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TYPE HOLDER AND BLOCK FOR THE SAME

Edward Roberts, Jr., Hohekus, N. J., assignor to
Roberts, Cushman & Company, New York,
N. Y., a corporation of New York

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1 Claim. (Cl. 101—31)

This invention relates to a type chase or the like for use in connection with a printing machine of the class employing a pigmented tape against which the type is stamped to produce an embossed monogram or printing impression upon an article.

An object of the invention is to provide a simple form of thermostatic control device which will enable the use in connection with a printing machine or monogrammer, of certain manufactured metallic or pigment tape that will, to produce the embossed impression, release at a given temperature.

A further object is to provide for the purposes described a thermostatic control set at the temperature necessary to correlate with the metallic or pigment tape of any special manufacture so as to effect thereby a clear release and make a perfect impression, and further to provide a control which, when set, will not vary more than two degrees Fahrenheit.

Still another object of the invention is to so combine the thermostatic control with a type carrier that the type, irrespective of outside temperature, will be maintained in synchronized relation to the tape at that temperature which will produce the best impression, and further that there will be no overheating of the type under any condition, thereby entirely eliminating the danger of damaging the work. The device of my invention makes it possible for an amateur or beginner to successfully perform embossing operations, and it eliminates entirely the necessity of making a few practice impressions in order to gauge the heat of the type with relation to the release of the tape, preparatory to making the embossed impression.

A still further object of the invention is to provide a type carrier having constructional features so combined and arranged as to permit interchangeability of thermostatic units in order that, where different kinds of special tapes are to be used, there can be selected and applied a thermostatic control which is set at the temperature best suited to release a given tape.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawing, wherein is shown a practical embodiment of the invention as reduced to practice.

In the drawing, wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 represents a fragmentary top plan view and section of a type chase, showing the tubular thermostatic unit disposed in a bore;

Fig. 2 is a front elevational view of the type carrier showing the condenser unit, with the face plate omitted;

Fig. 3 is a cross section taken on the line 3—3 of Fig. 2, showing the arrangement of the thermostatic unit, the heating element and condenser with relation to the type elements; and

Fig. 4 is a diagrammatic plan view showing the circuit connections for the thermostatic unit, condenser and heating cartridge unit, the last-named being shown in section.

For the purpose of illustration, I have shown my present invention as applied to a type chase or carrier of the reversible type, employed in and constituting a feature of the improved printing and embossing machine illustrated and described in my copending application for Letters Patent of the United States, Serial No. 681,578, filed on July 21, 1933. More particularly in the drawing I have illustrated substantially the same type chase as is shown in said copending application. This type chase is mounted in the machine so as to be bodily movable from inverted position with the type elements face upward to a reversed position with the type elements face downward, in which latter position said chase is engageable with a carrying plunger by means of which the type, on the operation of the machine, is brought into contact with the metallic or pigment tape to stamp the work. It will be recognized, however, that the thermostatic unit with its condenser and controlled heating cartridge unit may be utilized and combined with any suitable or approved type-holding or carrying body.

In the exemplification shown, 10 denotes in general a fragmentary portion of a type chase or carrier the body 11 of which consists of a bronze casting or the like, this casting being produced at one corner with an integral elongated enlargement 12 which projects well above the face 13 of the body and also extends beyond the plane of the end 14 thereof. On the face 13, there is formed a groove 15 for receiving the type dies or elements 16, this groove being formed between a clamping slide 17 and the opposing inner side 18 of the enlargement 12. The clamping slide 17 is mounted for adjustment upon the face 13 (as illustrated and described in my copending application above referred to) so as to clamp the type elements 16 against the side 18 which suitably serves as a rigid abutment wall for this purpose. As illustrated in Fig. 1, the enlargement

12 and type groove 15 extend entirely across the body 11 in parallel relation.

Provided within the enlargement 12 and extending from end to end thereof in parallel relation with the type groove 15 is a bore 19 in which is centrally disposed a cylindrical thermostatic control unit denoted in general by the reference character 20. This control unit, as shown in Fig. 1, is supported between end insulating plugs 21 and 22 which are removably fitted into the opposite ends of the bore 19. Said thermostatic control unit may in practice consist of any suitable or approved thermostatic cut-out switch and in the present embodiment, more or less diagrammatic in character, it is illustrated as comprising a sealed glass tube 23 containing sensitively arranged thermostatic parts including members 24 and 25 adapted to engage and disengage at a contact point 26. These members are set so as to function as a cut-out switch, separating at the contact point 26 which subjected to a given temperature, say, for instance, 244 degrees F., and which will again automatically resume contact at the point 26 to complete an electrical circuit through the device when the temperature falls appreciably below 244 degrees. Thermostatic controls of this kind are well known in the art and the particular device herein diagrammatically illustrated comprises a well-known commercial glass tube put out by the Thomas Edison Co., Inc., and which is set at the factory so that it will not vary more than two degrees F.

Also provided within the casting body 11 at spaced distances from the type groove 15 and thermostatic control unit 20 is a bore 27 which extends from end to end of the carrier in parallel relation to the bore 19 and type groove. Within this bore 27 is disposed an electrical heating cartridge unit denoted in general by the reference character 28. This unit is known in the trade as a "chromalox" unit and consists of a steel cylindrical shell 29 closed at one end 29' and containing a core 30 upon which is wound a resistance 31 separated from the shell by insulation 32 and having on its return side an integrally connected wire conductor 33 extending through a bore 34 to the open end of the shell.

Current may be supplied from a suitable source of power to one side or pole 35 of the heating element through a lead wire 36. Another lead wire 37 extends from the source of power to one side or pole 38 of the thermostatic control, while from the opposite side or pole 39 of this control there is a circuit wire 40 which extends to the side or pole 41 of the heating element. In Fig. 2, the wire 36 at the end thereof remote from the heating element is illustrated as being attached to a binding post 42 with which is connected a wire 43 which leads to the source of power and incorporated between the wires 37 and 40 is a condenser 44 the purpose of which is to prevent arc sparking. The cooperating parts of this condenser are attached at their opposite ends to binding posts 45 and 46, one end of the wire 37 being attached to the binding post 45 while incorporated in line wire 40 is a condenser connecting wire 47 one end of which is attached to the binding post 46 and the opposite end of which is attached to the binding post 48. In this way, one side of the condenser through the parts 46, 47 and 48 is connected in the line wire 40 while the other side of the condenser is connected through the binding post 45 to the line wire 37. With the binding post 45 is connected a wire 49 which continues the circuit line 37

to the source of power. The condenser device and the several enumerated binding posts are arranged in an insulated housing comprising a channel-shaped part 50 which is attached to the end 14 of the carrier and a cover 51 which is secured to the channel part 50 by suitable screws 52 or equivalent means.

The electrical heating element is of such outside diametrical dimension with respect to the size of the bore 27 that the steel shell 32 will be in contact with the metal of the body 11 so that through this contact the body will be heated by conduction, with the heat being transmitted through the material of the body to the type elements and also to the thermostatic unit.

The relation of the conductivity of the metal of the body 11 to the heating element 28 and to the thermostatic unit 20 is such that the type elements 16 cannot become heated more than one degree above the temperature of the metal necessary to automatically actuate the thermostatic switch, which results in interrupting the current. On the other hand, the type elements cannot become cooled more than one degree below the temperature of the metal necessary to automatically restore the thermostatic switch for again closing the circuit. In other words, if the thermostatic unit is set for a certain temperature, for instance, 244 degrees, the type elements will not reach a temperature above 245 degrees nor below 243 degrees. I have found that this control can be secured by mounting the thermostatic element and the type elements substantially equidistant from the heating element, as shown in Fig. 3. The thermal conductivity from the heater to the thermostat is substantially equal to that from the heater to the type.

My improved arrangement provides for interchanging the thermostatic control units. Tapes of different manufacture and for different specific purposes have their individual ranges of release for producing the best impressions. The particular temperature whereat a particular tape will release to produce the best work, being known, the operator may select and apply to the bore 19 a thermostatic control set to correlate with the release of the particular tape which is to be employed in connection with the embossing machine. In other words, for any particular tape, a thermostatic control may be used which will not under any condition, vary more than two degrees, that is, from one degree above to one degree below the mean temperature release of the tape. Within this two-degree range, the tape will always yield a perfect impression.

With my thermostatically controlled device, the operator need not pay any attention to the heating of the type, since the heat control is automatically regulated. There can be no overheating and therefore no damage to the work can result from this cause. Also, there can be no underheating and therefore no unclear impressions due to a failure of heat. Another important advantage of my device is that the operator in order to gauge the heat of the machine need not make a number of practice impressions before stamping the work. Still another advantage is that the controlled heat furnished the type elements is not affected by outside atmospheric conditions.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above

description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense. Moreover, the terms and expressions which I have employed are used as
5 terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that various modifications are
10 possible within the scope of the invention claimed.

I claim:—

15 A thermostatically controlled type holder comprising a metallic body provided with a longitudinal groove for holding type, one edge of said type groove being an enlarged abutment having a cross-section sufficiently large to conduct heat

to said type and to accommodate a thermostatic control device, a thermostatic device accommodated and enclosed within said abutment, and an electrical heating element accommodated within said metallic body in spaced parallel relation with said type groove and said thermostatic device; the said heating element being adapted to furnish heat by conduction to said type and to said thermostatic device and being positioned at a point such that the thermal conductivity from the heater to the thermostat is substantially equal to that from the heater to the type, whereby the temperature of the type can be controlled within a range of not over two degrees Fahrenheit.

EDWARD ROBERTS, JR.