D. JONES.
Roll for Rolling Metals.

No. 199,368. Patented Jan. 22, 1878.

Fig. 1.

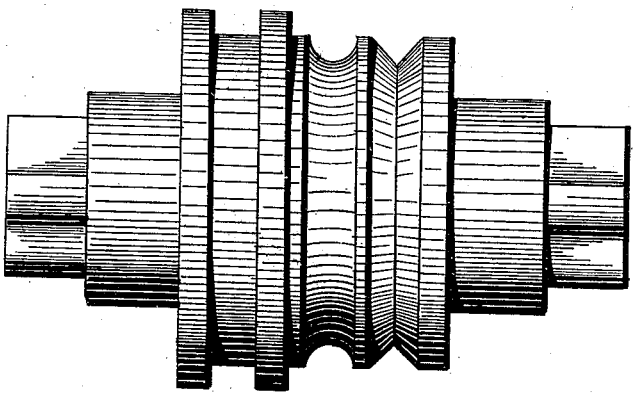


Fig. 2.

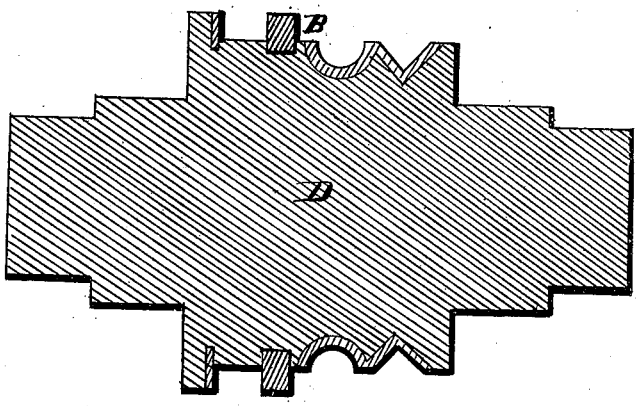
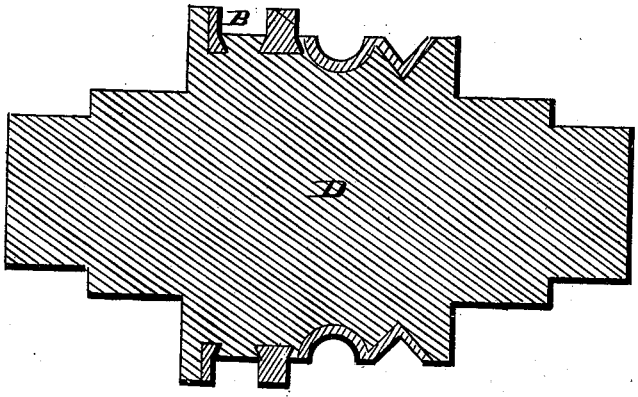



Fig. 3.




WITNESSES
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# UNITED STATES PATENT OFFICE.

DAVID JONES, OF YOUNGSTOWN, OHIO.

## IMPROVEMENT IN ROLLS FOR ROLLING METALS.

Specification forming part of Letters Patent No. **199,368**, dated January 22, 1878; application filed February 27, 1877.

*To all whom it may concern:*

Be it known that I, DAVID JONES, of Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Rolls for Rolling Metals; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to rolls for rolling metals; and consists in a roll the collars of which are of wrought-iron or of steel, and are secured to the body in the process of casting the latter.

In the drawing, Figure 1 is a representation of a roll for rolling iron. Fig. 2 is a longitudinal sectional view. Fig. 3 is a similar view, in which the part of the collar around which the metal is cast flares outwardly, so that the collar is dovetailed into the body of the roll.

The object of my invention is to make a better roll, and one that lasts much longer, and also gives more satisfactory results.

The invention may be applied to rolls of any size or configuration.

The collars B are either of wrought-iron or of steel. They are given the required form, and are then placed in the mold in their proper relative position to each other and to the body of the roll into which they are to be cast. The molten iron or metal is then poured into the mold so prepared and allowed to cool. If desired, the collars may be heated just previous to the operation of casting; but that is not essential. When the casting is completed and the mass has become cool, the collars will be found to be firmly and tightly attached to the body D, and the roll is then ready to be finished by turning, in the usual manner.

The portion of the collars embedded in the body may be wedge-shaped, as shown in Fig. 3, so that the collar is, in fact, dovetailed into the body of the roll. This, however, is not an essential element of my invention. Rolls constructed in this manner will last several times as long as those constructed entirely of cast-iron, and the expense of making them will be about the same. As the wrought-iron is fibrous, it has a tendency to wear smooth, instead of pitting, as is always the case when cast-iron is used. Thus the rolls give a smooth surface to the metal bars which are rolled thereby. The same result is produced by steel collars, by reason of their hardness and fineness of structure. The operation of the rolls is thereby facilitated, and a superior product is the result.

By reason of the greater strength and tenacity of the collars, each one may be made of a less width than is usually the case, and thus a shorter roll, or one with a greater number of grooves, can be constructed, and be equally as strong as a roll entirely of cast-iron.

What I claim as my invention, and desire to secure by Letters Patent, is—

A roll for rolling metals, which consists of a cast-iron body and wrought-iron or steel collars, said collars secured to the body in the process of casting the latter, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID JONES.

Witnesses:
ED. MCGINNIS,
PHILIP EBERHART.