G. E. BURNS.

APPARATUS FOR MAKING MOLDS FOR RINGS.

APPLICATION FILED APR. 1, 1912.

1,097,749. Patented May 26, 1914.

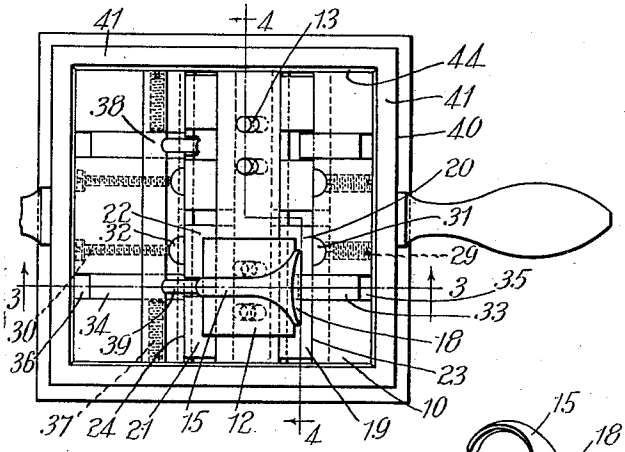


Fig. 1.

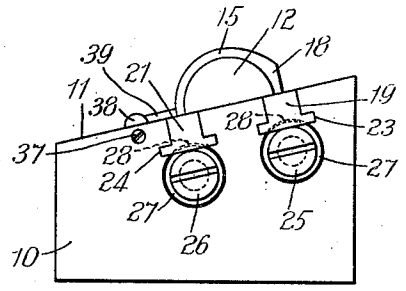


Fig. 2.

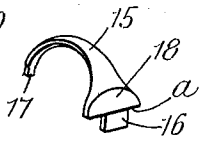


Fig. 5.

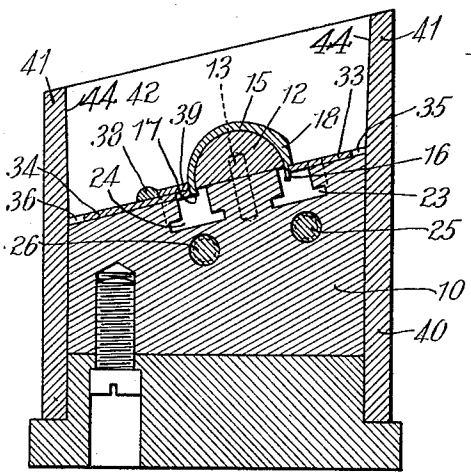


Fig. 3.

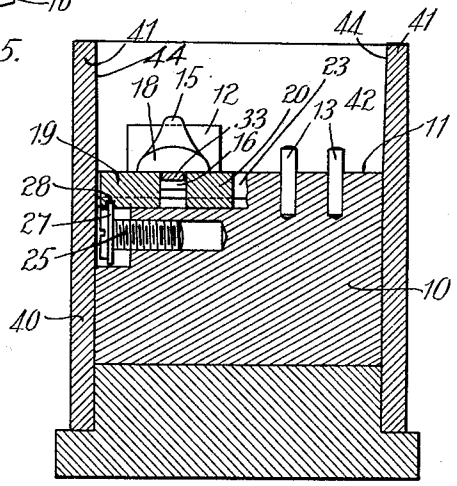


Fig. 4.

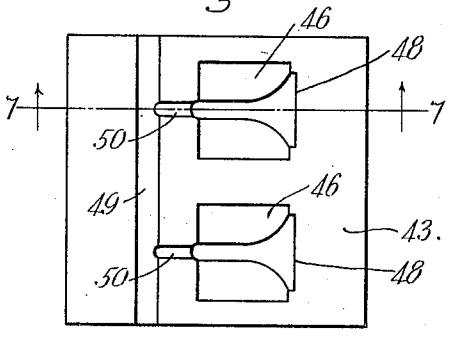


Fig. 6.

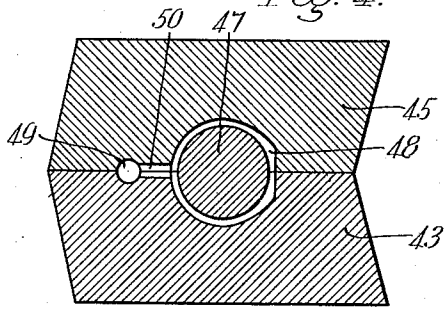


Fig. 7.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MAKING MOLDS FOR RINGS.

1,097,749. Specification of Letters Patent. Patented May 26, 1914.

Application filed April 1, 1912. Serial No. 687,605.

To all whom it may concern:

Be it known that I, GEORGE E. BURNS, a citizen of the United States, residing at Central Falls, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Apparatus for Making Molds for Rings, of which the following is a specification.

This invention relates to a device for making molds from which to cast finger rings.

The object of the invention is to provide a device of the character set forth in which a pattern of a half ring can be utilized to make molds, two of which are set together to form a complete mold in which can be cast one or more rings. The molds as formed in the apparatus are then baked, two of the half molds put together and the metal poured into them to cast the rings which are then taken from the molds and finished in a manner well known to those skilled in the art.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings: Figure 1 is a plan view of my improved apparatus for making molds for rings showing one of the core print formers in position with a half ring pattern applied thereto. Fig. 2 is a side elevation of the base with a core print former in position thereon. Fig. 3 is a sectional elevation taken on line 3—3 of Fig. 1. Fig. 4 is a sectional elevation taken on line 4—4 of Fig. 1. Fig. 5 is a perspective view of a half ring pattern. Fig. 6 is a plan of a half mold with two ring imprints therein. Fig. 7 is a sectional elevation of two half molds taken on line 7—7 of Fig. 6 showing a core in position for a ring to be cast.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is a base, preferably having an inclined top 11. The apparatus shown in the drawings is adapted to make a mold with two prints for casting rings therein and in Fig. 1 a single core print former is shown with a half ring pattern thereon, the other core print former being removed for the sake of clearness in illustration.

12 is a core print former, semi-cylindrical in shape and having pins 13 projecting into its flat side, said pins projecting from the top of the base 10 and thus locating the core print former. Upon the core print former is placed a half ring pattern 15 shown in perspective detail in Fig. 5. Said half ring pattern has tangs 16 and 17 at its opposite ends and is shown as provided with a half head or crown 18 terminating at its under side adjacent the tang 16 in a central divisional line *a*. It is very important that the pattern 15 should be exactly midway between the two ends of the core print former 12, because the complete mold is made from two half molds and when they are reversed it is necessary that the two sides of the mold should be exact duplicates and that they should be reversible, so that the two sides of the ring will match and make a perfect casting.

The ring pattern 15 is positioned midway of the ends of the core print former by means of suitable accurate measuring instruments and the ring pattern is positioned circumferentially of the former by locating the straight central edge *a* of the crown in alinement with the flat under face of said former.

Base plates 19, 20, 21 and 22 are provided, the tops of which are flush with the top of the base 10. The base plates 19 and 20 are adapted to slide in a slot 23 provided in the upper face of the base 10 and the plates 21 and 22 are slidable toward each other in a slot 24, also formed in the upper face of the base 10. The base plates 19 and 21 are moved toward the plates 20 and 22, respectively, by adjusting screws 25 and 26, each of which has screw-threaded engagement with the base 10, said screws being provided with annular flanges 27 which project into corresponding grooves 28 formed in the under side of said base plates 19 and 21, so that when the screws 25 and 26 are rotated the base plates 19 and 21 will be moved toward or away from the plates 20 and 22. These base plates 19 and 21 are adjusted until they engage the tangs 16 and 17, respectively, of the pattern 15, the pattern being located, as before set forth, in the exact center between the ends of the core print former. The base plates 20 and 22 are then moved toward the ring-pattern 15 until they engage the tangs 16 and 17, respectively, on the opposite side of said tangs from that engaged by the plates 19 and 21.

The base plates 20 and 22 are locked in position in their respective slots by set-

screws 29 and 30, respectively, said set-screws bearing against friction blocks 31 and 32, respectively, which friction blocks bear against the plates 20 and 22, respectively. Thus the finger ring pattern is locked in position midway between the ends of the core print former.

The space between the adjacent ends of the plates 19 and 20, outside the pattern ring, is filled by a stop plate 33 and the space between the adjacent ends of the base plates 21 and 22, outside the pattern ring, is filled by a stop plate 34. The stop plate 33 is slidable in a slot 35 and the stop plate 34 is slidable in a slot 36, both of said slots 35 and 36 being in the top of the base 10. Set-screws 37 are provided for the purpose of locking a rib 38 in position.

A runway in the mold is formed by providing a projecting rib 38 on the top of the base and this projecting rib is connected to one side of the ring pattern by a cross rib 39 projecting upwardly from the stop plate 34.

A casing 40 surrounds the base 10 and its side walls 41 project upwardly above the upper face of the base 10, thus making an open chamber 42 above the upper face of the base in which moldable material can be forced to make a half mold. The inner surfaces 44 of the casing 40 are inclined or tapered inwardly so that when the casing is lifted from the base, the half mold will be lifted with it.

The general operation of the device hereinbefore specifically described is as follows: The half ring pattern is placed upon the semi-cylindrical core print former and by means of careful measurements, the same is located exactly midway between the opposite ends of said core print former and with the straight side *a* of the crown portion 18 thereof in alinement with the flat face of said semi-cylindrical core print former. Said core print former is then placed in position with the pins 13 projecting into the holes therein, and with the tangs projecting down into the slots 23 and 24 in the base 10 and between the adjacent ends of the base plates 19, 20 and 21 and 22. The base plates 19 and 21 are then moved by means of the adjusting screws 25 and 26 in their respective slots until their inner ends engage the tangs 16 and 17 on the opposite sides of said tangs from the base plates 20 and 22. The base plates 20 and 22 are then brought forward until their ends engage the tangs 16 and 17 on the opposite sides of said tangs from the base plates 19 and 20. The plates 20 and 22 are then locked in position by the set-screws 29 and 30 and the friction blocks 31 and 32. The stop plates 33 and 34 are then moved in their slots 35 and 36 until they abut against the opposite sides of the ring pattern 15.

If it is desired to make a mold for two rings, then two of the core print formers, with their half ring patterns, are applied to the base 10.

The casing 40 being in position, moldable material is now forced into the chamber 42 and when removed will present an inner surface like that illustrated in Fig. 6. The half mold 43 has a print 46 therein adapted to receive a core 47 (see Figs. 6 and 7) and said half mold 43 has also the impression 48 of the ring pattern 15 therein. The half molds, after having been taken out of the apparatus for making the same, hereinbefore described, are baked and then two of said half molds 43 and 45 are placed together, as shown in Fig. 7, with cores 47 resting therein in the impressions made by the core print formers 12. When the molds have been baked and placed in the position illustrated in Fig. 7, the complete mold is formed and ready to have a ring cast therein, which is done by pouring the metal in through the runway 49 and cross runways 50, filling the space between the molds and the cores 47 and thus forming two complete finger rings. The finger rings are then taken from the molds and finished in the usual manner.

By having the upper face of the base inclined at an angle and the base plates and stop plates also inclined at an angle and substantially flush with the upper face of said base, a ring pattern provided with undercut engraving on its sides may be utilized to form an imprint in the mold from which, by the use of two of said molds, as hereinbefore described, a ring with undercut engraving on opposite sides may be cast, but it is not necessary that the upper face of the base should be inclined, except where it is desired to make a mold to cast rings with undercut portions in their surfaces. Otherwise, the upper face of the base could be horizontal.

Having thus described my invention, what I claim and desire by Letters Patent to secure is:

1. An apparatus for making molds having, in combination, a base, a semi-cylindrical core print former mounted on said base, and a half ring pattern with a tang at each end thereof, respectively, applied to said core print former.

2. An apparatus for making molds having, in combination, a base, a semi-cylindrical core print former mounted on said base, a half ring pattern with a tang at each end thereof, respectively, applied to said core print former and means adapted to engage said tangs and hold said pattern positioned midway between the ends of said core print former.

3. An apparatus for making molds having, in combination, a base, a semi-cylindri-

cal core print former mounted on said base, a half ring pattern with a tang at each end thereof, respectively, applied to said core print former and means to lock said core print former to said base.

4. An apparatus for making molds having, in combination, a base, a semi-cylindrical core print former mounted on said base, a half ring pattern with a tang at each end thereof, respectively, applied to said core print former and means adjustable on said base toward and away from said ring pattern and adapted to engage said tangs, whereby said pattern may be held positioned midway between the ends of said former.

5. An apparatus for making molds having, in combination, a base, a semi-cylindrical core print former mounted on said base, a half ring pattern with a tang at each end thereof, respectively, applied to said core print former and a pair of base plates slidable on said base toward and away from each other, their adjacent ends adapted to engage opposite sides, respectively, of one of said tangs.

6. An apparatus for making molds having, in combination, a base, a semi-cylindrical core print former mounted on said base, a half ring pattern with a tang at each end thereof, respectively, applied to said core print former, a pair of base plates slidable on said base toward and away from each other, their adjacent ends adapted to engage opposite sides, respectively, of one of said tangs, a screw having screw-threaded engagement with said base, and an annular flange on said screw projecting into a corresponding groove in one of said base plates, whereby said last-named base plate may be adjusted toward and away from said pattern.

7. An apparatus for making molds having, in combination, a base, a semi-cylindrical core print former mounted on said base, a half ring pattern with a tang at each end thereof, respectively, applied to said core print former, a pair of base plates slidable on said base toward and away from each other, their adjacent ends adapted to engage opposite sides, respectively, of one of said tangs and a stop plate slidable on said base and adapted to enter the space between the adjacent ends of said base plates.

8. An apparatus for making molds having, in combination, a base, a plurality of semi-cylindrical core print formers mounted on said base, half ring patterns with tangs at each end thereof, respectively, applied to said core print formers, said base having two slots in its upper face into which said tangs project, and a plurality of pairs of base plates in each of said slots, the members of each pair adapted to be adjusted toward each other and to clamp one of said tangs between their adjacent ends.

9. An apparatus for making molds having, in combination, a base having an inclined upper face, a semi-cylindrical core print former mounted on said base, a half ring pattern with a tang at each end thereof, respectively, applied to said core print former and a vertically arranged casing surrounding said base and open at its upper end to receive moldable material crowded into said casing and covering said half ring pattern.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE E. BURNS.

Witnesses:
CHARLES S. GOODING,
SYDNEY E. TAFT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."