April 22, 1924.

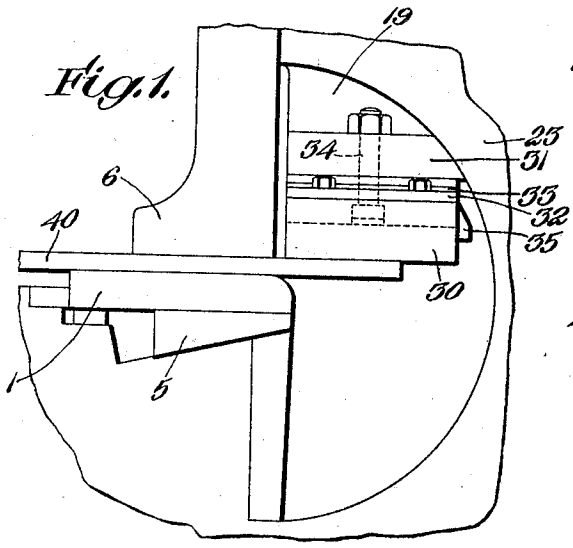
H. McCABE

1,490,933

FLANGING MACHINE

Filed July 31, 1922

Fig. 1.



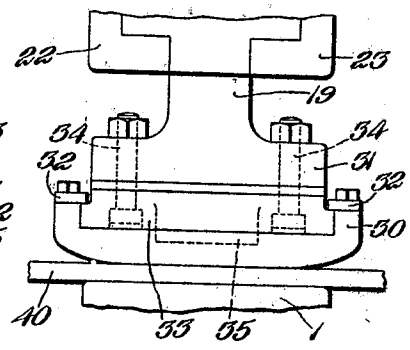
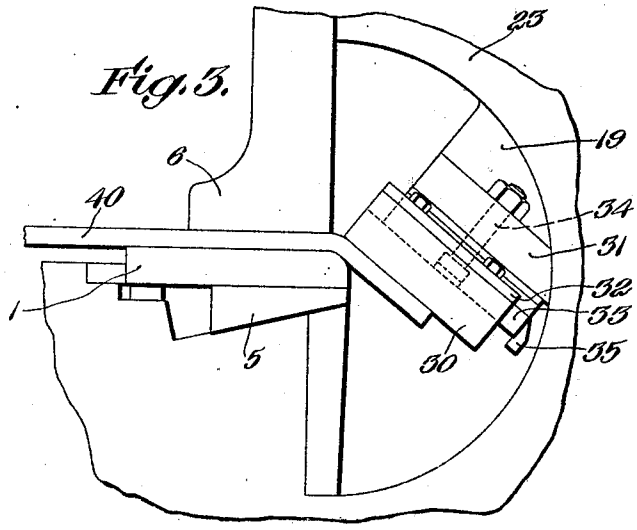


Fig. 2.

Fig. 3.



Witness:

Alfred H. McGlinchey.

Inventor:
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by his attorneys
Van Santvoord, Hitchcock & Perry

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UNITED STATES PATENT OFFICE.

HUGH McCABE, OF LAWRENCE, MASSACHUSETTS.

FLANGING MACHINE.

Application filed July 31, 1922. Serial No. 578,588.

To all whom it may concern:

Be it known that I, HUGH McCABE, a citizen of the United States, residing at Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Flanging Machines; 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 appertains to make and use the same.

The present invention relates to an improvement in flanging machines.

The object of the invention is to improve the construction of flanging machines of the type illustrated in the patent granted to me October 24, 1911, No. 1,006,861. In such flanging machines the bender face is wiped along over the surface of the metal being bent. This results in scoring the metal and greatly increases the power required to operate the machine.

According to the present invention this bender face is made capable of moving or sliding on its carrier, so that the flange is bent without the sliding or wiping of the bender face on the flange. To this end the invention consists in the improvement hereinafter described and particularly defined in the claims.

In the accompanying drawing illustrating the preferred form of the invention, Fig. 1 is a fragmentary side view of the bending machine, illustrating the parts of the machine which have to do with this invention; Fig. 2 is an end view of the bender carrier and face; and Fig. 3 is a fragmentary side view of the parts illustrated in Fig. 1 in a different position.

The illustrated embodiment of the invention is described as follows: The work clamp 1, the wedge 5, the top clamp plate 6, the frame portions 22, 23, and the bender segment 19, are or may be all as shown in said patent. The bender face 30 is slidingly supported on the bender face carrier 31, being provided with flanges 32, which engage the plate 33 secured by the bolts 34 to the bender face carrier 31. The plate 33 is provided with a stop 35 to limit the movement of the face 30 rearward.

The operation of the construction is as follows: The plate 40 to be flanged is inserted under the top clamp plate 6 with the edge which forms the flange extended inwardly under the bender face 30, the clamp is closed and the body portion of the plate is thereby held fast, the bender segment is then turned in the manner described in said patent, so as to bend the edge of the plate downwardly to form a flange. As the bender segment carries the bender face downwardly, it first brings the bender face 30 in contact with the flange portion of the plate, i. e., the portion of the plate to be bent to form the flange. Then as the motion of the bender segment continues, the bender face being in engagement with the plate, it slides on the bender carrier. By reference to Fig. 1, it will be seen that when the bender face engages the flange portion of the plate, it occupies a rearward position against the stop 35. As the downward movement of the bender segment takes place, the bender face stands fast and is turned about the center of motion of the bender segment without sliding on the carrier, the parts assuming the position shown in Fig. 3, after movement of the bender segment has continued through the angle shown. At this time the clamp is released and the bender starts rising, thus removing the pressure of the bender on the work, so that the bender face slides downwardly until it strikes the stop 35 on the bender face plate 33. The bender segment now returns to its original position, the work is fed along and again clamped in its new position, and the operation repeated.

With a flanging machine provided with this sliding bender face, the flange is much smoother and more regular than where the bender face slides over the surface of the flange as it is being formed. The appearance of the flange bent is therefore greatly improved, all scoring and disfigurement of the flange owing to the sliding action of the bender face on it being eliminated. In addition to the improvement in the character of the work performed by the machine, the thickness of the plate upon which the machine is capable of operating is greatly increased. In machines of this type manufactured by the applicant, a pressure of 450 tons may be exerted on the flange one inch from the center of curvature of the path of motion of the bender face. It is obvious that the slipping of the bender face on the edge of the metal under such pressure as this would consume an enormous amount of useless power; as a result of the use of the present construction eliminating this slipping of the bender face on the metal, plates

25 per cent thicker may be flanged than in a machine unprovided with such sliding bender face.

Having thus described the invention, what is claimed is:

1. A machine for flanging sheet metal having, in combination, a work clamp, and a bender for flanging the edge of the sheet such bender being provided with a sliding bender face for engaging the flange portion of the sheet and sliding on the bender as the flanging operation is performed.

2. A machine for flanging sheet metal having, in combination, a work clamp, and a bender for flanging the work provided with a sliding bender face to engage the work, operating to slide on the bender without sliding on the work during the bending operation.

3. A machine for flanging sheet metal having, in combination, a work clamp, a bender, and means for actuating it, the bender being provided with a bender face mounted to slide on the bender, and a stop to limit the movement of the bender face.

4. A machine for flanging sheet metal having, in combination, a work clamp, a bender segment, a bender carrier, a plate secured to the carrier, and a bender face slidingly mounted on the plate.

5. A machine for flanging sheet metal having, in combination, a work clamp, a bender carrier, a plate secured to the carrier, and a bender face mounted to slide on the plate in the operation of the machine.

6. A machine for flanging sheet metal having, in combination, a bender carrier, a plate secured to the bender carrier and provided with a stop, and a bender face slidingly mounted on the plate adapted to be limited in its movement by the stop.

7. A machine for flanging sheet metal having, in combination, a work clamp, a bender carrier, means for supporting the bender carrier to move from horizontal to inclined position, a bender face slidingly mounted on the carrier, and a stop for catching the bender face when the pressure on the sheet being flanged is relieved, whereby, when the bender face slides upwardly on the bender carrier during the bending operation, it will, upon release of the sheet, automatically reassume its original position with relation to the carrier.

HUGH McCABE.