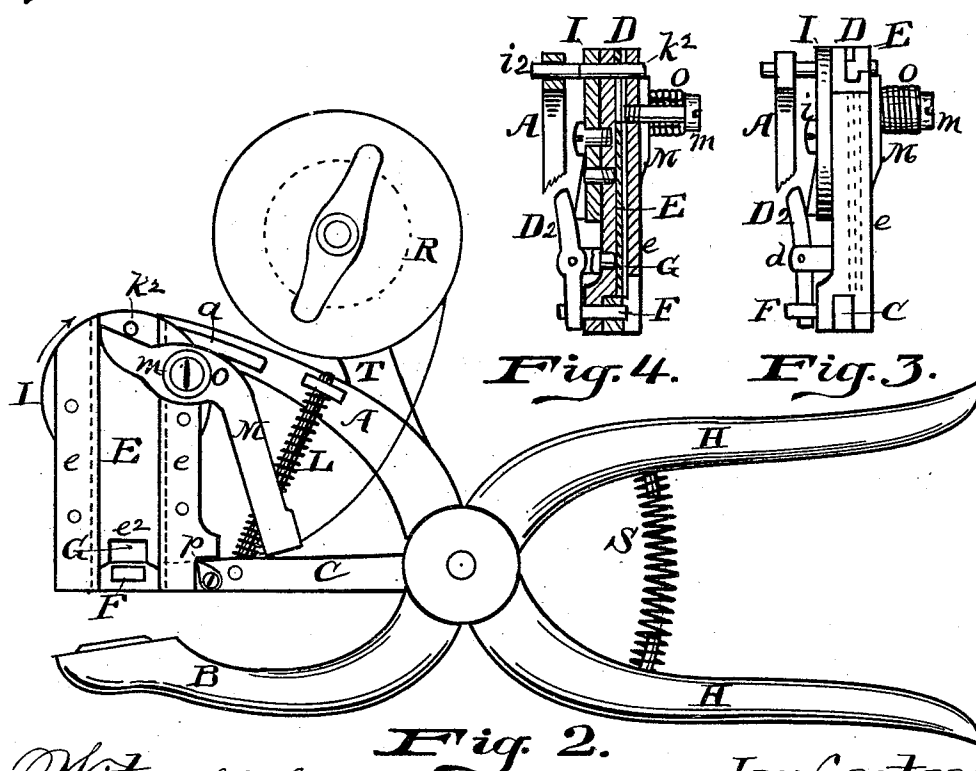
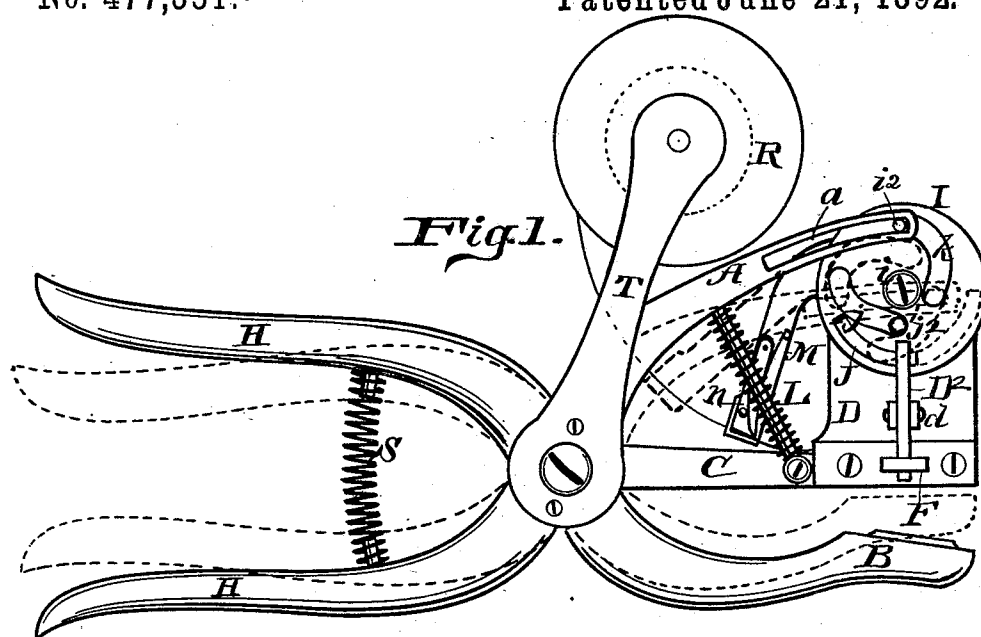


(No Model.)

E. G. COHEN.
HAND STAPLING IMPLEMENT.

No. 477,351.

Patented June 21, 1892.



Witnesses:
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UNITED STATES PATENT OFFICE.

EMANUEL GEORGE COHEN, OF CLEVELAND, OHIO.

HAND STAPLING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 477,351, dated June 21, 1892.

Application filed August 3, 1891. Serial No. 401,611. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL GEORGE COHEN, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented a certain new and useful Automatic Staple Maker and Driver, of which the following is a specification.

This invention relates to a hand implement for making and driving staples; and it consists in the novel constructions and combinations, substantially as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a right-hand side elevation. Fig. 2 is a left-hand side elevation. Fig. 3 is an end elevation of the head, and Fig. 4 is a vertical section of the same.

A B represent the two jaws of the device, provided with handles H to be grasped by the hand of the operator and kept spread apart when free by a spring S, fixed between the handles.

C is an arm pivoted to the joint of the two jaws A and B, its outer end carrying the operating-head.

D is a plate bolted to the said arm C, having a staple cutting and forming plunger and a driving and setting hammer, both of which are actuated by the jaw A.

E is the cutting and staple-bending plunger, and consists of a plate having rabbeted side edges fitted to slide in the rabbeted guides *e e*, secured to the front side of the plate D by screws or rivets. The lower end of plunger E has a recess *e*², with beveled bending edges for forming the staples over a block F. On the inside face of the plunger-plate is made a recess for containing the driving-hammer G, which slides independently therein.

The plunger and hammer are operated by a cam-wheel I, turning on a journal-screw *i*, set in the rear side of the plate D, said wheel I having a wrist-pin *i*² playing in a curved slot *a* in the moving end of jaw A. In the wheel I are made two cam-slots *j* and *k*, in which pins *j*² and *k*² play, the pin *j*² being fixed to the back of the hammer-plate F and moving in a vertical slot *j*³ in the plate D, and the pin *k*² is fixed in the upper end of plunger E and plays in a slot *k*³ in the said plate D. The rotation of the wheel I forces downward the plunger E through the medium of the cam-

slot K and also the hammer G through the medium of cam-slot *j* in quick succession, the plunger cutting off the blank and bending the ends of the blank downward in advance of the hammer, and then the hammer follows, forcing the ends of the staple through the fabric, ready to be clinched by the anvil on the jaw B. The receding of the jaws rotates the cam-wheel I back again to its normal position ready for the next operation. In performing these movements the forming-block F must be withdrawn to let the hammer pass down by it to insert and clinch the staple. This is also done by the cam-wheel and jaw A in the manner as follows: To the rear side of the plate D is fulcrumed a lever D² in a stud *d*, having its lower end engaging in a hole or slot in the rear end of the said block F, the upper end being held outward by a curved projection J on the wheel I. When the wheel is rotated, this projection J passes from under the lever D², and as the jaw A moves down it strikes onto the end of said lever, pushing it inward, and thus withdraws the block F just after the blank is bent, and in time for the hammer to pass for performing its part of the work.

L is a rod and spring fixed between the jaw A and arm C for the purpose of spreading them apart when the grip on the handles is relinquished.

The staples are cut and made from wire contained on a reel or spool R, supported on an arm T, attached to the side of the jaw B at the pivotal joint, and is fed to the plunger and hammer by means as follows: M is a bent lever fulcrumed on a screw-stud *m*, attached to the front upper corner of the plate or head D, and on the said stud is fixed a torsion-spring O, by which the lever is actuated in feeding the wire forward. The upper or short arm of said lever M is depressed by a projecting end of the pin *k*² in the plunger-plate E, thus throwing outward the long arm of the lever, through the end of which the wire passes for taking up the wire for the next feeding movement. On the rear side of the lever M is provided a spring-pawl *n*, having a sharpened point bearing against the wire. This pawl is for holding the wire fast when the lever moves forward for feeding the same, but loosens its hold when the lever moves back for taking up the wire. *p* is also a small

spring-pawl attached to the arm C at its junction with the head D, designed for holding the wire from slipping backward when the lever M moves back for the take-up.

5 The operations of this device are as follows: By compressing the handles the first movement of jaw A rotates the cam-wheel in the direction shown by the arrows. This causes the plunger E to move downward and immediately severs the blank or staple. The continuous movement of said plunger E bends the ends of the blank wire down over the block F and forming a staple. Then the block is withdrawn by the lever D², actuated by the jaw A. Here the plunger stops, the jaw B having at the same time moved up to the head D. Now the continuous rotation of wheel I moves the hammer G downward, forcing the ends of the staple through the fabric, the anvil closes the ends of the staple together, and clinches them on the under side of the fabric. Relieving the handles of the grip the jaws immediately open again and the wheel I rotates back again, thereby moving the plunger, hammer, and block back to their original positions.

Having described my invention, I claim as follows:

1. In a hand staple making and setting implement, a head D, mounted on arm C and having the plunger E and hammer G fixed to play in guides on the front face of said head, a staple-forming block F, movably set in a mortise in the head beneath the plunger and hammer, cam-wheel I, mounted on a journal-pin on the back of the head D and having a pin *i*² engaging with slot *a* in the jaw A and having pins *j*² and *k*² engaging with cam-slots *j* and *k* in said wheel I, a lever D², pivoted on back of head D, connected with block F, the

projection J on cam-wheel I, and the spring L, connected with the jaw A and arm C, constructed, combined, and operating as and for the purpose specified.

2. In a hand staple forming and setting implement, the lever M, mounted on the head D by a pin M, provided with a retracting-spring O, the short arm of said lever M being depressed by a pin *k*² on the plunger E, the lower end of the lever M having a hole for carrying the blank wire and provided with a spring-pawl *n* for gripping the wire when moving toward the head, and the detent *p*, in combination with the staple forming and setting mechanism, substantially as described.

3. In a hand staple forming and setting implement, the combination of the jaws A and B, an arm T, carrying a wire reel R, an arm C, mounted on the pivot-pin joining the jaws A and B, and supporting-head D, containing the staple forming and setting mechanism, consisting of a plunger E, hammer G, a forming-block F, a cam-wheel I, mounted on back of the head D, connected with and operating the plunger, hammer, and former by its rotations derived by the movements of the jaws A and B by means substantially as described, a feed-lever M, pivotally mounted on said head D and actuated by connection with the plunger, a spring-actuated rod L between the jaw A and arm C and the spring S between the handles H H', and the clinching-anvil on jaw B, all constructed to feed, cut, form, and drive staples, substantially as and for the purpose specified.

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Witnesses:

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