T. R. VENNERS & R. ROWLEY.

Machine for Rolling Tapered Bars.

No. 161,183. Patented March 23, 1875.

Fig. 2.

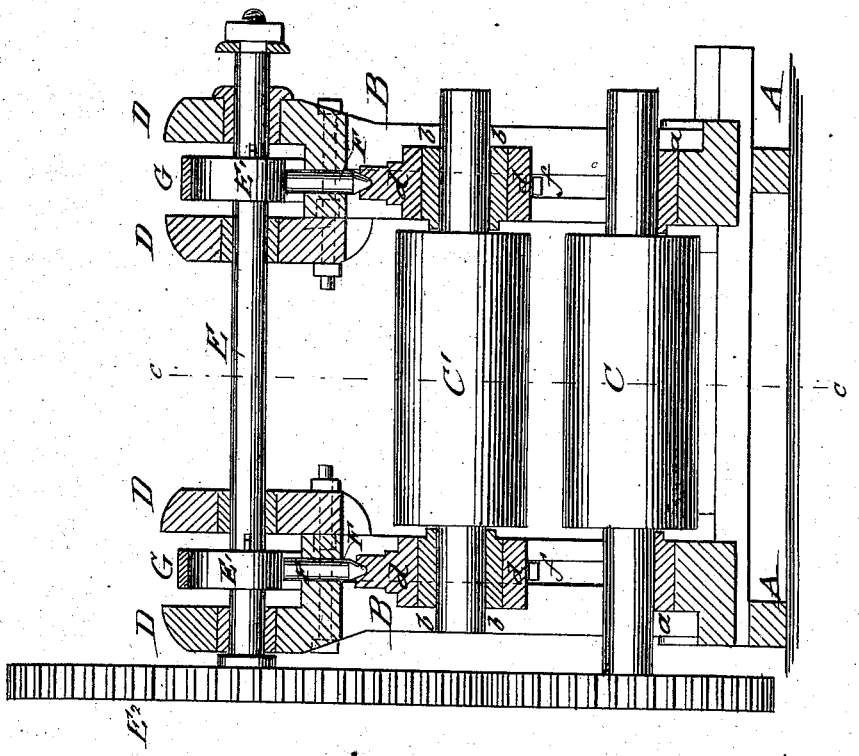
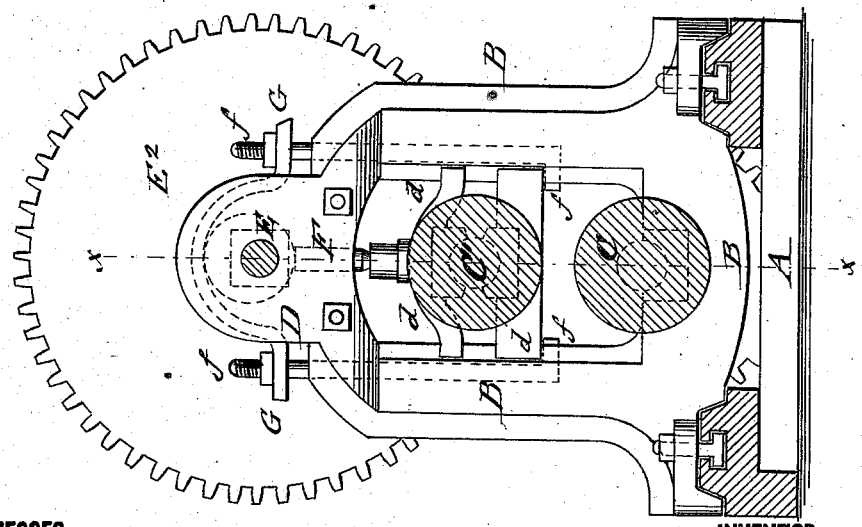


Fig. 1.



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UNITED STATES PATENT OFFICE.

THOMAS R. VENNERS AND RICHARD ROWLEY, OF CUMBERLAND, MD.

IMPROVEMENT IN MACHINES FOR ROLLING TAPERED BARS.

Specification forming part of Letters Patent No. **161,183**, dated March 23, 1875; application filed January 11, 1875.

To all whom it may concern:

Be it known that we, THOMAS R. VENNERS and RICHARD ROWLEY, of Cumberland, in the county of Alleghany and State of Maryland, have invented a New and Improved Roll-Train, for rolling tapered bars, of which the following is a specification:

In the accompanying drawing—

Figure 1 represents a vertical transverse section on the line *c c*, Fig. 2; and Fig. 2, a vertical longitudinal section on the line *x x*, Fig. 1, of our improved roll-train for rolling tapered bars.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved roll-train, by which bars of iron or other metal of any section may be rolled to any gage, length, or taper, and it consists in the combination, with a lower stationary roll, of an upper sliding roll, that is governed by the action of the eccentrics of a revolving top shaft on the steel pins of the roll-bearings, in connection with the arched top straps bolted to their guide-carriages.

In the drawing, A represents the bed-plates of our improved roll-train, on which are adjustably supported the upright standards or housings B. The standards B carry in lower stationary bearings A the lower roll C, which is rotated in connection with the driving-gear. The upper roll C′ turns in bearings *b*, which are supported in sliding carriages *d*, guided in side grooves or recesses of the standards. The upper parts of the standards B are constructed with two jaws, D, of which the outside jaws are cast solid with the standards, while the inside ones are detachable, being firmly bolted to the standards during the operation of the rolls. The jaws D are arranged with bearings for the top shaft E, to which are keyed, intermediately between the jaws, eccentrics E^1, in such a manner that they may be removed and exchanged, or taken off entirely, as required. The driving cog-wheel E^2, at end of shaft E, gears with a cog-wheel of the lower roll, and is made detachable from shaft E, so that the same can be readily taken out for the adjustment of the eccentrics, after which the detachable jaws are firmly applied again. The eccentric cams E^1 act on two straight sliding steel pins, F, which take the place of the screws in the common roll-trains, and are seated with their lower ends in the top parts of the sliding roll-carriages. Arched straps G, of wrought-iron or other material, extend over the eccentrics E^1, and are connected at the ends by bolts and screw-nuts *f* to the sliding carriage of the top roll, serving to raise the roll with the eccentrics, and to prevent any lost motion. The sliding roll-carriages may be adjusted to the size of the eccentrics, so that different bars of lengths and degrees of taper may be obtained. The roll-train may be readily set, by the removal of the lower gear-wheel, to perform the functions of the common rolls, provided that a suitable stop is attached to the eccentric-shaft of the top wheel for securing the exact distance of the rolls.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination, substantially as described, of the sliding journal-carriages *d*, that support upper roll, gibs *f*, pins F, and the eccentrics E^1, revolving in yokes or straps G, for the purpose set forth.

THOMAS R. VENNERS,
RICHARD ROWLEY.

Witnesses:
THOMAS VENNERS,
SIGMUND ROSENHEIM.