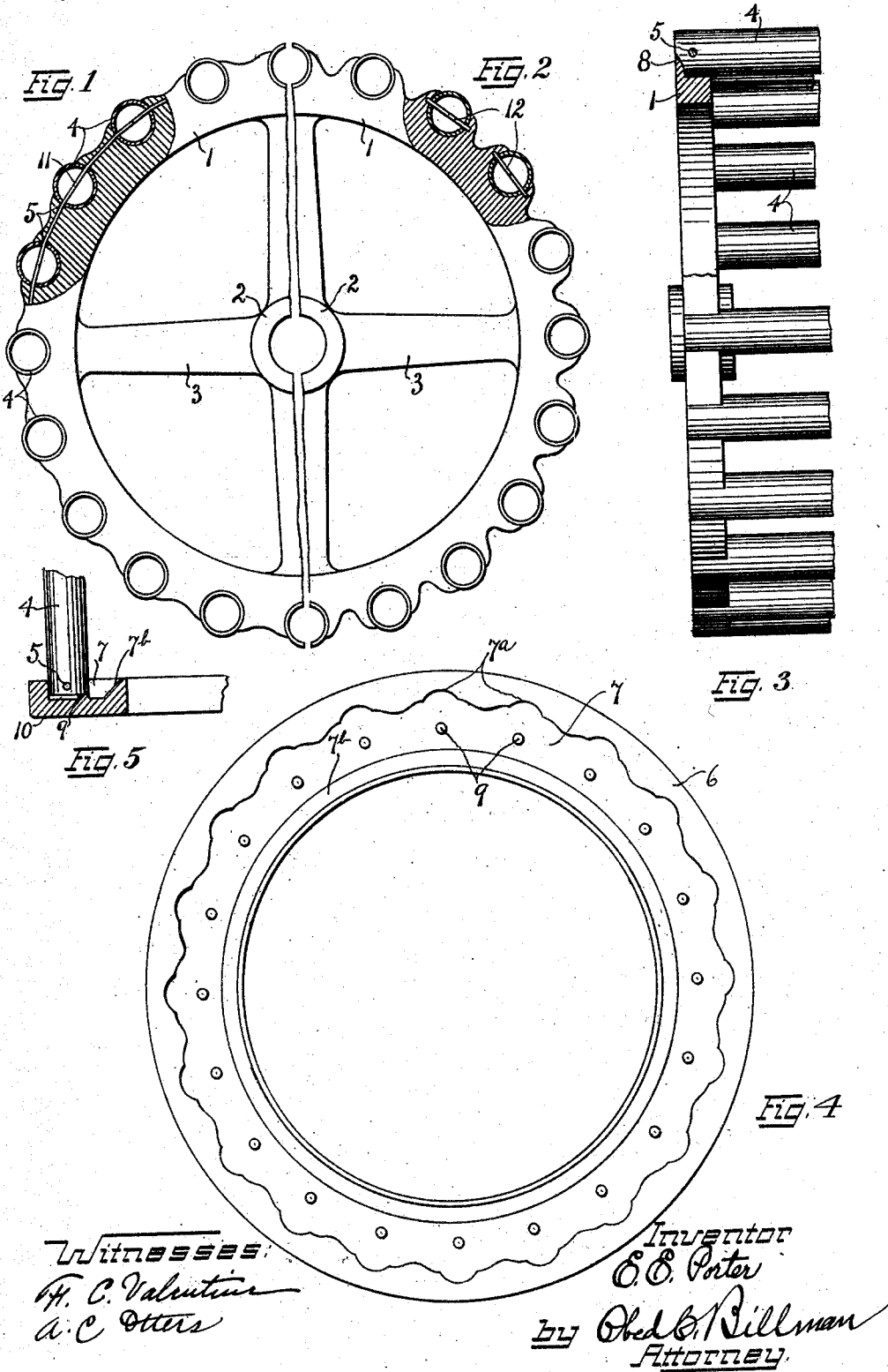


E. E. PORTER.  
PULVERIZING ROLL.  
APPLICATION FILED APR. 21, 1910.

Patented Jan. 10, 1911.

981,001.



# UNITED STATES PATENT OFFICE.

EDWIN E. PORTER, OF WOOSTER, OHIO.

PULVERIZING-ROLL.

981,001.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed April 21, 1910. Serial No. 556,875.

*To all whom it may concern:*

Be it known that I, EDWIN E. PORTER, a citizen of the United States, residing at Wooster, in the county of Wayne and State of Ohio, have invented certain new and useful Improvements in Pulverizing-Rolls, of which the following is a specification.

My invention relates to improvements in pulverizing rolls, or roll-sections for pulverizing rollers, the primary object of the invention being to provide a generally improved roll of this class, of simple, cheap, and efficient construction, made up of cast heads or ends and pipes or open ended bars having their ends "cast in" or embedded in said heads or ends and anchored therein in a manner adapted to impart great strength and rigidity to the roll or section as a whole.

The method of casting herein shown and described but not claimed is made the subject matter of a divisional application, filed October 10, 1910, Serial No. 586,190.

With the above mentioned and other ends in view, the invention consists in the novel construction, arrangement, and combination of parts hereinafter described, illustrated in some of its embodiments in the accompanying drawings, and particularly pointed out in the appended claim.

Referring to the drawings forming a part of this specification, Figure 1, is an end view, partly in section, of a portion of a pulverizing roll constructed 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 the improved roll. Fig. 4, a top plan view of a permanent mold for casting the heads or ends of the improved roll. Fig. 5, a sectional view of a portion of the permanent mold, illustrating method of casting, as well as manner of setting up the tread pipe-bars preparatory to casting the heads of the improved roll.

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

The improved pulverizing roll comprises 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 open ended

bars 4, said tread-pipes or bars 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, 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<sup>a</sup>, 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<sup>b</sup>, 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 and 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 my invention, what I claim and desire to secure by Letters Patent is,—

5 A pulverizing roll, comprising a pair of heads each consisting of rim and spider portions, and a plurality of tread pipe-bars having their normal open ends provided with transverse anchor openings, said open ends being closed by and cast in said rim portions

and projecting beyond the outer peripheries 10 thereof and said anchor openings being filled by the material of said heads.

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

EDWIN E. PORTER.

Witnesses:

OBED C. BILLMAN,  
GEO. H. BILLMAN.