C. WHILE, W. LEWIS, T. STRICKLAND & S. CADDICK.

APPARATUS FOR ROLLING METAL.

No. 114,892. Patented May 16, 1871.

Fig. 1.

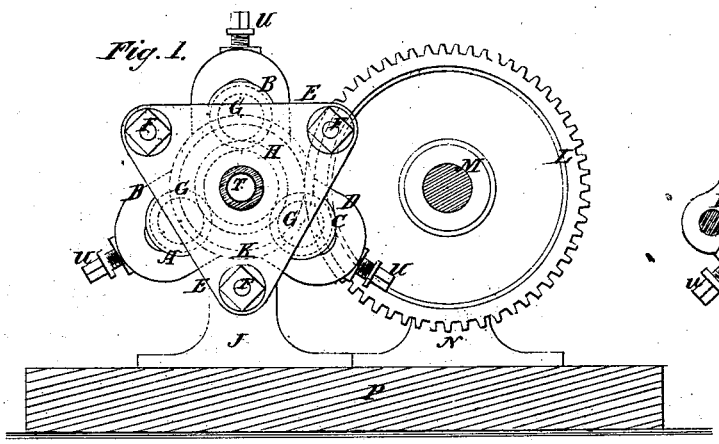


Fig. 3.

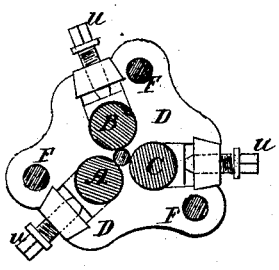


Fig. 2.

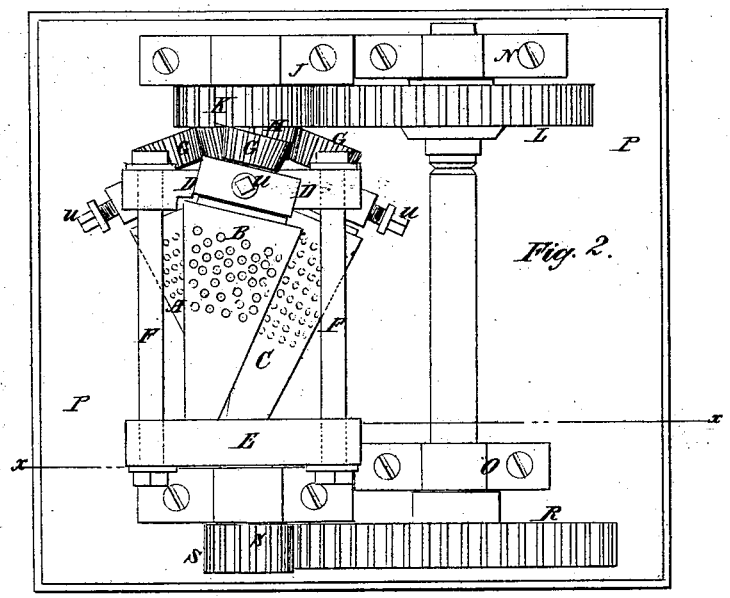
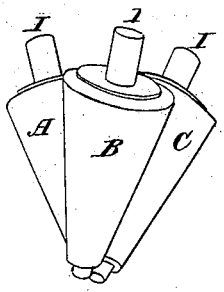


Fig. 4.



Witnesses:

Gustave Dieterich

Wm. A. Morgan

Inventors:

C. While, W. Lewis,

T. Strickland, S. Caddick.

Per Munn & Co.

Attorneys.

United States Patent Office.

CHARLES WHILE, WILLIAM LEWIS, THOMAS STRICKLAND, AND SAMUEL CADDICK, OF SPUYTEN DUYVIL, NEW YORK.

Letters Patent No. 114,892, dated May 16, 1871.

IMPROVEMENT IN APPARATUS FOR ROLLING METAL.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, CHARLES WHILE, WILLIAM LEWIS, THOMAS STRICKLAND, and SAMUEL CADDICK, of Spuyten Duyvil, in the county of Westchester and State of New York, have invented a new and useful Improvement in Mill for Reducing Iron and for other purposes; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

The object of this invention is improvement in machines for reducing iron; and consists in the construction and arrangement hereinafter set forth.

In the accompanying drawing—

Figure 1 is a front view.

Figure 2 is a top or plan view.

Figure 3 is a cross-section of fig. 2 on the line *x x*.

Figure 4 is a plan view of the rolls.

Similar letters of reference indicate corresponding parts.

A, B, and C represent the conical rolls.

D E are the heads of the revolving frame, in which the rolls are confined.

F represents bars or rods, by which the heads are connected together.

The smaller ends of the rolls are confined in a recess in the head E, where they are kept in proper position by suitable boxes.

The journals on their other ends are confined on the head D by box-caps in the ordinary manner of securing journals.

G represents bevel-wheels on the ends of the journals I, (see fig. 4,) which journals extend through their boxes and mesh into a bevel-wheel, H, seen in dotted lines in fig. 1.

This bevel-wheel H is placed on a hollow journal which is supported by the stand J.

The journal is a neck or extension on the head D and forms the mouth of the machine, into which the iron or other article to be operated upon is introduced. This tubular journal gives access to the orifice between the rolls, which, as before stated, in shape approaches a triangle in its cross-section.

K is a gear-wheel on this tubular journal, between the stand and bevel-wheel H.

The wheel K is revolved directly from the driving-wheel L.

M is the driving-shaft, supported by stands N and O on the bed P.

On the the other end of the driving-shaft there is another driving-wheel, R, which engages with a wheel, S, on the extended hollow journal of the head E.

It will be seen that power is applied at each end of the revolving frame, while, by the engagement of the bevel-wheels G on the rolls with the bevel-wheel H, each of the rolls is revolved on its own axis simultaneously with the frame and in the same direction, but at a reduced speed. Revolving the rolls and the frame in the same direction serves to counteract the revolving motion imparted by the rolls to the iron in manufacturing long bars. The rolls being placed obliquely with each other their action upon the iron is not only to squeeze and crush, but to draw or elongate, and thus reduce the iron to the proper or desired form.

The rolls may be made adjustable at one or both ends by means of screws, as seen in the drawing at U, or in any other suitable manner.

The material to be operated upon is fed into the machine through the hollow journal, as seen at T, where it is caught by the rolls and gradually worked forward until it is forced out through the other hollow journal in a finished state.

Any malleable material which thus passes through becomes cylindrical in form.

Having thus described our invention,

We claim as new and desire to secure by Letters Patent—

The combination of the frame comprehending the hollow journals and heads and bars D, E, and F, mechanism to impart to said frame a revolving movement upon its axis, the three conical rolls arranged on said frame, and mechanism to impart to each of said rolls a movement of rotation on its own axis, substantially as hereinbefore described.

CHARLES WHILE.
WM. LEWIS.
THOMAS STRICKLAND.
SAMUEL CADDICK.

Witnesses:
H. H. TAYLOR,
E. COONS.