No Printed Specification Available

Sheet 1, 2 Sheets.

T. W. Harvey.

7629X

Making Rivets.

Patented Jun. 29, 1833.

Fig: 1.

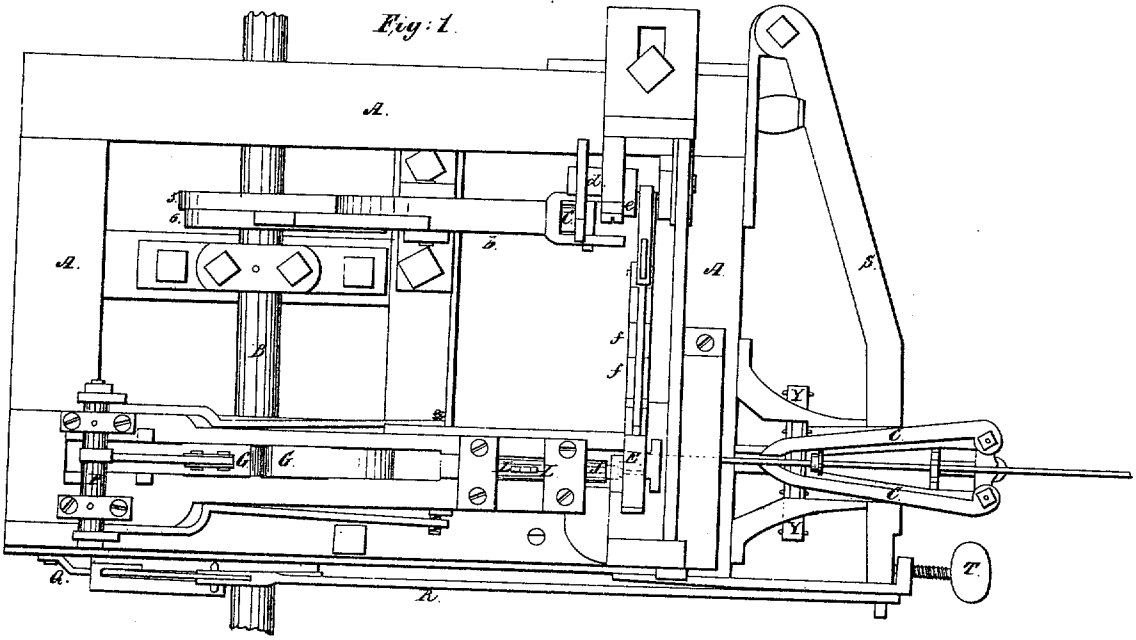
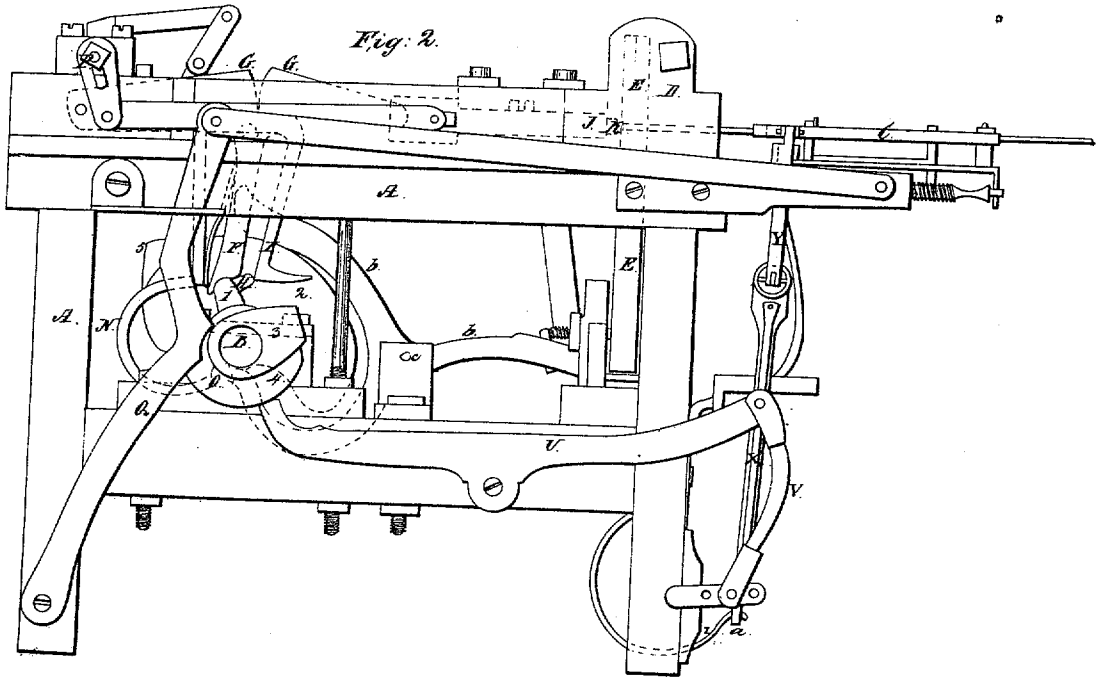


Fig: 2.



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Fig. 3.

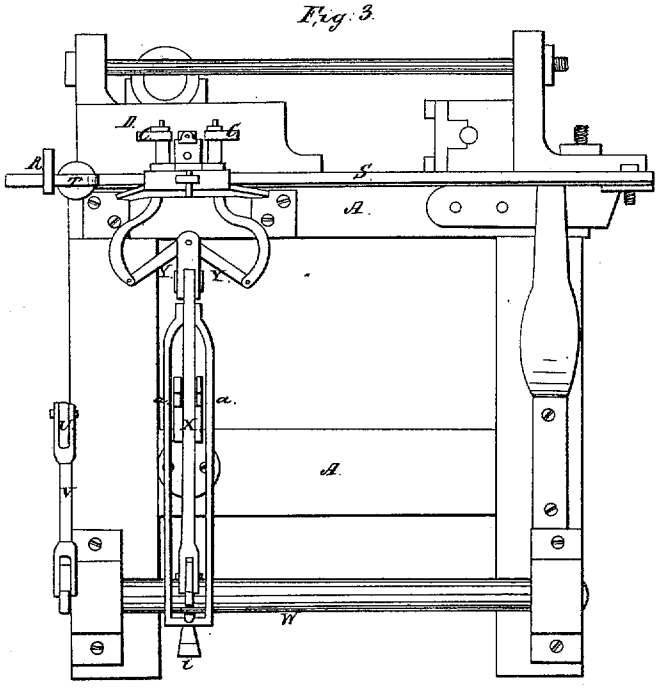
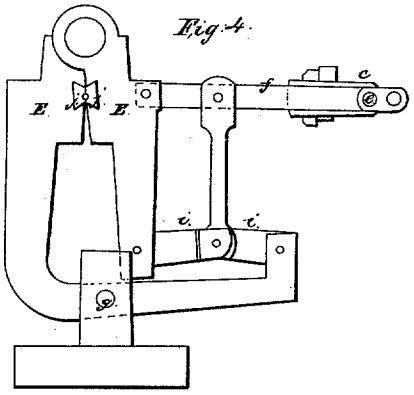


Fig. 4.



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June 29 1833 93.

Thomas H Harvey

Letters Patent

To all whom it may concern: Be it known that I T. H. Harvey have invented certain improvements in the machinery for making screws for Steam Engine Boilers and for other purposes and which is also applicable to the heading of wood screws, bolts, and other articles upon which heads are to be formed by pressure And I do hereby declare that the following is a full and exact description thereof — Reference being had to the accompanying drawings AA represents the frame of the machine. The shaft B is that by which the driving power is applied and which operates by means of cams on the other parts of the machine. Having described the principles to be peculiarly characteristic of my invention I will proceed to describe the manner in which the same is to be carried into effect. The wire is cut to the proper length and fed into the machine by the feeding gage C.C. which are represented as holding the wire in the position that the head D and is to be formed. The wire is then firmly confined between these the head resting on a gage at top. When thus confined the punch which forms within the wire is made to advance upon the platen which projects within the head and thus forms the head. The cutting of the shank of the rivet is effected by the revolution of the shears. A lateral motion being given to them by the cam on the shaft. Upon the inner side of the head D there is a slot or flat surface. Upon the inner side of the head D there is a slot or flat surface. Through which the screw or rivet passes. which flat or slot is one part of the collet. The die in the shears is of such thickness as one half of the collet. The die in the shears is of such thickness as one fourth of the length of the shank of the rivet. And as soon as the shears with the length of the shank of the rivet. And as soon as the head is formed by the heading die and becomes cleared. The shears retreat and cut off the rivet by their action on each other by that of the dies against the before named steel plate. The action of the cams mentioned by the following. Cam a b c on the drawing which under the arrangement upon the shaft [illegible] moves to and fro the third upon the shaft [illegible] moves to and from the toggle joint

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by which the heading die is forced forward. This it effects by acting upon the moving piece P which is attached by a pivot or joint to the main toggle joint GG. The greater part of which as seen in Fig 2. is represented by dotted lines as in the actual machine it is hidden by other parts.

Upon this Cam (No 1.) is usually form a tongue which falls into a slot made to receive it in the moveable lever L. The tongue is seen at H fig 2 & 4 which by touching against the piece I. keeps the cam in its place whilst its action is against the socket J of the heading die in this instance the slider. The die K being usually keyed in with double keys LL. but it may sometimes be merely clamped into its place. The Cam No 2. which is the lowest upon the shaft B. serves to bring the toggle joint GG back which it does by acting upon the second lever N which lays on the lower end in a mortise O against which the cam acts. The upper end of the lever is attached to one of the arms of the main toggle joint. The socket of the heading die may be connected to the toggle joint and actuated in various ways. I have sometimes done this in the way shown in the drawing by the rod of the second shaft E and the lever and slider connected with it, which are acted upon by the motion of the main toggle joint. But as very considerable variation can take place in doing this I do not intend in general to follow this arrangement I shall not therefore particularize it. Cam No 3 acts against the lever Q which draws back the rod R and with it the feeding finger CC. These fingers are attached to the lever S by their under sides, and by means of the screw T the feeding is regulated with the utmost precision. Cam No 4 acts upon the lever U this connects at one end by means of a joint to the rod V. which by another joint at its opposite end turns the roller W Fig 3 which is a front view of the machine. This roller thereby rises and depresses the pointed rod X which when drawn down straight cuts the wires YY. and clears the gripping jaws. The elevation of these jaws whereby to insert them Z is a spring which keeping against the steady a. a. draws the wires YY down when the cam which directly them is not in action. Cams 5 & 6 serve to elevate and depress the levers bbb. Figs 1. 2 when fastened as at L. the two socket ends of the lever being

united by three cams respectively, from the lever L a pitman rod connected
C. fig 1. connected with with the shaft L on which also there is a crank
C which works the rod or bar backwards and forwards in so doing vibrate
the shears B in a way which may be distinctly seen in fig 4. y being
the point on which the vibration takes place and which serves to cut off
the wire in the manner before described. The parallel rails L. by the vibra
tion of the bar F opens and closes the jaws of the shears. This effects
by means of the toggle joints, it as will be obvious from inspection of
the drawing. fig. no. The cog wheels give the rod. The machine
will of course vary in size according to the nature of the work it is intended
to perform. In the annexed drawings it is shown of one half
the actual size of the described machine which I consider a handy size
for. For an adaptable work for Steam boilers and similar objects
I make the frame five feet long, four feet wide and three feet ten inches
high. The main toggle joint bar three feet long, and vibrating on
centres five inches and a half apart, working a slide of one inch and a half in
the bearing &c. The shears I make to vibrate two inches and a half inches.
In the foregoing description I have followed the arrangement made
in the sketch of a machine which I have actually constructed. I have
in that machine a self-acting apparatus for causing the needle to move
laterally, the same alike shifting from it in minor points of mere
detail. The number of cams upon the main shaft may be increased
or diminished, and the form or direction of the levers upon which they
operate may be indefinitely varied without the machine ceasing essen
tially the same.

Most of the operating parts which I have
described and represented are not when taken individually new,
but I have so combined them as to form the first complete machine
for the purpose and effect stated as new and useful. (It is therefore
upon the general arrangement and combination of the parts by which
the machine is distinguished from all others which have been constructed
for similar purposes, that I found my claim to a patent in the
individual parts. However I claim the particular construction of
the cam No 1 as described and represented. I also claim the arrange

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mint of the Eggle jaws by which the sheets are opened and closed.
by the vibrations of the bar marked f in the drawing. Having thus
given a full description of my said machine, and having pointed out
what I particularly claim as new therein: I would observe that
of the size in such case made and provided. I will now add for
the information of those who may construct, & use the same, that in
the making of the larger kind of wire G. the rods must be heated prior
to which should be made for allowing water to run upon the dies to pre-
vent them from being softened

Witness
Wm. Hinds
Jas. Andrews

Thomas H. Harvey.

Copy of patent fees (1458 Words)