March 3, 1936. J. ROSTEN 2,032,767

TOOL

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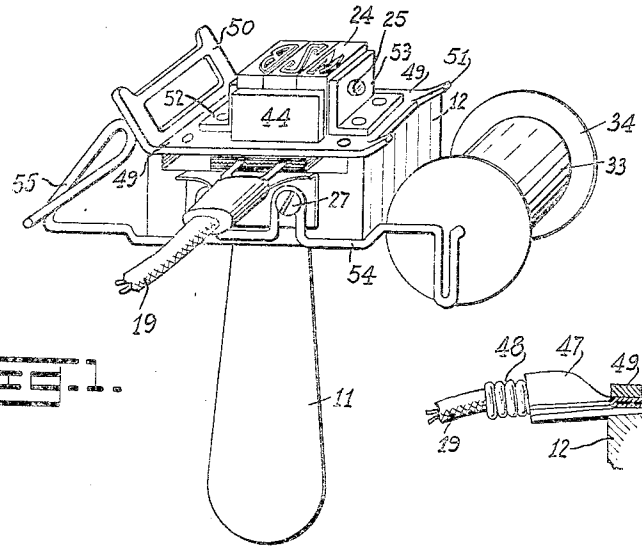


FIG. 1.

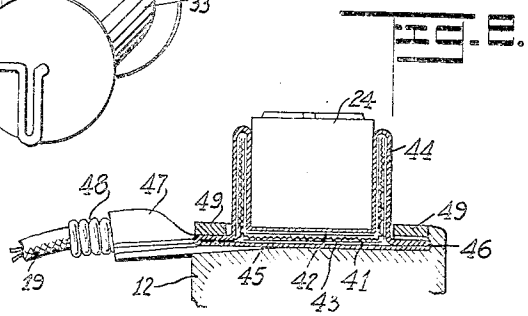


FIG. 2.

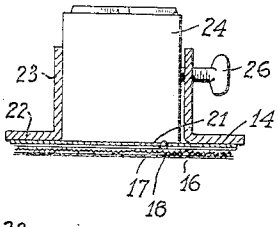


FIG. 4.

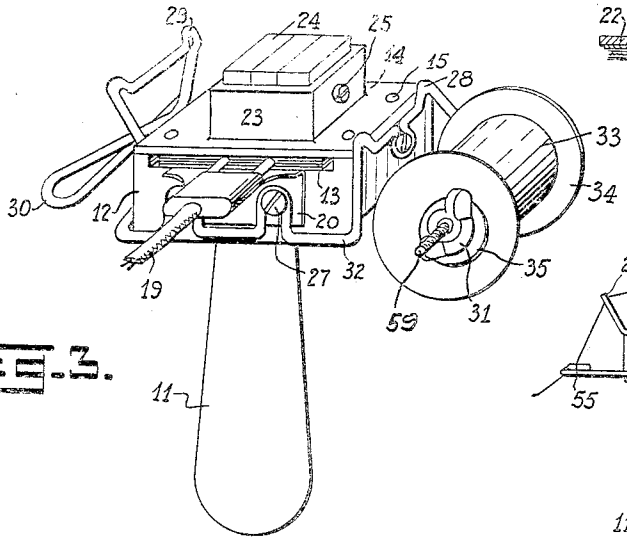


FIG. 3.

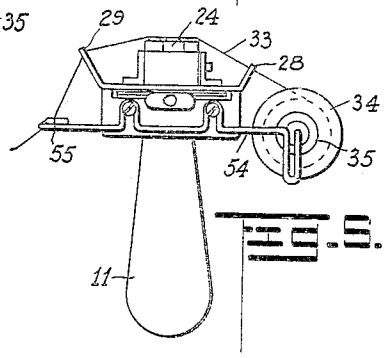


FIG. 5.

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TOOL

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4 Claims. (Cl. 41—7)

This invention concerns a tool; more particularly it concerns a hand tool with a suitably heated die which is to be imprinted upon an object.

I am aware that there are embossing machines which may be used to imprint and emboss paper and other objects. But such machines are costly and it is ordinarily not possible to imprint by the dies or type contained therein a variety of materials in various ways and at any preferred angle.

Embossing machinery ordinarily requires dies or type, which have such a melting point that the heat required at the face of the die or type may be introduced thereinto from the back without melting the material of the die or type. When the heat is thus introduced from the back of the type, the back of the type has to be heated to a much higher temperature in order to allow a much higher propagation of the heat of the type.

It has been one object of this invention to provide a device of this kind which may be readily set to receive all kinds of dies or type and which permits the said dies or type to be applied to any surface at any angle.

It has been another object of this invention to provide in a device of that kind for the distribution of heat in such a manner that the face of the die or type is heated quickly and substantially simultaneously thruout, so that the die or type may be of the ordinarily used variety, which melts at a comparatively low temperature.

Other objects of this invention concern suitable, simple means for arranging the holder of the die or type, for mounting foil on such a device and for suitably stretching and replacing said foil.

Still other objects of this invention will be better understood from the following description and accompanying drawing, in which:

Fig. 1 shows a device of my invention in a perspective view.

Fig. 2 is a cross-sectioned diagrammatic view illustrating the arrangement of the heating element of the device of Fig. 1.

Figs. 3 and 4 are views corresponding to those of Figs. 1 and 2, respectively, and illustrate a modification of my invention.

Fig. 5 shows an elevation of the device of Fig. 1 and illustrates the manner in which foil is extended over the device.

Similar numerals refer to similar parts throughout the various views.

The holder of the device of Fig. 3 comprises a handle 11 and a base 12 made of a suitable preferably insulating material. The base 12 is shown to be centrally recessed and in the said recess a heater 13 and a die holder 14 are accommodated, the former being strapped down in the recess by the latter by means of screws 15 engaged upon the base. The resistor 16 of the heater is suitably accommodated between sheets of insulation 17 and 18, made of mica for instance, in the manner known to those acquainted with this art and the resistor is supplied with electric current by way of a flexible conduit 19, which is supported by means of a bracket 20 which is mounted upon the side of the base 12 by means of screws 27.

Between the top insulating sheet 18 of the heater element and the die holder 14 is extended a flat plate 21. It is preferably made of a material of great heat conductivity, just like the die holder 14.

The die holder has a square or rectangular hole in the center around which extends, up from the base part 22 of the die holder, a correspondingly shaped flange 23. The size of the hole in the die holder is selected to accommodate the die, such as a cast type 24. The die or type is preferably arranged to abut upon at least three sides of the inside wall of the flange 23, it stands upon the plate 21 and may be collapsibly retained in the die holder by a suitable screw, such as set screw 25 or thumbscrew 26.

Underneath the screws 27 which retain the bracket 20 upon the side of base 12, is engaged a wire 32, which is shaped as shown, forming the guide means 28 and 29 upon both sides of the base, is laterally extended from guide means 28 to a certain distance to the right of the base, where it is bent to the front and threaded at its free end 59; and from guide 29 the wire extends to the left of the base 12, where it is bent to the front and folded upon itself at 30.

A wing nut 31 is engaged upon the threaded end 59 of the wire 32 and may be adjusted to apply the desired tension to the roller 34, suitable collars or washers 35 being arranged upon both sides of roller 34.

Fig. 5 indicates how the foil 33 extends over the top of the device. From the roller 34 it is guided by guide means 28, so that it extends centrally over the die or type 24; from there the tinfoil 33 is guided by way of guide means 29 to the other free end of wire 32 and it is extended between the looped parts 30 of the wire and is thus engaged by said looped parts so as to extend substantially tautly over the top of the device.

The die holder 14 and the collar 23 extending up therefrom are made of a highly conductive ma-

terial such as a copper alloy or copper, so that the heat propagated into said die holder through the bottom thereof is conducted to the collar and is transferred from said collar to the dies or type which is slidably inserted in said collar. At the same time the type is heated from below by way of plate 21, but particular importance is attached to conduction of the heat to the top of the type, so that it is there heated substantially as fast as at the bottom thereof. Undue radiation of heat from the outwardly exposed parts of the die holder may be prevented by insulating it, for instance by a heat proof coat of paint.

On account of the importance of adducing the heat quickly to the face of the type, I also may extend the heating element therearound or over one or more sides thereof, or even between the various pieces of type.

The modification of Figs. 1 and 2 indicates how the heat is directly adduced at or near the face of the type. In that instance the current introduced by way of wire 19 is connected with a resistor element 41. The said resistor element is accommodated between bent sheets of insulation 42 and 43 and thus a heater element is formed which is U-shaped. This heater element is suitably covered by a plate 44. The said plate is shown to extend flat at the bottom 45. It may be looped back at 46, and extends then around the vertical legs of heater and envelops it, so that the heater element is substantially sandwiched therebetween. The ends of the plate 44 are shaped to form an enclosure 47; in that enclosure a spring 48 is suitably fastened which protects conduit 19 and in which the conductor wires are spliced for connection to the wire resistor 41. The horizontal flat parts of the folded over plate 44,—where it extends in parallelism to the bottom 45 next to the heater,—are strapped down to the base 12 of the holder by means of a suitably shaped plate 49 which may be made out of metal or preferably out of a strong insulating material.

The sides 50 and 51 of the said plate 49 are struck up, in order to form suitable guides for the foil, said guides being disposed substantially in the manner of the guides 38 and 39 shown in Fig. 3. The heater element covers, and slidably accommodates two sides of the die or type 24, but of course it may be extended to one or the other of the intermediate sides. In the drawing I show angular lugs 52 and 53 fastened upon plate 49, which serve as a vise in which the type is gripped, a set screw 25 in one of said lugs serving to tighten up upon the type engaged between said lugs and within the trough formed by heater element. Since guide means are provided for the foil by the struck up sides 50 and 51 of the plate 49, the wire 54 serves in this case merely to support and tension the roller 34 with the tinfoil 33 on one end, and to provide clamping means 55 for the foil on the other end.

The device is used as follows:

The heating element is brought up to heat by the current supplied from a suitable source of current; a roller 34 with foil is mounted upon the holder provided therefor on one end of the wire. Then the foil is extended over the top of the type between the guides as indicated in Fig. 5, and the end thereof is suitably slung between the folded ends of the wire at 55 or 30.

Now the device is set onto the object which is to be embossed and the user presses down on handle 11, so that the face of the type is pressed into the object to be embossed, the foil being pressed thereinto by the type, so that the coating of the foil is pressed under heat into the depression in said object, and adheres thereto. The device may also be used for imprinting or stamping mouldable or soft material.

Having thus imposed one object, the operator pulls the said foil at the end which is clamped in the looped part of the wire, and unrolls so much of the foil 34 as necessary to provide a fresh part thereof on top of the type. Then another object may be imprinted or embossed.

The foil may be of the type generally used for embossing, such foil comprising a carrier and the embossing material which by the heat of the type is baked onto the object to be imprinted, embossed or ornamented.

Although I have shown and described one form of embodiment of my invention in detail, yet I do not wish to be limited thereby, except as the state of the art and the appended claims may require, for it is obvious that various modifications and changes may be made in the form of embodiment of my invention, without departing from the spirit and scope thereof.

I claim:

1. A hand tool for applying material unrolled from a spool, comprising a handle part, a die holder and a heating element fixedly mounted on top of said handle part, a die set in said holder, a spool bracket extended to one side from said handle part, and a clamp engaging said unrolled material arranged upon the other side of said handle part and aligned with said spool bracket, so that said material unrolled from said spool bracket and engaged by said clamp extends over said die.

2. A tool comprising a handle part, a die holder and a heating element arranged on top of said handle part, a die set in said holder, and a wire mounted upon said handle part and extended and bent to form upon opposite sides of said die a spool bracket and a clamp for the material extending from said spool bracket, respectively.

3. A tool comprising a handle part, a die holder and a heating element arranged on top of said handle part, a die set in said holder, and a wire mounted upon said handle part and extended and bent to form upon opposite sides of said die a spool bracket and a clamp for the material extending from said spool bracket, respectively, and to form guides for said material intermediate said die and bracket, and said die and clamp, respectively.

4. A tool comprising a handle part, a die holder and a heating element arranged on top of said handle part, a die set in said holder, a wire mounted upon said handle part and extended and bent to form upon opposite sides of said die a spool bracket and a clamp for the material extending from said spool bracket, respectively, and guide means for said material mounted upon said handle part and disposed between said die and bracket and said die and clamp, respectively.

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