(No Model.)

W. DIXON.

SHEET METAL FOLDING MACHINE.

No. 422,744. Patented Mar. 4, 1890.

Fig. 1.

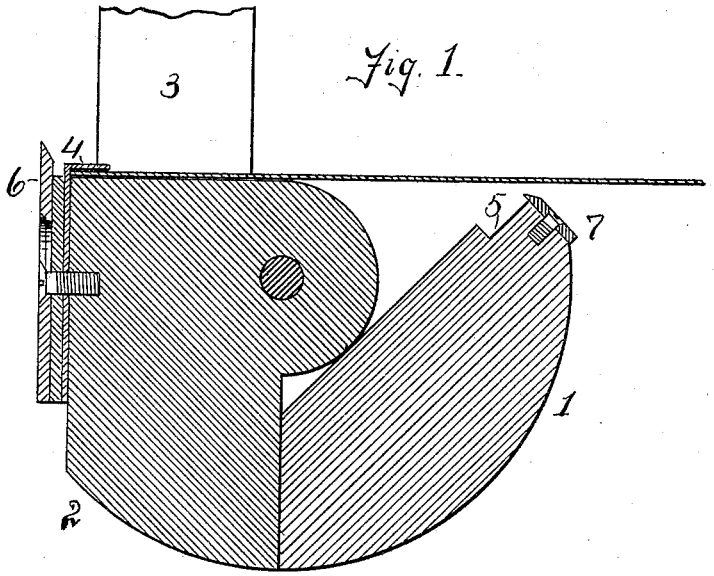


Fig. 2.

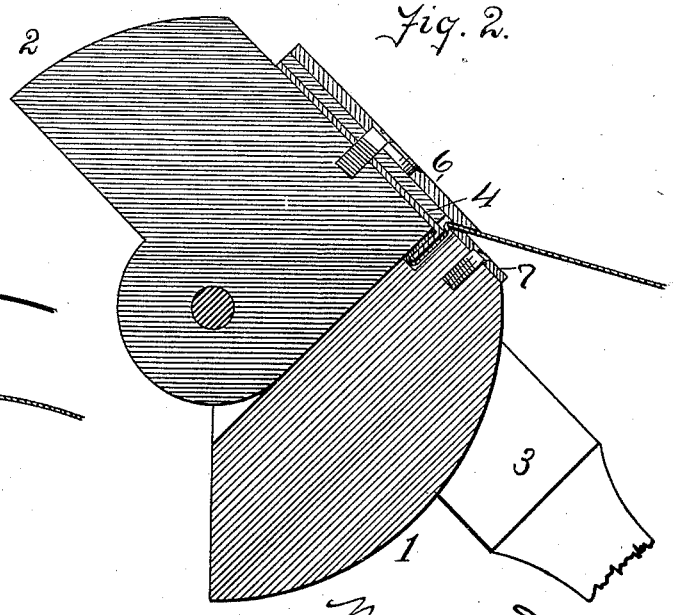
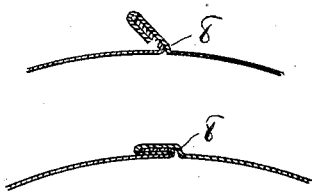


Fig. 3.



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UNITED STATES PATENT OFFICE.

WALTER DIXON, OF NORTH ST. PAUL, MINNESOTA.

SHEET-METAL-FOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 422,744, dated March 4, 1890.

Application filed December 2, 1889. Serial No. 332,341. (No model.)

To all whom it may concern:

Be it known that I, WALTER DIXON, a citizen of the United States, residing at North St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Sheet-Metal-Folding Machines; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of sheet-metal-bending machines commonly used for the purpose of forming the lock in the edges of stove-pipe blanks, and is specifically an improvement upon that particular variety of machine known as "Wright's Folder."

The machine referred to, upon which my invention is an improvement, consists of a bed and a swinging folding-bar hinged thereto and having a lever by which it is operated. The folding-bar carries a plate or gage, around which the metal is to be folded, and by means of which the edge of the blank is clamped to the folding-bar during the operation of bending by a side movement of the operating-lever, with which the gage-plate is connected. The edge of the bed is provided with a groove or rabbet of slightly larger dimensions than the gage-plate and in position to receive the same when brought forward by the operation of the lever. The edge of the blank is bent around three sides of the gage-plate, and the other edge of the blank being similarly bent in the opposite direction the two parts of the lock are formed. It is, however, necessary, in order to prevent the disengagement of the interlocking parts thus formed, that the part of the body of one side of the blank should be creased or bent in a reverse direction at the edge of the interlocked parts. This is commonly done by means of a "swage" or "groover," as it is known to the trade, having a groove along its face of a size to receive the seam formed by the interlocked parts, and by means of which a crease is formed upon one side of the joint, thus closing the lock. The joint is then hammered or the parts otherwise brought closely together, completing the operation.

The object of the present invention is to provide, in connection with machines of this class, means whereby the locking-crease may be formed simultaneously with the bending of the edges of the blank, thus entirely dispensing with the use of the groover at a great saving in the matter of time, with greater accuracy, and with less liability to injury to the metal.

The improvement is illustrated in the accompanying drawings, in which—

Figure 1 represents a cross-section of a machine of the class described provided with my attachments; Fig. 2, a similar view showing the manner of operation of my attachments, and Fig. 3 a cross-section of the lock formed by this operation.

In the drawings, 1 represents the bed of the machine, supported in any suitable manner, to which is hinged the folding-bar 2, adapted to be operated by means of a lever or handle 3. Upon the back of the folding-bar 2 is mounted the gage-plate 4, consisting of an angle-plate having one leg attached to the back of the folding-bar, and the other extending a short distance over the top of the same, leaving a space underneath the extending edge for the reception of the edge of the blank. The gage is so mounted upon the folding-bar as to be capable of a sliding movement vertically with reference thereto, and is so connected with the handle or lever 3 as to be operated by a side movement of the same to clamp the edge of the blank against the folding-bar. By the operation of the lever 3 the folding-bar is swung over against the bed, as shown in Fig. 2, the gage being received by a rabbet 5, formed in the outer edge of the bed in position to register therewith. By this operation a U-shaped fold is formed in the edge of the blank by being bent around the gage-plate between the folding-bar and the bed.

The construction and operation as thus far described are common and well understood; but for the purpose of forming the crease necessary to complete the lock I attach to the folding-bar, outside the gage-plate, an addi-

tional plate or straight-edge 6. This plate 6 projects upwardly a little beyond the top of the gage-plate, and when the folding-bar is brought over, as shown in Fig. 2, overlaps the outer edge of the bed 1. The action upon the blank is to bend the same in a reverse direction over the edge of the bed, thus forming the required crease simultaneously with the bending. The two folds are then interlocked and hammered or rolled together and the lock is complete.

For the purpose of enabling the plate 6 to be moved back, so as not to overlap the edge of the bed when the machine is to be used for purposes in which the creasing operation is not required, the plate is so attached to the folding-bar as to be adjustable with reference thereto. This adjustability may be accomplished in any suitable manner. As a convenient method, the plate may be secured to the folding-bar by means of screws set onto the bar and passing through diagonal slots in the plate.

A further improvement consists in an attachment for the purpose of more completely forming the lock. This consists of a plate 7, secured to the edge of the bed in such a manner as to project slightly above the same just inside the plate 6 and between the latter and the gage, when the latter is brought over in the act of bending, as shown in Fig. 2. The edge of the bed-plate 7 is preferably chisel-shaped, and its action is to slightly depress the body of the blank toward the folded edge, nearly closing the entrance within the fold. The plate 6 then acts to bend the blank in a reverse direction from and around the edge of the plate 7. The effect of the plate 7 is shown clearly in Fig. 3 at 8. This plate may be made adjustable in the same manner and for the same purpose as described with reference to the plate 6.

I claim as my invention—

1. In a machine for folding sheet metal, the combination, with the bed having a groove or rabbet in its outer edge, folding-bar hinged to the inner edge of the bed, and gage-plate attached to said folding-bar and extending parallel therewith in position to register with the rabbet in the bed when the folding-bar is brought over against the bed, of a straight-edged plate adjustably secured to the folding-bar behind said gage-plate in position to extend by the edge of the bed when the bar is brought forward, or to be moved back so that its edge is flush with the edge of the folding-bar when its use is not required, substantially as and for the purpose herein specified.

2. In a machine for folding sheet metal, the combination, with the bed having a rabbet at its outer edge, folding-bar hinged to the inner edge of the bed, and gage-plate attached to said folding-bar and extending parallel therewith in position to register with the rabbet in the bed, of a plate secured to the folding-bar behind said gage-plate in position to overlap the edge of the bed when the bar is brought forward, and an upwardly-projecting plate secured to the outer edge of the bed in position to enter the space between said gage and the plate carried by the folding-bar, substantially as and for the purpose herein specified.

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

WALTER DIXON.

Witnesses:

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