

(No Model.)

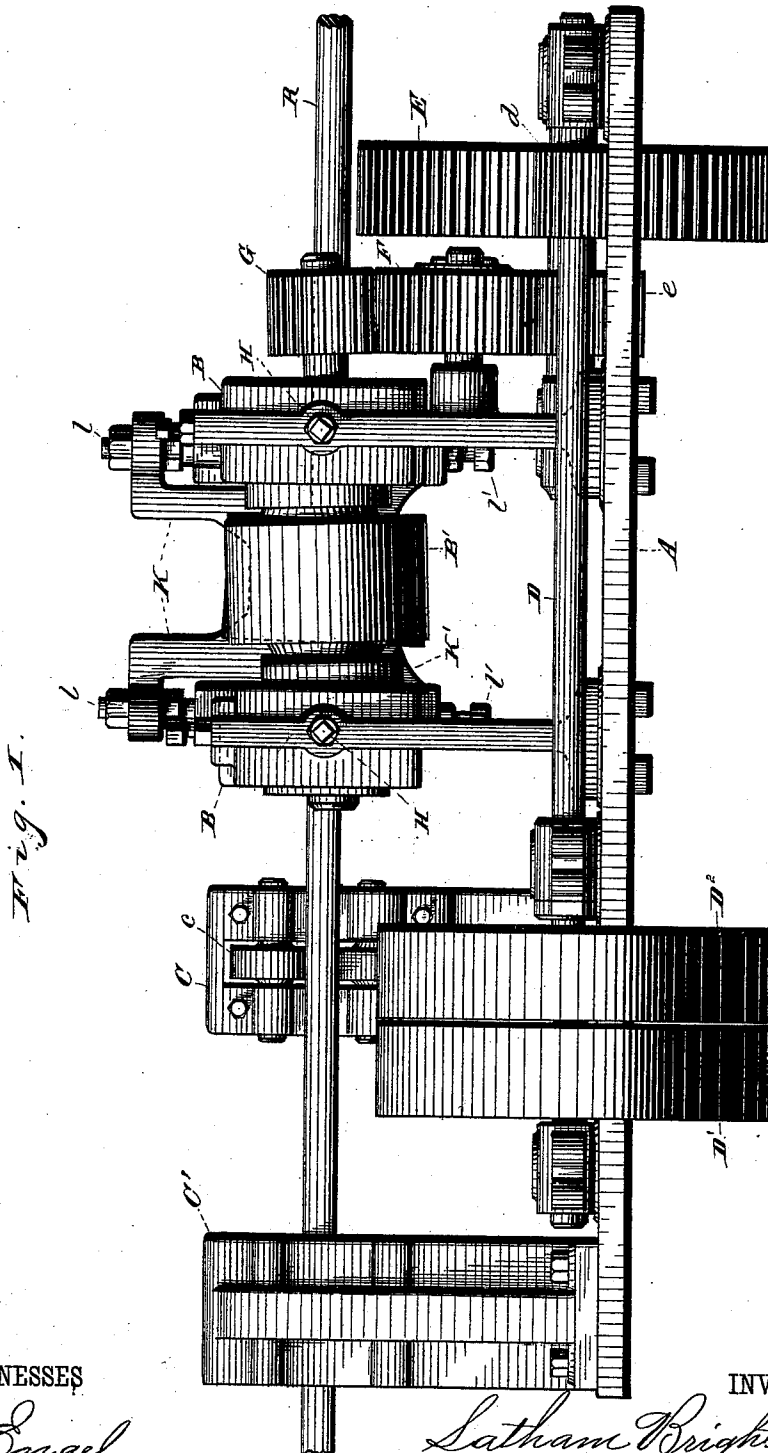
3 Sheets—Sheet 1.

L. BRIGHTMAN.

MACHINE FOR STRAIGHTENING ROUND BARS OF METAL.

No. 299,728.

Patented June 3, 1884.



WITNESSES

W. Engel
Geo. H. King

INVENTOR

Latham Brightman
By Leggett & Leggett ATTORNEYS

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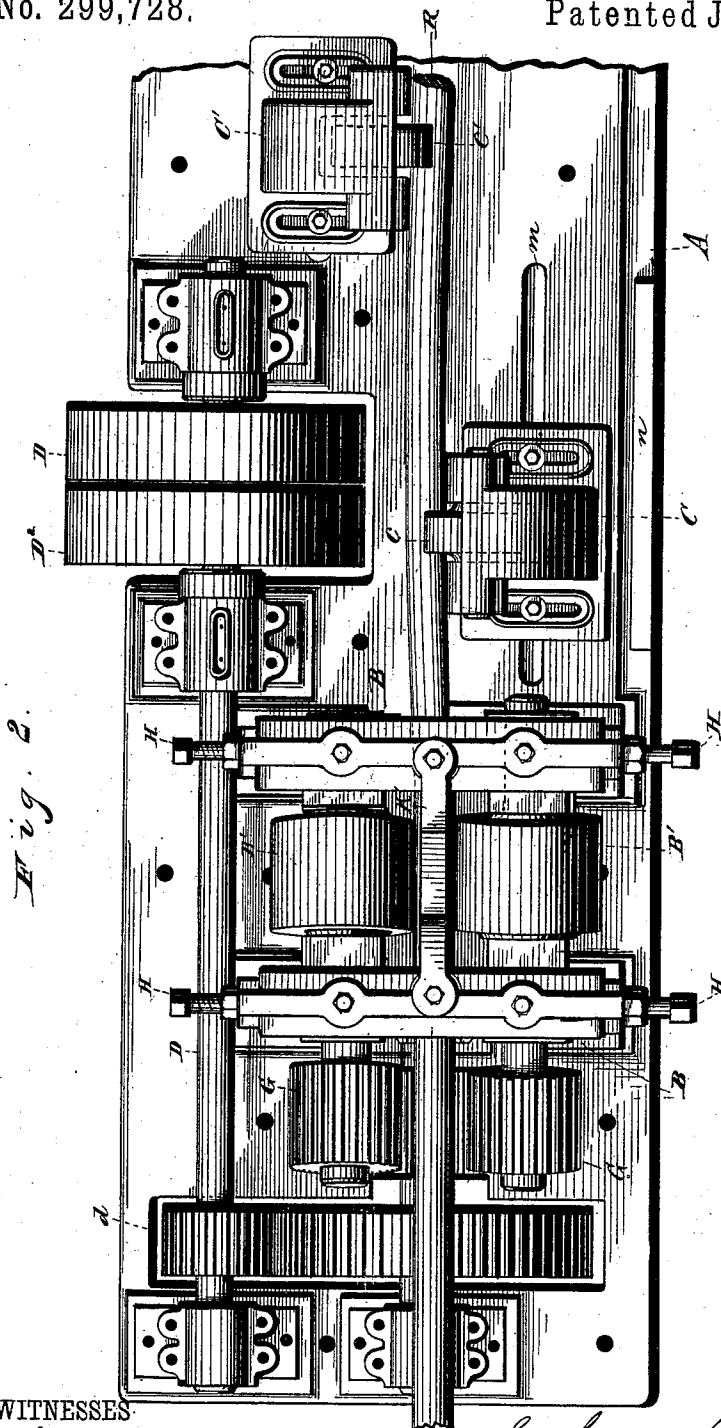


Fig. 2.

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Fig. 3.

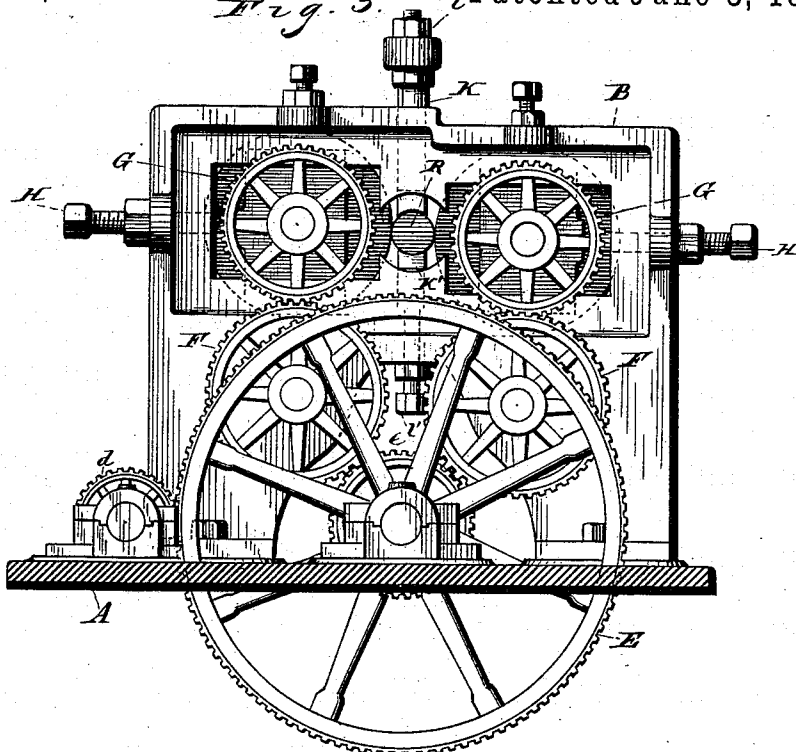
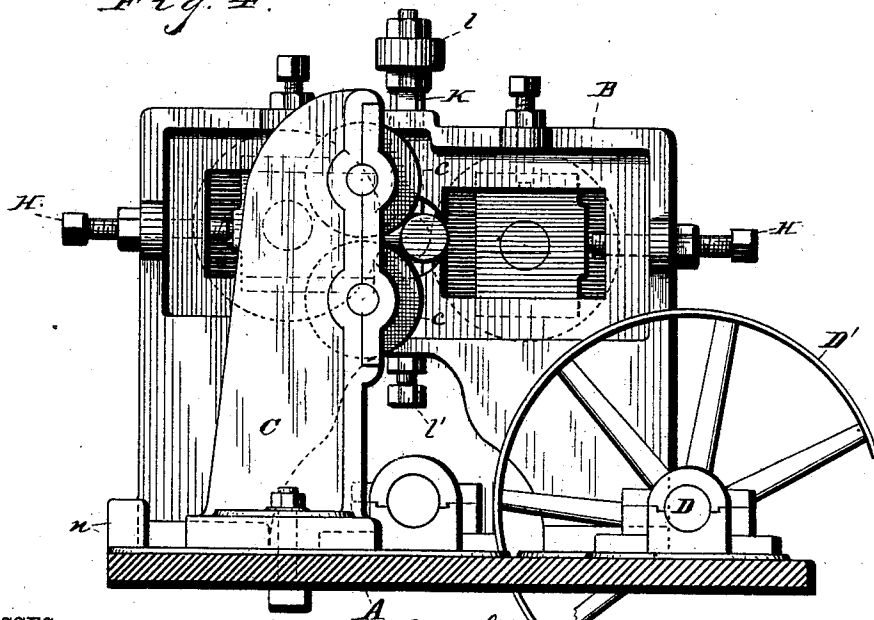


Fig. 4.



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UNITED STATES PATENT OFFICE.

LATHAM BRIGHTMAN, OF YOUNGSTOWN, OHIO.

MACHINE FOR STRAIGHTENING ROUND BARS OF METAL.

SPECIFICATION forming part of Letters Patent No. 299,728, dated June 3, 1884.

Application filed November 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, LATHAM BRIGHTMAN, of Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Machines for Straightening Round Bars of Metal; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in machines for straightening round bars of metal; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

My invention is embodied in a machine in which the bars of metal to be straightened are revolved and fed through the machine by means of feed-rollers that are set with their axes on a plane that is oblique to the axis of the bar of metal that is acted upon. The machine is also provided with sets of straightening-rollers that press upon the revolving bar from opposite sides and at different points lengthwise of the bar, and deflect the bar about as much as a straight bar could be deflected and regain its straight condition by its elasticity. When crooked or curved bars are passed through the machine and the outside of the curve comes in contact with the straightening-roller, the bar is deflected, in addition to the deflection to which a straight bar is subjected, a deflection also equal to the curvature of the bar, which is that much greater than the bar will "spring back" or regain by its elasticity, and the bar, therefore, when it leaves the machine will be straight.

In the drawings, Figure 1 is a side elevation. Fig. 2 is a plan view, and Fig. 3 a transverse section. Fig. 4 is a transverse section.

A represents the bed-plate, to which are attached the pillow-blocks B, in which are journaled the feed-rollers B', and the standards C and C', in which are journaled, respectively, the straightening-rollers *c* and *c'*.

D is a shaft provided at one end with a driving-pulley, D', and loose pulley D², and at the other with the pinion *d*, engaging the gear E, that is secured to the same shaft as is the pin-

ion *e*, that engages alike the intermittent gears F, that in turn engage the gears G, that are respectively attached to the trunnions of the feed-rollers B'. The boxes in which are journaled the trunnions of the feed-rollers B' are set in the pillow-blocks, and are provided with the set-screws H, by means of which the rollers are adjusted laterally and made to engage bars of different size with the required pressure.

K and K' are adjustable guides, the former operating from above and the latter from below the shaft, that hold the shaft vertically in its place between the feed-rollers. The guides are adjusted by the set-screws *l* and *l'*. The axes of the feed-rollers are not in the same plane with the axis of the bar in its passage through the machine, but are slightly inclined thereto, so that the feed-rollers as they revolve not only revolve the bar, but feed it through the machine. The standards C and C' have slots in their base-flanges running crosswise of the machine, through which bolts pass that fasten the standards to the base of the machine, making the standards adjustable; also, a slot, *m*, running lengthwise of the machine allows the standard C to be adjusted in this direction also. A rib, *n*, projects upward from the bed-plate behind the standard C, and by driving a wedge between the said rib and the said standards the latter may be forced forward toward the bar R, that is passing through the machine undergoing the straightening process.

In operating the machine, the feed-rollers B' and the guides K and K' are separated, so that the shaft may be readily passed between them. After the shaft is in position the guides are returned to the proper position, and the feed-rollers are pressed against the shaft with sufficient force to revolve and feed the shaft. The standard C is also drawn back and the shaft passed on to an engagement with the rollers C', after which the standard C is pressed forward until the rollers *c* deflect the shaft sufficiently, as shown in Fig. 2, and the machine is set in motion. When the shaft has passed the feed-rollers, there will be no pressure on it and is free to be removed from the machine. The feed-rollers might be set to

feed in the opposite direction, and the shaft in that case would be entered from the other end of the machine.

What I claim is—

- 5 1. In a machine for straightening round bars of metal, the combination of feed-rollers for revolving and feeding the bar and straightening-rollers so arranged as to bear against the bar at different points and from opposite sides,
10 substantially as set forth.
2. In a machine for straightening round bars of metal, the combination of feed-rolls, adjustable guides adapted to hold the shaft in position between the feed-rollers, and adjust-
15 able straightening-rollers so arranged as to bear against the bar at different points and from opposite sides, substantially as set forth.
3. In a machine for straightening round bars

of metal or shafting, provided with feed-rollers for revolving and feeding the shaft or bar 20 through the machine, straightening-rollers set in pairs in suitable bearings, and so arranged that different pairs of rollers will engage the shaft or bar at different points and from opposite sides, and with the bearing of one or 25 more of the pairs of rollers made adjustable crosswise of the shaft, so that they may be made to press against and deflect the shaft, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 10th day of November, 1883.

LATHAM BRIGHTMAN.

Witnesses:

GEO. E. ROSE,

J. S. CUNNINGHAM.