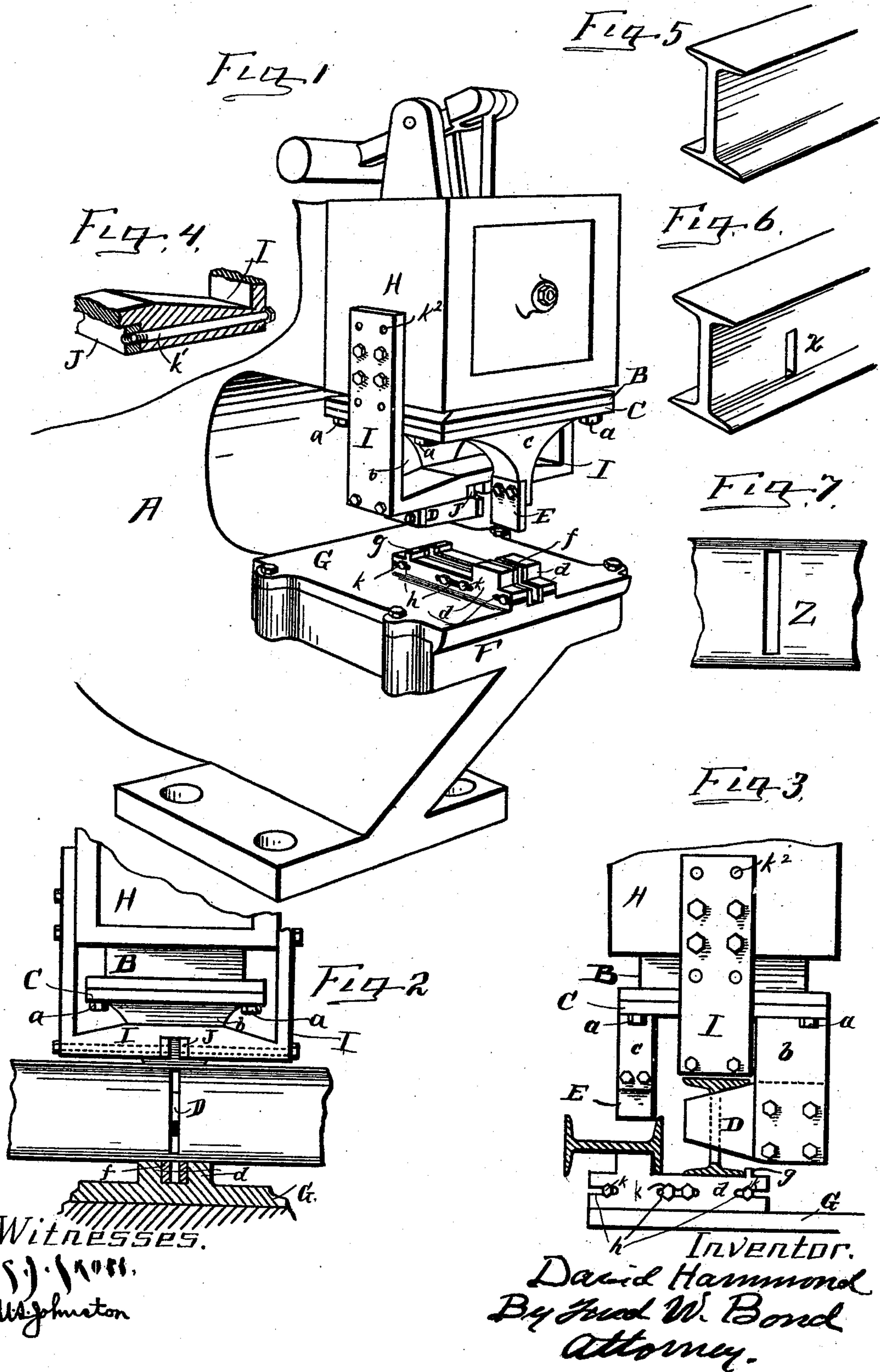


(No Model.)

D. HAMMOND.
SHAPE METAL CUTTING MACHINE.

No. 516,736.

Patented Mar. 20, 1894.



UNITED STATES PATENT OFFICE.

DAVID HAMMOND, OF CANTON, OHIO.

SHAPE-METAL-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 516,736, dated March 20, 1894.

Application filed November 6, 1893. Serial No. 490,132. (No model.)

To all whom it may concern:

Be it known that I, DAVID HAMMOND, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Shape-Metal-Cutting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a perspective view of the machine, showing the different parts properly attached. Fig. 2, is a transverse section of the lower and upper dies showing the same properly located, and also showing the position of the plunger together with a portion of the plunger casing or shell together with the upper die yoke. Fig. 3 is a side view of the plunger, showing the cutting blade properly attached thereto, and also showing the die yoke properly located, and attached. Fig. 4, is a view showing a portion of the upper die carrying yoke, showing the same in section, to illustrate the position of the die retaining bolts. Fig. 5, is a view showing a portion of an I beam. Figs. 6 and 7, are views, showing portions of beams, and illustrating different cuts.

The present invention has relation to shape metal cutting machines, and it consists in the different parts, and combination of parts hereinafter described and particularly pointed out in the claims.

Similar letters of reference indicate corresponding parts, in all of the figures of the drawings.

In the accompanying drawings, A represents the body of the machine, which may be constructed in the ordinary manner, reference being had to properly attaching and adjusting my improvements.

It will be understood that the body A is to be provided with the necessary machinery to communicate a reciprocating movement to the plunger B, which machinery has no reference to the present invention, except to be used in connection with my improvements.

To the bottom or under side of the plunger B is securely attached, by means of the

bolts *a* or their equivalents, the block or head C, which block or head is provided with the downwardly extended arms *b* and *c*, which arms may be formed integral with the block or head C, and are arranged substantially as illustrated in Figs. 1 and 3. To the arm *b* is securely attached the cutting blade D, which blade is designed for cutting the flanges of an I beam or other flanged bars. To the arm *c* is securely attached the cutting blade E, which blade is designed for cutting the webs of I beams, channel bars or other flanged bars.

In the drawings I have illustrated my improvements applied to the cutting of I beams or bars; but it will be understood that my improvement can be applied to the cutting of all forms of angled beams or bars, as well as to the various kinds of flanged beams or bars, without departing from the nature and object of my invention.

To the bed F is securely attached the die plate G which die plate is provided with the flanges *d*, said flanges being for the purpose of holding the dies *f* in proper position and adjustment.

For the purpose of bringing the bars designed to be cut into proper position with reference to the cutting blade D, the lugs or stops *g* are provided, which lugs or stops are preferably formed integral with the flanges *d*.

For the purpose of providing a means for resting the web of a channel-bar or I beam upon the dies, and at the same time elevating the bars or beams so as to clear the flanges of said beams, the dies are elevated directly below the cutting blade E as illustrated in Figs. 1 and 3, and the flanges opposite the elevated portion of the dies are also elevated.

For the purpose of adjusting the dies *f* longitudinally the slots *h* are formed in the flanges *d*, and said dies securely held at the desired point of adjustment by means of the clamping bolts *k* or their equivalents. To the plunger casing or shell H is adjustably attached the yoke I, which yoke is provided with the dies J, said dies being securely held in proper position by means of the bolts *k'* or their equivalents. The dies J are located directly above the cutting blade D, and in line with the lower dies *f*.

In use the web of the bar or beam is first cut, and if the web is of greater width than the width of the cutting blade E, a sufficient number of cuts is given the web to entirely cut it.

In Figs. 6 and 7 the different cuts to the web are represented at X and Z. After the web has been properly cut the bar or beam is placed in the position illustrated in Figs. 2 and 3, which position brings the cutting blade through the cut formed or made in the web, and as the plunger B together with its different parts moves downward, the lower flange or flanges of the beam will be cut, and as the plunger moves upward the top or upper flange or flanges, of the beam will be cut, thereby completing the cutting of the beam.

It will be understood that by providing the upper and lower dies, both the upper and lower flanges of an I beam or channel-bar can be cut without changing the position of the bar or beam.

For the purpose of providing a shear cut, the blade D is beveled upon its top and lower edges, substantially as illustrated in the drawings. It will be understood that the cutting blade should be formed somewhat thinner than the cutting blade E, so that the cutting blade D can be easily entered through the cut formed in the web of the beam.

For the purpose of providing a means for cutting various sized beams, the yoke I is adjustably attached to the casing or shell H, by means of a series of apertures k^2 .

In use I prefer to have both cutting blades attached to one head or block, as illustrated in the drawings; but it will be understood that a different plunger and head can be used for each cutting blade without departing from the nature of my invention.

The cutting blade E may be formed of sufficient width to cut the entire web of an I beam or channel bar at one stroke without departing from the nature of my invention.

It will be understood that the location and arrangement of the cutting blades and the dies may be varied without departing from

the nature of my invention, keeping in mind an upper and a lower set of dies.

If desired, the stops shown in Fig. 1, located on the lower dies may be dispensed with inasmuch as the stops g , formed upon the flanges d , will stop the bar at the desired point. In the drawings slots are shown, which slots are for the purpose of allowing the dies to be given longitudinal adjustment; but the longitudinal adjustment is more especially designed for the purpose of originally bringing the dies f , to proper adjustment, with reference to the flanges d .

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

1. The combination of the body A, provided with the plunger B, having fixed thereto the head C, provided with the arms b and c , the cutting blades D and E rigidly fixed to the arms, the dies f located below the cutting blades and the dies J, located above the cutting blades, and means for securing the dies, substantially as and for the purpose specified.

2. The combination of a body A, a reciprocating plunger carrying the cutting blade D, the dies f , located below said cutting blade, the yoke I, and the dies J, located above the cutting blade D, substantially as and for the purpose set forth.

3. The combination of the body A, provided with the casing or shell H, having located therein, a reciprocating plunger, provided with the head or block C, provided with the arm b , the blade D, rigidly fixed to the arm b , the dies f , the flanges d , provided with elevated portions or stops g , the dies J, located above the dies f , and means for securing the dies, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DAVID HAMMOND.

Witnesses:

F. W. BOND,
E. A. C. SMITH.