Dec. 17, 1929. O. C. CORRELL 1,740,285

STAMPING DEVICE

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Fig. 1.

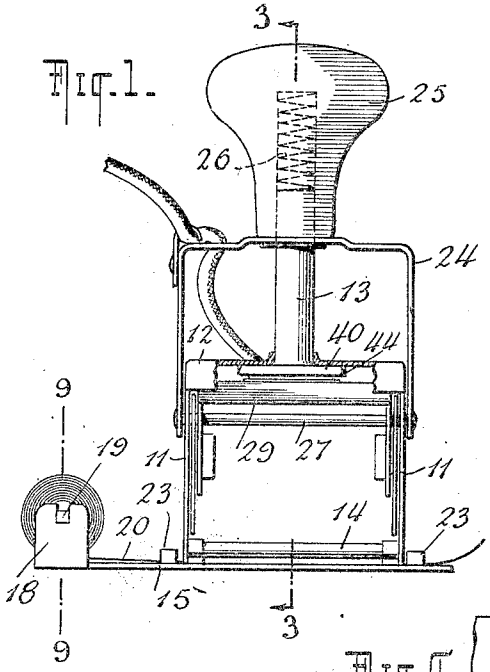


Fig. 2.

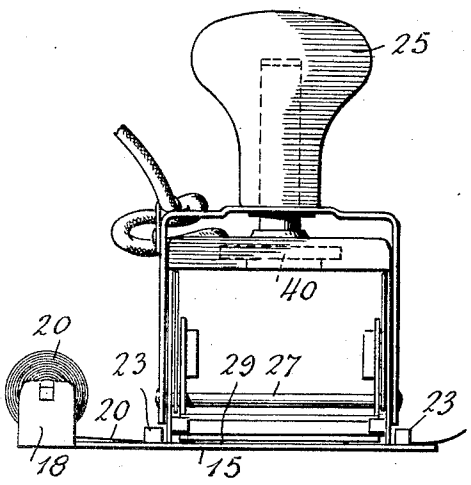


Fig. 3.

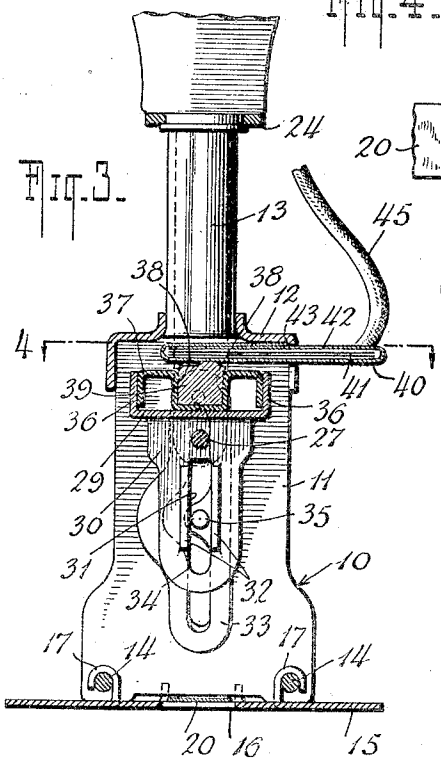


Fig. 4.

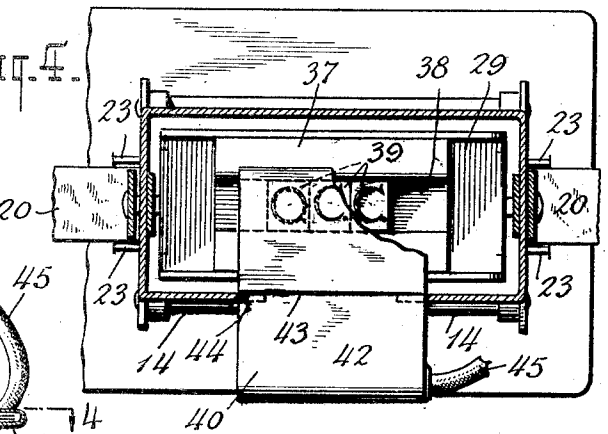
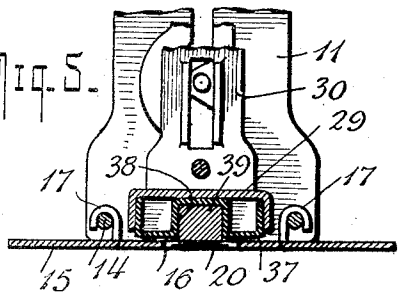


Fig. 5.



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Fig. 6.

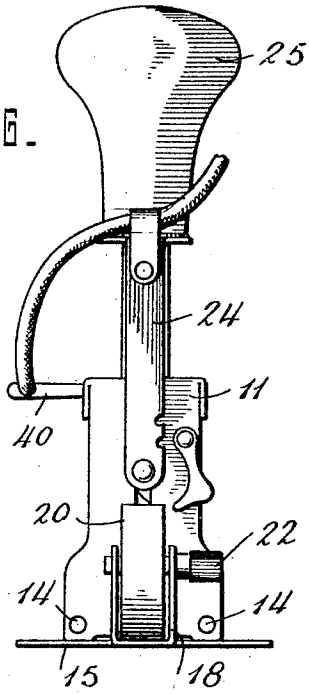


Fig. 7.

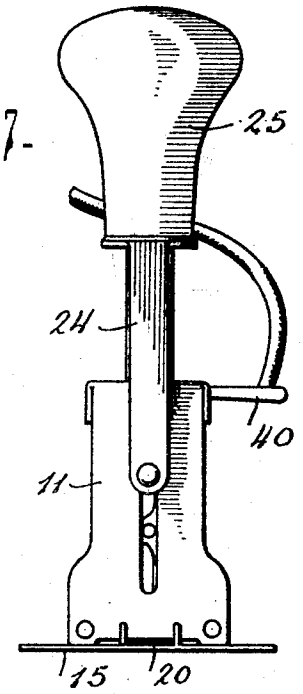


Fig. 8.

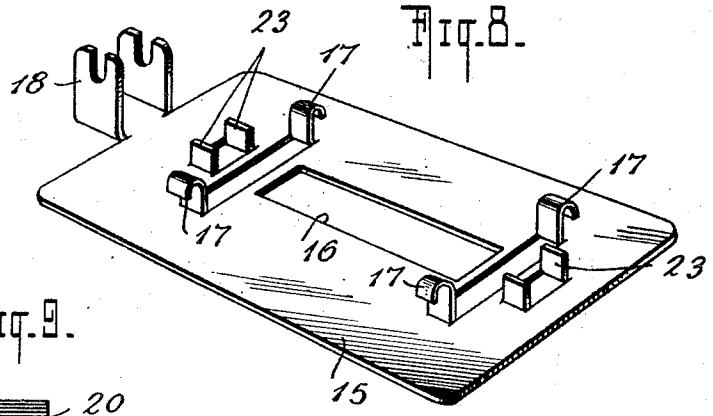
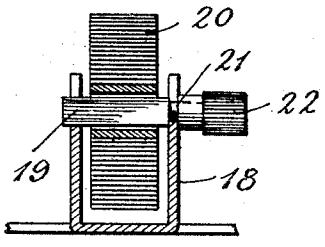


Fig. 9.



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UNITED STATES PATENT OFFICE

ORVILLE C. CORRELL, OF BROOKLYN, NEW YORK

STAMPING DEVICE

Application filed January 23, 1928. Serial No. 248,959.

This invention relates to improvements in stamping devices of the type wherein a die is operated by a reciprocatory plunger member to print upon a surface and then restored to its normal position by said member.

An object of the invention is to provide an improved stamping device in which a ribbon or tape coated with a coloring substance is mounted in position on a base plate between a surface to be printed upon and the die of the device, so that when said die is engaged with the ribbon and pressure applied, the die will effect a transfer of the coloring substance on the ribbon to said surface to make a permanent impression thereon in accordance with said die.

Another object is to facilitate the transfer of the coloring substance from the ribbon to the surface to be printed by an application of heat to the printing surface of the die prior to its engagement with the ribbon.

A further object is the provision of a stamping device of the above character which is simple in construction, practical and efficient in operation, and wherein the heating element employed to heat the die surface is so mounted that it will be engaged by said surface when the die is in its normal position, thus insuring an effective heating of said surface before its engagement with the ribbon of the device.

The above and other objects will appear more clearly from the following description when taken in connection with the accompanying drawings which illustrate a preferred embodiment of the inventive idea.

In the drawings,

Fig. 1 is a front elevation of the device in its normal position.

Fig. 2 is a similar view with the device shown operated.

Fig. 3 is an enlarged fragmentary vertical section on the line 3—3 of Fig. 1.

Fig. 4 is a section on the line 4—4 of Fig. 3 with the heating element partly broken away.

Fig. 5 is a fragmentary section similar to Fig. 3 but showing the die in its operated position.

Fig. 6 is a side elevation of the device looking from one side thereof.

Fig. 7 is a similar view of the opposite side.

Fig. 8 is a perspective view of the base plate of the device.

Fig. 9 is an enlarged section on the line 9—9 of Fig. 1.

Referring more particularly to the accompanying drawings, the numeral 10 indicates generally the frame of the device which includes the side members 11 and the connecting top member 12, the latter having the plunger guide rod 13 extending upwardly from the center thereof. The lower ends of the sides 11 are joined by two rods 14 for supporting the base plate 15. This plate is provided with an opening 16 of sufficient size to receive the die, later to be described, when the latter is operated to make an impression upon a surface. To support the plate in position, the same has struck therefrom adjacent each end of the opening 16 a pair of lugs 17 designed to be bent around the rods 14, as shown in Figs. 3 and 5, to attach said plate to the frame of the device. At one end of the plate 15 the same is formed with opposed upstanding brackets 18 having slots in their upper ends to receive a spindle 19 which supports a roll of ribbon or tape 20 coated upon one surface with a suitable coloring substance such as gold leaf. One end of the spindle is provided with a reduced threaded extension 21 upon which a head 22 is screwed. When securing the spindle in position after mounting the roll 20 thereon, the end thereof adjacent the extension 21 is engaged with the inner surface of one of the brackets 18, and the head 22 is then screwed lightly against the outer face of said bracket, thus fixing the spindle in position, it being understood that the roll 20 is free to rotate relative to said

spindle. The base plate 15 is further provided with two pairs of ribbon guides 23 struck from the plate at points outside the side members 11, the spaces between said pairs of guides being alined with each other and with the opening 16 in the plate, so that when the ribbon 20, with the coated surface downward, is passed between the guides, it will be disposed directly over said opening.

The die, its mounting and the actuating mechanism therefor will now be described. An inverted U-shaped yoke member 24 is provided centrally of its bight with a knob or handle 25 hollowed to receive the rod 13 so as to be slidable thereon and permit of vertical movement of the yoke relative to the frame 10 when downward pressure is applied to said handle. Said yoke is normally retained in an elevated position, and returned to such position after depression and release of the handle, by a spring 26 interposed between the handle and the upper end of the rod 13. The sides of the yoke 24 extend downwardly and exteriorly of the sides 11 of the frame 10 and are connected at their lower ends by a rod 27 which extends through elongated vertical slots 28 in said sides 11. This rod supports for vertically reciprocating and intermediate oscillatory movements a die supporting frame or mounting 29, the rod projecting through the arms 30 of said frame to form a pivot therefor, and each of said arms having a longitudinal slot 31 therein from the edges of which flanges 32 extend inwardly to provide a guide channel. Pivotally supported at its upper end and upon the inner surface of each side member 11, is a lever 33 having a slot 34 therein extending for practically its entire length and made arcuate intermediate its ends as shown in Fig. 3. The rod 27 extends through the slots 34 in the levers 33 and as the yoke 24 and frame 29 are moved downwardly, said rod will engage with the curved edges of said slots which project in the path of said rod with the result that said levers will be swung about their pivots in one direction. To transmit this movement to the frame 29 so that the same will swing in an opposite direction about the rod 27 as a pivot, each lever 33 has a pin 35 projecting into the slot 31 and between the flanges 32 of the adjacent arm 30. It follows that said pins swinging with the levers will rotate the frame 29 until its position is reversed and the same has been inverted. At this time, the rod 27 has again entered the lower straight portions of the slots 34 and continued movement of said frame is in a vertical plane only, until the die, presently to be described, is engaged with the portion of the ribbon 20 above the opening 16. Release of the handle 25 permits the spring 26 to restore the parts to normal position during which movement the operation just described is reversed.

The central portion of the frame 29 is provided upon its longitudinal edges with retaining flanges 36 for detachably receiving the die holder 37 therebetween. Said holder is shown as being of convoluted form in cross section to provide a central channel 38 to receive the die and the holder is of a width which will enable it to fit snugly between the flange 36 and yet be easily withdrawn therefrom when it is desired to change the die. The material of the holder may be resilient if desired, so that its sides will have a tendency to spread outwardly and thus frictionally grip the flanges 36 to more effectively retain the holder in position. The die in the present illustration is shown as consisting of a number of type 39, but it will be understood that said die may assume other forms without departing from the spirit of the invention. Said type are removably mounted in the channel 38 and can be interchanged or replaced at will.

It is desirable that the printing surface of the die receive a preliminary heating before it is engaged with the ribbon 20 in order to make more effective the transfer of the gold leaf or other coloring substance from said ribbon to the surface which is to receive the imprint of said die. For this purpose there is provided a heating element 40 of flat formation and consisting of a wire coil 41 enclosed in a metal casing 42. This casing is in the form of a sheet which is wrapped around the coil with an edge 43 (Fig. 3) of said sheet terminating intermediate the edges of the casing. This edge 43 is used as an abutment to engage behind a portion of the top member 12 after the element 40 has been inserted into a slot 44 in said member, thereby to hold said element in position. When mounted as shown in Fig. 3, the element is engaged by the printing face of the die in its normal position so that said surface will become quickly heated by reason of this direct contact. The element 40 may be connected to a source of current supply by the conductor 45.

Briefly, the operation is as follows. After the element 40 has been heated and its heat is sufficiently transmitted to the die surface, the device is placed with the base plate 15 resting upon the surface to be printed upon.

The handle 25 is now depressed to force the die with its supporting frame downwardly toward the base plate. During this movement the position of the die is reversed by the coaction of the arms 30 and levers 33 so that said die will assume the position shown in Fig. 5 as it approaches the ribbon 20. Upon engagement therewith and continued pressure upon the handle 25, the coated surface of the ribbon is forced into contact with the surface which is to receive the impression of the die and by reason of the heated condition of the die, the coating on the ribbon will be transferred therefrom, and onto said sur-

face in such manner that the impression, the letters of the type 39 for instance, will be effectively and permanently coated with the coloring substance. To secure efficient results, it is only necessary to hold the handle 25 depressed for an instant and upon release thereof the parts will return to normal in a manner which will be clearly understood from the foregoing description. Before the next operation, the ribbon 20 shown should be withdrawn a slight distance to the right, as shown in Fig. 1, to present a new portion of its surface to the opening 16 in the base plate.

What is claimed is:

1. In a stamping device, a ribbon coated with a coloring substance, a frame having a slot therein, a heating element insertable into said slot and having a casing provided with an abutting edge adapted to engage said frame adjacent said slot to retain said element in position, a die normally contacting said heating element, and means for moving said die into engagement with said ribbon to transfer said coloring substance therefrom to another surface.

2. In a stamping device, a ribbon coated with a coloring substance, a heating element, a die having a normal position with its printing surface in engagement with said heating element, a holder for said die having a channel therein for receiving the same, a frame supporting said holder and having retaining means engaging said holder to frictionally maintain the latter in position, and means to operate said frame to engage said die with said ribbon.

3. In a stamping device, a frame including supporting rods, a base plate having means engageable with said rods to attach said plate to the frame, said plate provided with an aperture over which is adapted to be placed a ribbon coated with a coloring substance, and a die movable into engagement with said ribbon and operable by pressure to transfer said coloring substance to a surface to be printed upon.

4. In a stamping device, a frame including supporting rods, a base plate having means engageable with said rods to attach said plate to the frame, said plate provided with an aperture over which is adapted to be placed a ribbon coated with a coloring substance, a die movable into engagement with said ribbon and operable by pressure to transfer said coloring substance to a surface to be printed upon, and means supported by said frame for heating the printing surface of said die prior to its engagement with said ribbon.

5. In a stamping device, a frame including supporting rods, a base plate having means engageable with said rods to attach said plate to the frame, said plate provided with an aperature over which is adapted to be placed a ribbon coated with a coloring substance, said plate also having guides for said ribbon on opposite sides of said aperture, and a die movable into engagement with said ribbon to transfer the coloring substance thereon to another surface.

6. In a stamping device, a frame including supporting rods, a base plate having means engageable with said rods to attach said plate to the frame, said plate provided with an aperature over which is adapted to be placed a ribbon coated with a coloring substance, said plate also having ribbon guides at opposite ends of said aperture and further having brackets at one end thereof, a spindle in said brackets for supporting a roll of said ribbon, and a die movable into engagement with said ribbon to transfer the coloring substance thereon to another surface.

7. In a stamping device, a stationary frame, a die-carrying frame having longitudinal and pivotal movements therein, a die in said movable frame, a heating element at one end of said stationary frame engageable by said die in one position of said movable frame, and means to move said movable frame both longitudinally and pivotally to engage said die with a ribbon at the other end of said stationary frame.

8. In a stamping device, a stationary frame, a heating element supported therein, a die movable in said frame and engageable in one position with said heating element, a ribbon supported in co-operative relation with said frame, and means to move said die longitudinally of said frame and to reverse the position of said die during said movement to engage the same with said ribbon.

9. In a stamping device, a stationary frame, a heating element supported at one end thereof, a ribbon at the other end of said frame, a die engaging said heating element, and means to move said die towards said ribbon and to reverse the position of the die relative to said heating element during said movement.

10. In a stamping device, a stationary frame, a heating element supported at one end thereof, a ribbon at the other end of said frame, a die engaging said heating element, means to move said die from said heating element into engagement with said ribbon, and means operable at an intermediate point of the movement of said die to reverse the position thereof relative to said heating element.

11. In a stamping device, a ribbon, a heating element, a die engageable with said heating element, a holder for said die, a frame in which said holder is mounted and having means to frictionally retain said holder in position therein, and means to move said frame to engage said die with said ribbon.

12. In a stamping device, a frame, a base plate attached to said frame and having an aperture over which a ribbon is adapted to be placed, ribbon guides on opposite sides of

said aperture, means at one end of said plate from which said ribbon is fed between said guides and over said aperture, and a die movable into engagement with the portion of said ribbon over said aperture.

13. In a stamping device, a frame, a base plate having an aperture therein over which a ribbon is adapted to be placed, means to attach said base plate to one end of said frame, and a die movable in said frame into engagement with the portion of said ribbon over said aperture.

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