

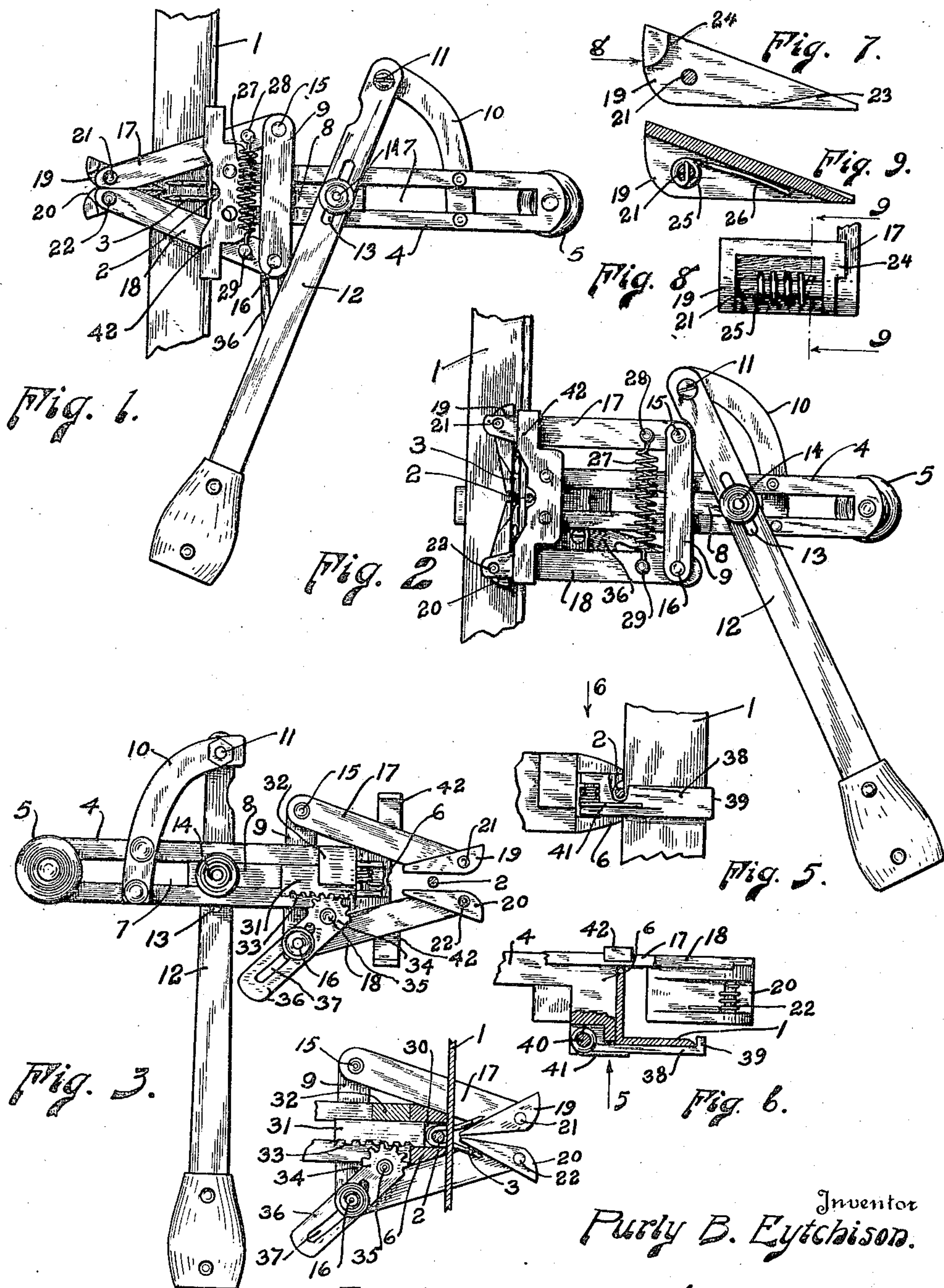
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STAPLING MACHINE

Filed March 28, 1922



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# UNITED STATES PATENT OFFICE.

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## STAPLING MACHINE.

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*To all whom it may concern:*

Be it known that I, PURLY B. EYTCHISON, a citizen of the United States, residing at Mitchell, county of Scotts Bluff, and State of Nebraska, have invented certain new and useful Improvements in Stapling Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

The object of this invention is to produce a machine or tool that can be conveniently and efficiently employed by fence builders for the purpose of securing fence wire to steel angle posts by means of ordinary staples.

It is customary today in all parts of the country where timber is not plentiful, to employ posts made of steel angles; these posts may be driven into the ground by a sledge hammer and do not require holes to be dug for their reception. In order to fasten the fence wire or other fencing to the posts, they are usually provided along one side with a plurality of spaced elongated holes or slots for the reception of staples. The staples are usually placed over the wire and pushed through the slots in the post, after which the ends of the staples are spread and finally clinched by means of a hammer and portable anvil.

It is the object of this invention to provide a simple and substantial machine which will eliminate pushing the staples through the slots with the fingers, the staple being put in a slot in the machine which, during the process of placing the machine in position, places the staple over the wire and through the slot. The machine is so designed that after the machine and the staple are properly placed and adjusted, a pull on the operating handle will cause the machine to spread the ends of the staple by bending it directly at the end of the slot and finally turning the ends of the staple down flat against the back of the post and giving it the maximum strength and resistance. I have also designed my machine in such a manner that it can be easily put in place on a wire, and have also provided it with means whereby it may easily pass back over the

wire when the clinching operation has been completed.

The above objects are attained by means of a construction which I will now describe, reference being had for that purpose to the accompanying drawing, in which—

Fig. 1 is a side elevation of my stapling tool showing the same in place on a post and in the position it occupies at the beginning of the operation.

Fig. 2 is a side elevation similar to that shown in Fig. 1, but showing the position of the parts at the end of the clinching operation.

Fig. 3 is a view of the machine itself seen from the opposite side from that in Figs. 1 and 2, and having a part thereof omitted so as to more clearly show the construction.

Fig. 4 is a fragmentary view with portions shown in section for the purpose of illustrating the construction of the adjustable abutment.

Fig. 5 is a fragmentary view looking in the direction of arrow 5, Fig. 6, showing the manner of anchoring the tool to the post.

Fig. 6 is a view looking in the direction of arrow 6 in Fig. 5, with a portion broken away to show the manner of securing the anchor member in place.

Fig. 7 is a side elevation of one of the wedge clinching members.

Fig. 8 is a front view thereof looking in the direction of the arrow 8 in Fig. 7; and

Fig. 9 is a longitudinal section taken on line 9—9, Fig. 8.

The same reference numerals will be used to indicate the same or similar parts throughout the several views.

Numerals 1 represents an angle iron post to which it is desired to connect the wire by means of a staple 3. My stapling tool consists of a body member 4 which is provided at one end with a handle 5 and at the other end with a cross head member 6. The body member 4 is of elongated shape and is provided intermediate its ends with a slot 7 which serves as a guide for a slide block 8, which has secured to the front end thereof a bar 9. Secured to the body member 4 is a bracket 10, to the end of which is pivoted by suitable means, such as a bolt 11, a handle 12. A slot 13 is provided in handle 12 in such a position that it will accommodate the pin 14 which passes therethrough and into the slide block 8. It is apparent from the above that when the handle 12 is moved



about its pivot 11, it will cause the block 8 to slide in the guideway 7 and move the bar 9 backwardly and forwardly at will. Secured to the ends of bar 9 by means of pivot pins 15 and 16 are two arms 17 and 18 which carry pivotally attached to the outer ends thereof wedge-shaped members 19 and 20 which are mounted on pivots 21 and 22. Wedge members 19 and 20 are rights and lefts, but are otherwise identical. Each member 19 and 20 is provided on the side nearest to arms 17 and 18 with a pair of spaced shoulders 23 and 24, the former of which engages with the side of arms 17 and 18 when the tool occupies the position shown in Figs. 1 and 3, and the latter of which engages the arms when the tool is in the position shown in Fig. 2. Surrounding the pivot pins 21 and 22 are springs 25, which have one end extending into a hole in the pivot, and the other end 26 engaging with the inside of the wedge, all as shown in Figs. 8 and 9. A spring 27 has its ends secured to pins 28 and 29 (Figs. 1 and 2) and is under tension whereby the arms 17 and 18 are constantly urged towards each other. The parts are so proportioned that when the bar 9 and arms 17 and 18 occupy the advanced position shown in Fig. 1, the wedge members 19 and 20 are permitted to contact, but as handle 12 is moved backwardly, carrying with it the bar 9, the arms 17 and 18 will be engaged on their inner side by the sides of cross head member 6, in the manner shown in Figs. 3 and 4, and this will cause the wedge members to move apart. As handle 12 is moved to the position shown in Fig. 2, the wedges 19 and 20 will pivot on each other and spread the arms out into almost parallel relation, whereby shoulders 24 will engage the arms and hold them in substantially rectangular position, while the sides of the staple are forced flat against the side of the post (Fig. 2).

In Fig. 4 I have shown a view in which some of the parts are shown in section, for the purpose of better showing the construction by means of which I am enabled to hold the staple and to force the same against the post as the tool is operated. I provide a hole 30 which extends longitudinally through the head 6; this hole is of such size that it will freely receive the end of an ordinary staple. In order that the staple may be shoved out as the tool is operated for clinching the same, I provide a slide 31 whose forward end projects a short distance into the opening 30 when the tool is in the position shown in Fig. 1, and which is guided in a slot formed in member 32. One side of slide 31 is provided with teeth 33 which engage corresponding teeth on a pinion 34 which is pivoted at 35 and is provided with an arm 36 having a longitudinal slot 37 which cooperates with pivot pin 16.

It will be seen that when bar 9 and pin 16 are in their forward position, as shown in Fig. 1, the slide 31 will be moved backwards and provide an opening 30 of the maximum depth. Within this opening the staple is placed and held while the tool is passed over the wire and anchored to the post. When handle 12 is moved rearwardly, pinion 34 will rotate about the pivot 35 and force the slide or abutment member 31 forwardly, thus causing the staple to be moved forwardly against the approaching wedges. If it is desired to make a tight clinch, the abutment slide 31 is so adjusted that it will move the staple well towards the front as the clinching operation is taking place, whereas if it is desired to make a loose clinch, abutment slide 31 may be so adjusted with respect to the pinion 34 that it will not be shoved close up against the wire. The adjustment of the abutment is accomplished by changing it a cog one way or the other with respect to the pinion.

In order to anchor the tool to the post, I provide on one side thereof a member 38, which is provided at its outer end with a hook 39 which engages the edge of the post in the manner shown in Figs. 5 and 6. The inner end of member 38 is pivoted at 40 and is provided with a spring 41 which tends to hold the member 38 against the side of the post. A plate 42 is secured to one side of head 6 and has outwardly extending arms which serve to guide the arms 17 and 18 and to keep them in contact with the head.

In Fig. 3 I have shown how the arms 17 and 18 and the wedge jaws may be spread apart so as to provide space for withdrawing the tool from the wire 2.

The operation of my tool is as follows: When it is desired to secure a wire to the post 1 by means of a staple 3, the handle 12 is brought forward to the position shown in Fig. 1, and the staple inserted into the opening 30 until it is stopped by the abutment 31. The tool is then slipped over the wire and the staple 3 so placed as to straddle the same and to be inserted into the opening in the post. The parts will now occupy the position shown in Fig. 1. The operator then sees that the anchoring plate 38 engages with the post in the proper manner, after which he grasps the handle 12 and moves the same backwards. As he does so, bar 9 and arms 17 and 18 move backwardly and carry the tips of wedges 18 and 20 between the legs of the staple. As the movement continues, the arms will be spread apart by the wedging action of head 6, and the wedges will move outwardly and spread the staple. Shoulders 24 will finally engage the sides of arms 17 and 18 (Fig. 2), and a further pull on the handle 12 will flatten the sides of the staple against the post. During the entire movement of handle 12, the abut-



ment 31 has been forced forward and with it the staple 3, which has thus been moved towards the wedge-shaped clinching members. When the staple has been clinched, handle 12 is then moved to about the position shown in Fig. 3. Anchor plate 38 is released and the tool is removed from over the wire by being pulled backwards over the same, as shown in Fig. 3.

From the above it is apparent that I have provided a stapling tool that is of substantial construction, that can be readily applied in place and removed, and which is provided with an abutment to hold the staple in place, as well as with spreading and clinching means that will quickly and positively bend the staple at the surface of the post and clinch the same flat against the post.

I have also provided my tool with an adjustable abutment, by means of which I may perform a tight clinch which will prevent slack running from post to post in case of a broken wire, or I may make a loose clinch whenever that is desired.

Having now described my invention, what I claim is—

1. A stapling tool, comprising in combination, a body member, a head member secured to one end provided with an opening adapted to receive and hold a staple, a member slidable in said opening and adapted to serve as an abutment for the staple, a handle pivotally connected to said body member, a bar slidably connected with the body member, means whereby said bar may be moved at will by moving the handle, an arm pivoted to each end of said slidable bar, a wedge member secured to the free end of each arm, resilient means tending to

force the free ends of said arms together, positive means for moving them apart as the slidable bar is moved rearwardly by the handle, and means for moving the slidable abutment member as the arms are moved.

2. A stapling tool, comprising in combination, a body member, a head member secured to one end provided with an opening adapted to receive and hold a staple, a member slidable in said opening and adapted to serve as an abutment for the staple, a handle pivotally connected to said body member, a bar slidably connected with the body member, means whereby said bar may be moved at will by moving the handle, an arm pivoted to each end of said slidable bar, a wedge member secured to the free end of each arm, resilient means tending to force the free ends of said arms together, positive means for moving them apart as the slidable bar is moved rearwardly by the handle, means for moving the slidable abutment member as the arms are moved, and means for adjusting the extent of the forward movement of said abutment member.

3. A stapling tool, comprising a body member provided with a head member, a bar slidable with respect to said body member, an arm pivotally connected to each end of said bar and having their other ends free, a wedge member pivoted to each of said free ends, resilient means for holding the said free ends in converging relation, means for moving said slidable bar with respect to the head, and positive means for moving the free ends of said arms apart as the wedges are moved toward the head.

In testimony whereof I affix my signature.

PURLY B. EYTCHISON.