2 Sheets—Sheet 1.

A. MAGNUSON.

Machine for Heading and Pointing Bolts.

No. 226,090 **Patented Mar. 30, 1880.**

Fig. 1.

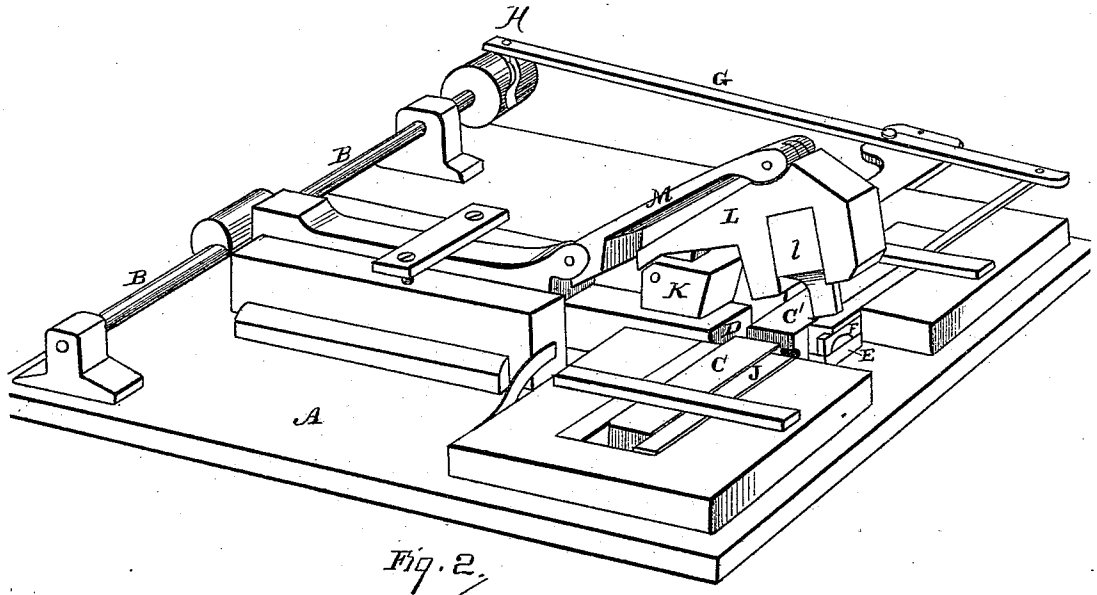
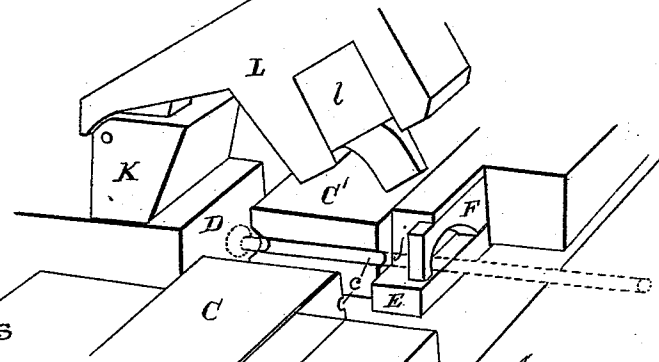


Fig. 2.



Witnesses

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2 Sheets—Sheet 2.

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Fig. 3.

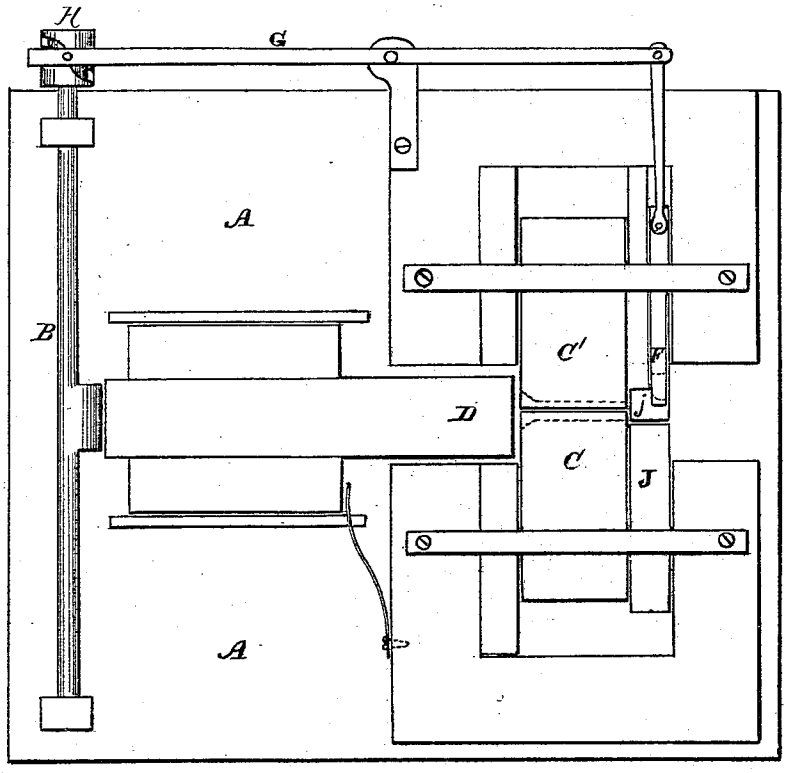


Fig. 4



Fig. 5



Witnesses.

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UNITED STATES PATENT OFFICE.

ALFRED MAGNUSON, OF SAN FRANCISCO, CALIFORNIA.

MACHINE FOR HEADING AND POINTING BOLTS.

SPECIFICATION forming part of Letters Patent No. 226,090, dated March 30, 1880.

Application filed December 1, 1879.

To all whom it may concern:

Be it known that I, ALFRED MAGNUSON, of the city and county of San Francisco, and State of California, have invented a Bolt Heading and Pointing Machine; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in machines for forming complete bolts; and it consists in a mechanism whereby the bolt is headed in a manner similar to that now in use, and in addition it is cut off and pointed at the same operation, as will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my apparatus. Fig. 2 is an enlarged perspective view of the working mechanism. Fig. 3 is a plan or top view. Fig. 4 is a section of the movable center. Fig. 5 is a view of the product of the apparatus.

In the present case I have shown my invention as applied to what is known as the "Lewis bolt-header," in which a head is formed upon a rod of iron after heating. The rod is then cut off by another operation to the proper length, and the bolt so formed is finally pointed by a third and independent operation.

By my invention these three operations are performed as one, and the product is greatly increased thereby. My apparatus can be easily attached to the present bolt-headers of that style.

A is a bed-plate supporting the mechanism. B is a shaft supported in boxes and extending across the rear portion of the bed-plate or frame, as shown. This shaft carries the usual balance and driving wheel and the cams or eccentrics upon each side of the frame by which the holding-jaws are opened to receive the bolt and closed to hold it while the head is being formed; but I have not shown these parts, as they are well illustrated in the machine above referred to.

In my invention I employ an independent cutter, which cuts the rod off to the proper length for a bolt, and a point-forming die which operates as follows: The side clamps, C C′, are moved toward each other by cams, and gripe the rod of which the bolt is formed. These clamps have grooves *c* formed in their faces the size of the rod or bolt, and are interchangeable for different-sized bolts. The inner ends of the grooves are suitably shaped to form the neck of the bolt in the desired form, and the die D has its end made to form any desired shaped head, as square, oval, round, &c. A small anvil-block, E, projects out on one side of the clamp C′, and on this slides the cutter F, connecting with the lever G, which is operated by the cam H on the cam-shaft B, a reciprocating motion being thus imparted to the cutter. The rod is inserted through the cutter, a slot being formed in the head for the purpose, and at the proper time, as the cutter is drawn back by the action of the cam and lever, the rod is cut off.

As the cutter is drawn back a bar or movable block, J, on the opposite side moves forward against the anvil-block, and the point or end of the rod rests on this anvil-block, between this bar or plate J and the shoulder *j*, formed on said anvil-block.

Above the bar which moves the head-forming die D is placed a block, K, which is supported by and fastened to the bed independent of the die-bar, on which is hinged a head, L, carrying the hammer *l*, for flattening or forming the sharpened end of the bolt. This head is provided with a toggle or hinged bar, M, which is also hinged in a suitable manner to the die-bar D. When this die-bar D is moved forward by the cam the head L is also thrown down, so that as the die forms the bolt-head the hammer forms the point.

The simplicity of this operation is manifest. The heated rod is pushed through the slot in the cutter, and is held by the grooved clamp coming against it on each side. The lever draws the cutter back and cuts off the bolt to the proper size, and at the same time the movable block J comes forward and against the end of the cut piece. The cam then pushes the die D forward, the head with the hammer coming down at the same instant and forming the point on the anvil-block E. The head and point are therefore formed simultaneously. The object of the movable block J and the shoulder *j* is to prevent the point of the bolt being spread out unduly and being irregular in shape.

As the cams draw the die-bar D back the

head is lifted, the clamps drawn back, and the next forward motion of the cutter pushes the finished bolt off the little anvil-block out of the way for the next bolt. By removing the tip-pointer and using the cutter the machine will make boiler-rivets or bolts for railway fish-plates. In this way the bolt is formed, cut, headed, and pointed, all in the same machine and at one operation.

It will be manifest that spikes for track-rails and bolts of any shape, either square or round, may be made by this machine.

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

1. The notched sliding cutter-bar F, jointly with the anvil E, provided with a flange for guiding the cutter-bar, substantially as described.

2. The head or block L, carrying the hammer *l*, hinged, as shown, to the block K, and operated, in conjunction with the head-forming die D, through the toggle or hinged link M, in combination with the anvil-block E, whereby the point of the bolt is formed after being cut by the cutter, substantially as herein described.

3. In combination with the head or block L, with its hammer *l*, adapted to strike a blow, in conjunction with the head-forming die D, the anvil-block E, with its shoulder *j*, and the movable block or holding-bar J, whereby the point is sharpened or flattened properly without too much spread being allowed to the point, substantially as herein described.

4. In combination with the movable head-forming die D, the head or block L, with its hammer *l*, adapted to flatten the point of the bolt on the anvil E, and connected to said die by means of the hinged toggle or lever M, whereby both head and point are formed on the bolt at the one operation and while the bolt is held by the clamps C C′, substantially as herein described.

5. In combination with the grooved clamps C C′, and sliding or movable die D, adapted to hold the bolt-bar and form the head, the cutter F, operating-lever G, and cam H, anvil-block E, with its shoulder *j* and the movable block J, and the hammer *l* on the head L, connected by the link M with the said die D, whereby the bolt is cut, headed, and pointed at one operation, substantially as herein described.

In witness whereof I have hereunto set my hand.

ALFRED MAGNUSON.

Witnesses:
S. H. NOURSE,
FRANK A. BROOKS.