(No Model.)

E. GRUNICH.

DEVICE FOR CLINCHING WIRE STAPLES.

No. 447,314. Patented Mar. 3, 1891.

Fig. 1.

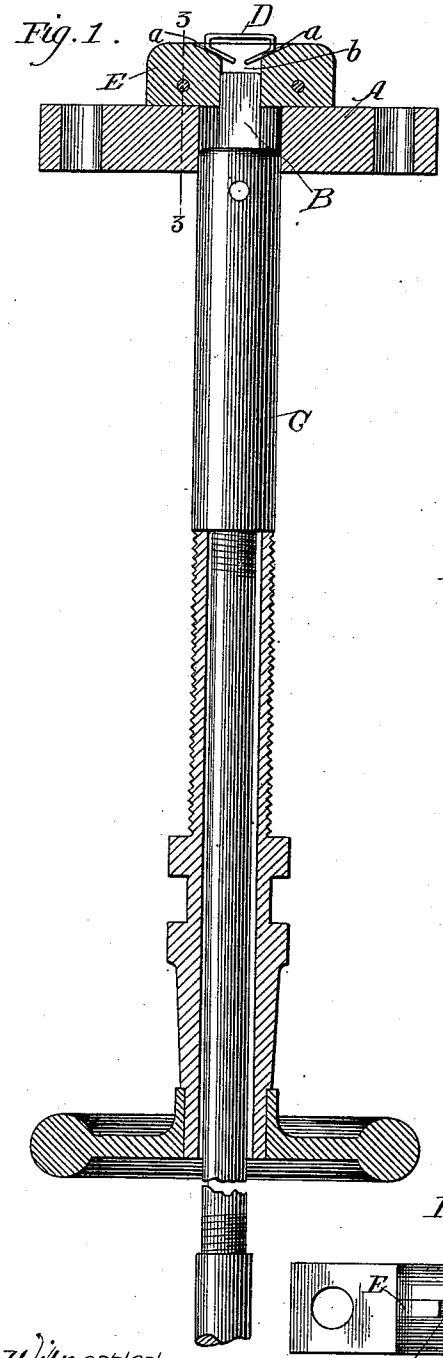


Fig. 2.

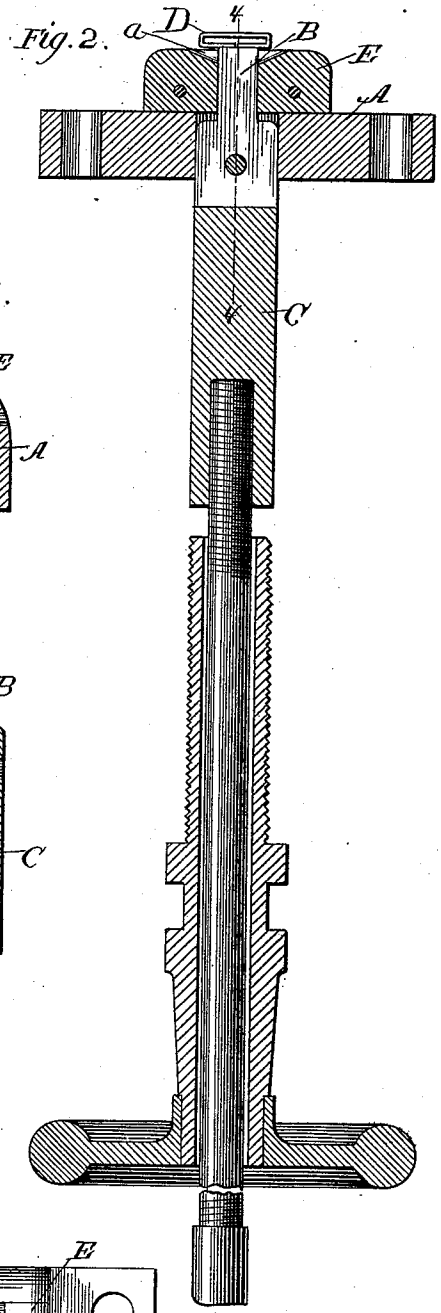


Fig. 3.

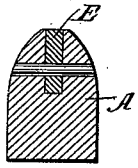


Fig. 4.

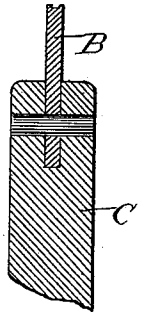
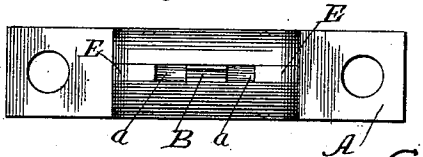


Fig. 5.



Witnesses:
Harry T. Jones.
Albert H. Adams.

Inventor:
Edward Grunich
by Wesley Bond
attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD GRUNICH, OF CHICAGO, ILLINOIS, ASSIGNOR TO EDWARD P. DONNELL, OF SAME PLACE.

DEVICE FOR CLINCHING WIRE STAPLES.

SPECIFICATION forming part of Letters Patent No. 447,314, dated March 3, 1891.

Application filed February 3, 1890. Serial No. 338,999. (No model.)

To all whom it may concern:

Be it known that I, EDWARD GRUNICH, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Devices for Clinching Wire Staples, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical section showing the clinching-die in its normal position. Fig. 2 is a similar view showing the clinching-die in its clinching position. Fig. 3 is a vertical section at line 3 3 of Fig. 1. Fig. 4 is a section, at line 4 4 of Fig. 2, through the clinching-die and its supporting-rod; and Fig. 5 is a top view.

This invention relates to devices for clinching wire staples, and is designed to be used on the class of machines shown in Letters Patent No. 386,972, granted to E. P. Donnell and S. McAuliffe, July 31, 1888; but it may be applied to any style of machine which is adapted to drive a two-pronged staple through paper or other material.

The object of this invention is to provide an improved device for clinching the ends of staples against the material through which the staples have been driven, which I accomplish as illustrated in the drawings and as hereinafter described.

That which I claim as new will be pointed out in the claim.

In the drawings, A represents an anvil, which is to be located in such position in the stapling-machine that the two ends of a driven staple will come in contact with its two oppositely-inclined bending-guides *a*. This anvil A is provided with a hole *b*, located centrally—*i. e.*, between the two oppositely-inclined bending-guides *a*.

B represents a clinching-die located in the hole *b*. This clinching-die B is supported upon a rod C, which is to be connected with suitable mechanism for moving it at the proper time. No such mechanism is shown, as such mechanism forms no part of my invention, and many of the common mechanisms for operating clinching devices may be adapted to operate my device. This clinching-die B is adapted to engage with both ends of a two-pronged staple after they have been bent by the bending-guides *a*, as shown in Fig. 1, and its acting face may be slightly recessed, as shown in Fig. 4, if desired.

D represents a staple.

The anvil A is to be supported in such manner that in relation to the clinching-die B it will be fixed or immovable—*i. e.*, if it has any movement in relation to the other parts of the machine the die B will have a corresponding movement. When the staple is driven against the bending-guides *a*, its ends will be bent into the form shown in Fig. 1, the points projecting over the holes *b*, as there shown. The clinching-die B will then rise and clinch the ends of the staple flat against the paper or material being stapled, as shown in Fig. 2, both ends being clinched alike. When desired, sufficient motion may be given to the die B to drive the staple ends slightly into the material being stapled. After the ends of the staple are clinched the die B will return to its normal position shown in Fig. 1.

As shown, the bending-grooves *a* in the anvil A are formed in an inset piece of steel E; but the anvil A may be made of a single piece with the grooves *a* formed therein.

As shown, the clinching-die B is attached to its supporting rod or stock C by a pin or screw, which renders it very cheaply renewable; but it is evident that the die B and stock or rod C may be made of a single piece without adding materially to the expense of renewals.

The device is primarily designed for use in stapling-machines wherein the anvil A is fixed, and the die B must be movable in relation thereto; but it is evident that a machine permitting of a movable anvil with a die fixed in relation thereto will accomplish the same object.

By the use of a central clinching-die in combination with two bending-grooves both ends of a staple are clinched equally against the paper.

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

In a device for clinching wire staples, the combination, with an anvil having two fixed and oppositely-inclined bending-guides and a central hole between the guides, of a central clinching-die and devices for positively actuating said die, substantially as and for the purpose specified.

EDWARD GRUNICH.

Witnesses:
HARRY T. JONES,
ROBERT A. MILLAR.