J. SHELLENBERGER.

Apparatus for Inserting Wire-Staples.

No. 218,143. Patented Aug. 5, 1879.

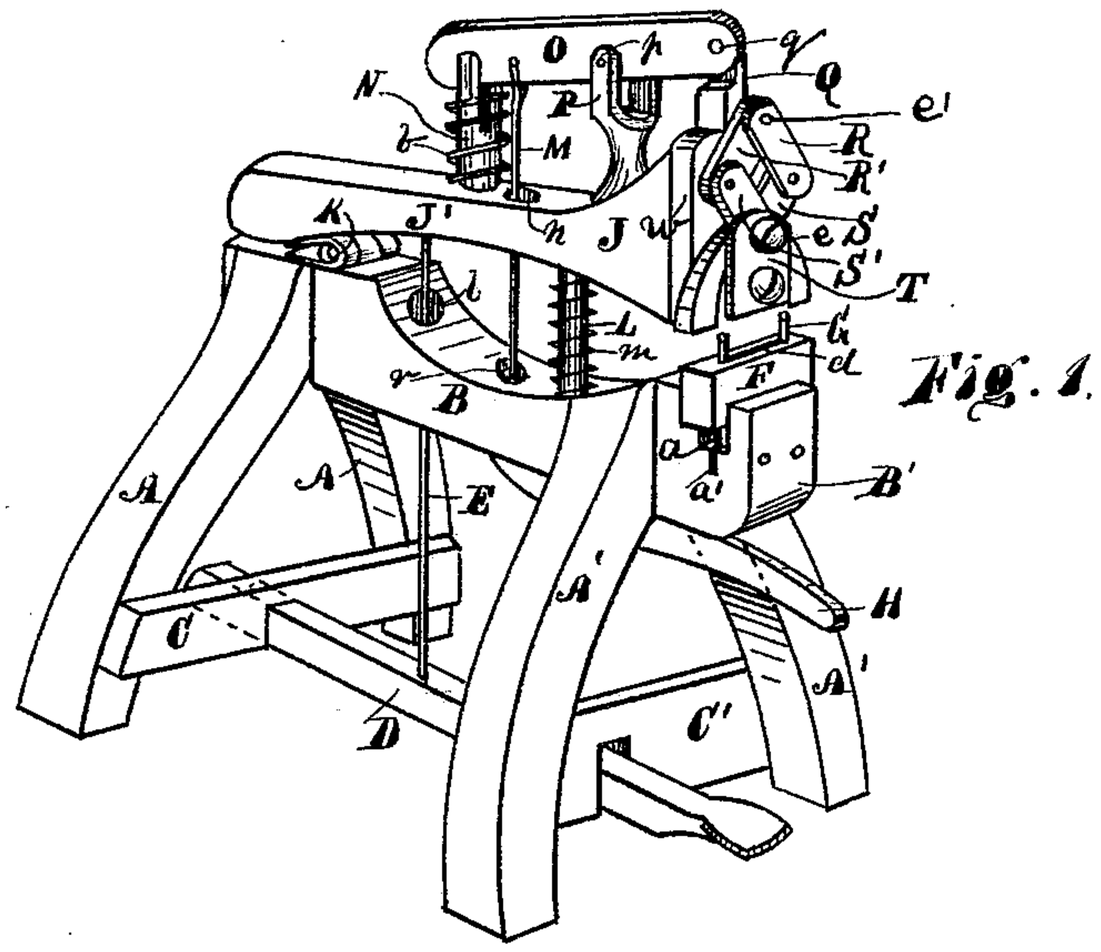

Fig. 1.

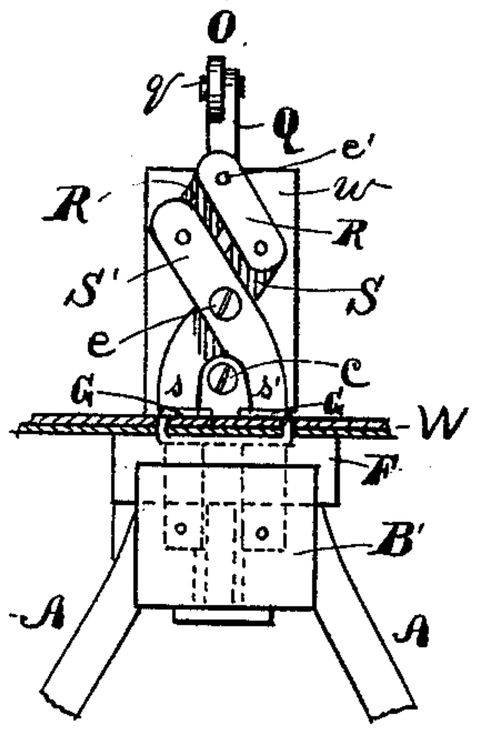

Fig. 3.

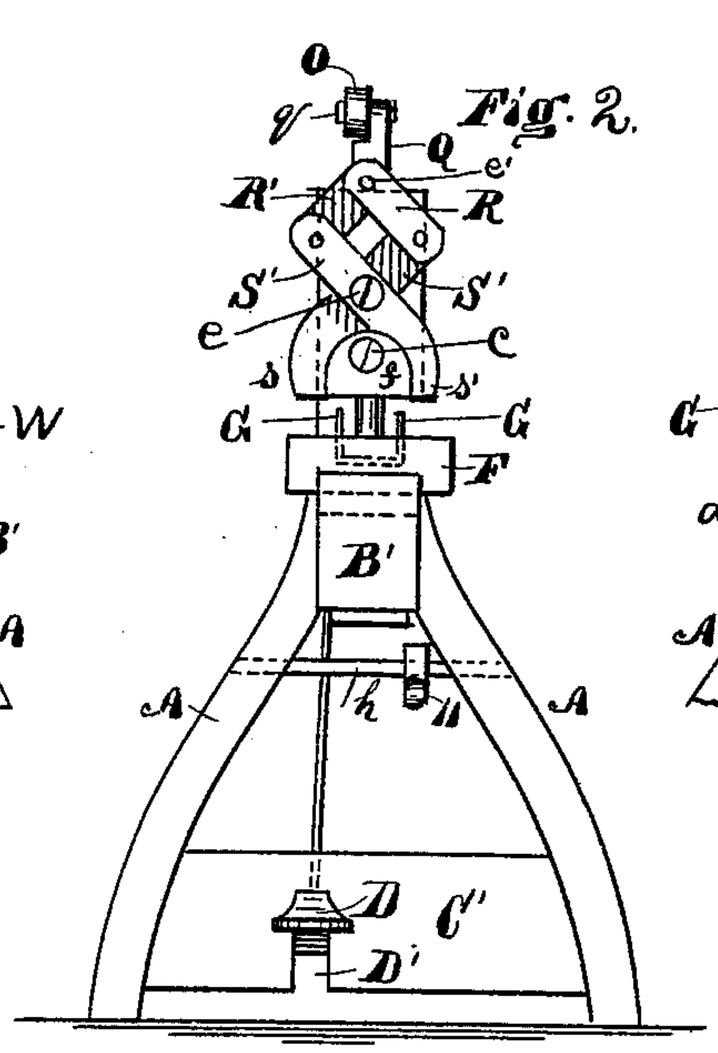

Fig. 2.

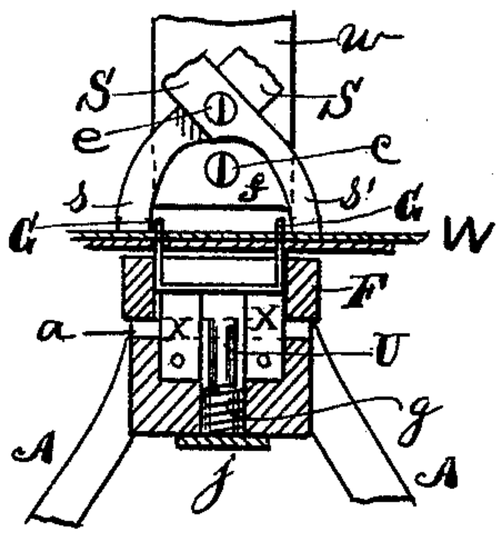

Fig. 4

WITNESSES;

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN APPARATUS FOR INSERTING WIRE STAPLES.

Specification forming part of Letters Patent No. **218,143**, dated August 5, 1879; application filed June 10, 1879.

To all whom it may concern:

Be it known that I, JOHN SHELLENBERGER, of North Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Apparatus for Inserting and Fastening 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 and fastening wire staples in various thicknesses of material, such as the overlapping parts of veneer or pasteboard, trays and boxes, books, papers, &c.

The first part of my invention consists in an improved device for holding and facilitating the insertion of wire staples 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 holding, inserting, and fastening staples in the articles to be secured together, as will first be fully described, and then set forth in the claims.

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 front elevation of the same, showing the staple ready to be inserted and clinched. Fig. 4 is a front view of the same, partially in section, showing the arrangement of parts more fully, and also showing the staple inserted through two thicknesses of material, ready to be forced up, and the ends bent or clinched; and Fig. 3 is a front view of the same, showing the staple forced home and clinched.

Referring to the drawings, A A A′ A′ represent the legs on which the bed B of the apparatus is mounted. The lower ends of each pair of legs are secured together by cross-bars C C′. On the bar C of the rear legs, A A, is pivoted the rear end of the treadle D. The front end of the treadle operates in a slot, D′, formed in the front bar, C′, thus forming a guide and preventing lateral movement of the treadle.

The bed B is provided with an extension or head, B′, at the front, in which, on the upper side, is cut or formed a transverse slot, *a*. The central part of this slot is also provided with a vertical hole to receive the spring *g* and stud U of the staple-holder F, and the slot *a* is further provided with a narrower recess or slit, *a′*, in the central part, in which are permanently secured the staple-drivers X X. The staple-holder F is a metallic block having a vertical slit, *d*, to receive the staple G and upper ends of the drivers X X. The holder F is also provided with a central stud, U, which is inserted in the vertical hole in the center of the transverse slot *a*, with the spring *g* below. The staple-holder F is thus adapted to be forced down in the slot *a* by the movable head above, and be rasied by the spring *g* when the head above is removed.

The drivers X X, being permanently secured to the head B′ and operating in the slit *d* of the movable holder F, cause the staple G (which is inserted in the slit *d* and resting on the upper ends of the pushers X X) to be driven up through the material W as the upper head, J, descends, and the staple G is driven home on the under side by the downward movement of the holder F, as will be hereinafter more fully described.

The upper or movable arm, J′, is hinged or pivoted at its rear end to the rear end of the bed B by the hinge K. The front end or head, J, of the arm is provided with a pair of lazy-tongs, consisting of the levers R R′ and S S′, constructed similar to that shown in the drawings. The tongs are pivoted to the front of the head J by the screw or stud *e*. The upper levers, R R′, are pivoted together and also pivoted to the slider Q by the stud *e′*, the slider Q operating in a vertical slot formed in the head J. The lower ends, *s s′*, of the levers S S′ form the tongs to bend and clinch the ends of the staple.

The slider Q is pivoted to the lever O at *q*, and the lever O is pivoted to the standard P at *p*. The rear end of the lever O operates in a forked standard, N, which also forms a guide for the lever and a support for the spring *b*. The spring *b* is designed to force the rear end of the lever up after it has been drawn down, and thus open the tongs R R′ S S′ ready for operation on the staple G. The lever O is operated and the tongs S S′ closed to bend the

ends of the staples and clinch them on the material that is to be fastened by means of a hand-lever, H, and a connecting-rod M. The arm J′ is held up by means of the spring *m* on the stud L, thus leaving a space between the head J and staple-holder to insert the staples and the material to be fastened.

The arm J′ is operated by the lever D and rod E, and the head J caused to force the staples through the material W, and the staples are driven home on the lower side of the material by the drivers X X as the holder F is depressed, after which the lever H is operated and the tongs S S′ closed, thus bending the ends of the staples and clinching them on the material W, as shown in Fig. 3. The levers H and D are then released and the head J is raised and the tongs S S′ opened ready for another similar operation.

Having thus described my invention, what I claim is—

1. In an apparatus for inserting and clinching staples, the staple-holder F, with vertical slit *d* and stud U, combined with the head B′, the drivers X X, and spring *g*, substantially as described and set forth.

2. The staple-holder F, with vertical slit *d* and stud U, combined with the head B′, drivers X X, spring *g*, and movable head J, substantially as described and set forth.

3. The tongs S S′, pivoted to the head J and operated by the lever O, rod M, and lever H, as and for the purpose specified.

4. In combination with the head B′, having a movable staple-holding block, F, with stationary staple-drivers X X inside, the removable head J J′, having a pair of tongs, S S′, on its face, the movable head J′ being operated by the lever D and rod E, and the tongs operated by the levers O and H and connecting-rod M, substantially as described and set forth.

5. In an apparatus for inserting and clamping staples, the bed B, with movable staple-holding device F, combined with the movable head J and staple-closing tongs S S′, substantially as described and set forth.

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

JOHN SHELLENBERGER.

Witnesses:

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D. F. SPEES.