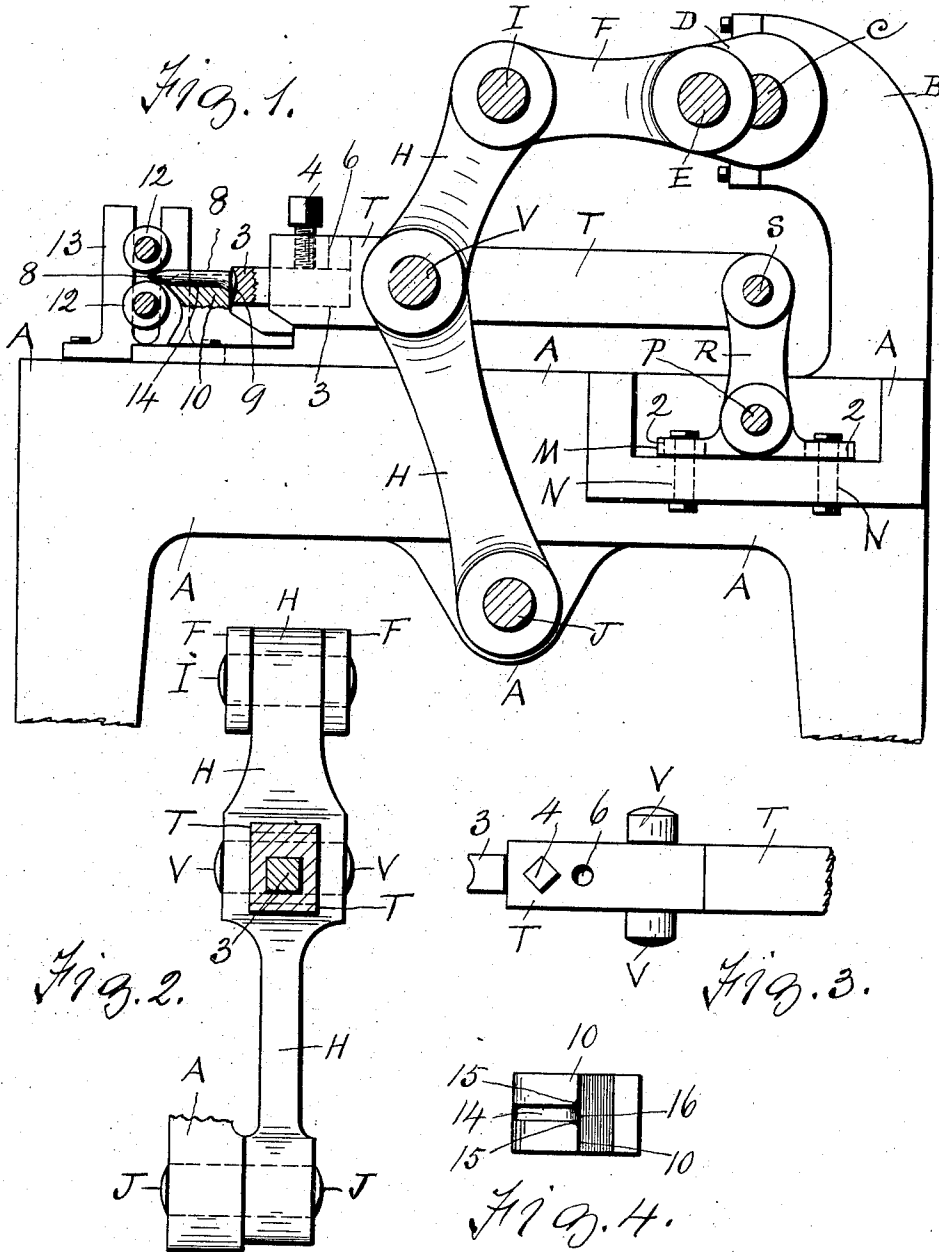


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SPIKE MACHINE.

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1,025,670.

Patented May 7, 1912.



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SPIKE-MACHINE.

1,025,670.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed September 20, 1911. Serial No. 650,440.

To all whom it may concern:

Be it known that I, GEORGE BARR, a citizen of the United States of America, and resident of Hamilton, in the county of Wentworth and Province of Ontario, Canada, have invented new and useful Improvements in Spike-Machines, of which the following is a specification.

My invention relates to improvements in railroad spike machines in which a header bar provided with a steel heading die, extending therefrom, adapted by pressure to engage the forward end of a rigidly held spike blank and thereby forge a suitable head on the same.

The objects of my invention are, first, to provide a horizontally disposed means adapted to horizontally engage the forward end of a spike blank and by a slightly downward movement of said means, forge a head having a greater extension on the bottom than on the sides of the spike, second, to provide means for producing a spike having an enlarged or curved neck; third, to provide adjustable means whereby the material of which the head is composed shall receive a horizontal push previous to forging the metal downward.

I attain these objects by the mechanism illustrated in the accompanying drawing, in which:—

Figure 1 is a side elevation of the spike machine embodying my improvements, showing the stroke of the machine at its terminus and the head forged on the spike. Fig. 2 is a front end elevation of the heading lever fulcrumed to the bed, the heading bar in section, together with the sectional heading die in said header bar. Fig. 3 is a plan of the fore end part of the header bar, showing the steel die extending forwardly therefrom, and Fig. 4 is a plan of the rigid chilled die which supports the spike while being headed.

Similar letters refer to similar parts throughout the several views.

In the drawing A is the rigid bed of the machine, and should be substantially constructed to resist any vibrations of the operating parts, and B, is a rear and upper extension of the bed.

C, is the transverse rotatable drive shaft, of the machine, and extends through the extension B.

D, is a crank secured on the shaft C, and E is the crank pin, to which is loosely secured the connecting rod F, and the opposite end of said rod is loosely connected to the upper end part of the heading lever H, by means of a transverse pin I, the lower end of which is fulcrumed at J, to a lower part of the rigid bed.

M, is a bearing rigidly secured to the bed A, by means of bolts N, and the bolt holes are slotted as at 2, to allow adjustment of the bearing toward either end of the machine. The bearing M, is provided with a transverse pin P, to which is pivotally connected the upper link R, which is provided with a transverse pin S. The link R, is adapted to rock or oscillate on the bearing M.

T, is a header bar, horizontally arranged, and the rear end of said bar is pivotally connected to the pin S. A suitable distance from the opposite, or front end, of the header bar T, is a transverse pin V, which loosely connects the heading lever H, to the header bar T.

3, is a steel heading die, which fits snugly in the forward end portion of the header bar T, and is withdrawable therefrom. An upper suitable set screw 4, is provided to screw into the header bar and thereby contact with the die 3, to hold said die. The hole 6 is to allow the insertion of a plate to counteract the wear of the operating end of the die 3. The forward end of the projecting head of the die 3, is suitably curved, or recessed, to the desired shape of the head 9, of the spike 8, and it will be noticed that the lower part of the head of the spike extends downwardly a greater distance from the neck of the spike, than does the sides and the top of the head.

10, is a chilled die, rigidly secured to the bed A, and of suitable shape and form, and the upper central part is semicircularly recessed, that is, recessed sufficiently to hold the spike firmly and be below the top of the spike as shown in broken lines. The rear, or head end of the upper part of the chilled

die 10, is vertical, and a distance from the forward end of the header bar T.

12 and 12 are feed rollers in a frame 13, which is rigidly secured to the bed A, and are for the purpose of feeding the spikes to the machine into the die 10, after the blank has been pointed. The rollers 12 and 12 are not in the object and purpose of this invention, nor is the manner or method of pointing the opposite end of the spike, as shown.

It will be noticed, in Fig. 4, of the drawing, that the horizontal recess in the chilled die 10, previously referred to, that said recess is indicated by 14 and that the rear end, or head end, of said recess flares outwardly as at 15 on both sides and also at the bottom of the recess as at 16. This feature in the recess, allows the neck of the spike to be slightly curved to the head part thereof, when operated upon, by the pressure of the horizontal die 3.

When in operation, the heated spike 8, is pushed by mechanical means, in its recess 14, in the die 10, and extending a distance beyond the flared parts 15, in said die, and sufficiently to provide sufficient material to form the enlarged neck and head of the spike from the extending blank end thereof. The spike is rigidly secured in place by an ordinary gripping device, and the heading die 3, is then brought to bear upon the extending blank end of the spike, by means of the mechanism as shown, and the neck and head are simultaneously formed on the spike.

The motion of the header bar T, together with the heading die 3, are almost horizontal, to the contact of said die with the blank end of the spike, then the motion is still horizontally inclined and simultaneously therewith a downward motion is produced until the head of the spike is formed, as shown.

The object of the adjustable link, is to provide a means of giving the stock or material of which the head is to be formed a more or less straight blow, as the initial pressure is applied to the stock before the bending downward of the head takes place, as shown in Fig. 1 of the drawing. The swelled neck is made by a parallel and downwardly inclined blow on the stock by the heading die 3, to fill the recess in the

front part of the stationary die 10, thereby forming the swelled neck on the spike.

What I claim as my invention and desire to secure by Letters Patent, is:—

1. In a spike machine, a rigid bed, a heading lever pivotally connected thereto, a horizontal header bar pivotally connected to the lever, a bearing adjustably connected to the bed, a link pivotally connected to the bearing and to one end of the header bar, a removable heading die in the opposite end of the heading bar, a rotary driving shaft journaled in the bed, a crank secured on the shaft, and a rod loosely connected to said crank and to the opposite end of the heading lever, adapted to impart a downwardly inclined horizontal motion to said header bar.

2. In a spike machine, a rigid bed, a bearing secured thereto, means for allowing the adjustment of the bearing, a link pivotally connected to the bearing, a heading lever pivotally connected to the bed, a header bar pivotally connected to the opposite end of the link, a main shaft adapted to rotate in the bed, a rotary crank on the shaft, a rod loosely connecting the crank and the opposite end of said heading lever, a centrally located part of said heading loosely connected to a forward part of said header bar thereby imparting a downwardly inclined horizontal movement to the header bar.

3. In a spike machine, a rigid bed, a heading lever pivotally connected thereto, a horizontal header bar loosely connected to a central part of the lever, a bearing adapted to horizontal adjustment on the bed, a link loosely connected to the bearing and to one end of the header bar, a removable concaved header die in the opposite end of the bar, a rotary driving shaft journaled in the bed, a crank secured on said shaft, a rod loosely connecting said crank and the opposite end of the lever, thereby imparting a horizontal and downwardly inclined motion to the header bar, and a chilled die, having a recess, rigid with the bed, and opposite to the heading die, and adapted to receive the blank of the spike previous to the contact of the header die therewith.

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Witnesses:

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