

Feb. 23, 1926.

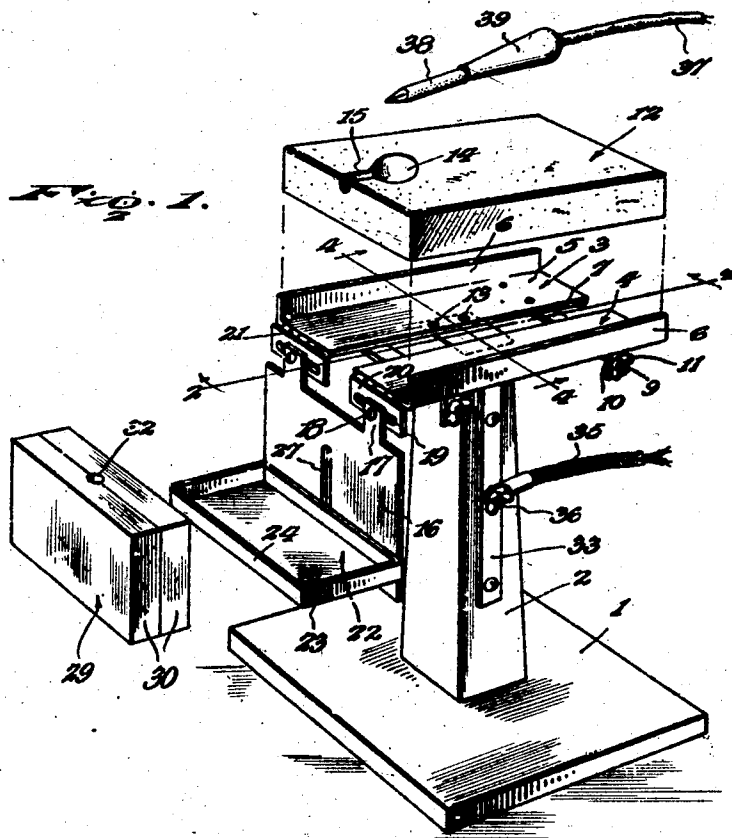
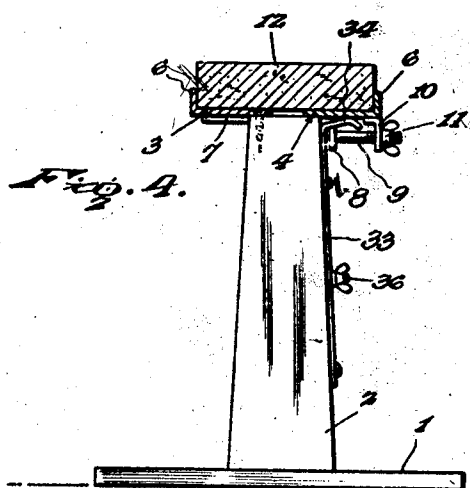
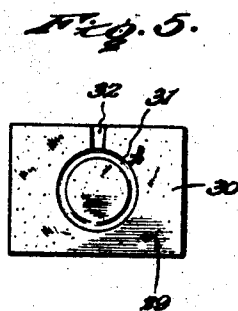
W. M. BOWLES

1,574,598

METAL MELTING AND POURING DEVICE

Filed Oct. 9, 1924

2 Sheets-Sheet 1



Inventor

W. M. Bowles.

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Lacey & Lacey, Attorneys

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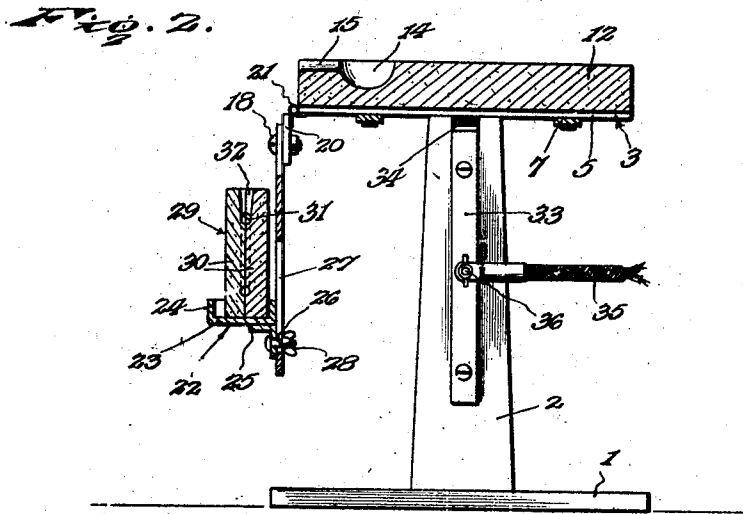
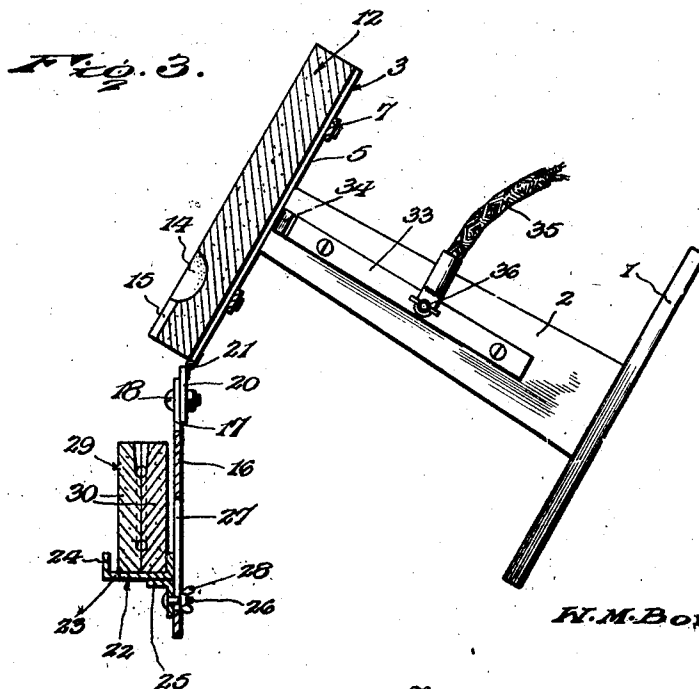
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METAL MELTING AND POURING DEVICE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

WILLIAM M. BOWLES, OF SHAWNEE, OKLAHOMA, ASSIGNOR OF ONE-HALF TO MRS. SARAH MOSES, OF SHAWNEE, OKLAHOMA.

METAL MELTING AND POURING DEVICE.

Application filed October 9, 1924. Serial No. 742,665.

To all whom it may concern:

Be it known that I, WILLIAM M. BOWLES, a citizen of the United States, residing at Shawnee, in the county of Pottawatomie and State of Oklahoma, have invented certain new and useful Improvements in Metal Melting and Pouring Devices, of which the following is a specification.

This invention relates to improvements in devices for melting and pouring precious metals such as are used by manufacturing jewelers in casting rings, bar pins, and other articles of jewelry.

One of the objects of the present invention is to provide a device of this class which may be conveniently employed in casting various articles of jewelry, the device embodying means whereby the metal of which the article is to be made may be readily and conveniently melted, and means for supporting the mold, in a manner to permit of ready pouring of the molten metal thereinto.

Another object of the invention is to provide a device of the class described embodying means for supporting charcoal blocks of various sizes in which cavities of different sizes may be formed to constitute crucibles in which the metal may be melted, the support for the said blocks being provided with means for supporting the mold flask in such position that when the device as a whole is tilted, the molten metal will be discharged from the crucible directly into the throat of the flask, thereby greatly simplifying the handling of the metal and its reduction to a molten state.

In the accompanying drawings:

Figure 1 is a perspective view of the device embodying the invention, the crucible block and the mold flask being somewhat displaced with relation to the device proper to better illustrate the structure of the latter.

Figure 2 is a vertical longitudinal sectional view taken substantially on the line 2—2 of Figure 1, looking in the direction indicated by the arrows.

Figure 3 is a view similar to Figure 2, illustrating the device tilted in the act of pouring the molten metal from the crucible block into the mold flask.

Figure 4 is a vertical transverse sectional view taken substantially on the line 4—4 of Figure 1, looking in the direction indicated by the arrows.

Figure 5 is a view in elevation of one section of the mold flask.

The device comprises a base 1 upon which is fixed an upstanding pedestal 2 which may be of wood or any other material found suitable for the purpose and which supports, at its upper end, the supporting means for the crucible block. The said supporting means comprises a pair of sections, one indicated in general by the numeral 3 and the other in general by the numeral 4. Each section comprises a plate 5 provided along one longitudinal edge with an upstanding flange 6, and bars 7 are secured to the under side of the plate 5 of the section 3 and extend beneath the under side of the plate 5 of the section 4 and are provided at their last mentioned ends with downwardly turned portions constituting ears 8 through which are engaged bolts 9, the threaded shanks of which fit through openings in ears 10 secured to the under side of the said plate 5 of the section 4, wing nuts 11 being threaded onto the shanks of the bolts and being adjustable to slide the ears 10 along the bolts and thereby bodily adjust the section 4 in the direction of the section 3, the flanges 6 of the sections being in this manner, brought into clamping engagement with opposite sides of the crucible block which is indicated by the numeral 12. The plate 5 of the section 3 is secured by screws or other similar fastening elements 13 to the upper end of the standard 2 and this section is, therefore, permanently fixed, it being understood that the section 4 is adjustable upon the bars 7 through the medium of the bolts 9 and nuts 11, in the manner above outlined.

The mold support is, generally speaking, of rectangular form and it will be observed by reference to the drawings that the crucible block 12 is likewise of this form and is designed to be disposed above the upper sides of the plates 5 of the two sections of the support and, as previously stated, to be clamped between the flanges 6, when the wing nuts 11 are tightened. The block 12

is of charcoal and in order that it may constitute a crucible, it is formed in its upper side, near one end, with a concavity 14 of approximately semi-spherical contour and with a channel 15 which leads radially from the concavity to and through the adjacent end edge of the block and serves to conduct the molten metal when poured from the concavity 14, as will hereinafter be explained.

When the device is tilted to pour the molten metal from the concavity 14 through the spout 15, it is intended that the metal shall be delivered to the mold in which the ring or other article is to be cast, and in order that the mold may be supported in position to receive the molten metal, means is provided which will now be described. The numeral 16 indicates a rectangular plate of metal which is provided with upstanding ears 17 at its upper edge, and bolts 18 are secured through said ears and adjustably through slots 19 formed in hinge leaves 20 hingedly supported as at 21 from the plates 5 of the sections 3 and 4 of the crucible block support, the plate 16 depending substantially in a vertical position, as shown in Figures 1, 2 and 3 of the drawings. A tray 22 of substantially rectangular form and comprising a bottom 23 and a surrounding rim 24, has secured to the underside of its bottom a bracket member 25 carrying a threaded stud 26 which projects through a slot 27 formed vertically in the plate 16. A nut 28 is threaded onto the stud 26 and may be tightened to hold the tray 22 at different elevations. The mold is indicated by the numeral 29 and comprises two sections 30 of charcoal, the opposing or meeting faces of which sections are formed with grooves or channels or recesses 31 of a contour to produce an article of the required shape, and the said faces of the mold sections are likewise formed with grooves 32 opening through their upper edges, which grooves register, when the sections are assembled, so as to constitute a throat into which the molten metal may be poured to enter and fill the grooves or recesses 31. In practice, the mold 29 will be interposed in the tray 22 and after the metal in the concavity 14 has been reduced to a molten state, the entire device may be bodily tilted, as shown in Figure 3 of the drawings, so as to discharge the molten metal from the concavity and through the groove or channel 15 into the throat of the mold. It will be observed by reference to the said Figure 3, that after the device is tilted, the mold support and the mold thereon, will be maintained in substantially perpendicular position so that the throat of the mold will at all times be in position to receive the molten metal delivered through the groove or channel 15 in the crucible block 12.

In order that the metal within the concavity 14 may be reduced to a molten state, a strip 33 of a metal which is a good conductor of electricity, is secured to one side of the pedestal 2 and has its upper end deflected outwardly to provide a contact finger 34 which engages firmly against the under side of the plate 5 of the section 4 of the crucible block support. A conductor wire 35 is connected by a binding post 36 to the strip 33, and a second conductor wire 37 is connected to a carbon rod 38 provided with a hand grip 39. The wires 35 and 37 lead from a source of current supply and it will be evident that when the handle 39 is grasped and the tip of the carbon rod 38 is brought into contact with the metal scrap in the concavity 14, the circuit will be closed and the metal will be reduced to a molten state.

Having thus described the invention, what I claim is:

1. A device for melting and pouring metal comprising a supporting standard, a crucible block removably held thereon and having a metal receiving concavity and a pouring channel leading therefrom, and a mold support freely swingingly suspended in position to support a mold to receive molten metal delivered from the channel, when the standard is tilted.

2. A device for melting and pouring metal comprising a supporting standard, means upon the standard for clamping and supporting a crucible block, a crucible block removably held by the said clamping and supporting means and having a metal receiving cavity and a pouring channel leading therefrom, and a mold support freely swingingly suspended from the said clamping and supporting means in position to support a mold to receive molten metal delivered from the channel, when the standard is tilted.

3. A device for melting and pouring metal comprising a supporting standard, supporting and clamping means thereon, a crucible block removably held by the clamping and supporting means, the said block having a metal receiving concavity and a pouring channel leading therefrom, a member freely swingingly suspended from the clamping and supporting means, and a mold supporting tray carried by the said member to support a mold in position to receive molten metal delivered from the channel, when the standard is tilted.

4. A device for melting and pouring metal comprising a supporting standard, supporting and clamping means thereon comprising a fixed section mounted upon the standard and a section movable with relation thereto, means for adjusting the last mentioned section with relation to the first mentioned section, the sections having up-

standing flanges, a crucible block disposed upon the sections and clamped between the flanges, said block having a metal receiving concavity and a channel leading therefrom, adapted to support a mold in position to receive molten metal delivered from the channel when the device is tilted. 10
5 a plate swingingly suspended from the sections at one end thereof, and a tray vertically adjustably mounted upon the plate and In testimony whereof I affix my signature.

WILLIAM M BOWLES. [L. s.]