



# UNITED STATES PATENT OFFICE.

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## MACHINERY FOR REDUCING METAL BARS.

Specification forming part of Letters Patent No. 9,542, dated January 18, 1853; Reissued May 15, 1855, No. 309.

*To all whom it may concern:*

Be it known that I, DEXTER H. CHAMBERLAIN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Machinery for Reducing Metallic Bars Into the Shape of Nails or other Articles of Like Character; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1, denotes a side elevation of my improved machine for reducing iron rods. Fig. 2, is an end elevation of the same. Fig. 3, is an end view of the horizontal rolls, and bolster.

In the said drawings, A and B, are two horizontal rollers, applied respectively upon the adjacent ends of the two parallel shafts C, D, that are supported in suitable bearings, that are upheld by a frame E. The end of one of these rollers, has a grooved cavity *a*, formed in it, and on its periphery, such cavity being made wider at one end, than it is at the other. Against the said cavity, and the ends of the two rollers, a third roller F, is arranged, as seen in the drawings. The periphery or curved, surface of the roller F, rests and rotates against the ends of the rollers A, B, and the said roller is fixed on a vertical shaft, G, that runs in bearings H, I.

In connection with the rollers so applied together, I make use of a bolster K, which consists of a block of metal, curved to fit into the angular space, between the peripheries of the rollers A and B. This block of metal is fixed upon one end of a slide L, that is supported by the frame, so as to be capable of a free endwise movement. From this slide, an arm, M, is made to project and extend into a cam groove N, cut around in the shaft

C, and in such manner, as to keep the front end of the bolster on a plane or even with the reducing edge of the cavity, *a*, during the rotary movement of said cavity against it.

The object of the bolster is to prevent the metal rod, during its elongation from being spread out and drawn in between the cylindrical parts of the rollers, so as to form a fin on the side of the rod, which would be likely to occur were the sliding bolster not used.

The two shafts C, D, are geared together by gears O, P, and on the outer end of the upper shaft C, there is a gear-wheel, Q, that is made to engage with another gear R, having the same diameter and placed on a horizontal shaft S. This latter shaft is connected with the shaft G, by means of two bevel gears T, U, of equal diameter.

The reduction of a rod on its opposite sides is effected by running it in the cavity *a*, and between the rollers, during their revolutions, the movable or sliding bolster operating to prevent the splaying out or squeezing of the metal, between the rollers so as to form a fin. The rollers may have adjusting screws *b*, *b'*, *c*, *c'*, applied to their boxes so as to regulate their proper distances asunder.

What I claim as my improvement is,

The combination of the bolster K, with the three rollers A, B, F, as arranged and made to operate together substantially in manner, and for the purpose as specified, the object of the said bolster being to prevent the overriding or squeezing out of the metal, so as to form a fin between the rollers as stated.

In testimony whereof, I have hereto set my signature, this first day of December A. D. 1852.

DEXTER H. CHAMBERLAIN.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.