

No. 662,646.

Patented Nov. 27, 1900.

M. HARDSOCC.
COAL DRILL.

(Application filed Feb. 7, 1900.)

(No Model.)

Fig. 1.

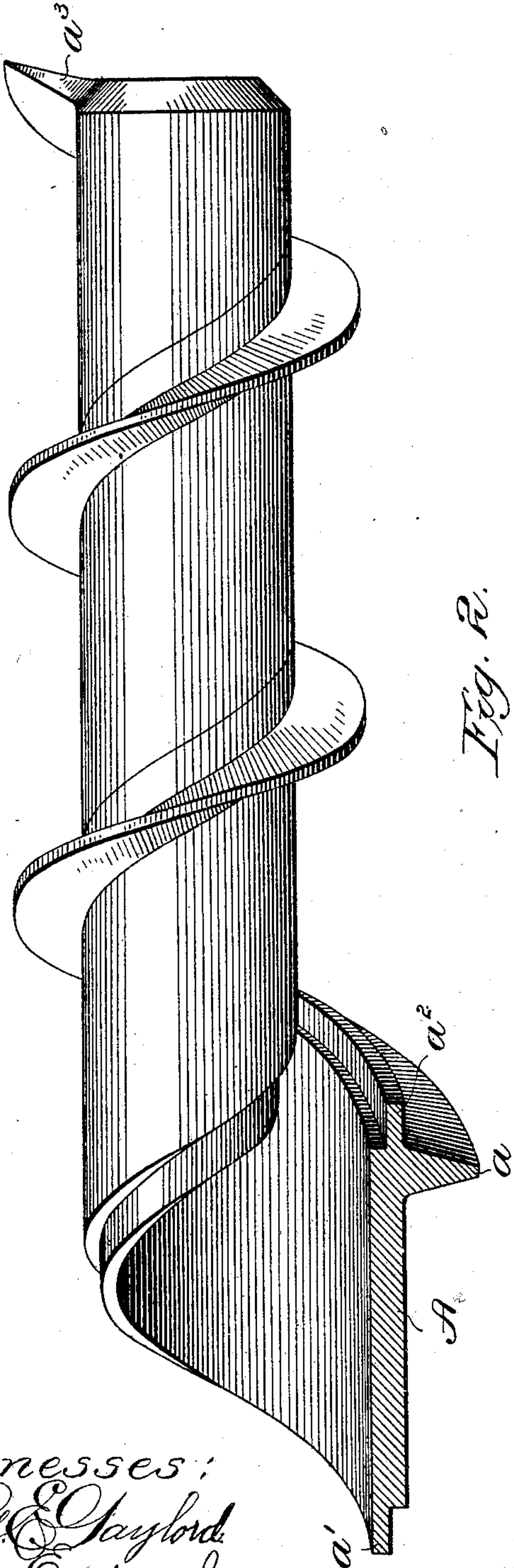
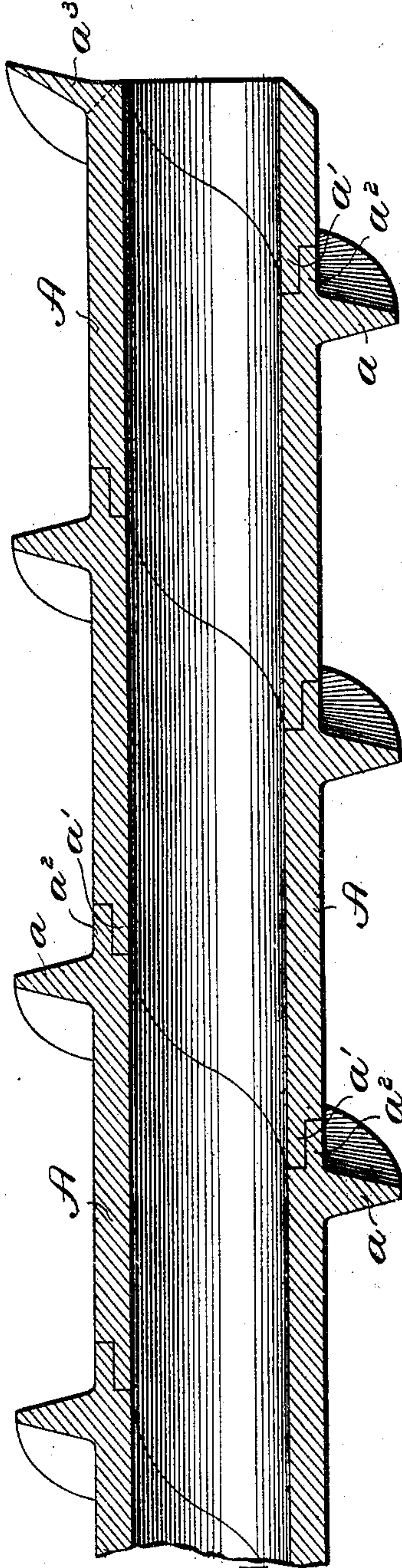


Fig. 2.



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COAL-DRILL.

SPECIFICATION forming part of Letters Patent No. 662,646, dated November 27, 1900.

Application filed February 7, 1900. Serial No. 4,351. (No model.)

To all whom it may concern:

Be it known that I, MARTIN HARDSOCC, a citizen of the United States, residing at Ottumwa, in the county of Wapello and State of Iowa, have invented certain new and useful Improvements in Coal-Drills, of which the following is a specification.

My invention relates to that class of drills which are adapted to be used in boring holes in coal, and particularly to the drill proper, as will be more fully hereinafter set forth.

The object of the invention is to provide a simple, economical, and efficient coal-drill; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an elevation of a coal-drill constructed in accordance with my improvements, showing a portion of the drill as it appears while being formed; and Fig. 2, a longitudinal sectional view of the drill as it appears when constructed in accordance with my improvements.

In constructing a drill in accordance with my improvements I make a long metallic strip in cross-section resembling the cross-section A of Fig. 1, such strip having a substantially V-shaped projection a thereon located, preferably, near one edge. The strip is cut away to one-half its thickness on the inner face of one edge and the exterior face of the other edge, forming on the inner face an overlap a' with a square shoulder and an end edge and forming on the outer face an underlap a^2 with a square shoulder and an end edge, each the counterpart of the other, so that when the strip is coiled in a spiral the two laps fit against each other to leave a smooth continuous inner face and a smooth face on the exterior between the triangular or V-shaped rib or flange a , the two overlaps engaging, as shown particularly in Fig. 2.

To form the drill, the strip A is taken and rolled around a solid rod or tube in a spiral or helical manner, the shouldered exterior and interior edges overlapping each other, producing, as shown in Fig. 1, a complete hollow drill having a spiral or helical cutting and elevating rib or projection a thereon.

In use the rib or projection a is sharpened at a^3 , so that it removes the coal, so as to form

an annular bore the width of the thickness of the tooth and body of the drill, and as the material is cut away from the body of coal it is elevated by this spiral or helical rib or projection, which acts as a conveyer or elevator to force the material out at the entrance to the hole. At the same time a core is left in the hole of a diameter equal to the tubular axial opening A' in the drill. In order to extract this core, the drill must be extracted, say, when it has drilled to a depth of about two feet, and the core is broken off and removed from the hole.

The principal advantages due to a drill constructed in accordance with my improvement are that the drill is simple and economical to manufacture, being made from a strip of metal strengthened and made rigid by the shouldered laps when spirally wound on itself; may be always kept sharp by merely grinding the projection thereof at a^3 , thereby dispensing with the necessity of sending it to a blacksmith's shop, and finally the drill acts to clean the hole rapidly and efficiently of the loose material.

I claim—

1. A drill made from a strip of metal provided on its outer face with a continuous longitudinal triangular-shaped rib and having its edges formed to engage one with the other, for the winding of the strip on itself to bring the edges into engagement and form a hollow body having a smooth interior for the drill and to cause the rib to form a continuous elevating-spiral on the exterior face of the body, substantially as described.

2. A drill made from a strip of metal cut away at its edges to form shouldered laps and provided on its outer face with a continuous longitudinal triangular-shaped rib, for the winding of the strip on itself to bring the shouldered laps into engagement and form a hollow body having a continuous smooth interior for the drill and to cause the rib to form a continuous elevating-spiral on the exterior face of the body, substantially as described.

3. A drill made from a strip of metal cut away on its interior face to form a shouldered overlap and cut away on its exterior face to form a shouldered underlap and provided on

its exterior face with a continuous longitudinal triangular-shaped rib, for the winding of the strip on itself to bring the shouldered laps into engagement and form a hollow body
5 having a continuous smooth interior for the drill and to cause the rib to form a continuous elevating-spiral on the exterior face of the body and permitting the sharpening of the drill by grinding the rib, substantially as described.

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