M. M. BREIT.

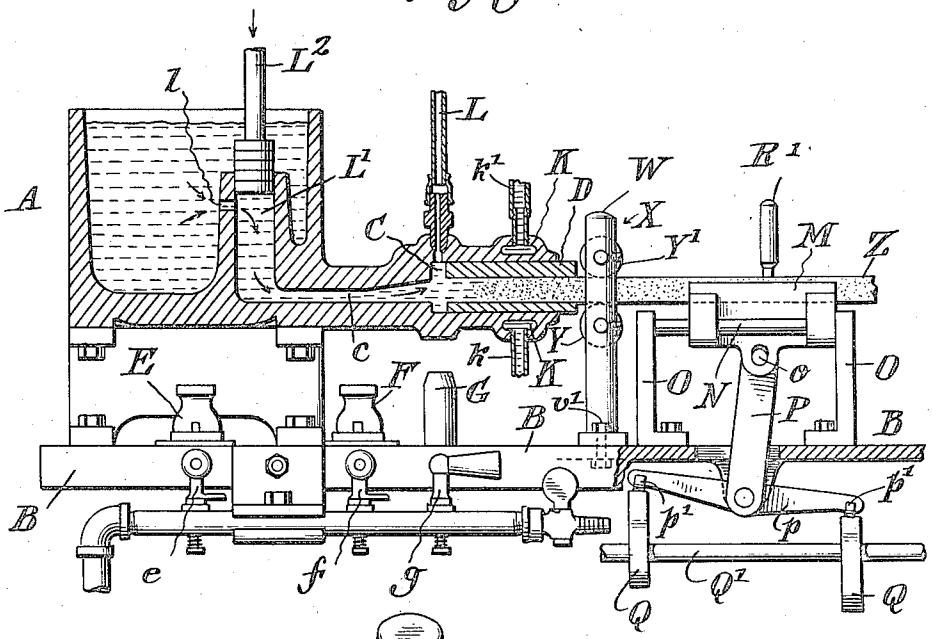
MACHINE FOR MAKING ORNAMENTAL RULES AND BORDERS.

APPLICATION FILED MAY 31, 1921.

1,422,532. Patented July 11, 1922.

2 SHEETS—SHEET 1.

Fig. 1.



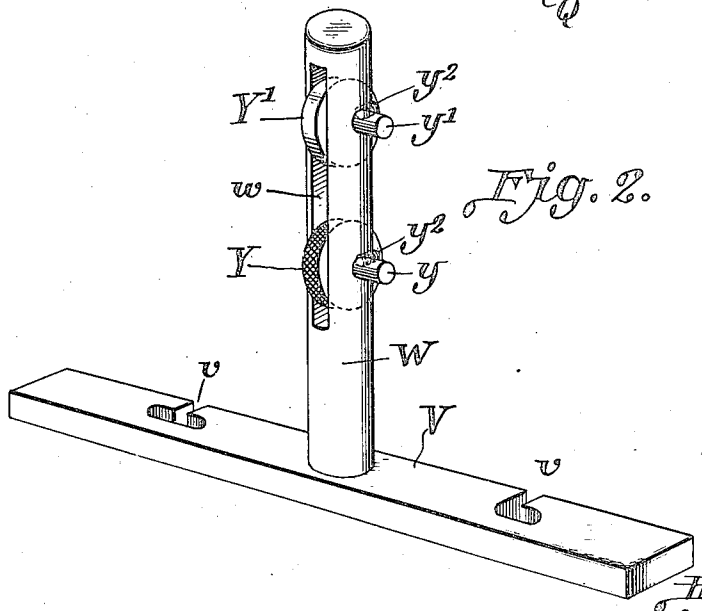




Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

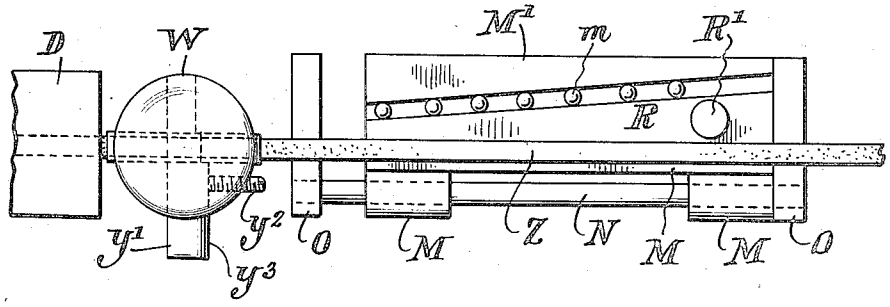



Fig. 4.

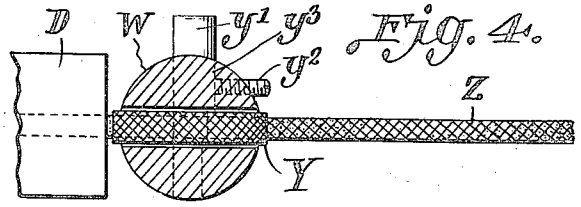



Fig. 6.

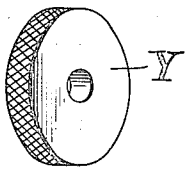



Fig. 5.

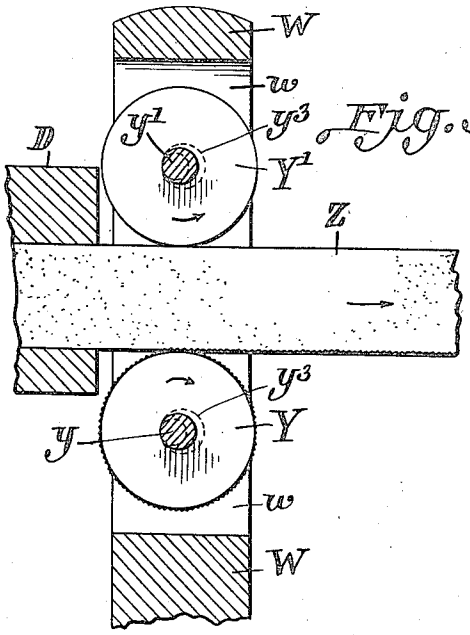
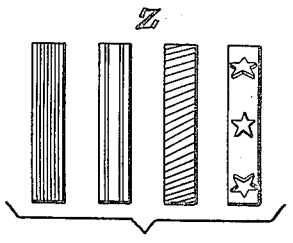



Fig. 7.




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# UNITED STATES PATENT OFFICE.

MARTIN M. BREIT, OF SAN ANTONIO, TEXAS, ASSIGNOR OF ONE-HALF TO LIGHT PUBLISHING COMPANY, OF SAN ANTONIO, TEXAS, A CORPORATION OF TEXAS.

## MACHINE FOR MAKING ORNAMENTAL RULES AND BORDERS.

1,422,532. Specification of Letters Patent. Patented July 11, 1922.

Application filed May 31, 1921. Serial No. 473,992.

*To all whom it may concern:*

Be it known that I, MARTIN M. BREIT, a citizen of the United States, residing in San Antonio, in the county of Bexar and State of Texas, have invented certain new and useful Improvements in Machines for Making Ornamental Rules and Borders, of which the following is a specification.

This invention relates to machines of the kind employed for making what is known as strip material, such as slugs, leads, rules, borders and the like, in which molten metal is forced from a melting pot through a mold which gives the desired shape to the metal. Heretofore it has been possible to ornament the rules or borders to some extent as by forming parallel ridges on the printing edge of the strip but so far as my knowledge extends no one previous to my invention has provided means in this class of machines for forming other kinds of designs on the article; that is, designs of irregular shape, involving projections or ridges extending transversely across the edge of the strip. This is because such strips have been formed with ornamental ridges and the like by dies connected directly with the mold or formed therein whereby the longitudinal or parallel ridges are produced as the metal strip passes out of the mold.

According to my invention I provide means whereby various designs or any desired designs may be formed on the metal immediately after it leaves the mold and while the metal is still hot and capable of being impressed with the desired designs.

In carrying out my invention I provide pressure rolls near the discharge end of the mold which grip the metal strip while still hot and form the designs thereon. These pressure rolls are adjustable so as to vary the pressure and they are carried by a frame which is detachably connected with the table of the mold, the construction being such that the frame with the pressure rolls may be readily applied to machines already built.

In the accompanying drawings:—

Figure 1 is a view, partly in section and partly in side elevation, of what is commonly called a casting machine for forming slugs, rules, etc., and which is equipped with my improvements.

Figure 2 is a perspective view of the devices which I have produced for ornamenting the strip

Figure 3 is a detail view, in plan, showing particularly how the strip is drawn through the mold.

Figure 4 is a detail view, in section, through the post of the roller frame and showing a bottom view of the mold, the strip and the roller which ornaments the strip.

Figure 5 is a detail view, in section, showing on an enlarged scale, how the pressure rollers operate on the strip.

Figure 6 is a perspective view of one of the pressure rollers, being the one which forms the ornamental design on the strip.

Figure 7 illustrates different kinds of designs which may be formed on the strip.

The casting machine shown in the drawings is of well known construction.

Figure 1 shows my improvements applied at X. The melting pot A is supported on a table B and delivers through a throat *c* to a mold chamber C within which the mold D is seated. Burners E, F and G heat the pot, the throat and the mold and the fuel supply to the burners is controlled by valves *e*, *f*, *g*. Oil or other lubricant is admitted at L and serves to keep the mold smooth. A water jacket K is formed in the walls of the mold chamber, water being admitted at *k* and discharged at *k'*. The molten metal is forced through the throat *c* and through the mold D by a plunger $L^2$ operating in a chamber L' to which molten metal is admitted at *l*. As the molten metal passes through the mold the desired strip form is given thereto and the metal hardens and cools to some extent when passing through the water jacket.

In order to assist the strip in passing through the mold devices have heretofore been employed for feeding it forward. The devices shown in the drawings are of well-known construction, comprising a frame M mounted to slide on a bar N, attached to brackets O, which are secured to the table B. The frame is connected at *o* to an arm P extending from a cross-piece *p* having rollers *p'* bearing on cams Q on a cam shaft Q'. A wedge R is supported on the frame M loosely and anti-friction balls *m* are interposed between the inclined edge of the wedge and the part M' of the frame. As the cam shaft Q' is rotated a reciprocating movement is given to the frame M, and the operation is such that when the frame is moving towards the mold the strip is not gripped but on the

reverse movement the strip is gripped and fed forward to the desired extent. Usually the strip is advanced to cutters which separate it into suitable lengths. The wedge R is provided with a handle R′ by which it may be moved manually when desired. These devices are commonly used in machines of this class.

Heretofore it has been possible to form rules or borders with printing ribs of various widths and to form them with parallel ribs or ridges, but it has not been possible to produce in prior machines cross lines or irregular lines for borders, rules or the like, and heretofore the discharge portion of the mold has been formed with dies which give form to the strip. This requires a different mold for each design.

According to my invention I provide means whereby as the strip leaves the mold and while it is yet warm and somewhat soft, any design desired may be formed thereon.

The device is in the form of an attachment which may be readily applied to machines already built. As shown in Fig. 2, it comprises a base V having key-hole slots $v$ adapted to receive bolts $v'$ by which it may be attached to the machine table. On the base is secured a post W which supports rollers Y, Y′ which are arranged in a slot $w$ in the post. Each of the rollers is mounted on a shaft $y$, $y'$, having an eccentric portion $y^3$ whereby it may be adjusted so that the rollers may be brought closer together or further apart. When once adjusted the shafts $y$, $y'$ may be held securely in place by set screws $y^2$. The formed strip Z passes from the mold D through the rollers Y, Y′ which are adjusted to press tightly on the strip so that the design on the periphery of the roller Y may be formed on the lower edge of the strip. The strip is fed forward step-by-step by means of the mechanism heretofore explained. The rollers Y, Y′ are not positively driven but are rotated by the strip as it passes between them.

Figure 7 shows various designs which may be formed. The design may consist of a single line, or parallel lines, or lines running cross-wise of the strip, or irregular figures, such as stars, may be formed on the strip. It will thus be seen that the same mold D may be employed for strips of various kinds and need not be removed from the mold chamber. The rollers, or rather the design-carrying roller, may be easily removed and replaced by another whenever desired.

I claim as my invention:

1. A machine for making ornamental rules and borders from molten metal, comprising a table, a mold thereon for giving strip form to the metal, devices supported on the table and engaging the strip for advancing it in a straight horizontal path after leaving the mold, and means supported on the table between the mold and the strip-advancing devices for forming a design on the edge of the strip.

2. A machine for making ornamental rules and borders from molten metal, comprising a table, a mold thereon for giving strip form to the metal, devices supported on the table and engaging the strip for advancing it in a straight horizontal path after leaving the mold, and means detachably connected to the table between the mold and the strip-advancing devices for forming a design on the edge of the strip.

3. A machine for making ornamental rules and borders from molten metal, comprising a table, a mold thereon for giving strip form to the metal, devices supported on the table and engaging the strip for advancing it in a straight horizontal path after leaving the mold, a vertical post detachably connected with the table between the mold and the strip-advancing devices, rollers carried by the post for forming a design on the strip and means for positively adjusting the rollers towards and from each other and for locking them in adjusted position.

In testimony whereof, I have hereunto subscribed my name.

MARTIN M. BREIT.