No. 685,066. Patented Oct. 22, 1901.

J. S. SEAMAN, JR.

MOLD FOR THE MANUFACTURE OF ROLLS.

(Application filed Oct. 26, 1900.)

(No Model.)

FIG. 1.

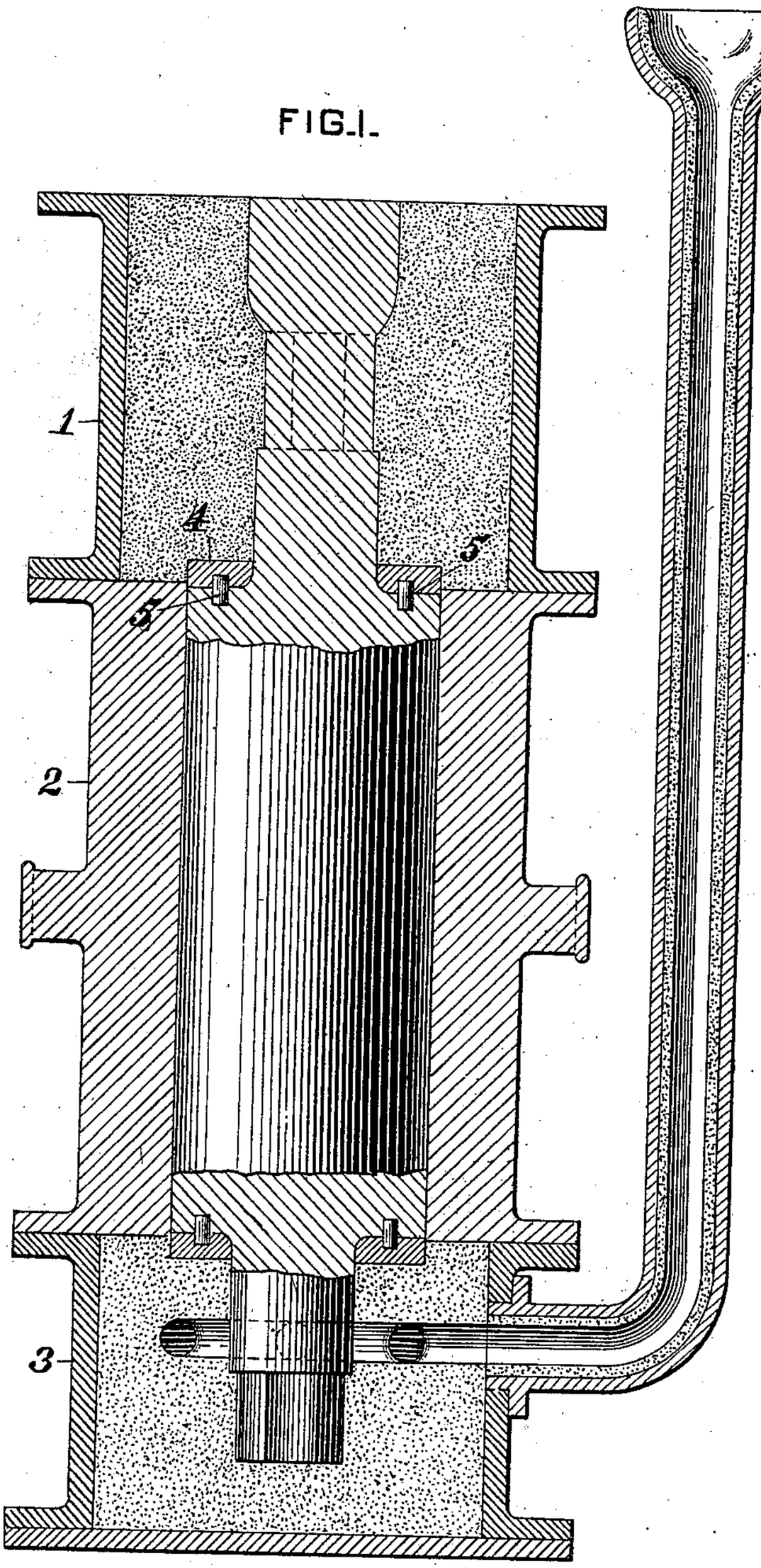
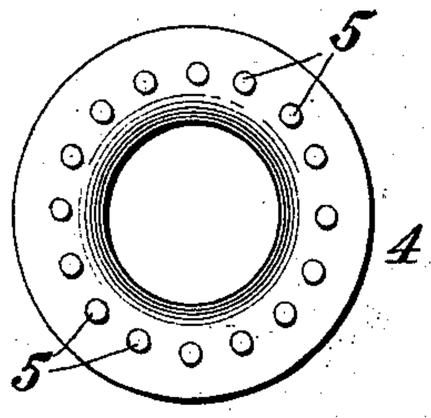


FIG. 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOSEPH S. SEAMAN, JR., OF PITTSBURG, PENNSYLVANIA.

MOLD FOR THE MANUFACTURE OF ROLLS.

SPECIFICATION forming part of Letters Patent No. 685,066, dated October 22, 1901.

Application filed October 26, 1900. Serial No. 34,484. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH S. SEAMAN, Jr., a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Molds for the Manufacture of Rolls, of which improvements the following is a specification.

The invention described herein relates to certain improvements in casting metal rolls, whereby the roll-body is held from distortion from true cylindrical contour while cooling, thereby insuring a practically uniform depth of chill. It has been found that during the solidification of the roll-body the thin shell which is formed as soon as the molten metal comes in contact with the chill of the mold is subjected to sufficient strains as to cause a distortion of the shell. Such distortion causes the thin shell to collapse or bend in at some points and to swell or bulge out at other points. This distortion usually occurs at the upper end of the roll-body and causes unequal chilling as the collapsing portions move inwardly out of contact with the chill, while the bulging portions are held firmly in contact with the chill of the mold, and are therefore chilled to a considerable depth.

My improvement has for its object the provision of an annular anchor secured within the mold, so constructed that the metal of the casting will engage said anchor and be held as against distortion.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of a mold having my improvement applied thereto, and Fig. 2 is a plan view of the under side of the anchor.

In the practice of my invention the mold, consisting of the cope 1, chill 2, and drag 3, is constructed in the usual or any suitable manner, the matrices for the journals and wabblers of the roll being formed in sand in the cope and drag. The wall or a portion of the wall at one or both ends of the matrix for the roll-body is formed by a ring 4 of metal, preferably cast-iron, and of sufficient transverse dimensions as to be capable of withstanding considerable radial stress. While not necessary, it is preferred that the ring should be supported laterally by the chill. The inner side of the ring is so constructed that the metal of the roll will engage it and be locked thereto, so as to hold the body of the roll as against distortion in cooling. In the construction shown in Figs. 1 and 2 the ring is provided with a series of pins 5, preferably formed of steel or wrought-iron and projecting into the roll-matrix, so that the molten metal will surround and be engaged by the pins. The metal in contact with the ring and pins will cool and solidify and form a firm rigid connection between the ring and the body of the roll. As the ring is stiff and rigid it will prevent any distortion of the roll-body.

As distortion usually occurs at the upper end of the roll-body, an anchor-ring at that end will be sufficient in most cases; but an anchor 4 may be placed at the lower end, if desired, as shown in Fig. 1.

In case the anchor or retaining ring should become welded to the roll it can be turned off, as also the pins or teats.

I claim herein as my invention—

A mold for casting rolls in combination with a retaining-ring provided with pins and arranged in the mold so that the pins will engage the metal at the end of the roll-body, while solidifying, and thereby preventing any distortion of the roll, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOSEPH S. SEAMAN, JR.

Witnesses:
DARWIN S. WOLCOTT,
F. E. GAITHER.