W. M. WATSON.

Rolls for Welding Plow Irons.

No. 158,657. Patented Jan. 12, 1875.

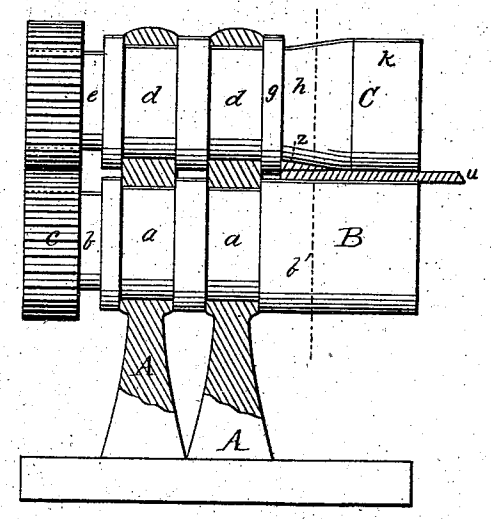

Fig. 1.

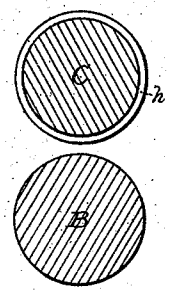

Fig. 3.

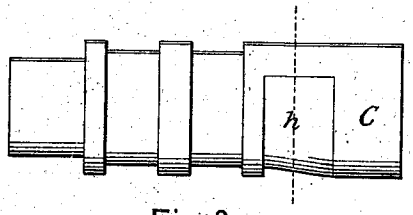

Fig. 2.

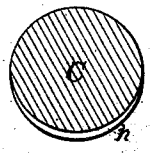

Fig. 4.

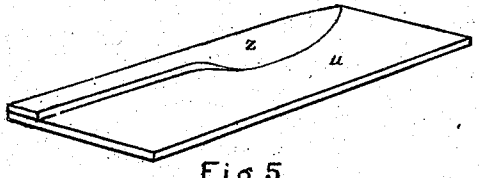

Fig. 5.

WITNESSES

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WILLIAM M. WATSON, OF TONICA, ILLINOIS.

IMPROVEMENT IN ROLLS FOR WELDING PLOW-IRONS.

Specification forming part of Letters Patent No. **158,657**, dated January 12, 1875; application filed April 12, 1873.

To all whom it may concern:

Be it known that I, W. MEDD WATSON, of Tonica, in the county of La Salle and State of Illinois, have invented a new and valuable Improvement in the Manufacture of Plows; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a sectional view of my invention. Figs. 2, 3, 4, and 5 are details of the same.

This invention has relation to an improved means for welding a double-shin mold-board or share; and it consists in the construction and novel arrangement of suitable welding-rolls, as hereinafter more fully set forth.

The object of this invention is to force the weld-pieces together with a steady, powerful, and uniform pressure, which will condense the fibers of the metal, and prevent blistering by forcing the air out.

In the accompanying drawings, the letters A A indicate the frame in which the rolls are journaled. B indicates a plain roll, having the journals *a a* and the ends *b b'* projecting beyond each standard, one end, *b'*, forming the roll itself, and the other end, *b*, being provided with suitable operating-gear *c;* or the end *b'* may be provided with a hardened sleeve, keyed thereto and forming the roll-face. C designates the grooved roll, having the journals *d d* and the geared projecting end *e*. A collar, *g*, is formed on this roll next the journal. Next the collar is the deep beveled groove *h* for the reception of the shin, the surface *k* of the roll next this groove being arranged at a sufficient distance from the surface of the plain roll to allow the passage of the mold-board or share. This roll C projects beyond the standard, and forms a part of the shaft journaled thereto; or its rolling face may consist of a hardened cylinder keyed to the projecting end of the shaft, as above described.

The beveled groove *h* of the roll C may extend entirely around its circumference, as indicated in Figs. 1 and 3, if it be desired to forge the double shin in a particular form after welding. I prefer, however, to form the double shin by means of the rolls in the welding operation, and therefore usually employ a roll having the eccentric groove *h* extending partially around the roll C, and gradually rising to the cylindrical surface thereof, as indicated in Figs. 2 and 4. When partially grooved, in the manner indicated, the roll will form the double shin with the proper bevel at its side and end.

The appearance of the share-plate *u* and shin-plate *z* when undergoing the rolling operation is indicated in Fig. 5 of the drawings.

The operating part of the rolls being outside of the bearings, there is no difficulty in operating on the edge of the widest plate. The rolls are driven in the ordinary manner. In their application the mold-board or share is cut in proper shape, and a piece of steel for the double shin, also cut in proper shape, is laid on the shin of the mold-board or the share, and both are heated to the proper welding heat. Then they are placed between the rolls and welded, and, if the proper degree of solidity is not attained, the welded parts should be run between another pair of rolls set nearer together; or the mold-board or share can be cut of extra length, doubled over and welded, if thought desirable.

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

The roll C, provided with the eccentric groove *h* and collar *g*, in combination with the plain roll B, for the purpose of welding a double shin on the mold-board or share, substantially as set forth.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM MEDD WATSON.

Witnesses:

J. S. UNDERHILL,

ALF. HEATH.