

(No Model.)

F. A. WALSH.
SHEET METAL SHEARING MACHINE.

No. 468,586.

Patented Feb. 9, 1892.

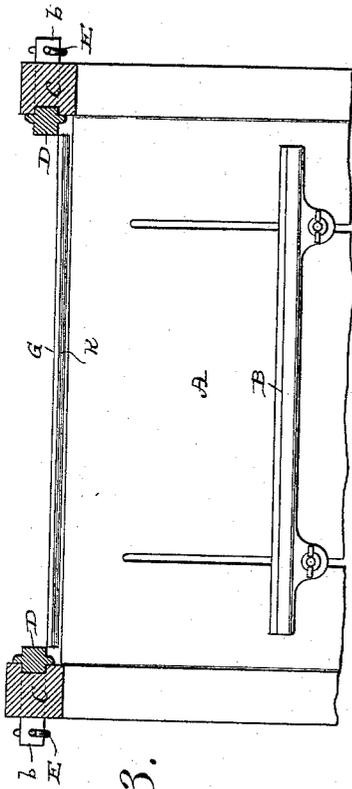


Fig. 3.

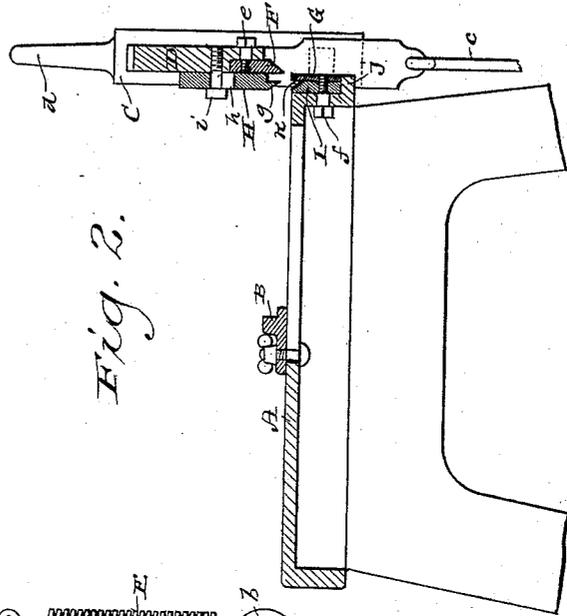


Fig. 2.

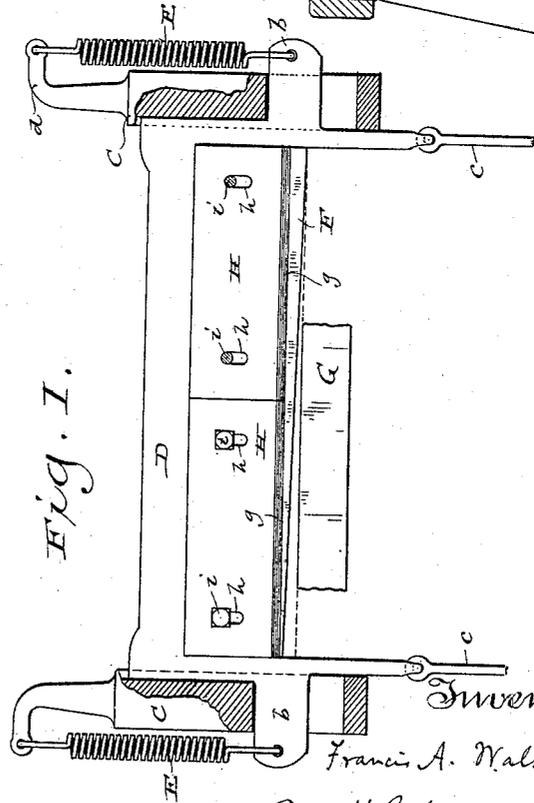


Fig. 1.

Witnesses
Geo. W. Young.
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UNITED STATES PATENT OFFICE.

FRANCIS A. WALSH, OF MILWAUKEE, WISCONSIN.

SHEET-METAL-SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 468,586, dated February 9, 1892.

Original application filed April 23, 1889, Serial No. 308,317. Divided and this application filed September 29, 1890. Serial No. 366,478. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS A. WALSH, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Sheet-Metal Shearing and Slitting Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

The present application is a division of the one filed April 23, 1889, Serial No. 308,317, on which Patent No. 445,738 issued February 3, 1891; and the invention consists in certain peculiarities of construction and combination of parts to be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents a rear view, partly in transverse section, of a sheet-metal cutting and folding machine constructed according to my invention; Fig. 2, a vertical longitudinal section of the same, and Fig. 3 a plan view, partly in horizontal section.

Referring by letter to the drawings, A represents the bed-piece of a machine for squaring or slitting sheet metal, this bed-piece being provided with an adjustable gage-plate B, as illustrated in Figs. 2 and 3. Extended upward from the front corners of the bed-piece A are slotted standards C, that serve as guides for lateral projections *b* on the sliding frame D, the latter being provided with links *c* for connection with the treadle or other operating mechanism, (not shown,) and said lateral projections of the sliding frame are connected by spiral springs E with parallel projections *d* on the upper ends of the standards, as best illustrated in Fig. 2, these springs serving to automatically return said sliding frame to its normal position after being drawn down by the treadle or other actuating mechanism. By means of set-screws *e* a shear-blade F is secured to the sliding frame D at the proper angle, and an opposing shear-blade G is secured to the bed-piece A by means of set-screws *f*, the parts thus far described being similar in construction and arrangement to sheet-metal-shearing machines as ordinarily constructed.

In the present machine plates H, having their lower edges in the form of dies *g*, are se-

cured to the sliding frame D in rear of the shear-blade F, these die-shaped edges of said plates being on a horizontal line at all points above the cutting-edge of said shear-blade. In order that one or all of the die-plates H may be raised or lowered, I provide them with vertical slots *h*, and connect them with the sliding frame D by means of set-screws *i*, passed through said slots. The die plate or plates H being raised up, they are out of the way when those edges of the sheets not to be folded are being trimmed, and this same result may be attained by having said plate or plates on a hinge, so as to be swung out of the way at the will of the operator.

While I have shown two die-plates, either one or both of which may be adjusted independent of the other, it is obvious that a greater number of such plates may be employed, or that a single plate equal in length to all of the separate plates may be substituted, this being a matter of convenience or necessity as practice may determine.

The usual ledge *j* on the front of the bed-piece A for the support of the lower shear-blade G is sufficiently extended to also support a plate I, the upper edge of the latter and said blade forming a die *k*, arranged to oppose the die on the plate or plates H, carried on the sliding frame D, as above described, said lower die-plate being in rear of said lower shear-blade and held therewith against said bed-piece by means of the set-screws *f*, as best illustrated in Fig. 2.

The dies *g k* may be of any desirable form; but, as shown, they are preferably edge-folding dies, similar to those described in the previous application above named, or, in other words, each die has one face thereof normally at right angles to the sheet to be operated upon and another face beveled in a direction acute to the plane of said sheet, the latter being free to incline toward the non-beveled faces of said dies when the engagement of the latter takes place, whereby a fold is formed parallel to said non-beveled faces of the dies and at an acute angle to the body of the aforesaid sheet.

In the operation of the machine herein described a sheet to be operated upon is held on the bed-piece A against the gage-plate B

and the sliding frame D drawn down to effect the shearing operation, the latter being immediately followed by an engagement of the edge-folding dies *g k* against the sheet, after
 5 which said sliding frame is automatically returned to its normal position by means of the springs above described.

While I have shown the dies in connection with a machine having a sliding frame carrying one of the blades, said dies may be as
 10 readily employed in similar machines in which a rotary cutter or cutters are employed.

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

1. In a machine for squaring or slitting metal sheets, the combination, with the shearing mechanism, of edge-folding dies adapted to form an acute-angled fold in the stock approximately to and along the line of the cut,
 20 substantially as set forth.

2. In a machine for squaring or slitting metal sheets, the combination, with the shearing mechanism, of edge-folding dies, each die
 25 having a face normally at right angles to the sheet being operated upon and another face beveled in a direction acute to the plane of

said sheet, the latter being free to incline toward the non-beveled faces of the dies when the latter are engaged, whereby a fold is formed
 30 parallel to said non-beveled faces of said dies and at an angle acute to the body of the aforesaid sheet, substantially as set forth.

3. In a machine for squaring or slitting metal sheets, the combination, with the shearing mechanism, of a pair of dies operated therewith to fold the edges of the sheets, and suitable means for adjusting one of the dies, substantially as set forth.

4. In a machine for squaring or slitting metal sheets, the combination, with the shearing mechanism, of a pair of dies, one of which is in sections, and suitable means for adjusting each of the die-sections, substantially as 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.
 45

FRANCIS A. WALSH.

Witnesses:

N. E. OLIPHANT,
 WM. KLUG.