H. C. SHAW.

MOLD.

APPLICATION FILED MAR. 21, 1908.

898,795.

Patented Sept. 15, 1908.

Fig. 1.

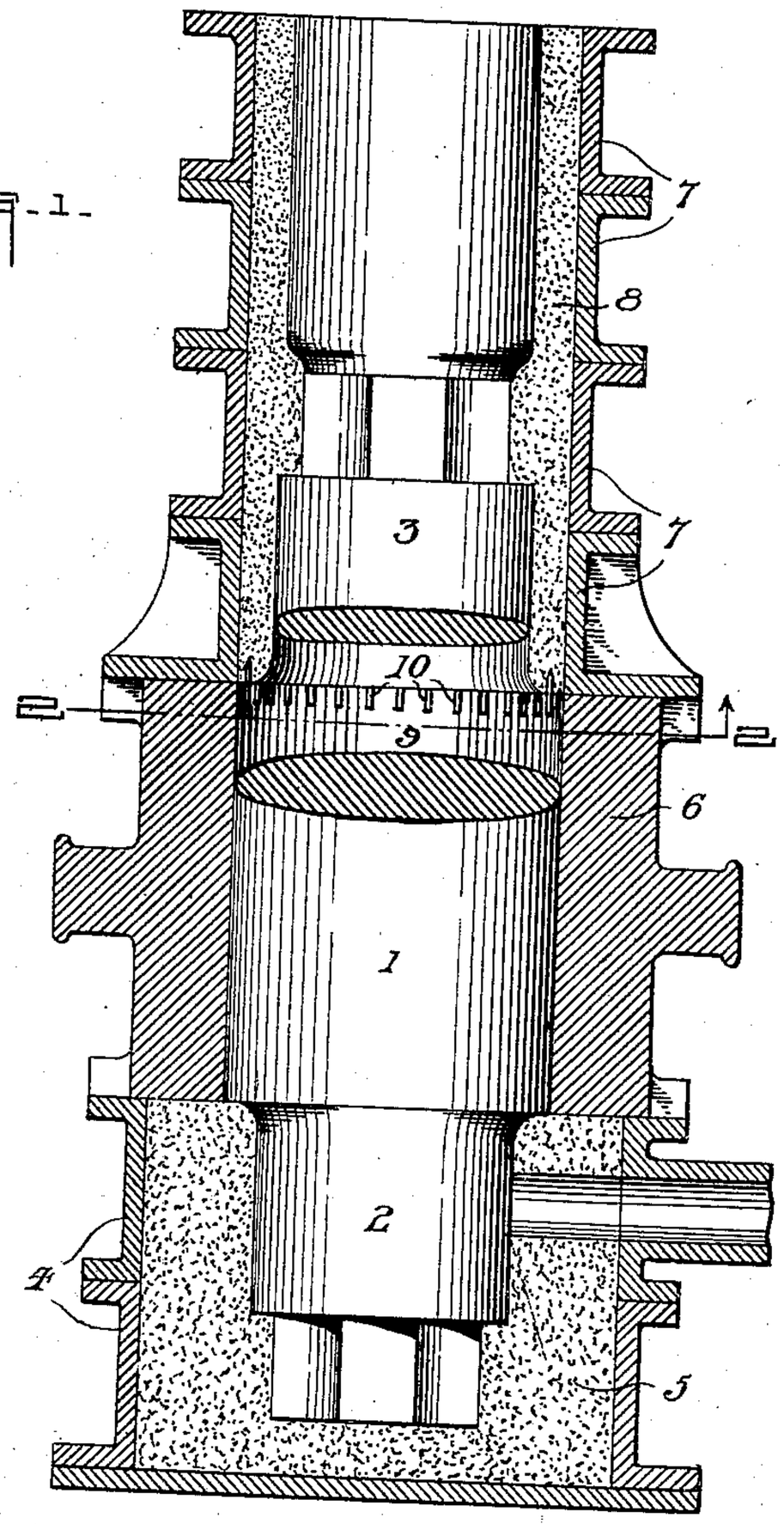
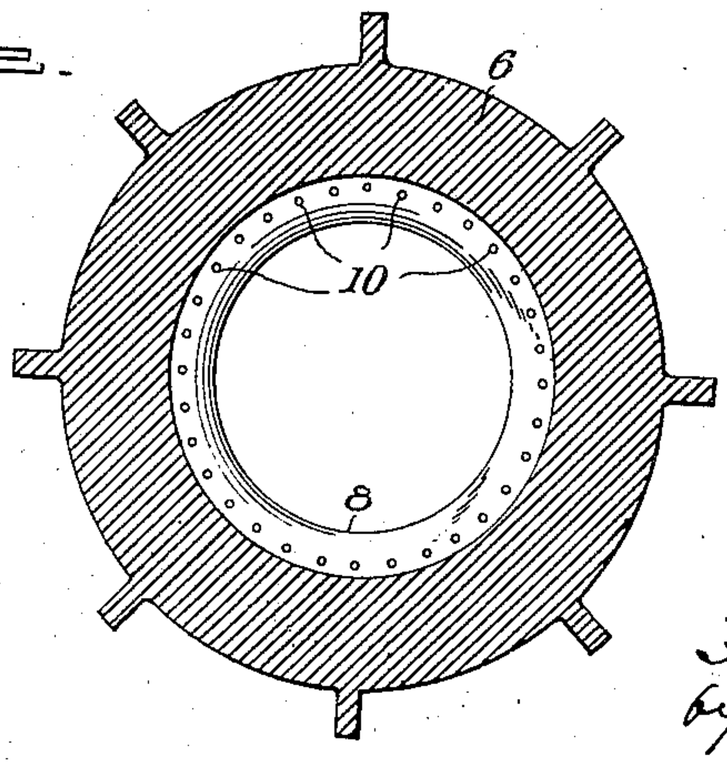


Fig. 2.



WITNESSES:

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MOLD.

No. 898,795. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed March 21, 1908. Serial No, 422,403.

To all whom it may concern:

Be it known that I, HENRY C. SHAW, a citizen of the United States, residing at Glenshaw, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Molds, of which the following is a specification.

My invention relates to the art of metal molding and casting and has particular reference to vertical molds for making rolls for rolling mills.

Its object is to provide a mold which will preserve the circular cross-section of the roll cast therein, even though the mold be tilted or somewhat rough on one side. When the interior surface of a chill is rough on one side, the metal clings to the roughness and causes the cast article to be distorted or drawn toward the rough side or places so that the side or places of the article opposite the roughness will often be wholly free from contact with the surface of the chill. It has also been observed that, when the mold is not exactly vertical, the metal settles toward the side, toward which the mold leans, and leaves the opposite side of the cast article free from the surface of the chill. The side of the article free from the chill will not be so deeply or thoroughly chilled as the side which maintains its contact with the chill, thereby producing a roll which is somewhat elliptical in cross-section and which will have the chill of unequal depth.

It is the object of the present invention to produce a mold which will produce rolls or other objects conforming to the shape of the mold whether the mold be exactly vertical or not and even though the chill has one or more rough places.

Referring to the drawing accompanying this specification, Figure 1 is a vertical section of a mold constructed in accordance with my invention, the molded article being shown in side elevation with a part broken away. Fig. 2 is a section of Fig. 1 on the line 2—2 looking upwards.

On the drawing, 1 represents the body of a roll and 2 and 3, the neck portions thereof. The mold is composed of the drag sections 4 which contain the sand 5 for molding the neck portion 2 of the roll; the chill 6 which is composed of metal, shapes the body 1 of the roll; and the cope sections 7 which contain the sand 8 for shaping the neck portion 3 of the roll. The mold so far as described is old and well known.

In the lower end of the sand 7, I place a circle of metal preferably projecting slightly down into the upper end of the opening 9 in the chill 6, but the circle of metal may be flush with the sand, or upper end of the chill. This circle of metal may be continuous, but I prefer that it consist of the pins 10, which may be pointed as shown or otherwise. The pins are arranged a short distance from the surface of the chill and sufficiently close together to cause the molten metal to congeal about the pins and adhere to them to prevent the metal from sagging toward one side of the chill. The pins being arranged symmetrically within the chill keep the metal symmetrical. I have found that this maintenance of symmetry at the top of the chill preserves symmetry of the article below the pins. I do not limit myself to the depth which the pins or their equivalent may extend into the chill.

I claim—

1. In a vertical mold for casting rolls, a chill for the body of the roll, a sand section for one neck of the roll above the chill and for the upper end of the roll, and a circle of metal pins in the sand and flush with or projecting into the chill mold so as to be engaged by the molten metal during the casting operation.

2. In a vertical mold for casting rolls, a chill for the body of the roll, a sand section for one neck of the roll above the chill and for the upper end of the roll, and a circle of spaced metal pins in the sand and flush with or projecting into the chill mold so as to be engaged by the molten metal during the casting operation.

Signed at Pittsburg, Pa., this 19th day of March, A. D. 1908.

HENRY C. SHAW.

Witnesses:

ALICE E. DUFF,

F. N. BARBER.