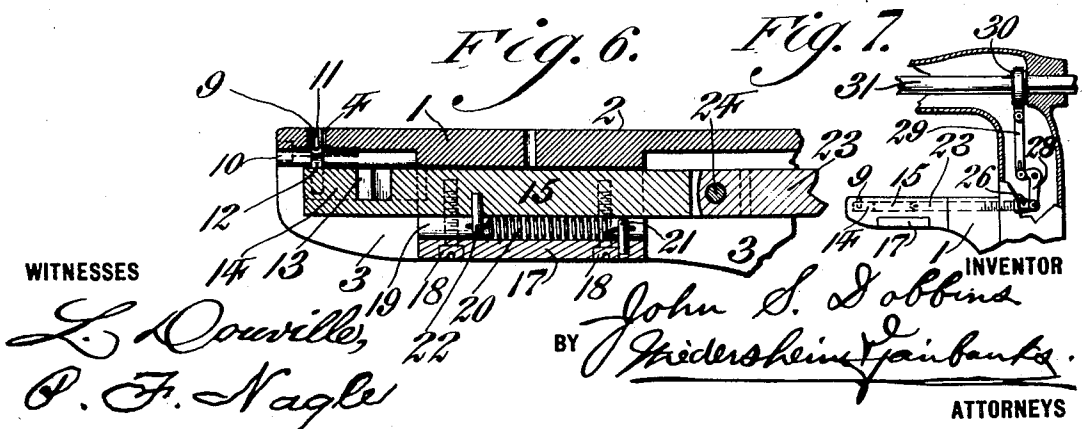
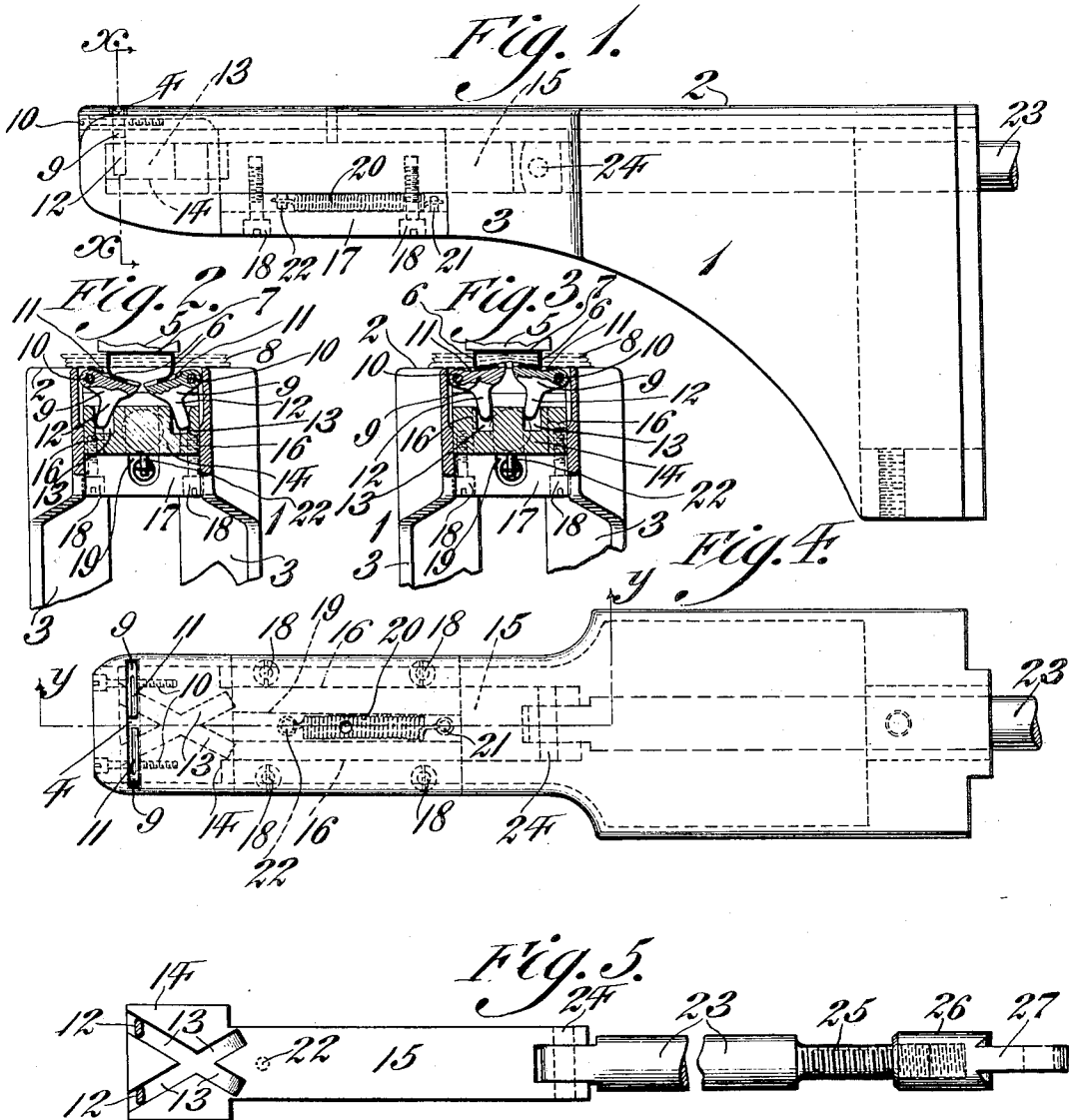


J. S. DOBBINS.
 CLENCHING DEVICE FOR STAPLING MACHINES.
 APPLICATION FILED APR. 22, 1912.

1,042,771.

Patented Oct. 29, 1912.



UNITED STATES PATENT OFFICE.

JOHN S. DOBBINS, OF CAMDEN, NEW JERSEY, ASSIGNOR TO THE NEW JERSEY WIRE STITCHING MACHINE COMPANY, OF CAMDEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CLENCHING DEVICE FOR STAPLING-MACHINES.

1,042,771.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed April 22, 1912. Serial No. 692,286.

To all whom it may concern:

Be it known that I, JOHN S. DOBBINS, a citizen of the United States, residing in the city and county of Camden, State of New Jersey, have invented a new and useful Clenching Device for Stapling-Machines, of which the following is a specification.

This invention relates to stapling machines and more particularly to a clencher operating device for bending and clenching staples in position upon a suitable piece of material and has for an object to provide a device of this character which is an improvement upon devices in the prior art as shown by the patents granted to Johnson, No. 597,773, January 25th, 1898 and Davis, No. 1,008,704, November 14th, 1911.

It has for a further object to provide a reciprocatory element embodying a complete unitary structure for operating in a positive manner certain clencher adjuncts of a stapling machine and providing in connection with said structure a feature of adjustment whereby the stroke of the clencher operating mechanism may be varied according to the desired clenching action.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a side elevation of a bracket forming a portion of a stapling machine and embodying therein the novel features comprising my invention. Fig. 2 represents a section on line $x-x$ of Fig. 1 showing the parts in one operative position. Fig. 3 represents a similar section showing the parts in another position. Fig. 4 represents a plan of the bracket shown in Fig. 1. Fig. 5 represents a plan of my novel cam bar for controlling the staple clenching device. Fig. 6 represents a section on line $y-y$ of Fig. 4. Fig. 7 represents a detail of construction.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates a bracket forming part of the main frame of a stapling machine and having an upper substantially plane surface 2, which serves as a table to support the material, and depending flanges 3 spaced apart to form a guide way 16 for certain moving parts of a mechanism later to be described. The table surface 2 is preferably provided with a transversely disposed slot 4 located in aline-

ment with the staple driving plunger 5 and adapted to receive therein the legs 6 of a staple member 7 in the operation of driving the staple through a suitable material, this material being designated by the reference numeral 8.

9 designates a pair of oppositely disposed clenching jaws pivoted at 10 to the bracket 1 and positioned adjacent to and beneath the opening 4 so that proper movement of the said jaws about the pivots 10 will bring them into engagement with the staple legs 6 which project into the said opening 4. In order to prevent improper movement or displacement of the staple during the clenching step, a groove 11 is formed in each jaw 9 and has a function of a seat for receiving the said legs 6. In the present instance, each of the jaws 9 is provided with a depending finger or lug 12 which are respectively seated in the angularly disposed and intersecting cam grooves 13 of the head 14 which preferably comprises an integral part of the bar 15. This bar 15 conforms to the guide way 16 of the bracket 1 and is adapted for reciprocating movement therein within certain defined limits.

17 designates a supporting block secured by screws 18 or like fastening devices, to the bracket 1 and forming a bearing and support for the bar 15 between the flanges 3 of the said bracket 1. An opening 19 is preferably formed longitudinally of the block 17 and is adapted to receive a spring 20 secured at one end to a fixed part, as the pin 21 of the block 17, and at its opposite end to the movable cam bar 15, this latter connection being effected, in the present instance, by means of a pin 22, as will be apparent.

23 designates a connecting rod secured by a cotter pin 24 or the like to the bar 15 and connecting the latter with a suitable mechanism for imparting the desired reciprocatory movement. In order that the relation between the cam grooves 13 and the clencher jaws 9 may be varied if desired, I preferably provide the connecting rod 23 with a threaded stem 25 upon which the threaded sleeve 26 of the connecting ear 27 is secured. As heretofore stated, the bar 15 may be reciprocated by any suitable actuated mechanism driven from the moving parts of the main machine, but for the purpose of illustration I have shown the ear 27 connected to a bell crank 28, which latter is operatively

connected by a rod 29 with an eccentric 30 on the driving shaft 31.

In the operation of the device the clencher jaws 9 are normally in their lowest position beneath the opening 4 and when a staple is forced through the material 8 by the action of the driving plunger 5, the legs 6 seat in the grooves 11 ready to be clenched upon a movement of the jaws 9. The cycle of operation is so arranged as to cause the bar 15 to receive a forward stroke as soon as the staple has reached the position just described, and therefore the angular cam grooves 13 shift the lugs 12 thus causing the jaws 9 to swing upwardly and toward each other about their pivots 10. This action causes the legs 6 to be bent toward each other and firmly clenched to the material 8, as seen in Fig. 3, after which movement the bar 15 makes its return stroke being aided therein by the spring 20, which of course has been extended on the previous stroke.

It will now be apparent that I have devised a simple and complete unitary staple clenching mechanism, well adapted for the purpose intended and which may readily be incorporated in stapling machines of the type such as shown in the patent to Johnson and the patent to Davis referred to above.

I am aware that it has heretofore been proposed in the aforesaid patents to Johnson and Davis to employ a reciprocating element as a means to clench staples to a suitable material, but attention is called to the fact that it is desirable in the commercial manufacture and practical use of devices of this character that the parts be made simple and strong and constructed in such a manner that they may be readily operated by unskilled labor without undue manipulation of a multiplicity of parts and without requiring a high degree of mechanical skill to effect their adjustment and regulation.

My present invention is clearly differentiated from the Johnson and Davis devices aforesaid, as will be apparent to those skilled in the art, since the same eliminates a number of intricate and complicated parts and employs as a single concrete unitary structure a reciprocable clencher operating bar having diverging cam grooves or slots for receiving the lugs or projections of the clencher jaws, whereby a substantially positive connection is formed between the said

bar and the said jaws. Thus it will be seen that on the forward stroke of the clencher bar both jaws will be simultaneously operated and moved toward the staple opening to effect the clenching operation, and on the reverse stroke the said jaws will be moved together away from the said opening, thereby insuring simultaneous action of the jaws for the purpose intended.

It will now be apparent that I have devised a novel and useful construction of a clenching device for stapling machines which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described a preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a staple clenching device, a supporting bracket having a transversely disposed opening therein to receive a staple, a pair of oppositely disposed clenching jaws mounted within said opening and respectively pivoted adjacent the ends thereof, a bar mounted for sliding movement on said bracket and having diverging cam slots therein, a lug on each jaw coacting with one of said cam slots, and means to operate said bar at a predetermined time.

2. In a staple clenching device, a supporting bracket having a transversely disposed opening therein adapted to receive a staple, a pair of oppositely disposed clenching jaws mounted within said opening and respectively pivoted adjacent the ends thereof, a bar mounted for sliding movement on said bracket and having diverging cam slots therein, a lug on each jaw coacting with one of said cam slots, means to operate said bar at a predetermined time, and a spring connecting said bar with a fixed part whereby said bar has a quick return movement.

JOHN S. DOBBINS.

Witnesses:

JAS. H. LIVERGLY,
C. D. McVAY.