E. B. EDWARDS.

Machines for Rolling Carriage Axles.

No. 154,854. Patented Sept. 8, 1874.

Fig. 1.

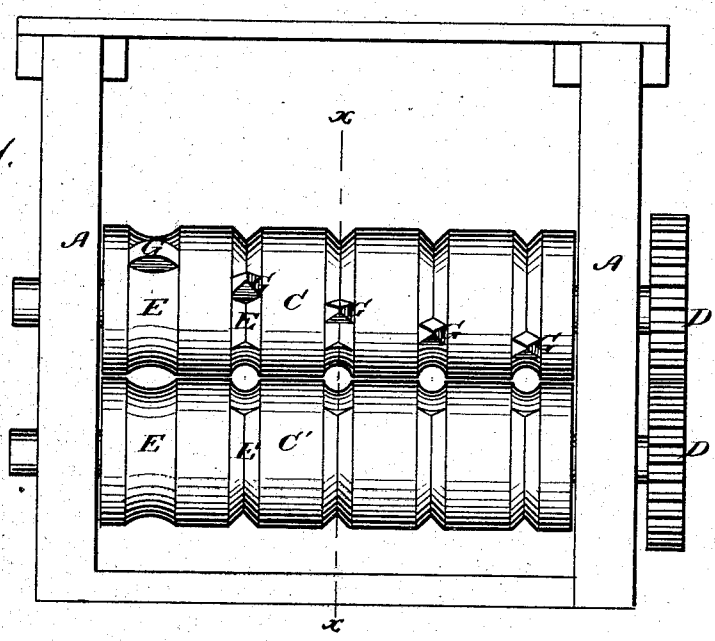
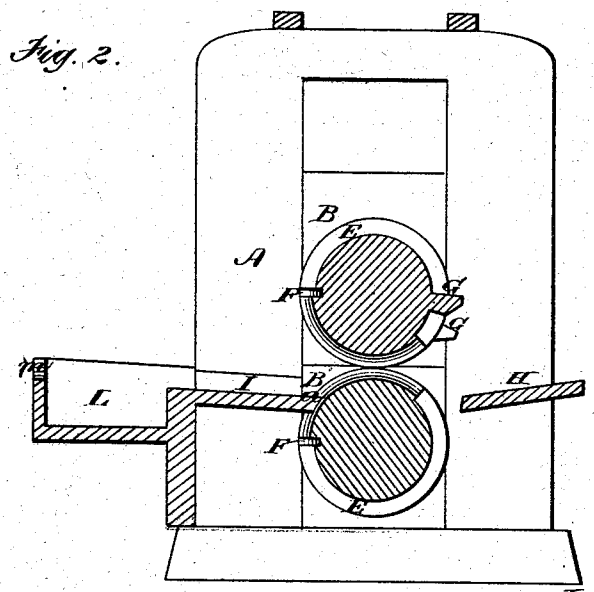


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

EDWARD B. EDWARDS, OF COLUMBIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR ROLLING CARRIAGE-AXLES.

Specification forming part of Letters Patent No. **154,854**, dated September 8, 1874; application filed June 3, 1874.

To all whom it may concern:

Be it known that I, EDWARD B. EDWARDS, of Columbia, in the county of Lancaster and State of Pennsylvania, have invented a new and useful Improvement in Rolls for Making Carriage-Axles; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a side elevation; and Fig. 2, a section through line *x x*, Fig. 1.

Similar letters of reference in the accompanying drawings denote the same parts.

My invention relates to improvements in rolling carriage-axles; and consists in the employment of two grooved rolls operated by appropriate mechanism, the grooves in one of the rolls being each provided with spirally-arranged guide-plugs and transverse recesses, into which the billet is successively pressed to form the collar on the axle.

In the drawings, A A are standards, provided with bearing-blocks B B, in which are journaled the rolls C C′, the outer ends of which are provided with gear-wheels D D, by means of which a rotary motion is given the rolls.

The grooves in the rolls are similar in form, so that a description of the form of the grooves in one roll will answer for the other.

The grooves E E in the rolls, between which the billet of iron is first introduced, are of oval tapering form, which gives the billet the tapering and oval shape required in carriage-axles. F F are recesses transverse to the grooves E E, there being one such recess for each groove in both rolls, into which the iron of the billet is forced in the process of rolling, to form the collar or flange near the end of axle, to preserve the carriage-wheel in place and limit its play on the axle. The remaining grooves in the rolls, between which the billet of iron to form the axle is successively introduced, are of proper shape to further reduce the billet, and form it into a carriage-axle of the requisite shape and size. G G are guide-plugs screwed or otherwise attached in each groove of the upper roll C.

The function of the guide-plugs is to act as a stop for the billet as it is introduced between the rolls, against which the billet abuts when introduced into the machine when the rolls are in motion, so as to prevent the introduction of too great a length of billet in the formation of the collar, and regulate its position on the axle.

The guide-plugs G G are arranged spirally in the grooves E E of the upper roll, each plug in the groove being in rear of the plug in one of the grooves contiguous to it, so as to allow for the elongation of the billet in the process of rolling, which is cut off after the axle is completed. H is a table or platform, connecting the standards of the machine, for supporting the billet as it is introduced between the rolls. I is a plate, the inner edge of which is provided with rounded projections *a*, fitting into the grooves in the lower roll. The plate I is supported by the standards A A of the machine nearly on the line between the rolls, and receives the billet of iron to form the axle as it is successively passed between the grooves in the rolls. L is an emery-trough attached to the rear face of the receiving-plate I, and provided with recesses *m*, in line with the grooves, to guide the billet in its passage over the emery-trough, which removes all scale from the iron, and polishes it. The rolls are, preferably, chilled, and the guide-plugs in the grooves of the rolls may be adjusted so as to roll long or short axles.

I claim as my invention—

1. In a machine for rolling carriage-axles, a grooved roll provided with recesses transverse to its grooves, and guide-plugs spirally arranged in said grooves, substantially as described, and for the purpose set forth.

2. The roll C, grooved as set forth, and provided with plugs G G spirally arranged, and recesses F, in combination with the similarly-grooved roll C′, having transverse recesses F in its groove, substantially as described.

3. The grooved rolls C C′, having recesses F F and guide-plugs G G spirally arranged in the grooves of the upper roll, in combination with the plate I and emery-trough L, provided with recesses *m*, the whole being arranged, constructed, and operated in the manner and for the purpose set forth.

EDWD. B. EDWARDS.

Witnesses:

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