

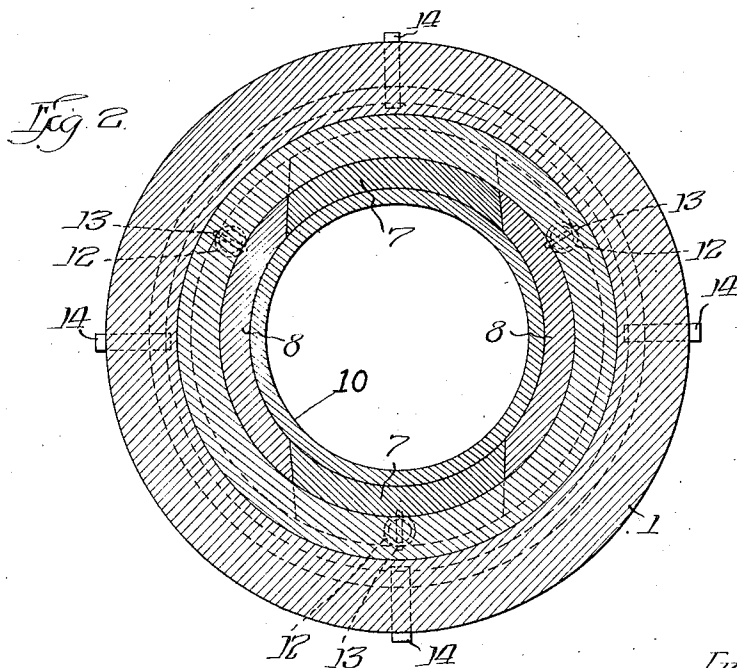
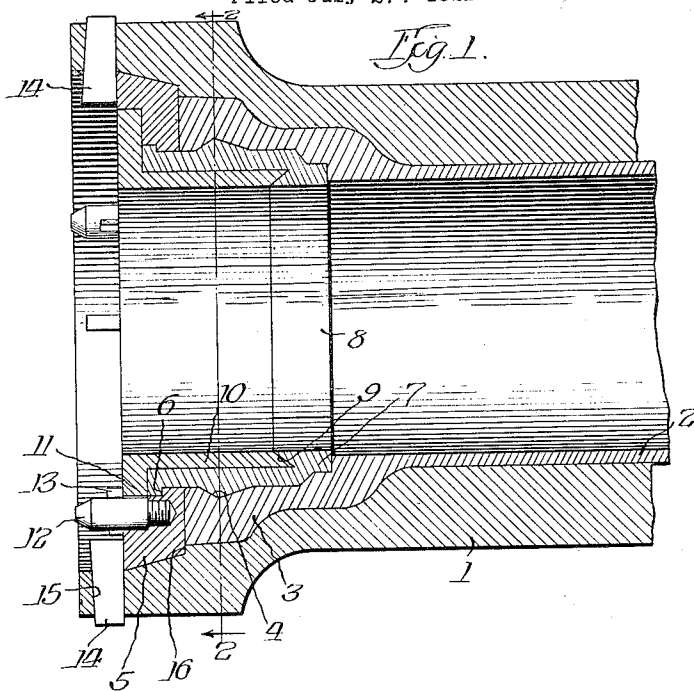
April 22, 1924.

1,491,028

J. A. BYERS

MOLD

Filed July 27, 1922



Witness:

Ed. C. Brown

Inventor

John A. Byers,

By Robert M. S. Atty.

Patented Apr. 22, 1924.

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UNITED STATES PATENT OFFICE.

JOHN A. BYERS, OF CHICAGO, ILLINOIS, ASSIGNOR TO JAMES B. CLOW & SONS, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

MOLD.

Application filed July 27, 1922. Serial No. 577,843.

To all whom it may concern:

Be it known that I, JOHN A. BYERS, a citizen of the United States, and resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Molds, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

The present invention relates to molds for casting molten metal and its principal object is the provision of a collapsible, preferably permanent, core especially useful in forming the bell end of pipes cast in a centrifugal casting machine.

In the drawing,—

Figure 1 is a broken diametrical section of a mold and core embodying the invention.

Figure 2 is a section on the line 2—2 in Figure 1.

The collapsible core is illustrated in the drawings applied to the bell end of a tubular metal mold 1. The mold 1 is to be suitably mounted and rotated so that upon introduction of molten metal in the preferred manner the pipe 2 will be cast by centrifugal force. The body of the pipe 2 is cast without the use of a core but the peculiar formation of the bell end 3 of the pipe requires a core for the definition of its internal surface. It is desirable to use a permanent metal core and in order that the core may be readily removed from the pipe the collapsible core of the present invention is provided. This is especially desirable in view of the fact that the bell end 3 of the pipe generally must be formed with a circular depression 4 in which to seat a lead ring for packing the joint between contiguous pipes in installation.

The core comprises a ring 5 formed with a forwardly facing shoulder 6. A multi-part tubular member 7—8 fits against the internal periphery of the ring 5 and is formed at its front end with a flange engaging against the shoulder 6 of the ring 5. The tubular member 7—8 projects inwardly beyond the ring 5 and the outer surface of this projecting portion is provided with a configuration desired to be produced in the inner surface of the bell end of the pipe to be cast. The multi-part tubular member 7—8 as illustrated in Figure 2 has its parts so related to each other as to render the mem-

ber inwardly collapsible unless locked in position. Preferably, as illustrated in Figure 2, the tubular member consists of two similar pieces 7 and two similar pieces 8, so formed that the pieces 7 may be removed toward the center of the member, whereupon the members 8 may also be removed. Normally the tubular member 7—8 is held in position on the ring 5 by a locking ring 10 fitting within the tubular member and formed at its outer end with a flange adapted to lock the flange of the tubular member 7—8 against the shoulder 6 of the ring 5. Preferably, the tubular member 7—8 is formed at its rear end with an undercut beveled groove 9 and the inner end of the locking ring 10 is correspondingly beveled. The locking ring 10 may be conveniently secured in position by wedges 13 driven through slots in pins 12 projecting from the face of the ring 5.

In preparing to cast a pipe the parts 7—8 of the tubular member will be assembled within the ring 5 and secured therein by wedging the locking ring 10 in position. The complete core thus assembled is then secured in the end of the mold 1 by wedges 14 driven through holes 15 in the end of the mold, the wedges 14 serving to clamp the ring 5 against a peripheral shoulder 16 in the mold 1. After the pipe has been cast the pipe and core may be withdrawn from the mold and the core then removed from the pipe or the core may be removed before the removal of the pipe from the mold. In either event, removal of the wedges 13 and the locking ring 10 permits the multi-part tubular member 7—8 to be collapsed inwardly toward the axis of the pipe. After removal of the ring 5 the parts may again be assembled and secured in the mold for the next casting operation.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A molding core, comprising a plurality of segments fitted together and exteriorly forming a molding surface, the segments being inwardly collapsible, an annular member encircling the segments, an annular member fitted within the segments, and means for locking the annular members and segments together, the assembled core being hollow.
2. A molding core, comprising a plurality of segments fitted together and exteriorly

forming a molding surface, the segments being inwardly collapsible, a member formed with a molding surface extending outwardly from the molding surface formed by the segments, and means for locking the member and segments together, the assembled core being hollow.

3. A molding core, comprising a plurality of segments fitted together and exteriorly forming a molding surface, the segments being inwardly collapsible, an annular member encircling the segments and formed with a molding surface extending outwardly from the molding surface formed by the segments, a second annular member fitted within the segments, and means for locking the annular members and segments together.

4. A molding core, comprising a plurality of segments fitted together and exteriorly forming a molding surface, the segments being inwardly collapsible, an annular member encircling the segments and formed with a molding surface extending outwardly from the molding surface formed by the segments, the annular member and segments being formed with interengaging shoulders, a second annular member fitted within the segments and provided with an annular flange adapted to force the shoulders into engagement, and means for securing the second annular member to the first annular member.

5. The combination of a tubular mold

formed internally with a molding surface, a plurality of segments fitted together and exteriorly forming a molding surface spaced from that of the mold, the segments being inwardly collapsible, an annular member removably secured to the mold and formed with a molding surface intersecting the molding surfaces of the mold and segments, a second annular member fitted within the segments, and means for locking the annular members and segments together.

6. A molding core, comprising a plurality of segments fitted together, the segments being inwardly collapsible, and means for securing the segments against such inward collapse, the core being hollow and having exteriorly a generally cylindrical molding surface and an annular molding surface extending radially outwardly therefrom.

7. The combination of a tubular mold formed internally with a molding surface, a core comprising a plurality of inwardly collapsible segments fitted together, the core having exteriorly a generally cylindrical molding surface and an annular molding surface extending outwardly therefrom to the molding surface of the mold, means for securing the segments against collapse, and means for securing the core to the mold.

In witness whereof, I hereunto subscribe my name this 24th day of July, 1922.

JOHN A. BYERS.