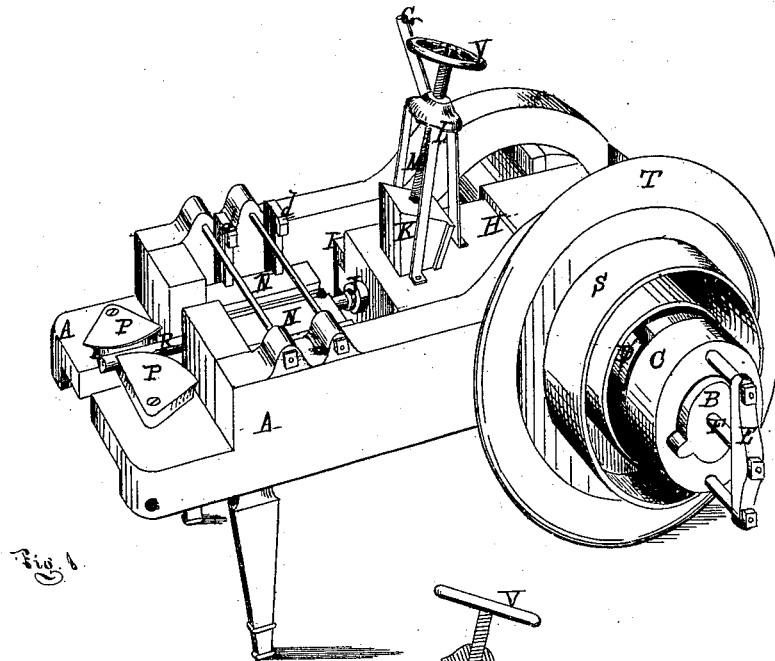


*By J. A. Briscoe,*

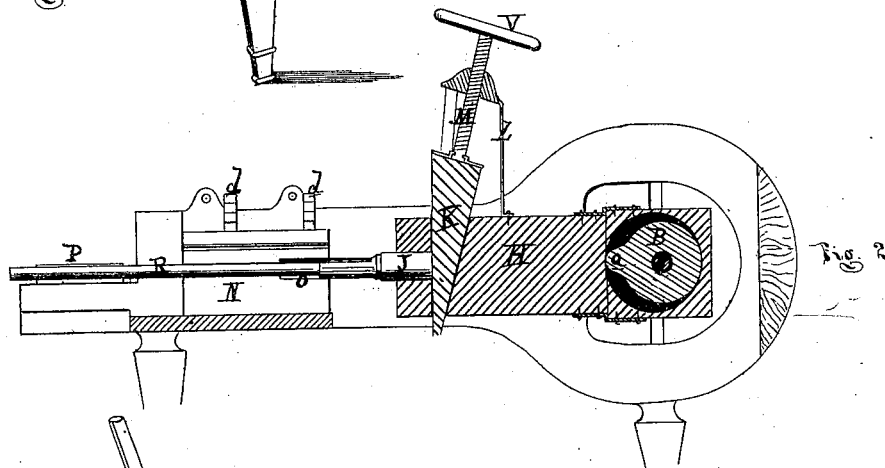
*Bolt Machine.*

*No. 112,775.*

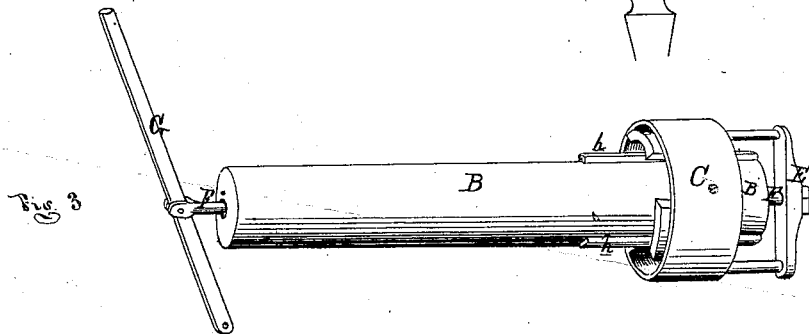
*Patented Mar. 21. 1871.*



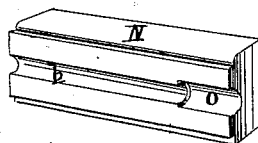
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

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*No. Stewart*

INVENTOR  
*Benjamin Briscoe*  
*Joseph A. Briscoe,*  
*per Atty*  
*Thos. C. Sprague*

# United States Patent Office.

BENJAMIN BRISCOE AND JOSEPH A. BRISCOE, OF DETROIT, MICHIGAN, ASSIGNORS  
TO THE MICHIGAN BOLT AND NUT COMPANY, OF SAME PLACE.

Letters Patent No. 112,775, dated March 21, 1871.

## IMPROVEMENT IN MACHINES FOR UPSETTING BOLTS.

The Schedule referred to in these Letters Patent and making part of the same.

### *To whom it may concern:*

Be it known that we, BENJAMIN BRISCOE and JOSEPH A. BRISCOE, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Machine for Upsetting Bridge and other Bolts; and we do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective of our improved machine.

Figure 2 is a vertical longitudinal section.

Figure 3 is a perspective of the driving-shaft, showing our improved clutch.

Figure 4 is a perspective of one of the dies.

Like letters refer to like parts in each figure.

The nature of this invention relates to an improved construction of a machine for upsetting the ends of bolts, where it is desired that the bolt should be of a uniform size, and not weakened by cutting the necessary thread to engage with the nut; in other words, a machine that will upset the ends of said bolts to the extent of the depth of the thread.

The invention consists in the method of forming the heads of bolts, and in the combination and arrangement of the devices employed for that purpose, all as more fully hereinafter described.

In the accompanying drawing—

A represents the two sides of a frame which sustains the operating parts of the device.

At one end of this frame is securely journaled the shaft B, which, near the center of its length, is provided with a cam, *a*, for the purpose hereinafter specified.

C is one-half of a clutch, which is sleeved on the end of the shaft B, and secured in its rotation therewith by the keys *h*, in such a manner that the clutch may have a lateral movement, said keys acting as slides to govern said lateral movement.

D is the other half of the clutch, which is secured to the pulley S, and it is sleeved upon said shaft, and only communicates motion thereto when in engagement with the other half C of the clutch.

E is a yoke secured to half C of the clutch, and has, in turn, secured to its center the connecting-rod F, which passes longitudinally through a suitable bore through the center of the shaft B, and at its opposite end said connecting-rod is pivoted to a handle, G, the lower end of which is pivoted to the frame A.

The pulley S, with its half D of the clutch, runs as a loose pulley on the shaft B, except when, by means of the handle and connecting-rod, the other half C of the clutch is brought into engagement with the half D.

H is a box with an orifice through the same, as shown in fig. 2, and forms a cam-yoke, within which the shaft B, with its cam *a*, rotates.

This box has a reciprocating motion upon the slides I, upon the inner sides of the frame.

Near its front end this box has a wedge-shaped slot cut through it, within which the wedge K has a vertical movement by means of the screw M and hand-wheel V, which are sustained by the yoke L, the lower part of which is secured to the top of the box H.

J is a ram fitted into a suitable orifice in the front end of the box, as shown, and the rear end of this ram extends rearward until it impinges against the wedge-K.

N N are two plates fitting between the sides of the frame, where they are held in place and in relation to each other by means of the keys or wedges *d d*.

These plates are provided, upon their inner edges, with grooves or channels *b*, corresponding in diameter to the size of the bolt R, upon which it is designed to operate.

This channel is enlarged to form a die, O, and when the plates are in places the channel should be in line with the line of motion of the ram J.

P are grooved cam-guides, for steadying and holding the bolt R while being operated upon.

In the operation of this machine, the bolt R, which is to be upset, is inserted in the channel *b*, in the plates N, until its inner end projects to the end of the die-part O thereof.

The wedge K is partially withdrawn by means of the hand-wheel V and screw M.

The two half-cheeks are then thrown into engagement, when the shaft B is rotated by means of the pulley S and any convenient power.

In the rotation of the shaft, the cam *a* gives a horizontal reciprocating motion to the box H, and the ram J inserted in the end thereof.

At each reciprocation the ram strikes against the head of the bolt presented within the die O and upsets the same, the grooved cams P holding the bolt firm in its place.

The operator, at each forward reciprocation of the box, gives a turn to the hand-wheel V, which compels the wedge K to enter further, thereby giving a longer stroke to the ram. This operation is repeated until the end of the bolt is upset sufficiently to fill the die O.

What we claim as our invention, and desire to secure by Letters Patent, is—

As an improvement in the method of forming the heads of bolts, supplementing the upsetting action of the heading-tool, when forced up and held by a cam in the usual manner, by another action of said heading-tool, effected by forcing the wedge K down between the rear end of said tool and a solid bearing in the block H, as herein described.

BENJAMIN BRISCOE.  
JOSEPH A. BRISCOE.

Witnesses:

M. STEWART,  
H. F. EBERTS.