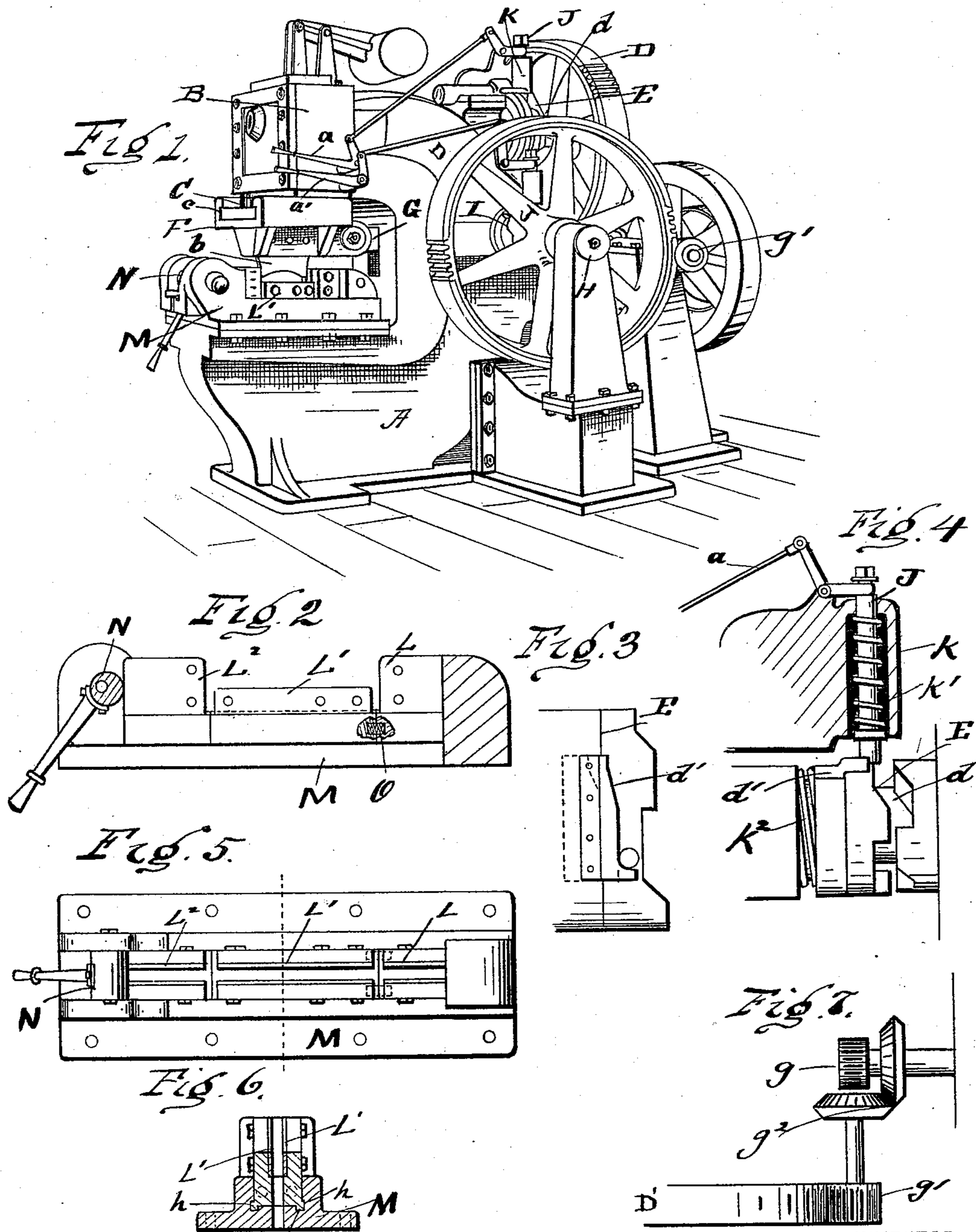


(No Model.)

D. HAMMOND.
SHAPE METAL CUTTING MACHINE.

No. 532,457.

Patented Jan. 15, 1895.



WITNESSES:
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DAVID HAMMOND, OF CANTON, OHIO.

SHAPE-METAL-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 532,457, dated January 15, 1895.

Application filed June 25, 1894. Serial No. 515,605. (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
5 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 accompanying
10 drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1, is an isometrical view of the machine. Fig. 2, is a side view of the dies, and
15 their frame. Fig. 3, is a view showing a portion of one of the clutches, and a stop plate. Fig. 4, is a side view of one of the clutches, showing the same open or out of engagement. Fig. 5, is a top view of the dies, and their
20 frame. Fig. 6, is a transverse section of the die-frame, showing location of the dies. Fig. 7, is a view showing arrangement of the gearing.

The present invention has relation to shape
25 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 the figures of the drawings.

In the accompanying drawings A represents the body or frame of the machine, which is constructed in the ordinary manner, reference being had to the proper attachment of my
35 improvements.

The casing or shell B is securely attached to the frame A in any convenient, and well known manner, and is provided with the ordinary machinery to impart an up and down
40 movement to the plunger-head C, which machinery is propelled by the wheel D. To one side of the wheel D, and upon its shaft is located the interlacing clutch E, which clutch
45 is for the purpose of throwing the plunger-head, and its different attachments in and out of gear, and is preferably operated by means of the lever or handle *a*.

To the plunger-head C is attached the sliding
50 head F, to which head is securely and rigidly attached the cutting blade *b*. For the purpose of causing the sliding head F to follow

the up and down movements of the plunger-head C, said sliding head is provided with the grooved flanges *c*.

For the purpose of imparting a horizontal
55 reciprocating movement to the sliding head F, the pitman G is provided, which pitman is pivotally attached to the sliding head, and connected to the crank shaft H. Upon the
60 crank shaft H is located the interlacing clutch I, which interlacing clutch is for the purpose of throwing the sliding head F in and out of gear by means of the lever or handle *a'* or its equivalent.

In use the plunger-head C is brought down
65 so as to force the cutting blade *d* through the web of the beam, at which point the movement of the plunger head together with its different parts are stopped by means of the
70 interlacing clutch E, as hereinafter described, after which and while the blade *b*, is at its lowest point the interlacing clutch I is thrown into gear thereby imparting rotary motion to
75 the shaft H, which in turn imparts a reciprocating motion to the sliding head F, by means of the pitman G, which movement cuts the flanges of the beam, thereby completely cutting the beam.

It will be understood that in order to cut
80 both flanges of a beam one complete revolution must be given to the crank shaft H, but in order to properly cut the web of the beam only one-half of a revolution should be imparted to the shaft *d*, upon which shaft is
85 loosely mounted the wheel D, and in order to provide a clutch that will automatically be thrown out of gear at half revolutions, inclined plates, such as *d'*, are located upon opposite
90 sides of the shaft *d*, and for the purpose of providing means for automatically stopping the different parts of the machine at the desired points plungers, such as J are provided, which plungers are located within
95 the casings K, and around which plungers are located the springs, such as K'.

When it is desired to throw one of the interlacing clutches into gear its respective
plunger is elevated so as to disengage it from the stop portions of the plate *d'*, after which
100 the sliding section of the interlacing clutch is brought into engagement with its adjacent section, by means of the spring K². For the purpose of imparting rotary motion to the

wheel D' and the wheel D, the pinions g and g' are provided, which are properly geared together by means of the beveled gears g^2 .

For the purpose of providing a means for holding the dies L, L' and L², the frame M is provided, which frame is securely bolted or otherwise fastened to the bed plate of the body A, substantially as illustrated in Fig. 1. The frame M is provided with the grooves h , which grooves receive the flanges h' , said flanges being formed upon the bottom or under sides of the die bars or dies, as the case may be.

In cutting various sized beams it is quite necessary to change the dies so that they will correspond with the beam designed to be cut, and in order to do this the frame M, is provided; one end of said frame being provided with the eccentric N, which eccentric is so attached that it can be removed, thereby leaving the outer end of the frame clear so that various dies can be removed and replaced at will, the eccentric N being for the purpose of locking the dies after they have been properly adjusted.

For the purpose of releasing a beam or the flanges thereof, after it has been cut, the springs O are provided, which springs are located in proper sockets, which sockets are formed in the die-bars. In the drawings the springs are best illustrated in Fig. 2.

The springs O are formed of sufficient strength to part the dies after they have been released, thereby releasing the flanges of the beam. It will be understood that in order to

properly clamp the dies, various sized filling blocks may be placed between the outer die and the eccentric.

It will be understood that the above described machine can be used for cutting all sizes and shapes of beams such as I beams, channel bars and angle bars.

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 a shell or casing, a plunger head carrying a sliding head, provided with a cutting blade, and dies located below the cutting blade, the clutch I timed to impart a full backward and forward movement, to the sliding head, the clutch E timed to stop the cutting blade at the limit of its up and down movements, and means for engaging and disengaging the clutches, substantially as and for the purpose set forth.

2. The combination of the body A, having fixed thereto a die frame, provided with grooves, removable dies located within said frame and provided with flanges, the springs O, located in sockets formed in the dies, and means for removing and clamping the dies, substantially as and for the purpose set forth.

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.