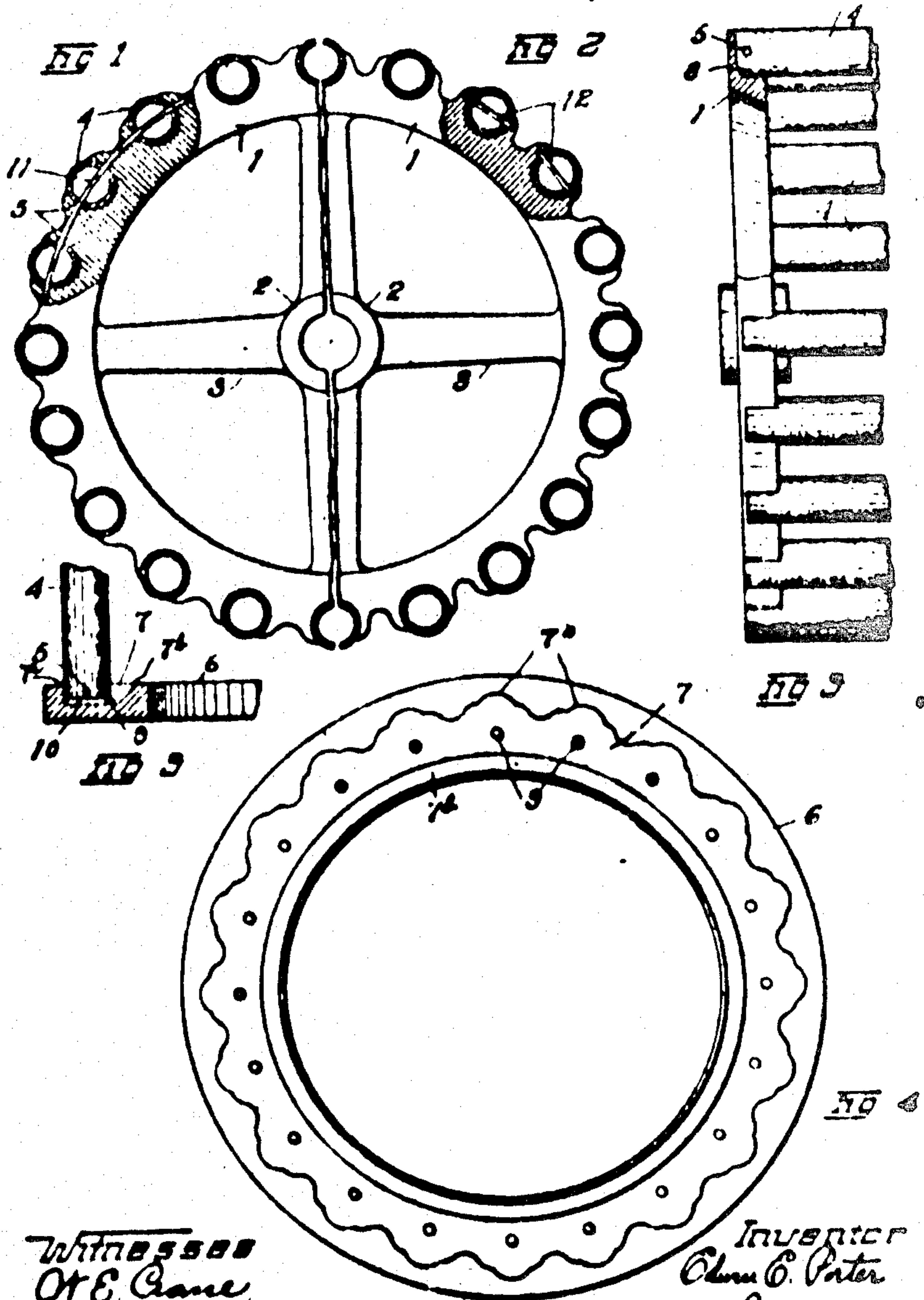


ART. 10
VULCAN

E. E. PORTER.
MOLD FOR CASTING.
APPLICATION FILED OCT. 10, 1910.

999,865.

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Witnesses
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999,865. MOLD FOR CASTING. EDWIN E. PORTER, Massillon, Ohio. Original application filed Apr. 21, 1910, Serial No. 556,875. Divided and this application filed Oct. 10, 1910. Serial No. 586,190.

To all whom it may concern:

Be it known that I, EDWIN E. PORTER, a citizen of the United States, residing at Massillon, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Molds for Casting, of which the following is a specification.

My invention relates to an improved method of casting pulverizing rolls and similar or analogous shaped castings.

The primary object of the invention is to provide a generally improved method and mold for use in the manufacture of this class of articles whereby the cast heads or ends and connecting bars, such for example,—as the tread bars of pulverizing rolls, may be economically cast by means of an improved mold adapted to receive and properly support the ends of the tread bars during the operation of casting the heads, and the provision of anchor openings in the ends of the bars adapted to be embedded in or covered by the metal of the head as cast.

The invention is particularly applicable for use in casting pulverizing rolls such as disclosed in my application for Letters Patent filed April 21, 1910, Serial No. 556,875, of which this application is a divisional part.

While I have shown in the accompanying drawings the application of the invention for use in the manufacture of pulverizing rolls or roll sections, it is of course obvious that the improved method and mold may be readily adapted for use in the manufacture of other or analogous castings.

Referring to the accompanying drawings, forming a part of this specification, Figure 1, is an end view, partly in section, of a portion of a pulverizing roll, such as may be produced in accordance with my invention. Fig. 2, a similar view of a modified form of same. Fig. 3, a side elevation, partly in section, of one of the head or end portions of a roll cast in accordance with my invention.

Fig. 4, a top plan view of a form of permanent mold constructed in accordance with my invention and adapted for use in casting the head or end of a pulverizing roll. Fig. 5, a sectional view of a portion of the improved permanent mold illustrating the method of casting, as well as the manner of setting up the tread bars, such for example,—as pipe-bars, preparatory to casting the heads of the improved pulverizing roll.

Similar numerals of reference designate like parts throughout all the figures of the drawings.

The improved pulverizing roll of the form shown in the accompanying drawings com-

prises a head consisting of a rim portion 1, and a spider portion consisting of a hub portion 2, and spider arms or spokes 3. The heads are united in pairs by means of a plurality of interposed tread pipes or bars 4, said tread bars or pipes having their ends provided with anchor openings 5, "cast in" the rim portions 1, of the heads as illustrated most clearly in Fig. 3, of the drawings. As a means or method of casting said pulverizing rolls, a circular or ring shaped permanent mold 6, such as shown in Fig. 4, of the drawings may be provided, said mold consisting of suitable metallic material and provided on its face side with an annular recess 7, conforming in its outline or contour to the contour desired for the rim portion of the head, said recess being preferably provided about its outer periphery with a plurality or series of suitably spaced recesses 7^a, to receive the ends of the tread pipes or bars preparatory to casting the heads.

As a means for providing for the contraction of the ring shaped casting while cooling, the annular recess 7, is provided with a beveled or flaring portion 7^b, about its inner periphery and as a means for permitting the molten metal while being poured into the mold to enter into the ends of the tread pipes or bars so as to surround the anchor openings 5, as illustrated in Figs. 1, and 2, of the drawings, or to flow into and fill said openings as illustrated in Fig. 3, of the drawings, an inlet opening may be formed by providing each bar with a notched or cut-away portion 8, as shown in Fig. 3, of the drawings; or said inlet opening to the end of each bar may be formed by means of a plurality of bar supporting studs 9, adapted to engage a portion of the end of each bar and elevate the same so as to provide such inlet recess or opening as at 10, intermediate the end of each bar to the lower portion of the mold recess 7, as shown most clearly in Fig. 5, of the drawings.

When the tread bars are set up in the mold preparatory to casting the head of the roll, a wire 11, may be passed through the anchor openings 5, of the tread bars as illustrated in Fig. 1, of the drawings, or in lieu of said wire, a plurality of anchor pins 12, may be inserted in said anchor openings 5, as illustrated in Fig. 2, of the drawings.

The spider arms or spokes 3, may be secured to or cast in with the rim portion 1, of the heads in any suitable and convenient manner.

Having thus described some of the embodiments of my invention, and a means for carrying the same into effect, what I claim and desire to secure by Letters Patent is,—

1. A mold for casting pulverizing rolls, comprising a permanent mold having a ring-shaped recess provided on its inner pe-

riphery with a flaring portion and a bar supporting portion adapted to elevate the ends of the tread bars when seated in said recess preparatory to casting.

2. A mold for casting pulverizing rolls, comprising a permanent mold having a ring-shaped recess provided on its outer periphery with tread bar receiving recesses and a bar supporting portion at the bottom of said recess adapted to elevate the ends of the tread bars when seated in said receiving recesses preparatory to casting.

3. A mold for casting pulverizing rolls, comprising a permanent mold having a ring-shaped recess provided on its outer periphery with tread bar receiving recesses and a plurality of bar supporting studs adapted to elevate the ends of the tread bars when seated in said receiving recesses preparatory to casting.

4. A mold for casting rolls and analogous castings, comprising a ring-shaped permanent mold having an annular recess provided at its outer periphery with a series of spaced recesses to receive the ends of the tread pipes preparatory to casting and having a flaring portion about its inner periphery to provide for the contraction of the ring-shaped casting while cooling.

In testimony whereof I have affixed my signature, in presence of witnesses.

EDWIN E. PORTER.

Witnesses:

FRANK R. BLAKESLEE,
O. C. BILLMAN.