Oct. 2, 1923. 1,469,747

E. M. WINTER

HOT DIE FOR PLASTIC MOLDING

Filed Aug. 12, 1921

Fig. 1.

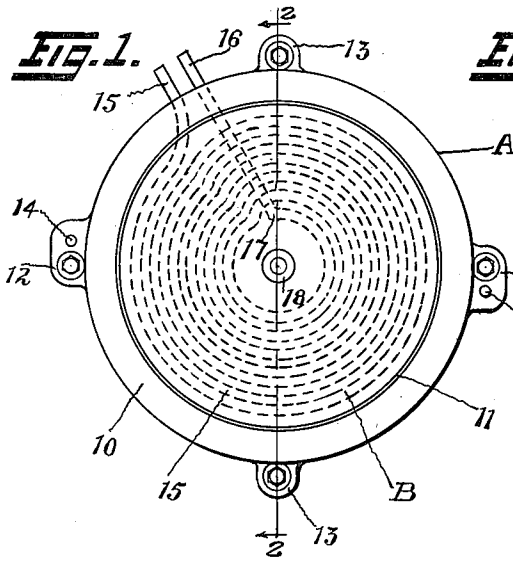



Fig. 2.

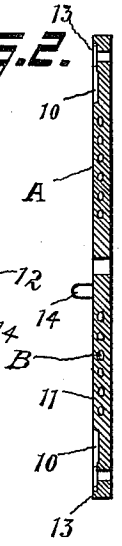



Fig. 3.

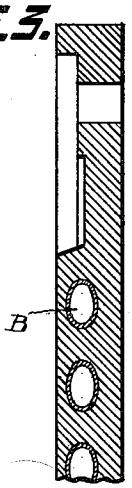



Fig. 4.

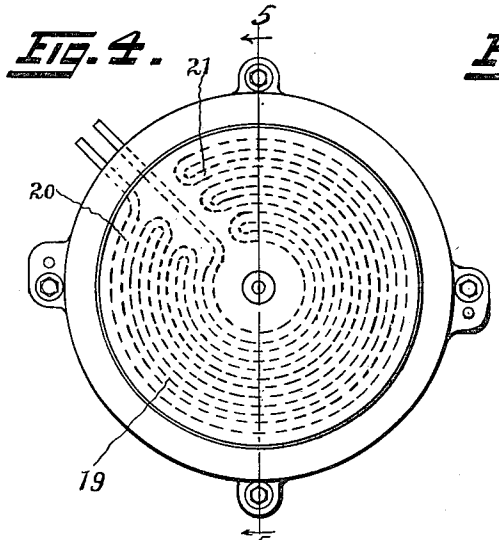



Fig. 5.

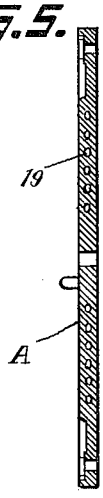
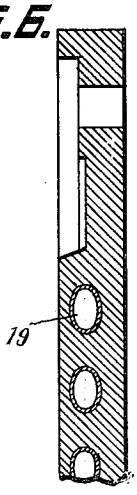



Fig. 6.




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# UNITED STATES PATENT OFFICE.

EDWIN M. WINTER, OF BROOKLYN, NEW YORK.

## HOT DIE FOR PLASTIC MOLDING.

Application filed August 12, 1921. Serial No. 491,720.

*To all whom it may concern:*

Be it known that I, EDWIN M. WINTER, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Hot Dies for Plastic Molding, of which the following is a specification.

My present invention relates to improvements in pressure platens for hot molding presses of various types, and is preferably adapted for molding phonograph records.

Ordinarily this device is used in toggle and hydraulic presses of the well known type for plastic molding, wherein the material is first heated to mold it and is then chilled by the introduction of cooling medium.

One feature of my invention is the making of a platen of the class described wherein a heat distributing means ordinarily associated with said platen is made integral with the platen itself, and thereby becomes more efficient in the conducting of heat through the material to be molded, and in thereafter cooling off such molded material for removing from the press.

Another feature is the making of this heat distributing means of sinuous or winding form, whereby a large amount of hot or cold medium may be extensively conducted and the heat or cold thereof extensively distributed through the body of the platen, and whereby the material under treatment may be subjected to rapid changes of temperature.

In the accompanying drawings which form part of this specification, Figure 1 is a plan view of one form of my invention.

Figure 2 is a sectional view on the line 2—2 of Fig. 1.

Figure 3 is a fragmentary detail view, on an enlarged scale, of a portion of the platen as shown in Fig. 2, for the purpose of showing more fully the hot and cold medium conducting means in cross section.

Figure 4 is a plan view of another form of my invention.

Figure 5, is a sectional view on the line 5—5 of Fig. 4.

Figure 6, is a fragmentary detail view, on an enlarged scale, bearing the same relation to Fig. 5 that Fig. 3 bears to Fig. 2.

Similar letters or numerals denote similar parts throughout the several views.

My invention comprises the body or plate A and the hot or cold medium conducting means B.

Referring to Fig. 1, the body or plate A preferably is of cast iron and is provided with a rim 10 and a circular central portion 11, the rim 10 having thereon suitable attachment means such as the lugs 12 and 13, the lugs 12 having suitable means, such as the dowel pins 14, for thereby removably securing a pressure plate, not shown, to the body A.

The hot or cold medium conducting means B is metal tubing, preferably steel tubing, and preferably of oval shape in cross section as affording more extended surface for radiation of heat or cold than round tubing. This tubing is arranged within the confines of the central circular portion 11 as a coil having port ends 15 and 16, the coil beginning at the port end 15 and continuing as a continuous winding to a point, such as 17, near the center or hub 18 of the central circular portion 11 and then being extended as a straight piece to the port end 16, the coil of tubing, when the body A is molded, being tinned and placed in position in the central portion 11 and molten iron poured thereabout, thereby causing in a well known manner amalgamation of the coil and body A, the coil becoming integral with the body A and located therein with the port ends 16 and 17 extending through the side wall or edge thereof and adjacent to each other for accessibility. It is thus seen that a means for conducting hot or cold medium is provided which is located within or enclosed by the body A and is part thereof, and is adapted for disseminating the heat or cold through the body A by radiation and which due to its sinuosity or winding distributes the heat or cold extensively throughout the body A for transmission to the material or article treated.

In the form of my invention shown in Fig. 4, the coil of steel tubing 19 is arranged as a coil having connected parts of counter direction, or loops such as 20 and 21, but in the locating and forming thereof in the body A and as being integral with the body A, is similar to the coil 15.

In operation the hot or cold medium is introduced at one port end of the coil and is ejected from the other port end, it being immaterial which port end is used for admission or ejection, the hot or cold medium being quickly conducted by the coil through

the body of the platen, the heat or cold being extensively distributed by radiation from the coil and transmitted from the platen to the material or article treated, and a means for effecting a quick change of temperature by changing from a hot to a cold medium and application thereof to the material or article treated is afforded.

Having thus described my invention it should be understood that there may be modifications thereof and variations therein without departing from the spirit of the invention or exceeding the scope of the appended claims.

What I claim and desire to protect by Letters Patent is:—

1. A platen having a flat coil of metal tubing enclosed by the material of the body of the platen for distributing hot or cold medium through said body; said coil extending through the body of the platen from near the edge thereof to near the central point of said body on a plane parallel to the plane of the surface of said body and having means for inlet or outlet of said medium.

2. A platen of disk form having a flat coil of metal tubing enclosed by the material of the body of the platen for distributing hot or cold medium through said body; said coil extending through the body of the platen from near the edge thereof to near the center of said body on a plane parallel to the plane of the surface of said body and having means for inlet or outlet of said medium.

3. A platen having a flat coil of steel tubing enclosed by the material of the body of the platen for distributing hot or cold medium through said body; said coil extending through the body of the platen from near the edge thereof to near the central point of said body on a plane parallel to the plane of the surface of said body and being provided with means for inlet or outlet of said medium.

4. A platen of disk form having a flat coil of steel tubing enclosed by the material of the body of the platen for distributing hot or cold medium through said body; said coil extending through the body of the platen from near the edge thereof to near the center of said body on a plane parallel to the plane of the surface of said body and being provided with means for inlet or outlet of said medium.

5. A platen of cast metal having a flat coil of tinned steel tubing enclosed by and amalgamated with the material of the body of the platen for distributing hot or cold medium through said body; said coil extending through the body of the platen from near the edge thereof to near the central point of said body on a plane parallel to the plane of the surface of said body and being provided with means for inlet or outlet of said medium.

6. A platen of cast metal of disk form having a flat coil of tinned steel tubing enclosed by and amalgamated with the material of the body of the platen for distributing hot or cold medium through said body; said coil extending through the body of the platen from near the edge thereof to near the center of the body on a plane parallel to the plane of the surface of said body and being provided with means for inlet or outlet of said medium.

7. A platen having a coil of metal tubing therein for conducting hot or cold medium through the platen and for extensively distributing heat or cold through the platen by radiation from said coil; the tubing being oval in cross section.

8. A platen of cast metal having a coil of steel tubing enclosed by and amalgamated with the material of the body of the platen for distributing hot or cold medium through said body; the tubing being oval in cross section.

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Witnesses:
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