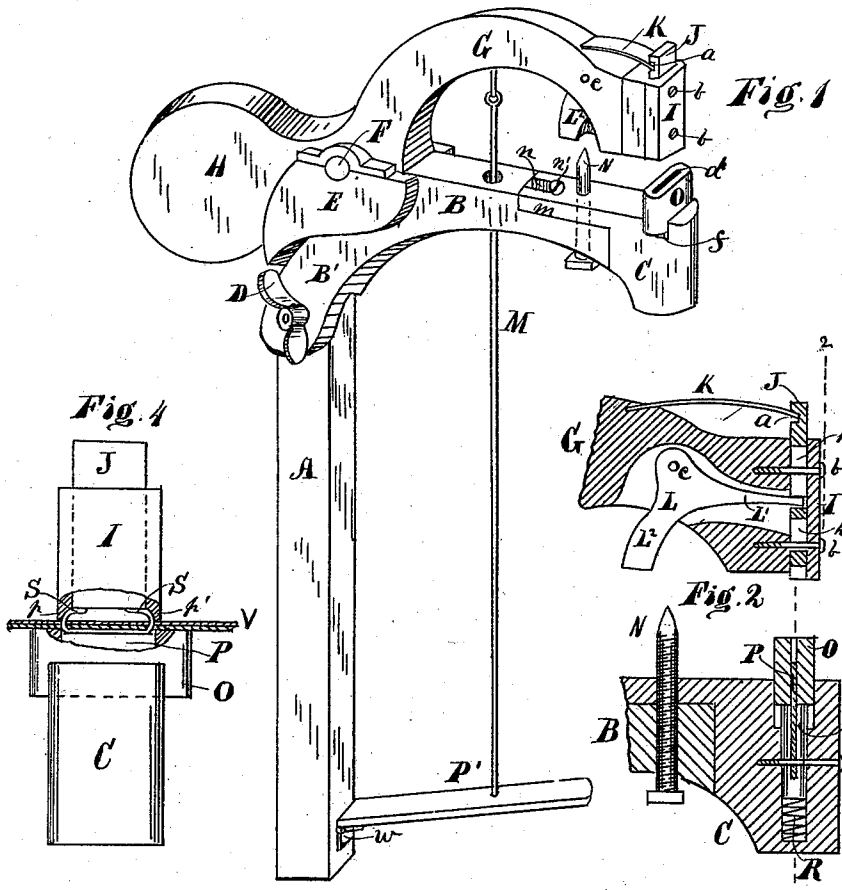
J. SHELLENBERGER.

Apparatus for Inserting, Bending, and Clinching Metallic Staples.

No. 221,979. Patented Nov. 25, 1879.



WITNESSES;

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JOHN SHELLENBERGER, OF NORTH INDIANAPOLIS, INDIANA.

IMPROVEMENT IN APPARATUS FOR INSERTING, BENDING, AND CLINCHING METALLIC STAPLES.

Specification forming part of Letters Patent No. **221,979**, dated November 25, 1879; application filed October 14, 1879.

To all whom it may concern:

Be it known that I, JOHN SHELLENBERGER, of North Indianapolis, county of Marion and State of Indiana, have invented a new and useful Improvement in Apparatus for Inserting, Bending, and Clinching Wire Staples in several thicknesses of thin material, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to provide a device for inserting, bending, and clinching wire staples in various thicknesses of material, such as the overlapping parts of veneer or pasteboard, tray-boxes, books, papers, &c.

My present invention is an improvement on my patent, No. 218,143, granted August 5, 1879, for an improved apparatus for inserting wire staples.

The first part of my invention consists in improved devices for inserting and bending the ends of the staples and clinching them after passing through the articles to be fastened together.

The second part of my invention consists in the new construction and arrangement of devices, and in the new combination of elements which are deemed essential for inserting, bending, and clinching staples in the articles to be secured together, as will first be fully described in the specification, and then set forth in the claims.

In illustrating and describing this invention several devices and combinations of devices are shown and described which are secured to me in my former patent referred to, therefore I now make no broad claim to them.

In the accompanying drawings, in which like letters of reference in the different figures indicate like parts, Figure 1 represents a perspective view of a machine embodying my invention. Fig. 2 is a longitudinal sectional view of the movable head and staple-holder, taken at the line 1 1, Fig. 3. Fig. 3 is a cross-section of the same, taken at the line 2 2, Fig. 2, and Fig. 4 represents a front view of the same, showing the staple forced home, bent, and ready to be clinched.

Referring to the drawings, A represents a vertical standard secured to the floor, and provided with a treadle, P′, hinged at *w*.

It is obvious that the treadle P′ may be secured to the floor instead of to the standard A. To the upper end of the standard is pivoted the bed B of the apparatus, and is secured by means of a bolt and nut, D, which bolt passes through the part B′ of the bed and upper end of the standard A in such manner as to allow the front end or staple-holder to be adjusted to any required angle, which is very convenient, in order to adapt the machine to the various heights required by different operators.

The bed B is provided with an adjustable head, C, with a joint, *m*, between them. The head C, also, is provided with a slot, *n*, in which the bolt *n′* is inserted, by means of which the head C may be adjusted forward or backward, if desired.

The staple-holder is of the same general construction as that shown in my former patent referred to—that is, the head C is provided on its upper side with a transverse slot, *f*. The central part of this slot is also provided with a vertical hole to receive the spring R and stud Q of the staple-holder O, and the slot *f* is further provided with a narrow recess or slit, in which is permanently secured the staple-driver P. The staple-holder O is a metallic block having a vertical slit, *d*, to receive and hold the staple S and upper end of the staple-driver P. The holder O is provided with a central stud, Q, which is inserted in the vertical hole in the center of the transverse slot *f* with the spring R below. The staple-holder O is thus adapted to be forced down in the slot *f* by the movable head above, and be raised by the spring R when the head is removed. The driver P, being permanently secured to the head C by the bolts or screws *g g*, and operating in the slit *d* of the movable holder O, causes the staple G (which is inserted in the slit *d*, and resting on the upper end of the driver P) to be driven up through the material V, as the upper head descends, and the staple is driven home on the under side by the downward movement of the holder O, all in the same manner as in my former patent referred to.

The upper or movable arm, G, is constructed similar to that shown in Fig. 1—that is, the rear end, H, forms a counter balance or weight to overbalance the curved arm G of the head,

and thus always keep the front end of the arm elevated when there is no pressure on the treadle P′. At the union of the arm G with the weight H the movable arm is provided with trunnions F, which operate in suitable bearings E formed in the bed B, as shown. The front end of the movable arm G is provided with a recess, L′, in which operates the bent lever L, said lever being pivoted at *e*, as shown in Fig. 2. The front end of the lever L projects forward, and operates in the hole *h* of the staple bending and clinching device J.

The downward-projecting arm L^2 of the lever is designed to strike against the pointed end of the adjustable stud-screw N, as the head descends, and thus operate the lever L and clinching device J, as will be hereinafter described.

The staple bending and clinching device J is a steel block, having a cross-slot, *a*, at its upper rear side, in which one end of the spring K operates. The other end of the spring is made fast to the upper part of the arm G, as shown. The device J is further provided with two slots, *h h′*, through which the screws *b b* are inserted to secure the cap I to the head. The lower screw, *b*, forms a stop to prevent the spring K from drawing the device J up too far, while the upper screw, *b*, also forms a stop to prevent the lever L from forcing the device too far down. The lower end of the block J is perfectly square, and, when at its extreme highest point, is a short distance above the end of the cap I, while the sides *p p′* of the cap I are beveled, as shown, for the purpose of bending the points of the staple, as will be hereinafter described. The arm G is operated or forced down by means of the treadle P′ and rod M, as shown.

The operation of my improved machine is as follows, to wit: A staple, S, is placed in the staple-holder O, as shown in Fig. 3. The material to be fastened together is then placed on it, and the arm G forced down by the treadle P and rod M. As the lower end of the cap I strikes the material that is to be fastened it forces the staple through, and also forces the staple-holder O down. As the ends of the staple pierce the material the curved sides *p p′* of the cap I bend the ends of the staple, as shown in Fig. 4, and the ends of the staple are finally clinched by means of the device J and lever L, as follows, to wit: The lever L comes in contact with the adjustable screw N after the ends of the staple are through the material and bent as in Fig. 4; and the lever forces the block J down, thus causing the ends of the staple to be firmly fastened to the upper side of the material, after which, by releasing the treadle, the weight H tilts the arm G up ready for the next operation.

Having thus described my invention, what I claim is—

1. In an apparatus for inserting, bending, and clinching staples, the adjustable bed B, the post A, the pivoted weighted movable arm G H, the treadle P′, and rod M, as and for the purpose specified.

2. The pivoted arm G, having a recess, L′, combined with the lever L, the staple-bending cap I, the clinching device J, and spring K, as and for the purpose specified.

3. In combination, the lever L, the bending-cap I, the clinching device J, and the adjustable screw N, as and for the purpose specified.

4. In an apparatus for inserting, bending, and clinching staples, the adjustable bed B, with the staple-holder O, having a slit, *d*, a stud, Q, a spring, R, and driver P, combined with the pivoted arm G, the lever L, the staple-bending cap I, and clinching device J, as and for the purpose specified.

5. The cap I, having its sides *p p′* at the lower end beveled, combined with the clinching device J, and staple-holder O, as and for the purpose specified.

6. In an apparatus for inserting, bending, and clinching staples, the adjustable bed B and pivoted weighted arm G, as and for the purpose specified.

7. In an apparatus for inserting, bending, and clinching staples, the adjustable bed B, having an adjustable head, C, provided with a staple-holder, O, with vertical slit *d*, stud Q, and staple-driver P, combined with the pivoted weighted arm G, the lever L, staple-bending cap I, and clinching device J, as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN SHELLENBERGER.

Witnesses:

E. O. FRINK,

D. F. SPEES.