Feb. 10, 1953 A. A. VANDERVIEREN 2,627,601

STAPLE SUPPORT FOR STAPLING MACHINES

Filed July 11, 1950 2 SHEETS—SHEET 1

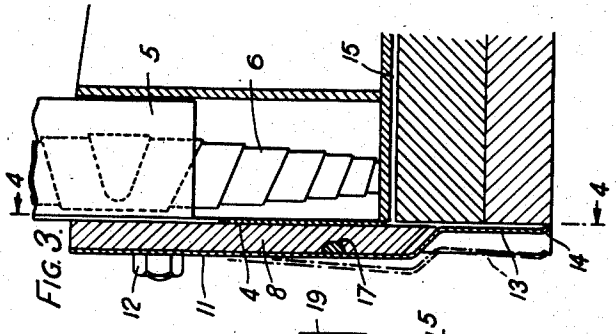


FIG. 3

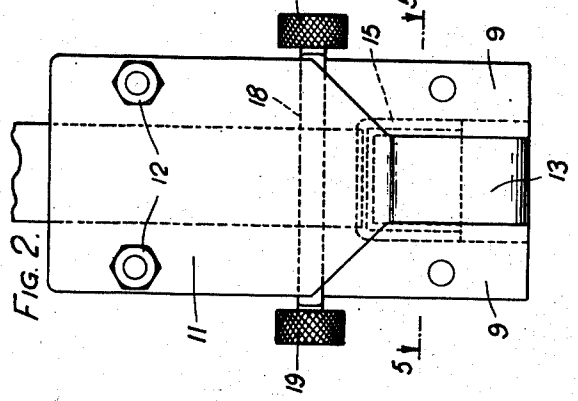


FIG. 2.

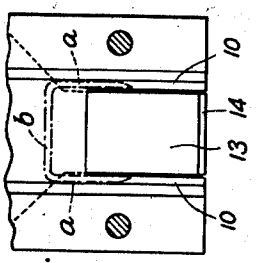


FIG. 4.

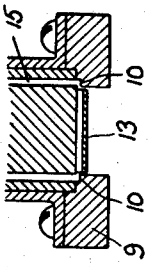


FIG. 5

FIG. 1.

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FIG. 6.

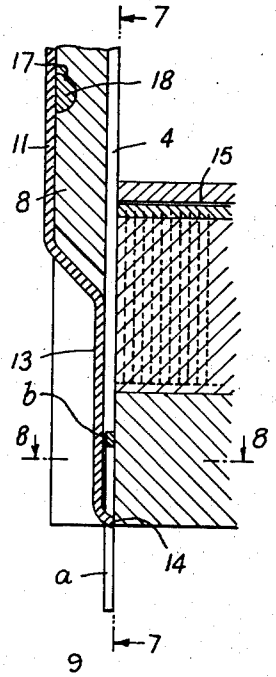


FIG. 7.

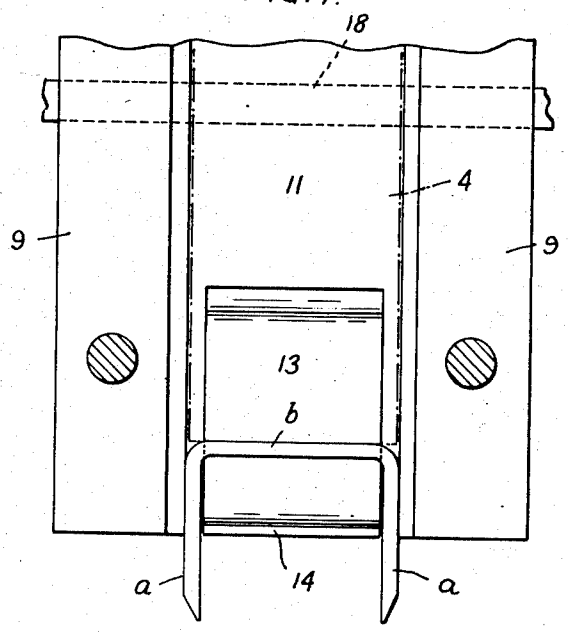
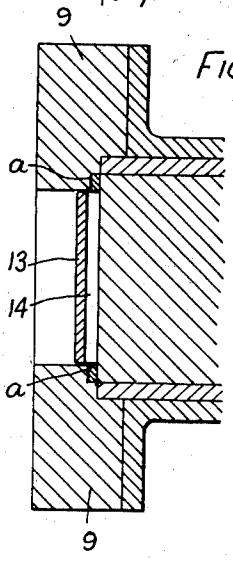


FIG. 8.



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STAPLE SUPPORT FOR STAPLING MACHINES

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4 Claims. (Cl. 1—3)

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This invention relates to stapling machines of the kind having a reciprocably mounted staple driver for driving a staple into work to be stapled.

It is an object of the invention to provide improved means for guiding the staple as it is driven into work.

To enable the invention to be fully understood it will now be described with reference to the accompanying drawing in which,

Fig. 1 is a side elevation of a stapling machine according to one embodiment of the invention,

Fig. 2 is a fragmentary view on an enlarged scale showing the front of the pivoted arm carrying the stapling mechanism,

Fig. 3 is a sectional side view of Fig. 2,

Fig. 4 is a fragmentary view taken from the rear of the guide block and guide plate on line 4—4 of Fig. 3,

Fig. 5 is a fragmentary section on line 5—5 of Fig. 2,

Fig. 6 is a fragmentary cross section showing the adjustable plate in operative position as the staple is being driven,

Fig. 7 is a view on line 7—7 of Fig. 6, and

Fig. 8 is a cross section on the line 8—8 of Fig. 6.

As shown in the accompanying drawing the machine comprises a base 1 having an arm 2 pivoted at one end at 3.

A staple driver 4 is reciprocably mounted at the outer end of the arm 2 and is connected with a plunger 5 housing a spring 6. The plunger 5 is depressed by a knob 7 against the action of the spring 6 to force the driver 4 to drive a staple.

A rigid guide block 8 is secured to the outer end of the arms 2 and includes parallel vertically extending portions 9 each of which has a vertical groove or recess 10 at its inner edge. A flexible plate 11 is secured at its upper end to the guide block 8 by bolts 12, and its lower end is formed with a tongue 13 which is bent to extend between the portions 9 and lie substantially parallel to the inner edges thereof, the vertical edges of the tongue 13 do not extend between the grooves 10. The tongue is formed with an inwardly projecting flange or lip 14 at its outer free end, which is adapted, when the tongue is in the operative position shown in full lines in Fig. 3 to be positioned between the grooves 10.

Staples *b* of conventional U-shape are adapted to be fed in strip form in known manner by a spring feed member through the channel 15 into the path of the driver 4. As the staples are driven into the work by the driver 4, the legs *a*, as shown in Fig. 2, are guided in the grooves 10.

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As the legs reach the lower end of the grooves 10 they are guided between the side edges of the inturned lip 14 and the adjacent portions of the vertical walls of the grooves 10. Accordingly, any tendency for the legs *a* to move inwardly towards one another is prevented and it is possible to drive the legs vertically into the work which is positioned on the anvil 16 of the base 1 and obtain the maximum penetration into the work. This is particularly desirable when the work to be stapled is relatively thick.

If, however, the work to be stapled is relatively thin, for example, in the case of a small number of paper sheets, deep penetration is not necessary and efficient stapling is assured if the legs of the staple are bent into a shallow curve. This form of stapling is readily obtained by the present invention by displacing the tongue 13 to withdraw the flange or lip 14 from operative position, as shown in full lines in Fig. 3, to the inoperative position shown in dot-dash lines. In the latter position the lip 14 is not positioned between the legs *a* of the staple and they are free to bend inwardly and are consequently bent into a shallow curve beneath the work on striking the anvil 16.

The means for adjusting the guide plate 11 comprises a spindle 18 having a curved cam surface 17 which extends transversely of the plate 11 in a recess in the front wall of the guide block 8. A knurled knob 19 is mounted on each end of the spindle 18 for rotating it. When the spindle is rotated through 180° from the position shown in full lines in Fig. 3, the cam surface 17 will engage and flex the plate 11 outwardly into the inoperative position shown in dot-dash lines in Fig. 3, when the tongue 13 will be withdrawn outwardly of the legs 9 so that the lip or flange 14 is no longer in position to co-operate with the grooves 10 to guide and support the legs *a* of the staple. On rotation of the spindle to its original position the flexible plate will automatically spring inwardly to its operative position.

It will be understood that when in operative position the lip 14 will be flexed outwardly as the base cross-piece of the staple *b* is driven past it.

The invention is not limited to the particular form of guide means shown in the drawings and the means for displacing the adjustable guide plate into and out of operative position may be varied.

I claim:

1. In a stapling machine having a reciprocably mounted staple driver, means for guiding and

supporting individual staples having spaced legs as they are driven by said driver, comprising a rigid guide block, laterally spaced vertical grooves in said guide block, a flexible guide plate, means on the free end of said flexible plate extending between the said vertical grooves to cooperate therewith to guide the staple as it is driven by the driver into the work to be stapled, a rotatably mounted spindle extending transversely of the flexible guide plate, cam means on said spindle, and manually actuated means for rotating said spindle to move the cam into one position to displace said plate to inoperative position wherein the means on the free end thereof are withdrawn from between said vertical grooves, and to move said cam into another position to permit said plate to return to its operative position.

2. In a stapling machine having a reciprocably mounted staple driver for driving individual staples having spaced legs, means for guiding and supporting the said staples as they are driven by said driver comprising a rigid guide member having vertical grooves engageable by the legs of the staple to limit outward movement thereof and an adjustable guide member, an inturned lip on said adjustable guide member adapted when the said adjustable member is in operative position to project between the legs of the staple to limit relative inward movement of said legs as the staple is driven into a workpiece, and manually actuated cam adapted to be preset to position said adjustable guide member in either operative or inoperative position.

3. In a stapling machine provided with a reciprocably mounted staple driver for driving individual staples having spaced legs, means for guiding and supporting the legs of said staples as they are driven by said driver comprising a rigid guide block laterally spaced vertical grooves in said guide block to engage with and limit outward movement of the legs of the staples, an adjustable guide member, said adjustable guide member comprising a flexible plate anchored at one end to the machine and formed at its other end with an inturned lip of less width than the distance between the said legs, said lip extending between the legs of a staple to limit their inward

movement as they are driven into a workpiece, and manually operable cam means adapted to be preset to position said guide member in one of two predetermined positions so as either to permit the said inturned lip to extend between the legs of a staple or to be completely withdrawn from between said legs.

4. In a stapling machine having a reciprocably mounted staple driver, means for guiding and supporting individual staples having spaced legs as they are driven by said driver, comprising a rigid guide block, laterally spaced vertical grooves in said guide block for limiting the outward movement of the legs, a flexible guide plate, an inturned lip on the free end of said flexible plate said lip being of less width than the spacing between the legs of a staple and extending between the said vertical grooves to limit inward movement of the legs of the staple as it is driven by the driver into the work to be stapled, manually actuated cam means adapted to be preset to one of two alternative positions in one of which it effects the displacement of said plate to a position wherein the means on the free end thereof are withdrawn from between said vertical grooves, and in the other position it permits said means on the free end of the plate to extend between said grooves.

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