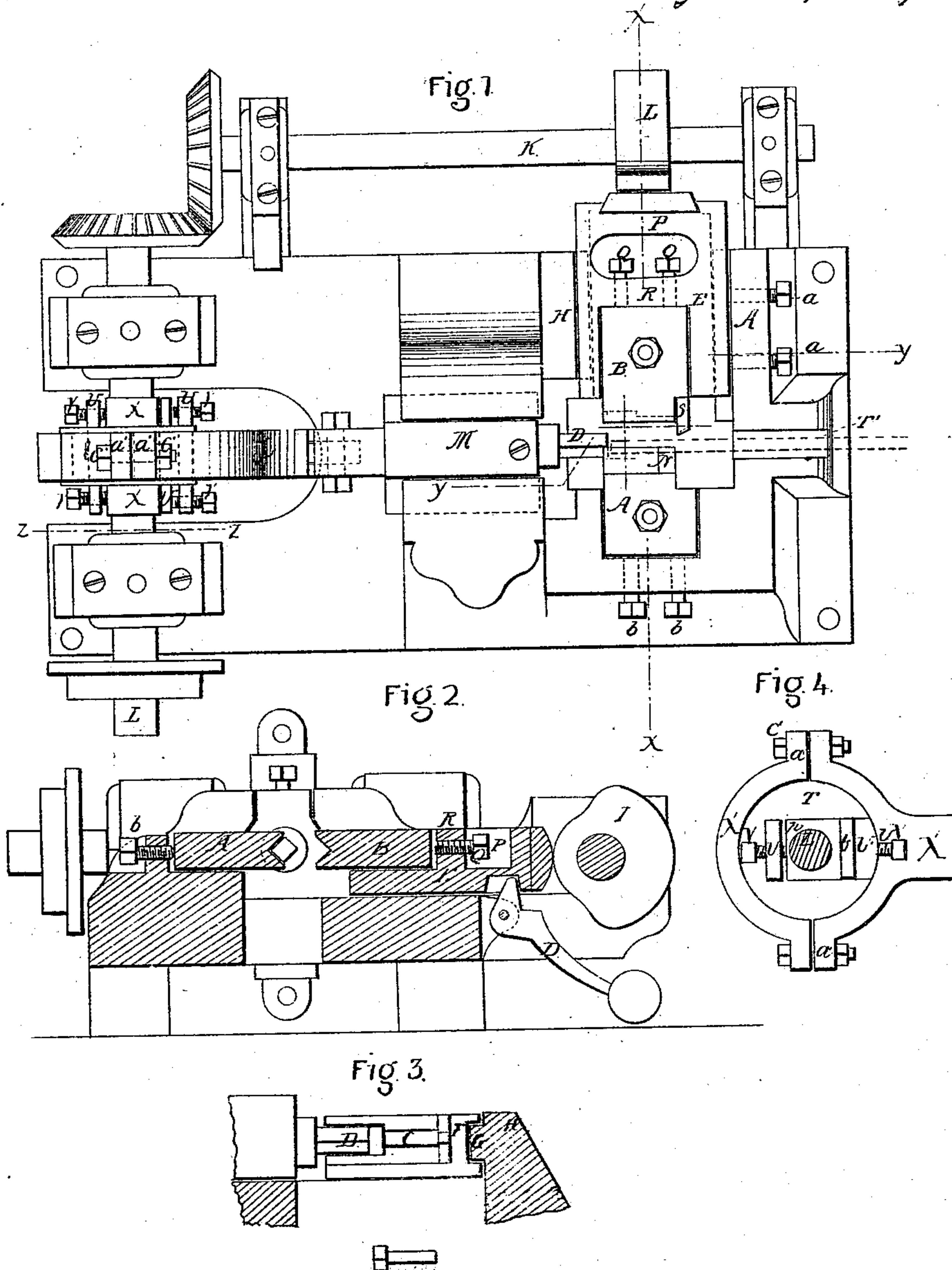


*D. G. Morris.*  
*Bolt Heading Mach.*

*N<sup>o</sup> 94,021.*

*Patented Aug. 24, 1869.*



Witnesses:

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# United States Patent Office.

DAVID G. MORRIS, OF CATASAUQUA, PENNSYLVANIA.

Letters Patent No. 94,021, dated August 24, 1869.

## IMPROVED MACHINE FOR HEADING BOLTS.

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

To all whom it may concern :

Be it known that I, DAVID G. MORRIS, of Catasauqua, in the county of Lehigh, and State of Pennsylvania, have invented a new and improved Bolt and Rivet-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in machines for heading bolts and rivets, and has for its object to provide certain improvements calculated to increase the efficiency of such machines.

The invention consists in an improved arrangement of certain parts.

Figure 1 represents a plan view of my improved machine;

Figure 2 represents a section on the line *x x* of fig. 1;

Figure 3 represents a section on the line *y y* of fig. 1; and

Figure 4 is a section, through the line *z z* of fig. 1, of the shaft L, showing the eccentric by which the header is operated, also the ears and set-screws for adjusting the same.

Similar letters of reference indicate corresponding parts.

A and B represent the clamping and holding-dies, having in their faces the semicircular clamping-grooves *c*, for holding the blank, and the rectangular enlarged grooves D, for the header D.

The one, A, is fixed in its position in the usual way, but the die B is adjustably arranged in a recess in a sliding carrier, E, having grooves F, in its vertical sides, wherein tongues G, of the brackets H, project, forming slides, whereon the said carrier works.

The carrier E is operated in the forward movement by a cam I, on a shaft K, which is driven by the main shaft L, which also operates the stock M of the heading-die.

The said carrier is operated in the opposite direction by a weighted lever, O, which is raised by the forward movement, to be permitted to act when the cam I is in the position to allow the carrier to be retracted.

Behind the recess in the carrier, wherein the die is placed, another recess, P, is formed, from which set-screws Q are screwed through the wall R, intervening between the two recesses for the adjustment of the dies.

The stationary cutter N is fixed to the stationary die, and forms a part thereof, being grooved to coincide with the groove in the said die.

The movable cutter S is securely connected to the movable die, and arranged so as to lap by the rear of the fixed die, and to resist the end-thrust of the blank under the action of the header.

*a a* are set-screws, passing horizontally through the upper outer portion of the bracket H, whose use is to adjust the carrier E, so that the cutter S may always be made to work in proper relation to the cutter N, *i. e.*, to preserve a close shearing-cut.

The heated bar is fed in through a recess T, in the die-supports, against the end of the header, when it is retracted and the gripping-jaws are opened.

T indicates an eccentric, arranged on the squared portion *x* of the shaft L, and held in the circular opening in the stirrup X, connected to the header. Said stirrup is formed in two parts, whose flanged adjacent ends *a'* are secured together by screw-bolts and nuts *c'*, said ends being slightly separated to allow of their adjustment, whereby to compensate for the wear of the contiguous portions of the stirrup and eccentric. The square opening in the latter is made larger than the squared portion *x* of shaft L, to allow the insertion of one or more blocks U' of wood or metal.

V are set-screws, passing through lugs or ears U, formed on the eccentric, their inner ends resting on the shaft or block U', as the case may be. The latter may be changed from one side to the other of the shaft as required.

It will be seen that by adjusting the set-screws V, the eccentric T will be likewise adjusted, and thereby the stirrup also, the ultimate and desired effect of which will be to increase or diminish the throw of the header to make thinner or thicker heads on the bolts.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The construction and arrangement, with relation to each other, and the cam I on the shaft K, of the adjustable die-holders A and B, and the carrier E, sliding on tongues or ways formed on the bracket H, and provided with set-screws *a*, for adjusting the cutter S relative to the cutter N, as herein shown and described.

2. The arrangement of the eccentric T, arms U, and set-screws V, with relation to the squared portion X of the shaft L, as set forth and shown.

The above specification of my invention, signed by me, this      day of      , 1869.

D. G. MORRIS.

Witnesses:

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