

W. J. Lewis.

Making T-Head Bolts.

N<sup>o</sup> 54,377.

Patented May 1, 1866.

Fig. 1.

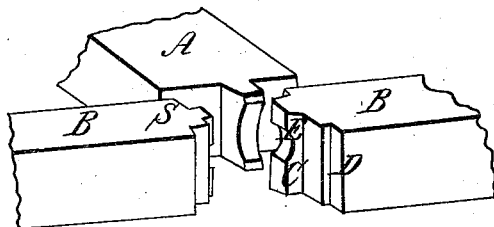


Fig. 2.

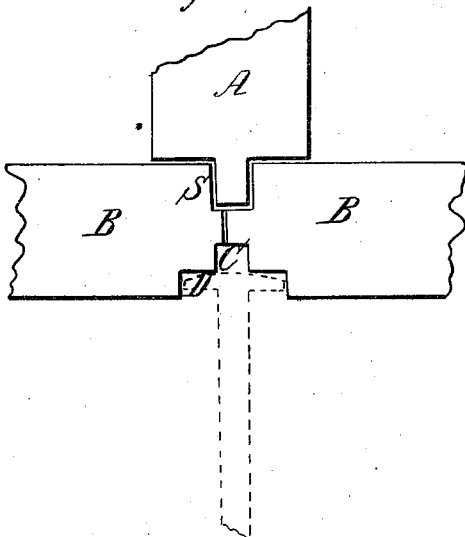


Fig. 3.

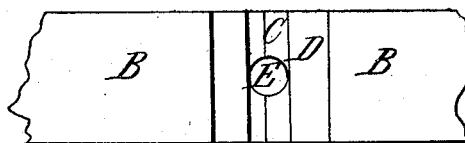
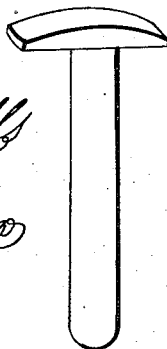


Fig. 4.



Witnesses;  
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WILLIAM J. LEWIS, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN DIES FOR MAKING T-HEAD BOLTS.

Specification forming part of Letters Patent No. 54,377, dated May 1, 1866.

*To all whom it may concern:*

Be it known that I, WILLIAM J. LEWIS, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Construction of Dies for Making T-Head Bolts; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, and to the letters of reference marked thereon.

The nature of my invention consists in constructing the gripping-dies of bolt-heading machines with a double recess in the front, or that part farthest from the header, in addition to the one in the back, whereby the bolt-head may be worked into proper shape by submitting it alternately to the action of both sides of the gripping-dies; also, in constructing the dies of such a shape that the surplusage of metal, which tends to work out between the joints and produce what is known as the "flash" or "fin," may, on turning the bolt, bring such flash or fin against the solid portion of the dies and work said surplusage into the head or body of the bolt, as the case may be.

To enable others to understand and make my dies, I will proceed to describe their construction by reference to the accompanying drawings, wherein—

Figure 1 represents a perspective view of the operating ends of my improved dies. Fig. 2 represents a top view of the same as seen when closed. Fig. 3 is a front view of the same. Fig. 4 represents a T-head bolt.

All the drawings are lettered, and similar letters denote corresponding parts in the several views.

I make my dies B B similar to those now in use; but in addition to the recess S, wherein the header A works, I form in the front of the dies B B, or that part farthest from the header, a couple of angular recesses, C D, constructed and made to operate as follows: The recess C is made narrower than the one in which the header works, so that the rod of iron which is spread out by the action of the header can be, on the opening of the dies B B, brought forward by the operator and inserted in the recess C, which, as the dies come together,

will compress the rough head laterally and increase its length, at the same time throwing that part of the iron that is spread out between the dies and the sides of the header nearer the center of the bolt. As the dies open again the operator turns the rod or bolt one-fourth way round, and in the outside recess, D, when the continued action of the dies squares up the ends of the head. On the release of the bolt by the dies the operator gives it another quarter-turn, and passes it to the opposite side of the dies for repeated action of the header. The head having been narrowed by lateral pressure of the dies B B in the recess C, the projecting fin or flash on top of the head is by this means brought into the path of the header A, which will overlap the edges of the narrowed head and drive the fin or flash into the body of the bolt.

It will be observed that the dies B B do not part exactly on a right line drawn longitudinally through the center of the header, but to one side of the cylindrical hole E, which is made deeper in one die than in the other, so that when the bolt is turned one-half way round that side of the bolt on which the fin was produced is brought opposite to the die having the deepest part of the cylindrical hole. It is obvious from this that the sides of this opening must overlap and drive in the flash or fin, making the bolt smooth underneath the head.

Having thus described my invention, what I claim is—

1. Constructing the gripping-dies of bolt-heading machines with a double or single recess in the front, or that part farthest from the header, in addition to the one in which the header works, whereby the bolt-head may be worked into proper shape by submitting it alternately to the action of both sides of the gripping-dies.

2. The mode herein described for driving the fin off the bolt-head—that is to say, first staving the rod to form the head, and subsequently compressing it laterally, so as to throw the flash or pin produced in staving in a line with the path of the header, so that on submitting the head to the action of the header a second time the fin will be driven into the body of the bolt.

3. Parting or separating the griping-dies on one side of a right line drawn longitudinally through the center of the header, so that the cylindrical hole will be deeper in one die than in the other, for the purpose of overlapping and driving off the fin produced on one side of the bolt by simply turning it one-half way round to bring the opposite side into the deepest recess.

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Witnesses:

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