

(No Model.)

2 Sheets—Sheet 1.

U. D. ALEXANDER.
SHEET METAL WORKING MACHINE.

No. 541,800.

Patented June 25, 1895.

FIG. 1.

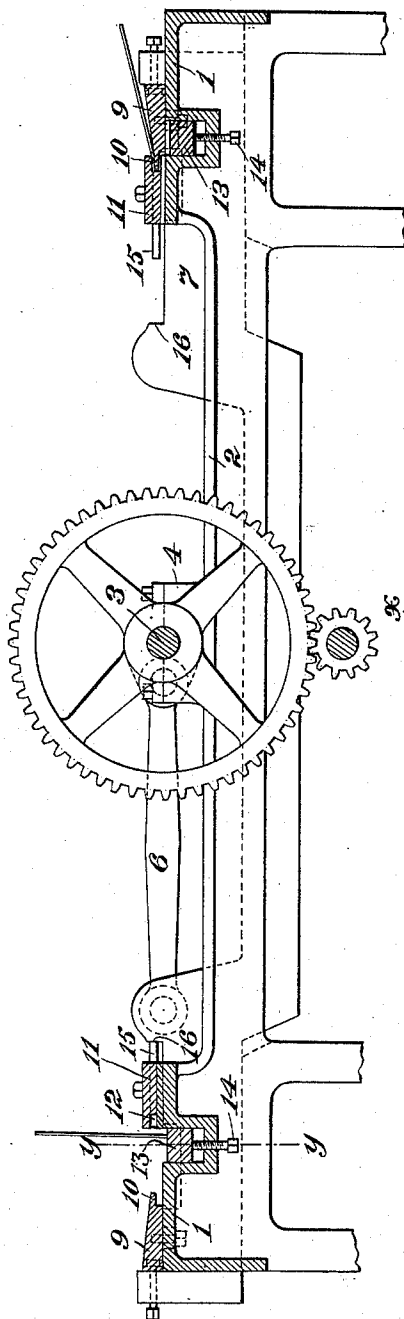
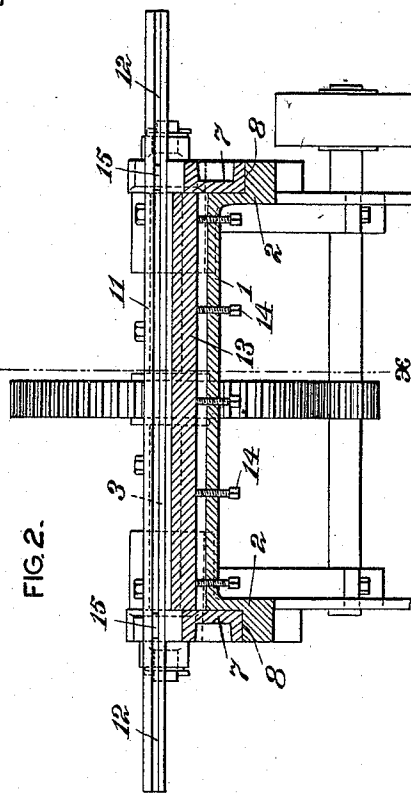


FIG. 2.



WITNESSES:

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INVENTOR,

Urbana D. Alexander
by Darwin S. Wolcott

Att'y.

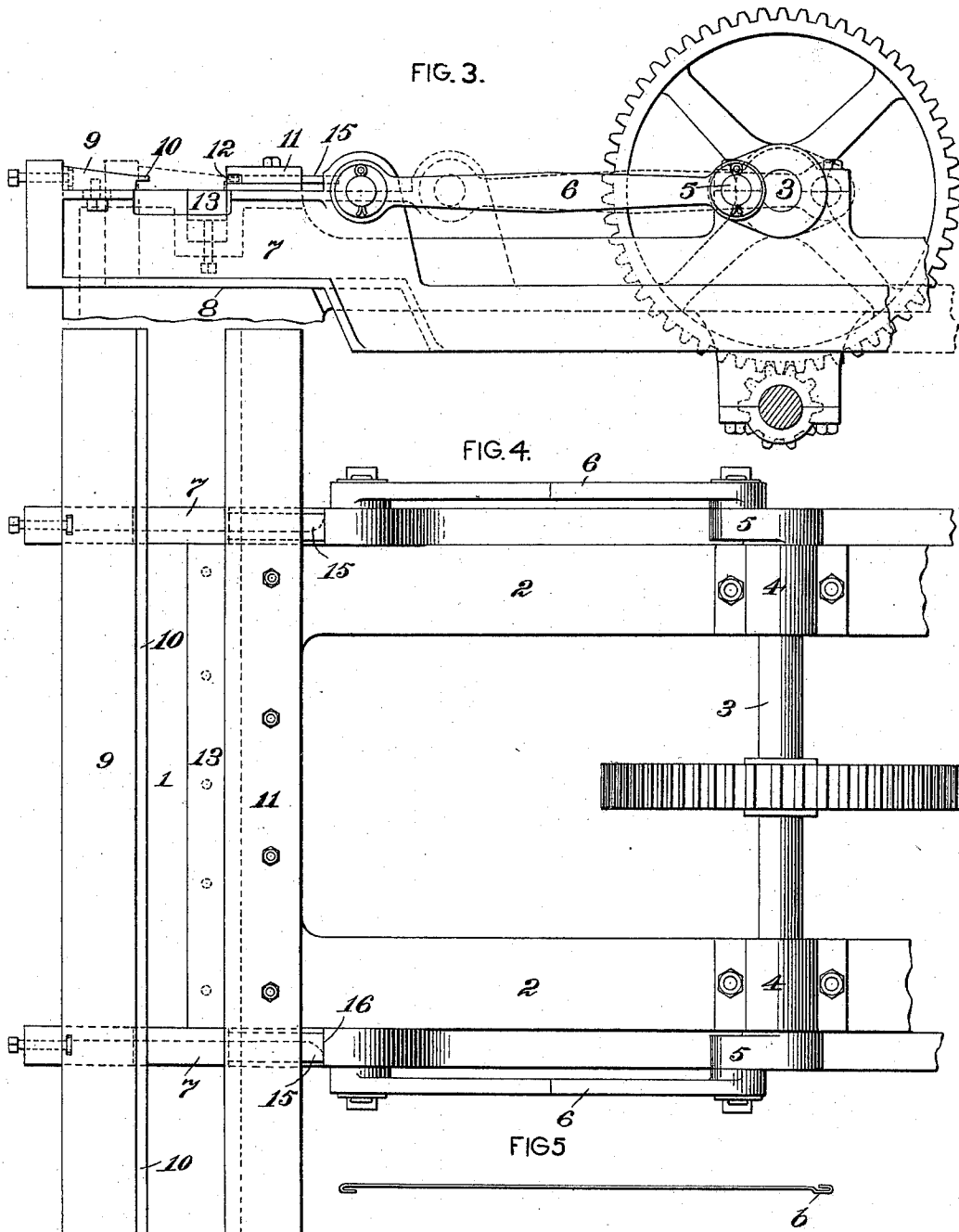
(No Model.)

2 Sheets—Sheet 2.

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SHEET METAL WORKING MACHINE.

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UNITED STATES PATENT OFFICE.

URBANA D. ALEXANDER, OF CANNONSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO THE CANONSBURG IRON AND STEEL COMPANY, OF SAME PLACE.

SHEET-METAL-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 541,800, dated June 25, 1895.

Application filed September 17, 1894. Serial No. 523,237. (No model.)

To all whom it may concern:

Be it known that I, URBANA D. ALEXANDER, a citizen of the United States, residing at Cannonsburg, in the county of Washington and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Sheet-Metal-Working Machines, of which improvements the following is a specification.

The invention described herein relates to certain improvements in machines for the formation of hooks on opposite edges of a metal sheet, said hooks being adapted to engage one another when the sheet is bent into tubular form.

In general terms, the invention consists in the construction and combination substantially as hereinafter more fully described and particularly claimed.

In the accompanying drawings forming a part of this specification, Figure 1 is a sectional elevation of my improved machine, the plane of section being indicated by the line *xx*, Fig. 2. Fig. 2 is a transverse section, the plane of section being indicated by the line *yy*, Fig. 1. Fig. 3 is a side elevation of one-half of the machine. Fig. 4 is a top plan view of the same; and Fig. 5 is an edge view of a sheet with hooks formed thereon.

The shoulder just back of the hook along one edge is formed in the sheet cutting machine.

In the practice of my invention, the bed plates 1, which are supported at the desired height in any suitable manner, are connected by side bars 2. The power shaft 3 is mounted in suitable bearings 4 on the side bars 2, and is provided at its ends with crank arms 5, which are connected by rods 6 to the slides 7. These slides are supported by shoulders 8 on the sides of the bed plates 1, as shown in Fig. 2. Cross-bars 9 are bolted on the upper edges of the slides 7 near their ends, said bars extending across the bed plates, as shown in Figs. 2 and 4, and being provided along their inner edges with ribs or fins 10. On the bed plates are bolted the plates 11, which are provided on the edges adjacent to the cross bars 9 with grooves 12 of a width greater than the thickness of the ribs or fins by an amount at least equal to twice the thickness of the sheets operated on.

In operating my improved machine, one edge of metal sheet is placed on the gage bar

13, which is adjustably supported by screws 14, passing through the bed plates. As the cross-bar is shifted toward the plates 11, the fins 10 force the sheets into the grooves 12, thereby causing the metal to be bent around the fins forming the hooks shown in Fig. 5. The sheet is then turned and its opposite edge placed on the gage bar, so that a hook will be formed projecting on the opposite side of the sheet as shown in Fig. 5.

In order to release the sheet from the grooves 12, pins 15 are passed through the plates 11 in line with the grooves, and shoulders 16 are so formed on the slides 7 as to come into contact with the pins as the cross-bars are moved away from the plates 11. The movement imparted to the pins by the slides forces the hooked portion of the metal sheets out of the grooves 12. The pins are moved in the opposite direction by the metal sheets as they are forced into the grooves, as described.

It will be observed that the two portions of the machine operate alternately, so that two hooks are formed at each revolution of the power shaft and at the expense of only a little more power than would be required to operate one half of the machine.

I claim herein as my invention—

1. In a sheet metal working machine, the combination of a stationary plate provided with a groove, a reciprocating cross-bar provided with a rib or fin, the walls of the groove being constructed to shift the portions of the sheet on opposite sides of the fin into parallelism, or approximate parallelism, with each other, and an adjustable gage plate for regulating the depth of the hook to be formed, substantially as set forth.

2. In a sheet metal working machine, the combination of a stationary plate provided with a groove, a reciprocating cross-bar provided with a rib or fin, and pins passing through the plate in line with the groove and movable with the cross-bar, substantially as set forth.

In testimony whereof I have hereunto set my hand.

URBANA D. ALEXANDER.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GAITHER.