

(No Model.)

W. PFEFFERKORN.
MACHINE FOR BENDING FLANGED METAL BARS.

No. 530,240.

Patented Dec. 4, 1894.



Fig. 1.

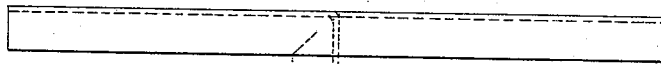


Fig. 2.

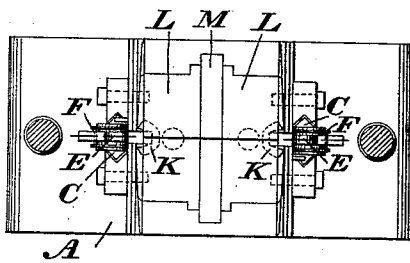


Fig. 4.

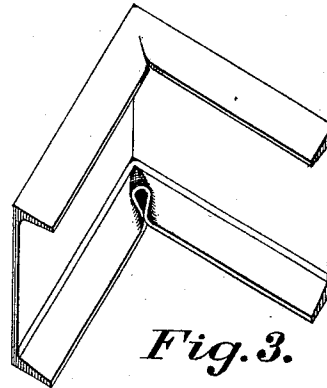


Fig. 3.

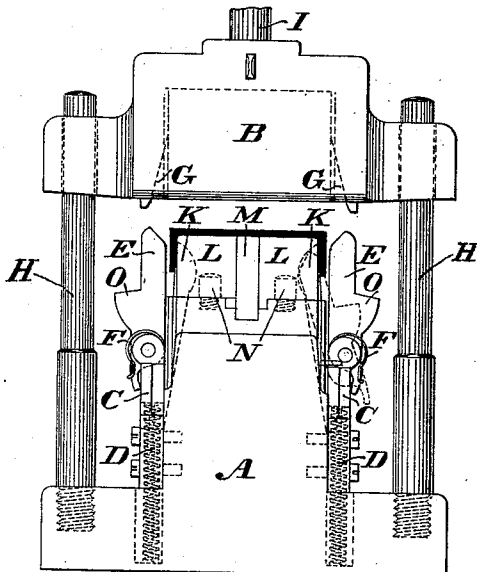


Fig. 5.

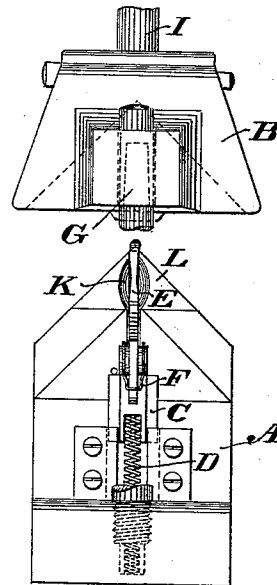


Fig. 6.

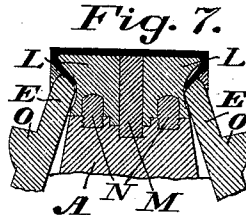


Fig. 7.

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MACHINE FOR BENDING FLANGED METAL BARS.

SPECIFICATION forming part of Letters Patent No. 530,240, dated December 4, 1894.

Application filed March 23, 1894. Serial No. 504,895. (No model.)

To all whom it may concern:

Be it known that I, WILHELM PFEFFERKORN, a citizen of the United States, residing at Johnstown, county of Cambria, State of Pennsylvania, have invented a new and useful Improvement in Machines for Bending Flanged Metal Bars, of which the following specification is a true and exact description, due reference being had to the accompanying drawings.

My invention relates to a machine for effecting short bends in channel bars by folding together a portion of the flanges while at the same time bending the web.

The object of my invention is to provide a machine that will afford as much support as possible for the web of the channel as hereinafter explained.

Referring to the drawings: Figure 1 shows an end view of a channel bar of the character described. Fig. 2 is a side view thereof showing in dotted lines the position of the channel after bending. Fig. 3 is a perspective view of the bent channel showing the manner of bending or folding the flanges. Fig. 4 is a top view of one part of my machine. Fig. 5 is a front and Fig. 6 a side view of my machine, and Fig. 7 is a section on the center line of Fig. 6.

In general my machine comprises a stationary die, having an apex over which the channel is bent, a reciprocating die having an A shaped cavity into which the channel is bent and forced by the stationary die, and finger bars which fold the flanges into pockets in the bottom die.

In the drawings A is the stationary die having an apex, and B the reciprocating die having the cavity into which the channel is forced. On the sides of A are the blocks C sliding in guides and held up by springs D. On the top of these blocks are pivoted the finger bars E normally held away from the die by springs F. In the top die B are inclined slots G which engage the finger bars E so that as the top die descends the finger bars are pressed inward toward each other. The guides H serve to keep the two dies in alignment with each other. The rod I connects die B with any suitable source of reciprocating power. The bottom die A is provided

with pockets K into which the finger bars are pushed by the action of the top die as shown in Fig. 5.

I am aware that machines have been constructed substantially as hereinbefore described, but such machines do not properly support some parts of the bar being bent, and my invention consists in an improvement in one of the dies. It consists in forming the apex of the bottom die A having the removable portions L separated by the stationary portion M secured to or integral with the die. These loose pieces are held in position by the dowels N.

The operation of the machine is this: A heated channel being placed in the machine as shown in Fig. 5 the top die descends and commences to bend the channel over the apex of die A. Simultaneously the finger bars E engage slots G in the top die and being forced together they commence to fold or bend the flanges into the pockets K, and, as the top die descends, the channel is bent more and more, and the flanges pressed farther into the pockets until the condition shown in Fig. 7 is reached. The top die now engages the offsets O on fingers E and on descending farther withdraws them from the fold in the flange which then closes close together as is shown in Fig. 3. The top die being now withdrawn the channel may be taken out of the machine. In taking it out, however, it will be seen that the folds in the flanges lapping under the loose pieces L will lift them out also, when they may be removed. Were it not that these pieces L are loose and removable I would be compelled to cut away all the metal of the bottom die directly above the folds in the flanges and thus lose considerable of the web support at the point it is needed most, i. e., adjacent to the flanges.

Thus it will be seen that by making my bottom die with the removable pieces L, I am enabled to secure a much better web support than I could were the lower die in one piece.

Having thus described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In a machine for bending channel bars, in combination with a moving die and mechanism for operating same, finger bars for

bending or folding, as described, the flanges of the channel, and a stationary die having loose and removable portions in which are pockets, said pockets being adapted to receive the bent or folded portions of the flanges.

5 2. In a machine for bending channel bars in the manner set forth, a die having loose and removable portions in which portions the bearing for the web extends beyond the pocket provided to receive the bent or folded portion of the flange substantially as described.

10 3. In a machine for bending flanged metal bars in combination with a pair of dies be-

tween which the bar is bent, and operating mechanism; pockets in one die and finger bars normally out of said pockets and so connected and arranged that they are adapted to have a movement inward into, and downward in said pockets, the portions of the die containing the pockets being removable from the remainder of the die.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILHELM PFEFFERKORN.

Witnesses:

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JOHN H. KENNEDY.