

R. S. LOGAN.
 CAST METAL END FOR CONVEYER ROLLERS.
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1,418,152.

Patented May 30, 1922.

Fig. 1

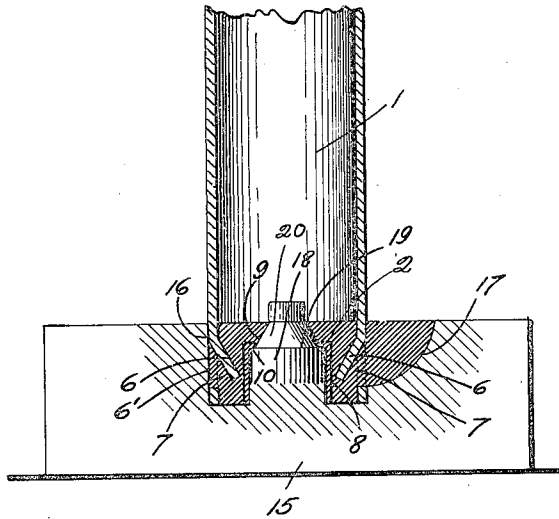
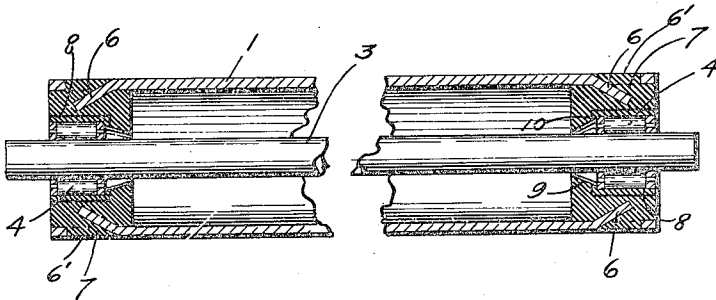


Fig. 2



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CAST-METAL END FOR CONVEYER ROLLERS.

1,418,152.

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To all whom it may concern:

Be it known that I, ROBERT SMITH LOGAN, citizen of the United States of America, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Cast-Metal Ends for Conveyer Rollers, of which the following is a specification.

This invention relates to rollers for conveyers, but more particularly to a novel end for the rollers, and the invention has for its object to provide a metal end cast in the roller itself and around a steel bearing-bushing.

The invention consists of the novel construction of the end of the roller, and in the method of centering the steel bushing, and of casting the metal end within the roller and around the centered bushing.

The invention further consists of the construction which provides for locking the cast end within the tubular roller to prevent looseness of the end and rattling of the same; all of which will be first fully described and afterwards specifically pointed out in the appended claims.

Referring to the accompanying drawing:

Fig. 1 is a vertical sectional view through the end-portion of a conveyer roller, illustrating it in position to receive an end cast therein, and

Fig. 2 is a vertical longitudinal sectional view through the completed roller.

Like numerals of reference indicate the same parts throughout the two figures, in which:

1 indicates a hollow metal conveyer roller, 2 the metal ends, 3 the shaft, 4 the roller bearings and cages.

The roller 1 is provided near its ends with a plurality of inwardly bent tongues 6, preferably struck in from the wall of the roller itself, so as to provide a plurality of perforations or openings 6' in the wall of the roller, although other suitable interlocking means may be provided. The cast metal ends 2 are formed with integral lugs 7 lying within said perforations 6'; each end being centrally provided with a steel bushing 8 to receive a roller bearing and cage 4. The steel bushing 8 communicates with a smaller opening or bore 9 through which the shaft 3 extends; an annular shoulder 10 being formed at the bottom of the steel bushing

8 for the retention of the roller bearing and cage 4 in proper position within the roller-end 2.

Having thus described the construction of the cast metal ends, the method of casting the same is as follows: A metal block 15 is provided with an annular chamber 16 of a size to snugly receive the end portion of the roller 1, and its perforations 6'; a gate 17 being provided in said block 15 so as to communicate with one of the perforations 6' in the manner as shown in Fig. 1. A metallic core 18 having a steel bushing 8 thereon is centered within the end of the roller, for instance as shown in Fig. 1; said core being of a predetermined diameter and having a shoulder 19 and a smaller tapered portion 20 as shown. The end portion of the roller 1 being positioned as illustrated in Fig. 1, molten metal is poured into the gate 17 and flows through the coincident perforation 6' in the roller 1 into the end portion of the roller, around the steel bushing 8 centered on the core 18 and into the perforations 6'; the metal rising in the end portion of the roller up to the top surface of the block, 15, as indicated in Fig. 1. The inwardly bent tongues 6, thus lie within the molten metal, and upon the cooling and contraction of the metal-end 2, the same contracts against the outer surfaces of the tongues 6, as will be apparent from the drawing and thus creates a rigid interlocking of the end 2 with the roller 1, preventing any loosening and rattling, so that the end 2 becomes practically an integral part of the roller.

The end 2 being thus cast into the end portion of the roller 1, the roller 1 is then removed from the block 15, and that portion of the cast metal which was within the gate 17, is knocked off. The end 2 thus formed with the steel bushing centered therein, is ready to receive the roller bearing 4.

This method provides a most effective end for the roller, and incorporates a factor of strength far in excess of all requirements, while its application to the roller by the method disclosed anchors the end in the roller and contracts the metal thereof around the bushing 8 as to preclude any possibility of casual displacement of the bushing.

Having thus described the invention, what

I claim as new and desire to secure by Letters Patent of the United States, is:

1. A conveyer roller including a tubular body provided near each end thereof with a plurality of openings transversely through the wall of the roller, a cast metal end in each end portion of the roller, each cast metal end including lugs entering the said openings in the roller, and a central metal bushing in each cast metal end for the reception of a bearing.

2. A conveyer roller including a tubular body provided near each end thereof with an opening transversely through the wall of the roller, a cast metal end in each end portion of the roller, each cast metal end including a lug entering the said opening in the roller and including a metal bushing within each cast metal end for the reception of a bearing.

3. A conveyer roller including a tubular body provided near each end thereof with a depression in the wall surface of the roller, a cast metal end in each end portion of the roller, each cast metal end including means cooperating with the depression in the roller wall to lock the cast metal end within the roller, each cast metal end including a central metal bushing within the same for the reception of a bearing, the cast metal end being contracted around the said bushing to retain the bushing against displacement.

4. A conveyer roller including a tubular body, a central metal bushing for the reception of a bearing, and a cast metal end between the tubular body and the central bushing, said cast metal end being contracted around the said bushing to retain the same against displacement.

5. A conveyer roller including a tubular body provided near each end thereof with a

plurality of openings transversely through the wall of the roller, a cast metal end in each end portion of the roller, each cast metal end including lugs entering the said openings in the roller, and including a central chamber for the reception of a bearing.

6. A conveyer roller including a tubular body provided near each end thereof with an opening transversely through the wall of the roller, a cast metal end in each end portion of the roller, each cast metal end including a lug entering the said opening in the roller and also including a central chamber for the reception of a bearing.

7. A conveyer roller including a tubular body provided near each end thereof with a depression in the wall of the roller, a metal end cast in each end portion of the roller, each cast metal end including means cooperating with the depression in the roller wall to lock the cast metal end within the roller, each cast metal end including a central chamber for the reception of a bearing.

8. A conveyer roller including a tubular body provided near each end thereof with an inwardly extending tongue, a metal end cast in each end portion of the roller and in interlocking engagement with said inwardly extending tongue, each cast metal end including a central chamber for the reception of a bearing.

9. A conveyer roller including a tubular body provided near each end thereof with an inwardly extending member, a metal end cast in each end portion of the roller and surrounding said inwardly extending member to form an interlocking engagement therewith, each cast metal end including means to receive a bearing.

In testimony whereof I affix my signature.
ROBERT SMITH LOGAN.