

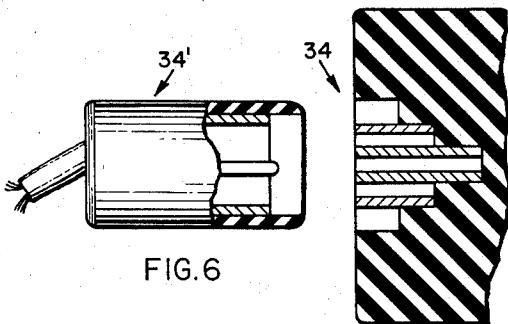
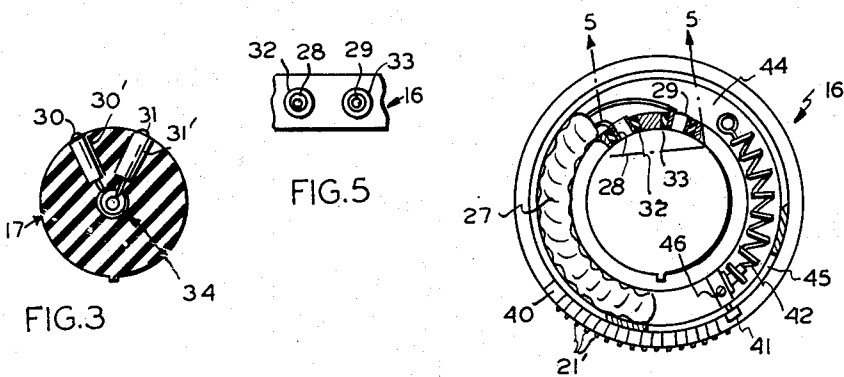
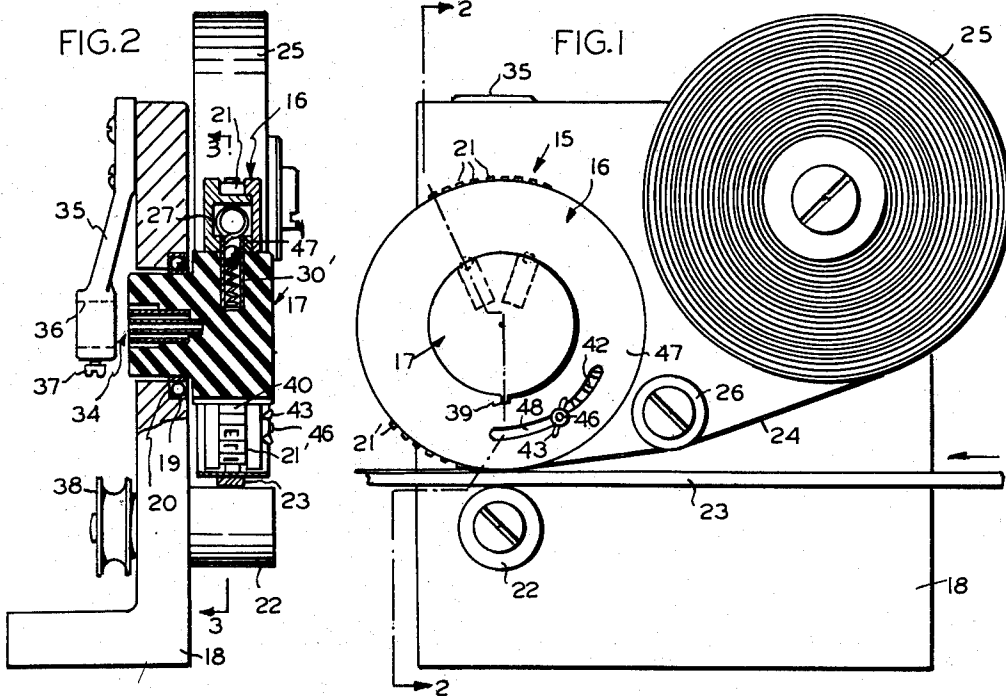
July 16, 1963

J. FRIEDMAN

3,097,592

HEAT STAMPING DEVICES

Filed Jan. 31, 1962



INVENTOR,
JEROME FRIEDMAN,
BY *[Signature]*
ATTORNEY.

1

3,097,592

HEAT STAMPING DEVICES

Jerome Friedman, 36 Eastwood Lane,
Valley Stream, N.Y.Filed Jan. 31, 1962, Ser. No. 170,133
10 Claims. (Cl. 101—6)

The present invention relates to marking devices and more particularly to heat-stamping apparatus employing a rotatable type-wheel which is electrically heated. As an example, it is adaptable for use in leaf stamping devices.

An object of this invention is to provide a novel and improved apparatus of the character mentioned, in which the type wheel is easily removed and another quickly mounted in its place with provision that upon the mounting of a type-wheel, detents will hold it against displacement and also effect electrical connection to the heating means housed therein.

A further object thereof is to provide a novel and improved type-wheel having removable type elements associated with means which will automatically hold those remaining while some are removed and will likewise hold the elements while the composition is being loaded onto the wheel.

Still another object of this invention is to provide a novel and improved heat stamping apparatus of the sort described, having the attributes mentioned and which is simple in construction, reasonably cheap to manufacture, easy to use and efficient in carrying out the purposes for which it is designed.

Other objects and advantages will become apparent as this disclosure proceeds.

For the practice of this invention, one form it may assume is to have a horizontally positioned, dielectric hub, rotatably mounted on a frame. A hollow ring fits as a collar on said hub. On the periphery of this ring, there are type elements adapted to be heated by an electrically-operated heating means housed in the ring's interior. The heater's terminals are connected to a pair of spaced metal sockets which are insulated from each other and present their mouths at the periphery of the ring's hole. Imbedded in the hub, are a pair of spring-loaded detents of conductive material, positioned so that when the ring is at a particular position on the hub, said detents will enter and become engaged in said sockets respectively, thus holding the ring fast for rotation with said hub; said ring being in front of the frame. Said hub also has elements imbedded therein which comprise the male part of an electrical plug connector enterable at the back face of the hub by the female plug connector part which is for connection to an electrical power supply outlet. Said plug connector parts are of the co-axial type so that said plug parts are in rotatable relation. A bracket fixed to the frame, holds the female plug part against rotation.

If desired, the type may be permanently fixed on the ring's periphery, or it may be of removable separate elements, in which latter instance the ring's periphery is of channel-form to receive them, with a stop in said channel at one end and a spring-loaded movable stop slidably fitted therein, thereby providing a changeable space for the type elements between such stops. A means is also provided to fix the position of said movable stop; so that the type elements in the channel are held securely.

A driven roller is mounted to rotate on said frame, at a predetermined position below the type-wheel. A stud on the frame is provided with a roll of say "gold leaf" tape material to ride on work to be marked which is passed between the type-wheel and said driven roller. An idler roller is positioned on the frame, to guide the

2

tape onto the work piece, as such tape is wound off its supply roll.

A detailed description of the apparatus shown herein will now be given, for which reference will be had to the accompanying drawing in which similar characters of reference indicate corresponding parts in all the views.

FIG. 1 is a front view of a gold-stamping apparatus embodying the teachings of this invention.

FIG. 2 is a section taken at line 2—2 in FIG. 1, or this figure may be described as being an end view of FIG. 1, shown partly in section.

FIG. 3 is a section through the dielectric hub, taken at line 3—3 in FIG. 1.

FIG. 4 is a face view of the type-ring with its cover plate removed to show its interior.

FIG. 5 is a fragmentary section taken at line 5—5 in FIG. 4.

FIG. 6 is an enlarged view, partly in section, showing the female part of the electrical plug connector.

FIG. 7 is an enlarged fragmentary sectional view showing the mating male part of said electrical plug connector.

In the drawing, the numeral 15 designates generally a type-wheel comprising a ring denoted generally by the numeral 16 which fits as a collar on a dielectric hub 25 denoted generally by the numeral 17. This hub has its reduced rearward part through a hole in the vertical plate of an angle piece 18 serving as the frame; such hole being a bit larger than said hub part. Press-fitted into the counterbore 19 of said hole, is a ball-bearing unit 20 which is also press-fitted on said reduced hub part, thus mounting said hub 17 for rotation on the frame; the forward part of such hub being forward of the frame where it receives said ring 17 which carries the type 21 along its own periphery. The numeral 22 designates a driven roller on the frame below the ring, at a proper location to longitudinally shift an elongated piece of work 23 which carries say gold-leaf tape 24 from off a supply roll 25; such work piece with the tape atop it, being frictionally gripped by the said driven roller and the type-wheel. The numeral 26 denotes an idler on the frame, to guide the tape.

The type 21 may be composed of separate elements set in a channel along the ring's periphery. Said ring 16 is hollow and houses an electrically operated heater member 27 whose terminals are respectively connected to the spaced metal tubular elements 28, 29 which serve as sockets to be entered into and engaged by the respective spring-biased detents 30, 31 to hold the ring 16 in place on the hub 17. Said socket elements 28, 29 are respectively within the dielectric tubular pieces 32, 33 so that said sockets are insulated from each other; said ring being made of metal.

The detents' assemblies 30', 31' are imbedded in the hub 17 in spaced relation, with their detents 30, 31 extending from the hub's periphery for engagement with the sockets 28, 29 respectively, whose mouths are in the wall of the hole of the ring 16. Exposed at the back face of the hub, as previously mentioned herein, are the embedded elements which constitute the male part 34 of an electrical plug connector, enterable by the corresponding female plug connector part 34' which is for connection to an electric cord for tapping an electrical power supply outlet. Said plug connector is of the coaxial type and the cooperating plug parts are fitted to be in rotatable relation. A bracket 35 fixed on the frame has an opening 36 to receive the female plug connector part and secure it against rotation by use of the set screw 37. Means may be provided to manually turn the roller 22, but for quick production, it may be continuously power-driven as for instance by a driven belt engaging the pulley 38.

Since the detent assemblies 30', 31' are respectively connected to the terminals of the male plug part indicated gen-

erally by the numeral 34, it is evident that upon mounting the ring 16 onto the hub 17 so that the detents 30, 31 become engaged by the sockets 28, 29 respectively, that not only is said ring held from movement along the axis of the hub, but at the same time the heater means 27 is connected to the connector plug 34. Where little pressure is to be imposed on the work 23, in its passage between the roller 22 and the type wheel 16, the detents 30, 31 will hold the type wheel secure for rotation with the hub 17. For better security, the type wheel may be keyed to said hub as indicated at 39.

I have also made provision to have changeable type, which in this sort of a device becomes a practical need where part of the composition is to be changed for different work runs. Of course, the special construction I have for this purpose, is applicable to type wheels generally for their partial or entire type composition, and from this disclosure, those versed in the art will readily understand without further illustration, that this scheme is suited even for flat compositions of type.

So, I have in this device, a fixed stop 40 and a movable stop 41, between which separate type elements 21' are assembled and so maintained, due to the action of the compression coil spring 42 against the movable stop. When the type-setting is completed, the movable stop is pushed to hold the composition securely and then tightened in place by say a wing-nut 43 at the exterior of the ring 16. In the embodiment shown, said movable stop 41 is slidably mounted in the race 44 interior said ring, in which race there is the heater means 27 and the spring 42. In the race wall, there is a suitable slot 45 to clear the reduced shank of the movable stop member 41, and there also is the arcual slot 48 in the ring's end plate 47, to clear the screw 46 which extends laterally from the movable stop 41, to receive the nut 43.

The hub 17 is suited for rings 16 of various diameters and thicknesses, and the roller 22 is changed to suit the particular thickness of the run of work 23, to be "gold stamped."

Instead of being power-driven, the device may be manually turned by a crank supplanting the pulley 38, in instances where its use is not for continuous operation. For such condition, the bracket 35 to hold the cord's plug part fixed, may be dispensed with, if such electric cord is not permitted too many turns, which may be accomplished by turning the type-wheel 15 back to an initial start position at the end of the marking of each piece of work.

From explanation given herein and from the illustration in the drawing, the manner of operation of this device is apparent and needs no further elaboration.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiment shown herein shall be deemed merely illustrative and not restrictive and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the specific description herein to indicate the scope of this invention.

I claim:

1. In a heat-stamping device of the character described,

a hub member rotatably mounted on a frame, a type wheel member positioned as a removable collar on said hub, electrically-operated heater means carried by the type wheel, adapted when actuated to heat the type on said wheel, a pair of electrically conductive detents on one of said members and insulated from each other, a pair of electrically conductive open sockets carried by the other of said members and insulated from each other; said detents being releasably entered into said sockets and in contact therewith respectively; said detents being spring-biased to remain in said sockets, that pair of electrically conductive components which is on the type wheel, being connected respectively to the terminals of said heater means and means on the hub affording accessible terminal connections to a source of electrical energy, connected respectively to the conductive components comprising the pair associated with the said hub; the movement of the type wheel in being slid off the hub, causing said detents to shift out of said sockets and the movement of said type wheel in being mounted onto said hub, causing said detents to shift into said sockets.

2. A device as defined in claim 1, wherein the means on the hub affording connections to a source of electrical energy, comprises a coaxial connector plug, consisting of mating male and female parts coaxial with said hub; said mating connector plug parts being rotatable, one in the other.

3. A device as defined in claim 1, wherein the said mouths of the sockets are at the peripheral contact region of said hub and type wheel.

4. A device as defined in claim 1, wherein said sockets are in the type wheel.

5. A device as defined in claim 1, wherein the type wheel is releasably keyed to the hub for rotation therewith; release from such keyed association being effected by sliding said type wheel off said hub.

6. A device as defined in claim 1, wherein the type wheel is hollow and the heater means is housed therein.

7. A device as defined in claim 1, wherein at least a portion of the type is removably mounted on the type wheel; said type wheel having a fixed element to serve as a stop for one end of said removable type portion and a second element on said type wheel, spring-biased towards said stop element, to abut the other end of said removable type portion.

8. A device as defined in claim 7, including means accessible at the exterior of the type wheel, to releasably fix said second element at any set position from the said stop element.

9. A device as defined in claim 1, wherein the hub is of a dielectric material.

10. A device as set forth in claim 2, including a means on the frame to hold the connector plug part which is associated with the plug part on the hub, against rotation.

References Cited in the file of this patent

UNITED STATES PATENTS

199,460	Morgans	Jan. 22, 1878
989,870	Pringle	Apr. 18, 1911