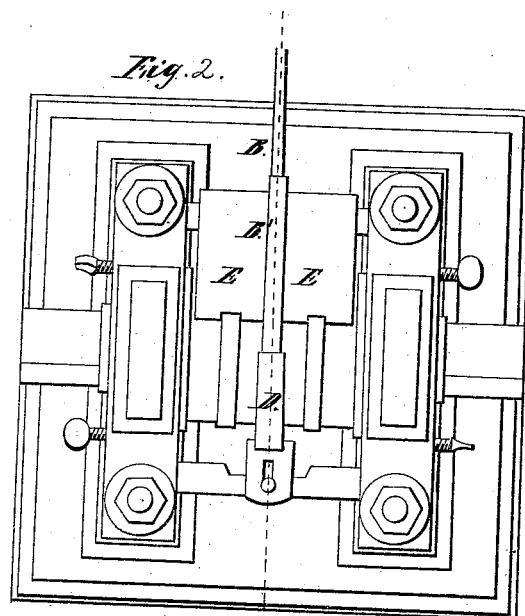
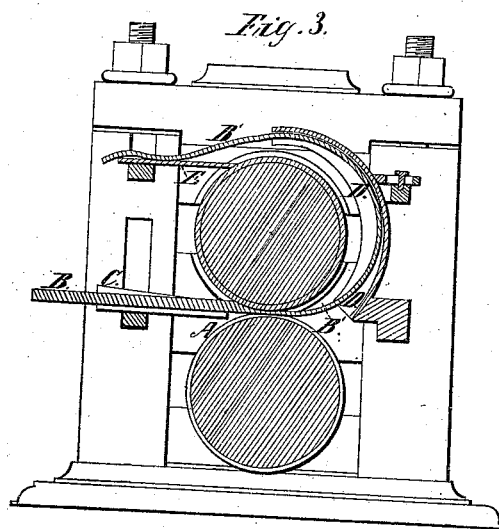
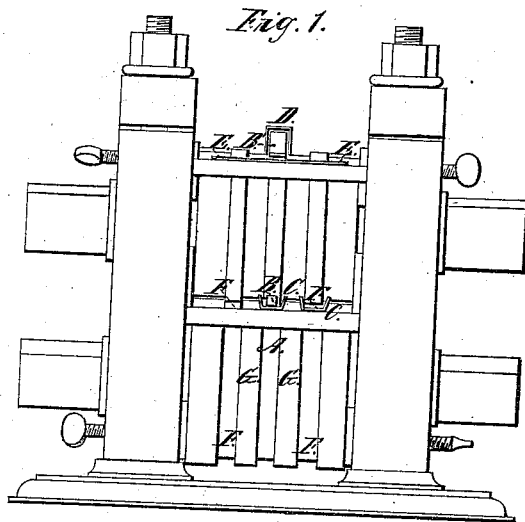


B. Norton,
Rolling Sheet Iron,
N^o 4,772.
Patented Sep. 26, 1846



UNITED STATES PATENT OFFICE.

BENJN. NORTON, OF BOONTON, NEW JERSEY.

MACHINERY FOR ROLLING HOOP-IRON.

Specification of Letters Patent No. 4,772, dated September 26, 1846.

To all whom it may concern:

Be it known that I, BENJAMIN NORTON, of Boonton, in the county of Morris and State of New Jersey, have invented a new and useful improvement in the manner of constructing and arranging the rollers and other apparatus used in the rolling of hoop-iron, scroll, band, and other iron of a like character; and I do hereby declare that the following is a full and exact description thereof.

In rolling the billets of iron that are to be converted into hoop iron, or into scroll, band, or other iron of a like character, the apparatus used, as ordinarily constructed consists of three rollers, the axes of which are in the same vertical plane. The billet is passed through a groove in the lowermost pair and is returned through a groove in the uppermost pair, by which it is prepared to be passed through the smooth or finishing rollers. In my improved apparatus, I use but two rollers between which the billet is first passed in the usual way; as it passes from between these rollers on the rear side, it enters a curved trough, which I call a receiver, and this trough conducts it around the rear side of the upper roller, toward the workman in front who passes it into the groove in the first instance, and who then passes it into a second groove formed in the same rollers. By this arrangement time is saved and friction is lessened, it requiring considerably less power to drive two than it does to drive three rollers; the rollers are also rendered much more durable, as the collars on each side of the groove may be made much wider than under the old plan, in which they were necessarily restricted to the width of the groove in which they were to run in the upper roller, these collars becoming the projecting fillets, or tongues that enter the grooves of the upper roller. When the iron that is being rolled is returned through grooves in the same pair of rollers, the collars on each side of such groove may be widened out; thus for example, a five eighths groove may have collars on each side of it seven eighths of an inch, or more, in width. One of the most frequent accidents that happen to grooved

rollers is the giving way, or breaking of the narrow collar; an accident which will rarely happen under my improved construction. The increased width and consequent strength of the collars allows, also, of the rolling of the iron thinner and of bringing it more nearly to its ultimate width in the grooves, leaving less spreading to be effected by the action of the smooth rollers and consequently making better work by leaving sounder edges and diminishing the number of wasters.

In the accompanying drawing, Figure 1 is a front elevation of my improved machine; Fig. 2 is a top view of it, and Fig. 3 is a vertical section in the line $x \dots x$ of Fig. 2.

A is the groove through which the billet (B) of iron is first passed.

C is a feeding trough of the ordinary kind.

B' is the strand or rolled part of the billet as it leaves the first groove. D is the receiver or curved trough with which the strand is brought into contact as it leaves the rollers and within which it passes around the upper roller so as to be delivered in front of it. E is a plate of iron which conducts the strand forward in such manner as not to interfere with the rollers and presents it so as to be conveniently seized by the workman, and conducted into one of the second grooves F F, by passing through which it is prepared for finishing by the smooth rollers. G G are the collars between the first and second grooves; these, it will be seen, are considerably wider than the grooves, their width being limited by convenience only. The rollers may be of any desired size and length so as to have any required number of grooves. Those represented are supposed to be six inches in diameter.

Having thus fully described the nature of my improvement in the manner of constructing and combining the rollers and other apparatus used in the rolling of hoop iron, what I claim therein as new and desire to secure by Letters Patent is—

The combining of the curved trough, or receiver, D, with a pair of rollers for the purpose of conveying the strand to the front of the rollers, in combination with the em-

ployment of the second groove or grooves
F F in the lower roller, and thereby admit-
ting of the widening out of the collars G G;
the said combination and arrangement being
5 made substantially in the manner and for
the purpose herein fully made known; not
intending, however, to limit myself to the

exact form of the receiver, as described and
represented, as this may be varied without
changing the principle of action.

BENJAMIN NORTON.

Witnesses:

WILLIAM GREEN, Jr.,
WM. MULLIGAN.