(No Model.) 2 Sheets—Sheet 1.

W. TOEPFER.

MACHINE FOR BENDING ANGLE AND OTHER BARS.

No. 357,160. Patented Feb. 1, 1887.

Fig. 1.

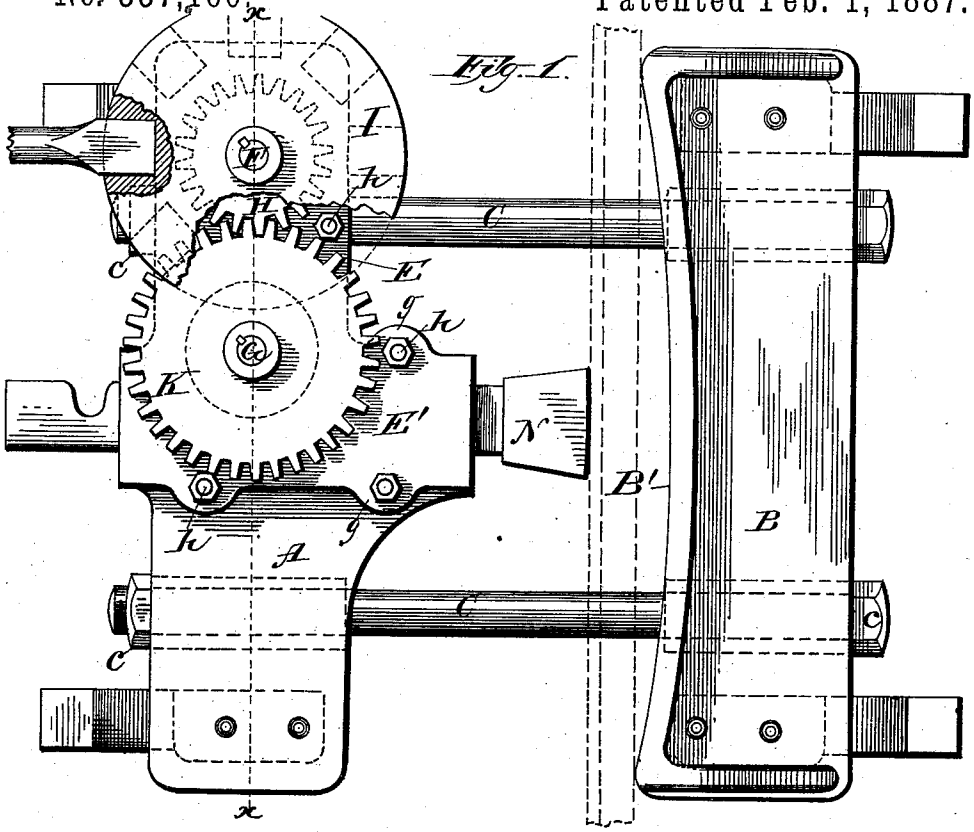
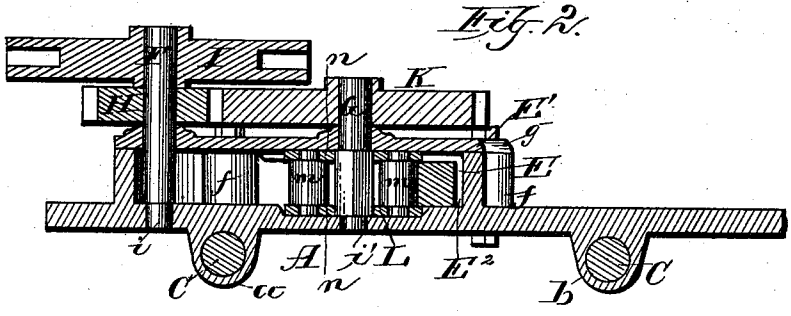


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

W. TOEPFER.

MACHINE FOR BENDING ANGLE AND OTHER BARS.

No. 357,160. Patented Feb. 1, 1887.

Fig. 3.

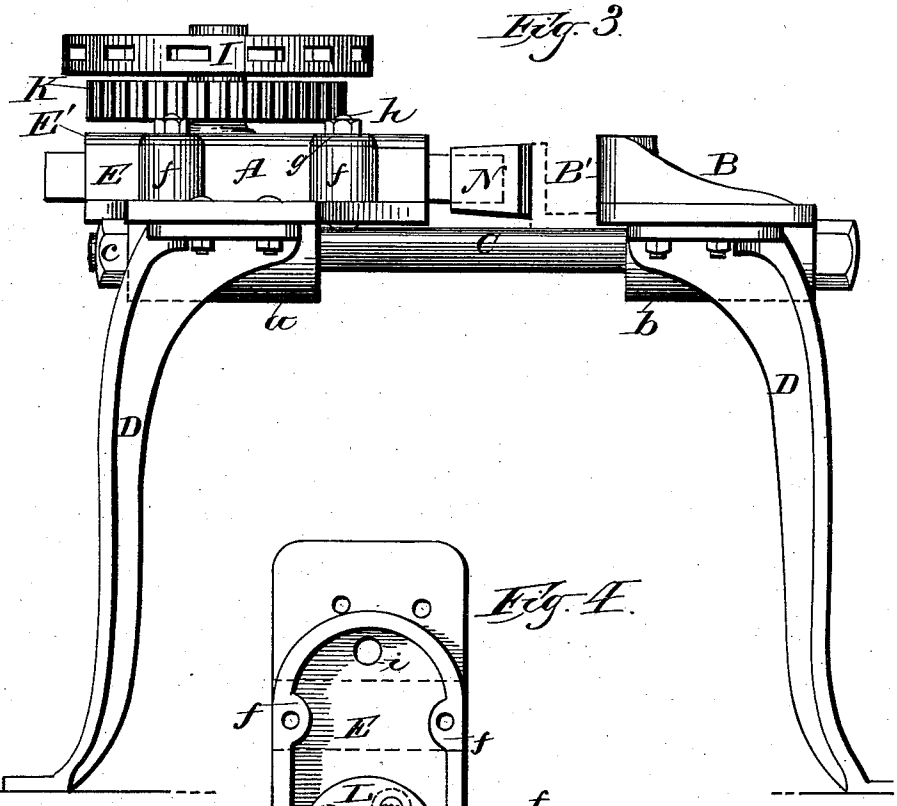


Fig. 4.

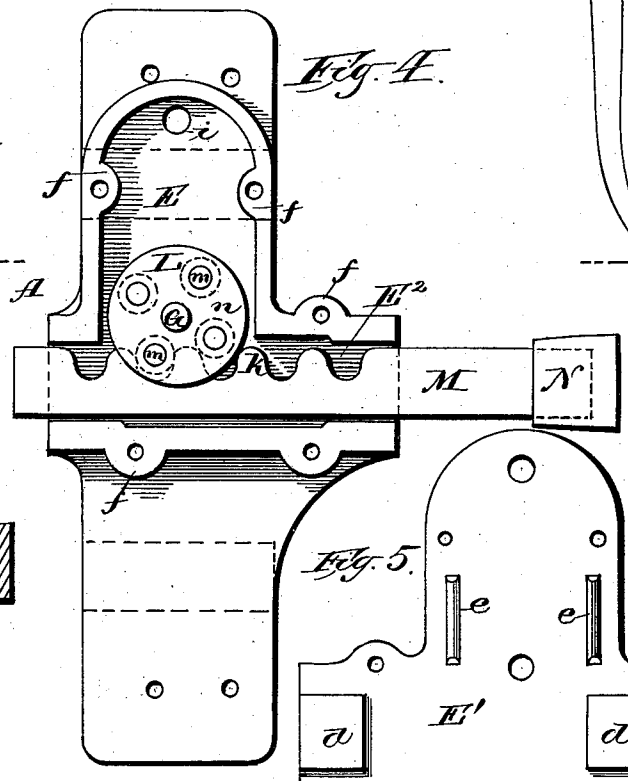


Fig. 6.

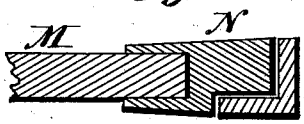


Fig. 5.

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UNITED STATES PATENT OFFICE.

WENZEL TOEPFER, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO WENZEL TOEPFER & SONS, OF SAME PLACE.

MACHINE FOR BENDING ANGLE AND OTHER BARS.

SPECIFICATION forming part of Letters Patent No. 357,160, dated February 1, 1887.

Application filed August 10, 1886. Serial No. 210,525. (No model.)

To all whom it may concern:

Be it known that I, WENZEL TOEPFER, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Machines for Bending Angle and other Bars; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to a machine for bending angle and other bars; and it consists in certain peculiarities of construction, as will be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents a top plan view of my machine; Fig. 2, a horizontal vertical section on line *x x*, Fig. 1; Fig. 3, a side elevation; Fig. 4, a plan view of the front portion of the machine with the main operating-gear and central cover-plate removed; Fig. 5, an under side view of the central cover-plate, and Fig. 6 a detail view of a pressure-block.

Referring by letter to the drawings, A B represent the front and rear heads of my machine, each provided upon its under side with sleeves *a b*, through which are passed connecting-rods C, the latter being retained in position by suitable bolt-heads or nuts, *c*, and to these heads are bolted or otherwise suitably connected legs D. The front head, A, is integrally constructed with a right-angular box, E, that has a removable cover, E′, the latter being provided upon its under side with depending stops *d e*, while both the box and cover have perforated enlargements *f g*, that register one with another, and through which are passed bolts *h*, to retain said cover in position with relation to the box.

The box and its cover are provided with bearings *i i′*, for journals F G the one F having keyed thereto above said cover a pinion, H, and capstan-head I, while the one G carries a gear-wheel, K, arranged to mesh with said pinion.

Keyed to the journal G, inside the box E, is a lantern-wheel, L, that is arranged to engage a rack, *k*, on a plunger, M, that operates in the part E² of the box E, and is provided with a removable block, N, the trundles *m* of the lantern-wheel being loose in the heads *n*, so as to lessen the friction between said trundles and rack.

The stops *d* on the under side of the box-cover E′ fit in the corresponding part E² of the box E, and by this construction I prevent contact of the plunger M with that portion of said cover between these stops, thereby lessening the friction. The front face, B′, of the rear head, B, is arc-shaped, as shown in Fig. 1, and, if desired, a series of heads having arcs of differing dimensions may accompany each machine.

The block N on the plunger M must conform to the opposing part of the bar that is being bent, and for that reason the same is made removable; and in Fig. 1 I show a plain block operating against an angle-bar, while in Fig. 6 I show an angular block operating against a bar in a reversed position from the former.

In the operation of my invention the bar to be bent is laid upon the connecting-rods C, in front of the rear head, B, (said bar being unheated,) as shown in dotted lines, Fig. 1. By operating the capstan-head I, by means of a handspike, P, the pinion H and gear-wheel K communicate motion to the lantern-wheel L, and the latter in turn actuates the plunger M to bring its block N against the bar and force the same in toward the arc-shaped face of head B. The bar is moved along and the above-described operation repeated until said bar has been bent to the desired curvature, this curvature being varied accordingly as the bar is moved each time a greater or less distance.

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

1. In a machine for bending angle and other bars, the combination, with a fixed head having an arc-shaped front face, of a rack-plunger carrying a block in opposition to said arc-face, a lantern-wheel having revolving trundles arranged to mesh with the rack on the plunger, and means, substantially as described, for operating said lantern-wheel, as set forth.

2. In a machine for bending angle and other bars, a front and rear head supported on suitable legs, the former head having a right-angular box, the latter an arc-shaped front face,

and both provided with depending sleeves, in combination with brace-rods passed through the sleeves to unite said heads, a rack-plunger operative in the right-angular box and carrying a removable head in opposition to the arc-face of the rear head, a lantern-wheel arranged to mesh with the rack on said plunger, a gear-wheel on the same journal with said lantern-wheel, a pinion arranged to mesh with this gear-wheel, and a capstan-head keyed to the pinion-journal, all arranged to operate substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WENZEL TOEPFER.

Witnesses:

H. G. UNDERWOOD,

MAURICE F. FREAR.