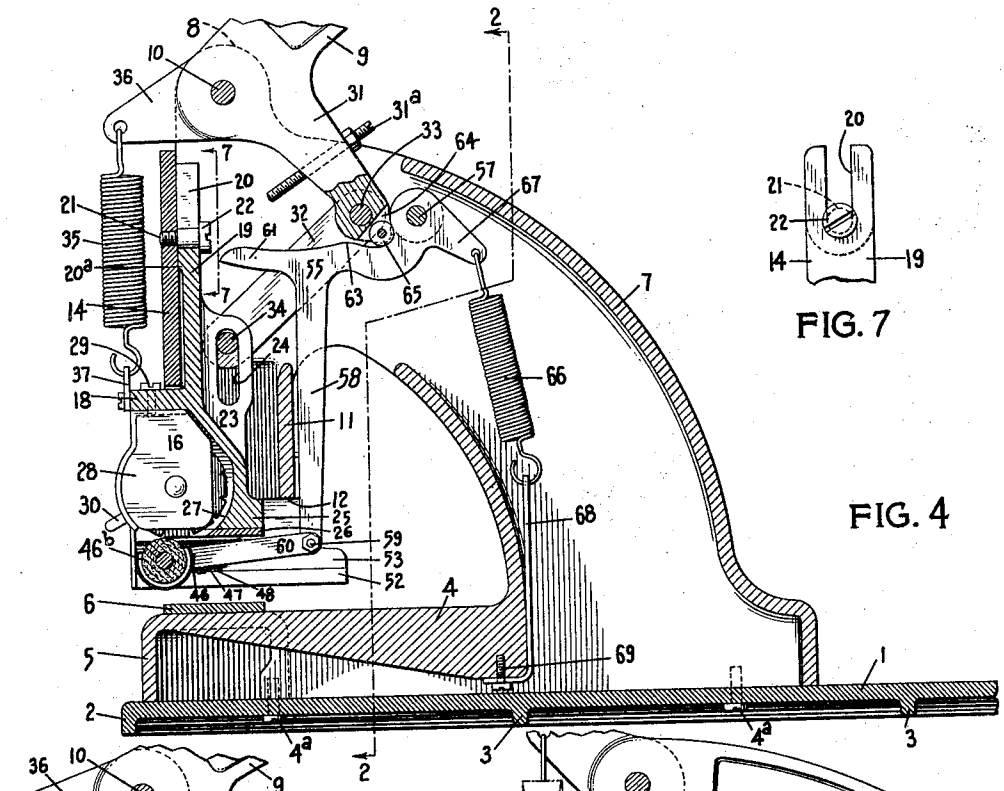


FIG. 4

FIG. 7

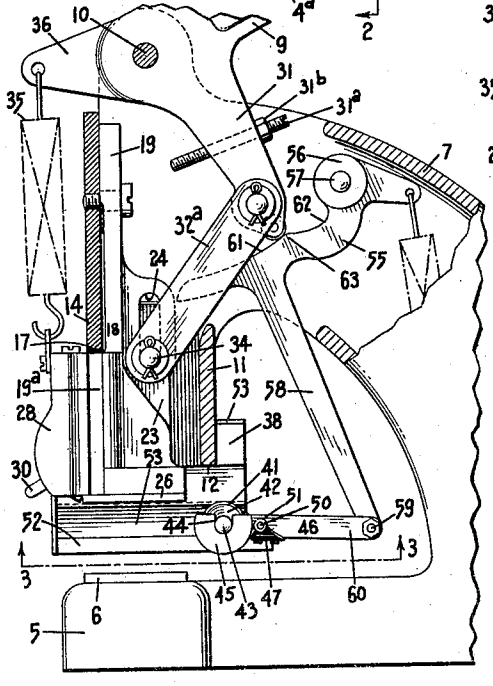


FIG. 5

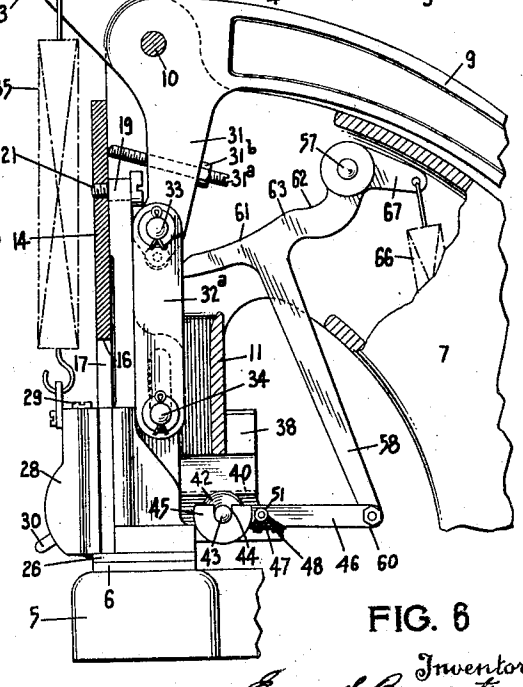


FIG. 6

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UNITED STATES PATENT OFFICE

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STAMPING PRESS

Application filed April 19, 1929. Serial No. 356,552.

The invention relates to a printing or stamping press, and relates more particularly to that class of machines which is manually operated by means of a pivoted lever.

The invention has for its objects to provide certain new and useful improvements in such machines as will hereinafter be apparent.

An important object of the invention is to provide a machine or press of the character described in which novel and efficient means are provided for insuring continued and adequate supply of ink to the stamping die at predetermined intervals during the operation of the machine.

A further object is to provide novel and efficient means for withdrawing the inking unit out of proximity to the die in timed relation to the movement of the latter, said inking unit being withdrawn automatically prior to any movement of the movable die.

As a further object said ink unit removing means are designed to maintain said unit out of the path of said movable die on the return stroke of the press until the die has reached its uppermost position. At this point the ink unit is again projected into the path of the movable die to ink the face of the latter.

A further object is to provide means for efficiently inking the die by the movement of the inking roller towards and away from the die in predetermined and timed relation to the movement of the latter, as will hereinafter be more particularly pointed out.

A further object of the invention is to provide novel and efficient means for yieldably maintaining the inking roller in engagement with the die surface with a sufficient pressure to insure adequate ink supply to all points of the die surface.

In its illustrated embodiment the stamping press is designed to be used in conjunction with a calendar dater unit, which is removably contained within the machine, said dater being used in conjunction with the remaining printed indicia carried by the movable die.

The invention is of considerable utility, for example, in passport work for applying duplicate or partial impressions on a photograph and passport to which the latter is attached, to insure against fraud in the removal of and substitution of photographs on a passport which has been initially approved. In this connection it is preferable that the opposing dies of the machine be knurled, scored or stippled so as to perforate or shred the paper or other material impressed between the dies. Although a useful purpose of the machine has been described, it will be apparent that the device is capable of other and varied uses which will be manifest.

With such objects in view, as well as other advantages which may be incident to the use of the improvements, the invention consists in the parts and combinations thereof hereinafter set forth and claimed, with the understanding that the several necessary elements constituting the same may be varied in proportions and arrangement without departing from the nature and scope of the invention.

In order to make the invention more clearly understood there are shown in the accompanying drawings means for carrying the same into practical effect, without limiting the improvements, in their useful applications, to the particular constructions which, for the purpose of explanation, have been made the subject of illustration. In the said drawings:

Fig. 1 is a perspective view of a combined shredding and printing stamp or press constituting a preferred embodiment of the invention, the operating handle of the device being partially broken away.

Fig. 2 is a vertical section through the same on line 2—2 of Fig. 4.

Fig. 3 is a horizontal section on line 3—3 of Fig. 5.

Fig. 4 is a vertical longitudinal section through the press frame to more clearly illustrate the interior operating mechanism of the same, the latter being shown in their position prior to operating the press.

Fig. 5 is a similar view showing the position and relation of the parts when the operating handle has been partially depressed.

Fig. 6 is a similar view showing the posi-

tion and relation of the operating parts when the handle has been completely depressed.

Fig. 7 is a detail fragmentary view in elevation on line 7—7 of Fig. 4.

1 indicates the base plate of the press which may be of cast metal having a depending peripheral flange 2, reinforcing webs 3 and to which the press proper is removably secured by means of screws 4ª or other fastening devices (Fig. 4). The base or frame portion 4 of the stamping press may also be formed of cast metal, and as illustrated is of substantially T-shape in plan view, the forward end of the portion 4 terminating in an angularly disposed, preferably integral portion 5 extending transversely of the base plate 1, and which forms a support for the lower stationary die member 6 of the press.

The rear portion of the base 4 of the press is provided with an upwardly and forwardly extending, preferably integral, arcuate pedestal or standard 7, which supports the operative parts of the device. The described portions of the press are preferably hollow for the combined purpose of supporting the parts and to provide economy in weight and expense of manufacture. The upper portion of the bracket or pedestal 7 terminates in opposed spaced ears 8—8 between which the lower end of the operating handle 9 is pivotally supported or fulcrumed by means of transversely extending pin or shaft 10. The forward portion of pedestal 7 terminates in depending relatively wider spaced frame members 11—11, the lower edges 12 of which form stops for limiting upward movement of the movable parts of the device (Fig. 2).

The depending side walls 11 of the frame are spaced transversely a greater distance than the side walls of the arcuate portions 7, by reason of the shouldered portions 13—13 as will be best seen in Figs. 1 and 2. A face or cover plate 14 is removably secured to the front of the machine as by screws 15 (Fig. 1), said plate being cut away at its lower portion as indicated at 16 to provide spaced guide portions 17—17 which extend inwardly beyond and appreciably clear the portions 11—11 of the frame casting to which the plate is secured (Figs. 1 and 2).

A plunger member, indicated generally at 18, is mounted for vertical reciprocation relative to the machine frame, said plunger having opposite side grooves 19ª fitting over the guide portions 17—17 of the plate 14 to maintain said plunger 18 against horizontal displacement in any direction, at the same time permitting vertical reciprocation of the plunger relative to said guide portions. The plunger 18 is provided with a central relatively narrow upwardly extending guide portion 19, which may be formed integrally with the plunger body, said portion 19 being somewhat thickened at the top 20ª (Fig. 4) for anti-friction purposes and provided with a central guide slot or recess 20. A guide pin 21 (Figs. 4 and 7) is threaded or otherwise secured to the stationary cover plate 14, the body portion of said pin being contained within the guide slot 20 of the plunger, and the enlarged head 22 of the pin preventing rearward movement of the plunger away from the cover plate 14. The rear face of the plunger is further provided with a central vertically disposed web portion 23, said web portion having an elongated slot 24 for a purpose to be described. The lower portion of the plunger is widened transversely of the machine as shown at 25 (Figs. 2 and 4), said widened portion constituting an abutment to bear against the portions 12, 12 of the frame to limit upward movement of the plunger, and also constituting a support to receive the upper removable die member or plate 26 which carries the printed indicia 26ª (Fig. 3) to be impressed by the machine. The body portion of the plunger 18 is provided at its forward end with a cut away portion or recess 27 to form an enclosing housing for a removable date stamp unit 28 which is designed to be used in conjunction with the printed indicia carried by the upper movable die member 26. The date stamp unit 28 is or may be of the well known changeable or calendar type and is removably secured within the cut away portion 27 of the plunger by means of screws 29 or other fastening means. The usual hand lever 30 is provided for progressively changing the date of the calendar dater 28.

The lower portion of the operating handle 9 has an offset arm or projection 31 (Figs. 4, 5 and 6) terminating in a bearing portion to which the upper ends of a pair of spaced links 32, 32*a* are pivotally secured by means of a transverse pin 33. The lower ends of said links are secured together by a pin 34 which also passes through the elongated slot 24 of the plunger web 23 disposed between the links. The operating handle 9 is normally maintained in its upper or raised position, as shown in Fig. 4, by the tension of a coil spring 35, the upper end of which is secured to an arm 36 of the lever, the lower end of said spring being secured to a bracket member or projection 37, in turn secured to or constituting a part of the movable plunger 18. A toggle action is obtained by the arrangement of the parts described whereby downward movement of the plunger 18 is obtained by downward pressure on the operating handle 9, and considerable leverage is effected. It is to be noted however, that an initial lost motion is obtained by the provision of the elongated slot 24. In the normal position of the parts of the machine as shown in Fig. 4, the pin 34 is positioned in the upper end of the slot. A preliminary or partial downward movement of the op-

erating handle 9 moves the pin 34 to the bottom of slot 24, as shown in Fig. 5, without however, imparting any downward movement to the plunger 18 as will be apparent. This is for the purpose of permitting the inking roller and associated parts to be moved from their normal position beneath the plunger and the upper die member, before the upper and lower die members are brought together to impress a paper between the dies. Continued downward pressure on the operating handle completes the toggle action between lever 31 and links 32, 32ª, with a result that the plunger 18 and the die carried thereby are forced downwardly with considerable leverage into engagement with the lower stationary die 6 carried by the base portion 5 of the machine. The position of the parts at the completion of the printing stroke is illustrated in Fig. 6.

An adjustable screw 31ª having lock nut 31ᵇ projects through the arm 31 of the operating handle and is adapted to contact with the cover plate 14 when the lever has been wholly depressed to limit downward movement of the lever and movable dies (Fig. 6). Manipulation of the screw 31ª provides a range of adjustment of the machine to accommodate materials of varying thickness which may be operated on by the machine between the movable and stationary dies 26 and 6.

The inking roller for continuously supplying ink to the movable upper die member and date stamp unit, and associated parts for supporting the roller and moving the same longitudinally of the machine coincidently with the downward and upward movements of the operating handle, will now be described.

As best seen in Figs. 2, 5 and 6, a pair of opposed bearing members or brackets 38—38, of substantially Z-shape in cross section, are secured to the opposite depending frame members 11—11 by means of screws 39 or other fastening devices. The members 38 are identical in construction and are preferably formed of bronze or other anti-friction material. The lower flange portion of each bracket member 38 terminates in a grooved track or runway 40 each for the reception of the tapered periphery of a wheel or roller 41, one engaging each of the bracket members 38. The rollers 41 are also preferably constructed or machined of bronze or other anti-friction material, and may constitute integral parts of the inking roller 42 which extends transversely of the machine beneath the plunger 18. The opposite ends of the roller 42 are provided with projecting trunnions 43, 43 or may constitute a shaft having a journal bearing engagement within U-shaped slots or recesses 44 formed in the end walls of an elongated ink container or reservoir 45. The periphery of the ink roller is or may be provided with a fabric or plush ink absorbing material 46ᵇ, (Fig. 4), adapted to receive ink from the reservoir 45 as will be apparent. It may be desired to construct the wheels 41, roller 42 and trunnions 43 as a unit, to insure rotation of the roller within the reservoir by engagement of the wheels 41 with the trackways 40 of the bearing brackets 38.

Means are provided for exerting tension on the inking roller and receptacle as a unit to insure a bearing engagement between the rollers 41 and trackways 40, as well as between the ink applying portion of the roller proper and the upper die and dating unit, thereby to obtain efficient inking of the impression die and anti-friction movement of the inking unit towards and away from the plunger when the machine is operated. To this end a rearwardly projecting bracket 46 is suitably secured as at 46ª to and preferably centrally of the ink reservoir 45 (Figs. 2 and 5).

A transversely disposed leaf spring member 47 has its central portion secured as by a screw 48 to the lower side of the bracket 46, and each end of the leaf spring has welded or otherwise secured thereto an enlarged portion 49 having a trunnion 50 for the reception of a roller 51. Each of the rollers 51 has bearing engagement against a concealed trackway 52 constituting an integral part of or otherwise secured to the inner face of a plate or housing 53, one provided at each side of the machine. Each housing 53 is preferably secured to the machine by screws 54 or other fastening devices passing through apertures in said housing and having threaded engagement with the centrally enlarged portion of the bracket members 38. The housing members 53 may be of nickeled or ornamental metal for decorative purposes and serve to conceal and protect from wear and dust the bearing and bracket members 38 of relatively soft anti-friction metal. Said housing members further serve to maintain the leaf spring 47 under tension by the engagement of their trackways 52 with rollers 51, as best seen in Fig. 2. It will be understood that when the inking unit is moved relative to the plunger 18 with a rolling engagement tension is obtained between rollers 41 and trackways 40, as well as between rollers 51 and trackways 52. Adequate and efficient inking of the upper printing die by reason of such bearing engagement is thereby insured. As heretofore explained the tension of spring 47 is for the purpose of maintaining this engagement of the rollers and the engagement of the ink applying surface of the ink roller with the dater unit and impression die carried by the plunger.

The means for obtaining the reciprocation of the ink applying unit relative to the plunger and removable die at the desired intervals will now be described.

As best seen in Figs. 2, and 4 to 6, a lever

indicated generally at 55 is centrally mounted between opposite spacing sleeves or bushings 56, 56 carried by a transverse pin or shaft 57 extending transversely of the machine and secured at its opposite ends within the side walls of the pedestal portion 7 of the frame. The lever 55 is provided with a depending portion 58 having a pivotal connection 59 between suitable ears 60 of the bracket 46 in turn secured to the ink reservoir 45. The pivoted lever 55 is further provided with an arcuate bearing portion or cam surface 61 and a second relatively deeper cam surface 62 of increased curvature, said cam surfaces being spaced from one another by an intermediate projection 63 of said lever. The lower extremity of arm 31 of operating handle 9 is cut away as indicated at 64 (Fig. 4) to provide opposed ears between which is suitably journaled and housed a roller 65 designed for bearing engagement against the described cam surfaces of pivoted lever 55 during the operation of the machine.

From an inspection of Figs. 4, 5 and 6 it will be seen that the degrees of curvature of the cam surfaces indicated at 61 and 62 and which portions are designed to be engaged by the roller 65 are of a predetermined nature, and are designed to effect an intermittent oscillatory movement of lever 55 on its pivot, depending upon the position of the operating handle 9 as the same is swung on its pivot 10. Referring to Fig. 4 it will be observed that under normal conditions the ink roller and reservoir are disposed forwardly of the machine beneath the plunger 18. In this position the roller 65 is in engagement with the rearmost portion of the arcuate cam surface 62 of lever 55. It is to be understood that in this position the operating handle 9 is in its uppermost position with respect to the machine. The lever 55 is yieldably maintained in the position shown in Fig. 4 by the tension of a coil spring 66 secured at its upper end to an arm 67 of lever 55, said spring being secured at its lower end to a bracket member 68 in turn secured as at 69 to the frame of the machine.

When the operating handle 9 is depressed from the position shown in Fig. 4 to the position shown in Fig. 5 the plunger 18 is stationary due to the engagement of pin 34 with elongated slot 24 as has been heretofore described. The engagement of roller 65 with the relatively deeply curved cam surface 62 of lever 55 results in said lever being swung on its pivot 57 immediately upon preliminary depression of operating handle 9. This results in the inking unit being withdrawn from beneath the plunger 18 and into the position shown in Fig. 5 at or before the arrival of pin 34 at the bottom of slot 24. The inking unit is now out of the path of the plunger 18 and die carried thereby. At this point the roller 65 has reached the projection 63 of lever 55 which defines one end of the spaced cam surface 61 of lesser curvature on said lever. The degree of curvature 61 consists of an arc the center of which is the pivot point 10 of operating handle 9. Continued depression of said operating handle therefore does not result in any further rearward movement of lever 55 on its pivot. At this time the engagement of roller 65 with cam surface 61 serves to maintain lever 55 stationary and inking unit out of the path of the descending plunger until the stroke has been completed as shown in Fig. 6. When the operating handle 9 is raised a reverse movement of the parts is obtained and it will be understood that the ink receptacle is maintained stationary by reason of the engagement of roller 65 with cam surface 61 until the point 63 has been reached. The plunger 18 and movable die are now out of the path of the inking unit and continued upward movement of operating handle 9 results in the inking receptacle being again projected beneath the plunger by reason of the engagement of roller 65 with more deeply curved portion 62 of lever 55, which permits the tension of spring 66 to be exerted to move lever 55. The parts are now once more in the position illustrated in Fig. 4.

The degree of curvature of the cam surface 62 is such that the described reciprocating movement of the inking unit is quite rapid, the inking roller being withdrawn from and projected beneath the plunger 18 with a rather swift movement, this being due to the proximity of roller 65 to the fulcrum 57 of lever 55. It will be further apparent that the die is freshly inked by the rotative engagement of the ink applying roller with the die just prior to an impression stroke, is again supplied with ink on the return of the inking roller, with the result that the die is given two applications of ink for each impression stroke.

It will be further apparent that the cam surface 61 of lever 55 is contained between the spaced links 32 and 32^a, there being sufficient clearance to permit relative movement without friction. The links 32, 32^a therefore serve as guides for lever 55 and insure engagement of roller 65 therewith at all times during the manipulation of the operating handle 9.

Tension of leaf spring 47 maintains the rolling engagement of the inking unit during the reciprocation of the latter.

As has been described, the upper die 26 is removably secured to the lower side of the plunger 18 by screws or any suitable means, to enable the die to be replaced when it is desired to change the indicia to be impressed by the stamp. The lower impression die 6 may also be removably secured to

the base frame 5 of the machine. It is further preferable that the opposed contacting surfaces of the upper and lower dies 26 and 6 be knurled, scored or stippled so as to perforate or shred the paper coincident with the imprint of the stamp. Such construction is an effective means to prevent fraudulent alteration of the impression made by the machine.

What we claim is:

1. In a stamp press, the combination of a movable die and a stationary die, means for inking said movable die normally disposed between the latter and said stationary die, a hand operated lever positively connected to said movable die for actuating the latter, and cam-controlled means in turn controlled by said hand lever for moving said inking means out of position between said dies and across the impression surface of said movable die while the latter is stationary, continued movement of said hand lever forcing said movable die into contact with said stationary die.

2. In a stamp press, the combination of a movable die and a stationary die, an ink receptacle having an inking roller therein normally disposed between said dies, toggle mechanism for actuating said movable die, and a pivoted lever having a cam surface thereon engaged by said toggle mechanism for moving said inking receptacle out of position between said dies while said movable die is stationary, said inking roller contacting with the inking surface of the movable die, and means whereby continued movement of said toggle mechanism forces said movable die into contact with said stationary die.

3. In a stamping press, the combination of a frame having a stationary die member, a movable die member mounted in said frame for reciprocation relative to said stationary die, inking means normally maintained in contact with said movable die, a lever pivotally mounted in said frame and connected at one end with said inking roller, said lever having a cam surface, an operating handle pivotally mounted in said frame and having an offset arm provided with a roller engaging the cam surface on said pivoted lever, and a link pivotally connected at one end to said offset arm and at its other end to said movable die; whereby the initial movement of said offset arm on the actuation of said operating handle moves said roller along said cam surface to swing said lever on its pivot and retract said inking means from engagement with said movable die while the latter is stationary, the continued movement of said operating lever forcing said movable die into contact with said stationary die.

4. In a stamping press, the combination of a frame having cooperating die members, one movable relative to the other, inking means resiliently held in contact with one of said dies, a lever pivotally mounted in said frame and connected at one end with said inking means, an operating handle pivotally mounted in said frame and having an offset arm engaging said lever, said offset arm having a pin and slot connection with said movable die member, whereby the actuation of said operating handle moves said inking means across the impression surface of the movable die while the latter is stationary by the movement of the pin in the slot, continued movement of said operating handle forcing said movable die into contact with said stationary die by the contact of the pin with the end of said slot.

Signed at Washington, in the District of Columbia, this 30th day of March, 1929.

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