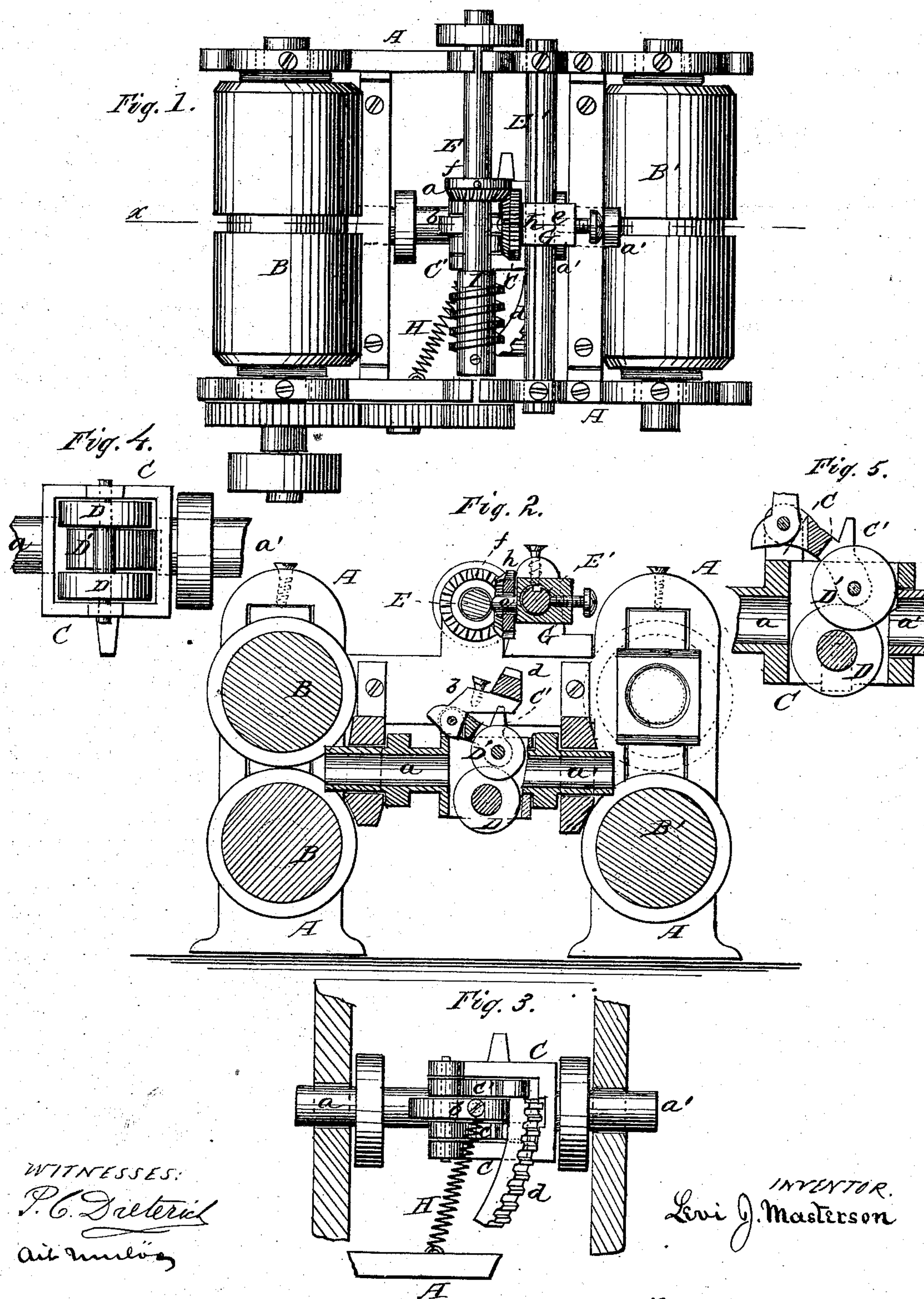


L. J. MASTERSON.
Machines for Twisting Metal.

No. 156,583.

Patented Nov. 3, 1874.



WITNESSES:
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att. in law

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UNITED STATES PATENT OFFICE.

LEVI JAMES MASTERSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
OF TWO-THIRDS HIS RIGHT TO GEORGE H. COLKET, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR TWISTING METAL.

Specification forming part of Letters Patent No. 156,583, dated November 3, 1874; application filed
September 26, 1874.

To all whom it may concern:

Be it known that I, LEVI JAMES MASTERSON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Twisting Metal; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in certain improvements upon the machine for twisting metal for which Letters Patent No. 152,501 were granted to me June 30, 1874, as will be hereinafter more fully set forth.

In the accompanying drawing, Figure 1 is a plan view. Fig. 2 is a longitudinal section on line *x x* of Fig. 1; and Figs. 3, 4, and 5 are details.

A represents the frame of my machine, constructed in any suitable manner to contain the various working parts. In suitable housings at each end of the frame A are ordinary grooved rolls B B and B' B' for rolling the metal. C represents a frame, provided with hollow journals *a a'*, which are arranged in bearings between the two sets of rolls B and B', and on a line with the grooves thereon. In the lower part of the frame C is pivoted a guide and twisting roll, D, and a corresponding lifting-roll, D', is pivoted above it in a frame, C', which is hinged in the upper part of the frame C. In the hinged frame C' is hinged an arm, *b*, from which projects a segmental rack-bar, *d*. Above the frame C are two shafts, E and E', which are parallel with each other, and with the rolls B B'. The shaft E is revolved by suitable gearing from either set of feed-rolls, and on the same is fastened a bevel-pinion, *f*, which gears with a double pinion, *h*, placed on a stud, *e*, projecting from a clamp, G, fastened on the stationary shaft E'.

The pile or billet of iron or other metal, having first been sufficiently heated for rolling, is passed through between the rolls B B,

and enters the hollow journal *a*. The metal is carried by the action of the rolls B B into the frame C between the rolls D D'. These latter rolls may be constructed substantially as shown—that is, the lower roll D have a deep circumferential groove, into which the metal enters, and the upper lifting-roll D' fit in said groove—or in any other suitable manner. As the metal enters between these rolls the upper roll D', with the frame C', arm *b*, and rack-bar *d*, is raised by the metal sufficiently to throw the segmental rack *d* in gear with the double pinion *h*; and this pinion being revolved by the means already described, the entire frame C, with its appurtenances, is turned on its axes as much of a revolution as will correspond with the size of the rack-bar. As soon as the rack-bar passes beyond the double pinion *h*, and the metal passes out of the hollow bearing or guide, a weight, H, or its equivalent, connected to the rack, brings the whole frame back to its original position.

The object and purpose of thus twisting the metal is the same as fully described in my former patent, above referred to.

By having the segmental rack of suitable size, a quarter-turn, half-turn, or any other degree of turn, may be given to the frame.

When a slow motion of the frame is required, the pinion *f* and clamp G, with its pinion, are loosened from their places upon the respective shafts, and a worm, I, moved up into place, and fastened on the shaft E, so that the segmental rack-bar, when thrown upward by the metal, will gear therewith.

This invention is applicable to existing rolls, and any number may be used in a train of rolls, as may be desired.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The frame C, provided with hollow journals *a a'*, combined, substantially as herein described, with the stationary revolving guide and twisting roll D, and the movable revolving lifting-roll D', as and for the purpose herein set forth.

2. The hinged frame C', in combination

with the guide and twisting roll D' , the hinged arm b , and segmental rack d , substantially as and for the purpose specified.

3. The combination of the roll D' , frame C' , hinged in the frame C , the arm b , and rack d , with pinions h f and revolving shaft E , for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LEVI J. MASTERSON.

Witnesses:

C. H. WATSON,

H. A. HALL.