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PLIER TYPE STAPLER

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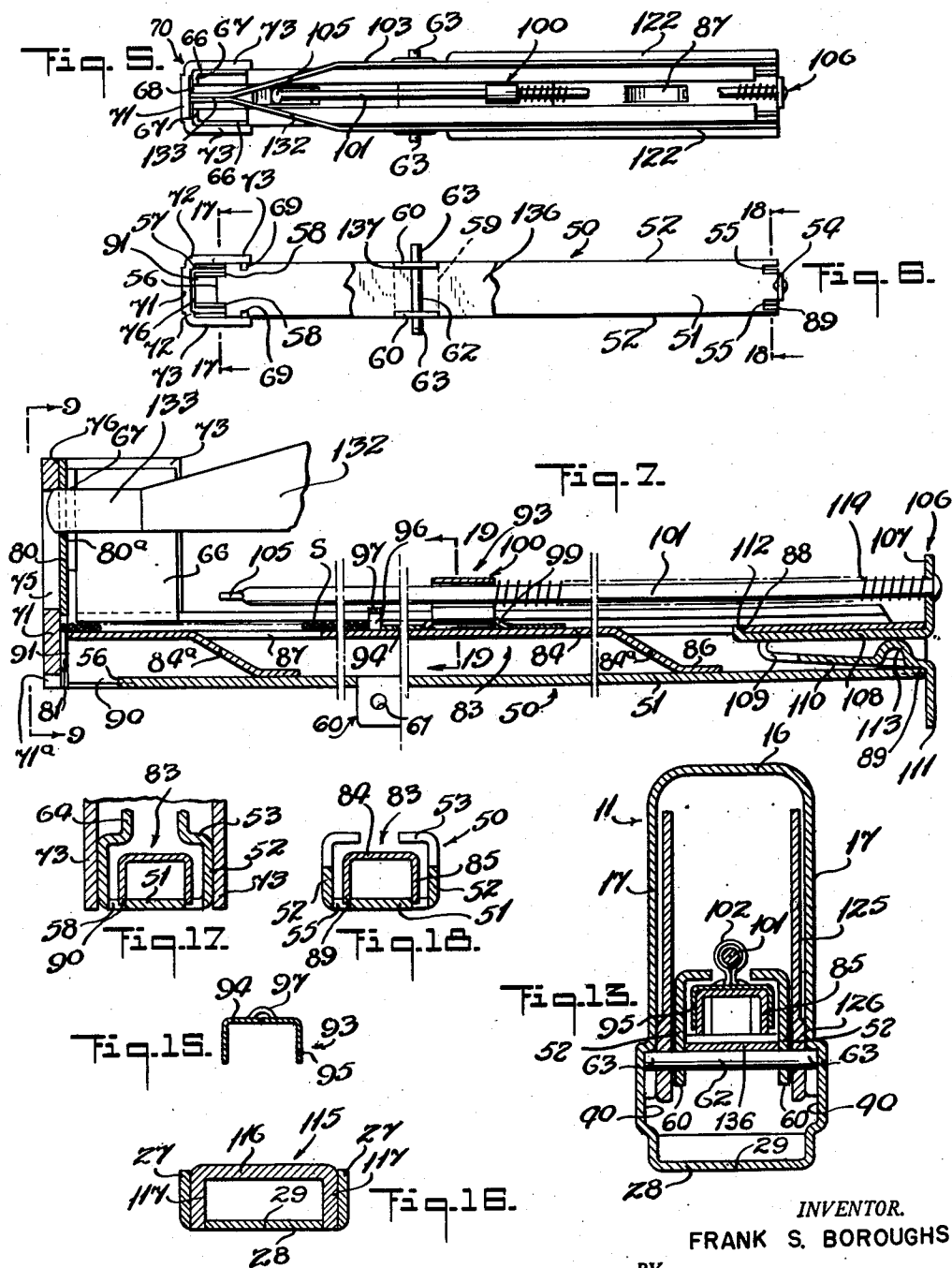
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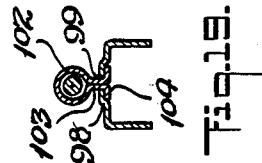
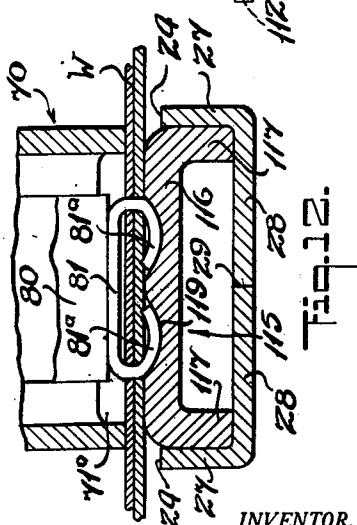
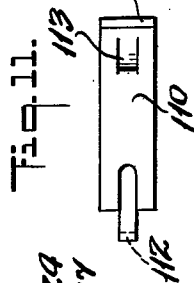
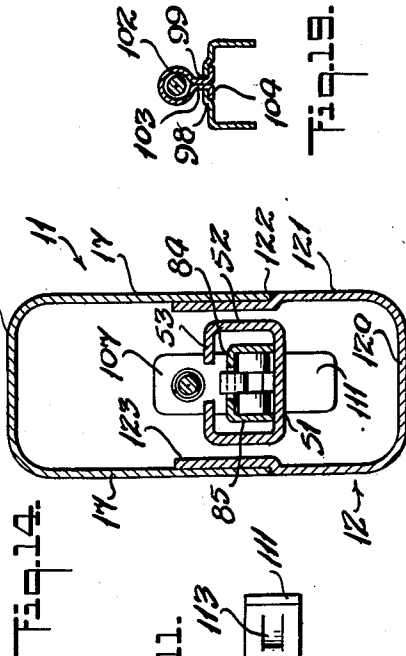
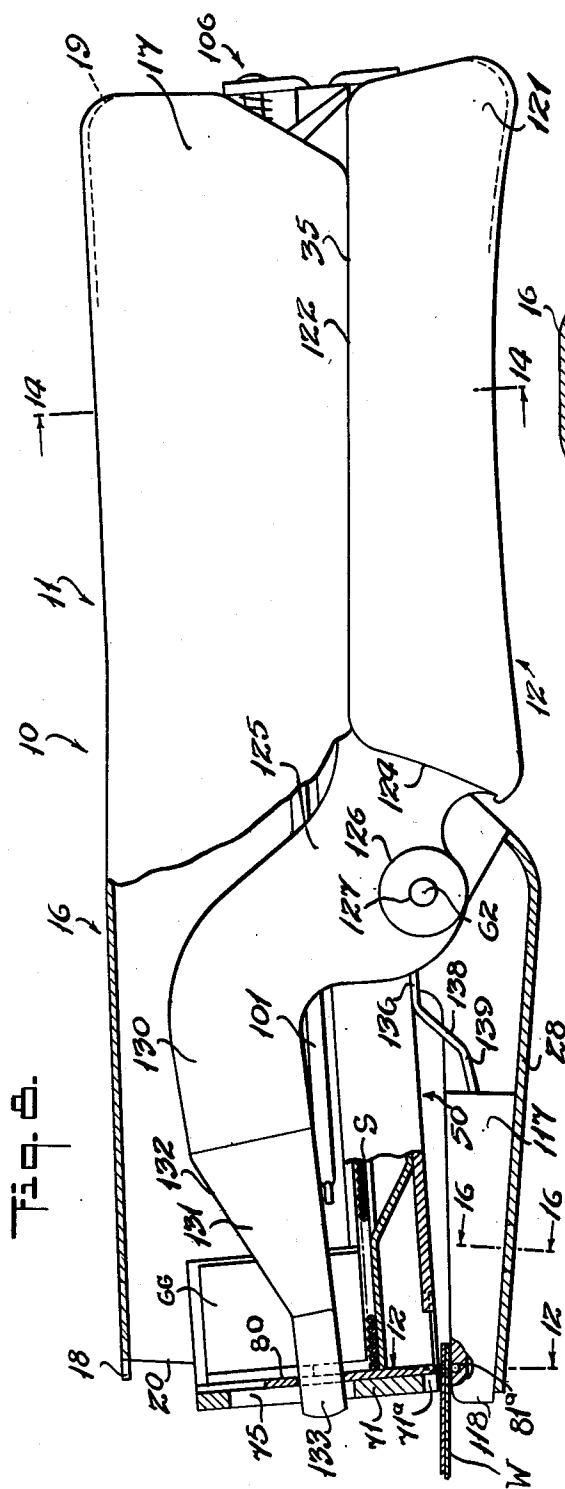
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PLIER TYPE STAPLER

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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PLIER TYPE STAPLER

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Application August 20, 1949, Serial No. 111,412

6 Claims. (Cl. 1—49)

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This invention relates to plier type staplers.

An object of this invention is to provide a stapler of the character described comprising a frame provided with an anvil, a staple magazine, a handle pivoted to the staple magazine and said frame being formed with hook shaped grooves, and the pivotal connection between the handle and the magazine including a pivot pin having outward extensions engaging in said groove for pivoting the magazine and the handle relative to the frame, and spring means being provided to retain the outer ends of the pivot pin within half bearings at the inner ends of the grooves, for retaining the handle, frame and magazine in assembled inter-pivoted relation.

Another object of this invention is to provide a staple magazine of the character described in which the pivot pin serves to lock the spring to the magazine.

Yet another object of this invention is to provide in a stapler of the character described, a staple magazine having side walls which are notched and a front cover for the magazine having lugs received in the notches to accurately determine the size opening for the staple which is driven from the magazine.

Yet another object of this invention is to provide in a stapler of the character described, a staple magazine comprising a magazine body having a bottom wall and upwardly extending parallel side walls, and a channel shaped staple guide within the body, having a top wall and downwardly extending parallel side walls, the lower ends of the side walls of the channel being formed with tongues at the front and rear, and the bottom wall of the magazine body having notches to receive said tongues whereby to center the guide relative to the magazine body and also to provide against longitudinal movement of the guide relative to the body.

Still another object of this invention is to provide in a stapler of the character described, a staple magazine including a pusher rod and a latch attached to the rear of the pusher and releasably engageable with the top wall of the staple guide in a novel manner to permit withdrawal of the pusher rod at will, and to retain the pusher rod in place on said guide when the pusher is assembled with the latter.

Yet another object of this invention is to provide a staple magazine for a stapler of the character described comprising a staple pusher slidable on the magazine. Said staple pusher having a top wall formed with a slot and a split sleeve having outwardly extending wings pass-

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ing through the slot for attaching the sleeve to the pusher, the pusher furthermore being provided with means at its front end to contact the driver blade and prevent it from getting under the driver blade.

Still another object of this invention is to provide a plier type stapler of the character described in which the frame, staple magazine and the combination handle and plunger driving mechanism is readily assembled and held in assembled relation by a single spring made of strip spring material, said spring having means to pivotally move the handle relative to the frame, and also means to rotate the staple magazine relative to the frame and handle.

Yet a further object of this invention is to provide a plier type stapler of the character described in which the main frame has hook shaped slots or embossed grooves open at one end so that the pivot pin which pivotally connects the handle with the staple magazine can enter the hook shaped slots or grooves through its open end and move into the hooked end portion of said slots or grooves to be retained in such position by a spring but permitting the handle and the magazine to be readily disassembled from the main frame by manipulating the handle in such a way that the pivot pin is moved out of said hook shaped slots or grooves, the construction being such, furthermore, that the hooked ends of said slots or grooves serve as half bearings for the pivot pin.

Yet a further object of this invention is to provide a stapler of the character described in which a one piece anvil is welded or riveted to the main frame, and said anvil serves to retain the main frame against opening up.

Still another object of this invention is to provide a plier type stapler of the character described which is so constructed that when the handle is first squeezed the staple magazine is first moved with the handle toward the anvil at the front of the magazine until it reaches the work being stapled. Continued squeezing of the handle will drive the blade against the work while the handle rotates relative to the magazine, thereby ejecting a staple for stapling the work, the construction being such that the movement of the staple magazine toward the frame when the handle is released, is controlled by the front end of a spring assembled with the magazine, and the return of the driver end of the handle and the handle itself to normal position is controlled by the rear end of the spring, the anvil fixed to the front end of the frame being

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hollow and the front end of the spring being received beneath the anvil.

Yet a further object of this invention is to provide a plier type stapler of the character described in which the lower end of the front cover is provided with clearance to assure that the staple will not clog up in the track, as happens when the device is used fast, without paper between the jaws. In staplers as heretofore made if the machine is used fast without paper being placed between the jaws the closed staple instead of remaining on the anvil remains in the track, and when the machine is used again the next staple instead of being clamped inwardly opens up using the under staple for an anvil. This next staple within the track sometimes jams the mechanism, requiring clearing. By providing a clearance at the lower end of the front wall of the front cover of the staple magazine, any staple that sticks in the front end of the track can readily be ejected. The clearance helps the ejection of the jammed staple. Such ejection may be done by putting a pencil behind the anvil and then pressing the pliers to retain the staple magazine against coming down toward the anvil but permitting the blade to be driven, to force out the jammed staples.

A still further object of this invention is to provide a strong rugged and durable stapler of the character described which will be relatively inexpensive, easily assembled, with can be cleaned easily and repaired easily, which shall be smooth and positive in operation and yet practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims:

In the accompanying drawings in which is shown various illustrative embodiments of this invention,

Fig. 1 is a side elevational view of a plier type stapler in normal position, with parts broken away and in cross section,

Fig. 2 is a side elevational view of the handle assembled with the staple magazine and the spring, but removed from the main frame, and with parts of the handle broken away and in cross section,

Fig. 3 is a side elevational view of the staple magazine,

Fig. 4 is a side elevational view of the pusher rod and latch,

Fig. 5 is a top plan view of the structure shown in Fig. 2,

Fig. 6 is a bottom plan view of the structure shown in Fig. 5,

Fig. 7 is a longitudinal cross sectional view through the staple magazine and showing the front or driving end of the handle,

Fig. 8 is a side elevational view of the stapler and showing the handle fully squeezed, and with parts broken away and in cross section,

Fig. 9 is a front end view taken along line 9—9 of Fig. 7 and with parts broken away and in cross section,

Fig. 10 is a cross sectional view taken along line 10—10 of Fig. 3,

Fig. 11 is a bottom view taken along line 11—11 of Fig. 4,

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Fig. 12 is an enlarged cross sectional view taken along line 12—12 of Fig. 8,

Fig. 13 is a cross sectional view taken along line 13—13 of Fig. 1,

Fig. 14 is a cross sectional view taken along line 14—14 of Fig. 8,

Fig. 15 is a cross sectional view taken along line 15—15 of Fig. 4,

Fig. 16 is a cross sectional view taken along line 16—16 of Fig. 8,

Fig. 17 is a cross sectional view taken along line 17—17 of Fig. 6,

Fig. 18 is a cross sectional view taken along line 18—18 of Fig. 6, and

Fig. 19 is a cross sectional view taken along line 19—19 of Fig. 7.

Referring now in detail to the drawings, 10 designates a plier type stapler embodying the invention. The same comprises largely a frame 11 and handle 12 and a staple magazine 13. The frame 11 may be made of sheet metal and comprises a top wall 16 from which extend downwardly parallel side walls 17. The top wall 16 has a front edge 18 and a somewhat downwardly curved rear edge 19. The side walls 17 have front edges 20. Extending rearwardly from the lower ends 21 of the front edges 20 are end edges 22 extending rearwardly about one quarter the length of the frame. At the rear ends of the edges 22 are substantially semi-circular downwardly and forwardly curved edges 23, from which extend forwardly and downwardly edges 24. The top wall 16 of the frame has a substantially horizontally intermediate portion 18a from which extends forwardly a downwardly sloping portion 18b, and also from which extends rearwardly and upwardly, sloping portion 16c. The edges 20 may be inclined somewhat forwardly and downwardly. The edges 22 are substantially at right angles to the edges 20 but are inclined downwardly and rearwardly. The edges 24 are inclined downwardly and forwardly substantially the same angle as the edges 22, thus forming a mouth or jaw at the front end of the frame.

Extending downwardly from the front ends of edges 24 are downwardly extending edges 25. Extending from the side walls 17 just rearwardly of the curved edges 23, are neck portions 26 from which extend forwardly, lower jaw portions 27. The lower jaw portions 27 have upper edges 24 and forward edges 25 as described before. Extending inwardly from the lower ends of portions 27 are aligned flat portions 28 having meeting edges 29. Said walls or portions 28 are inclined downwardly and rearwardly. Extending from said walls 28 are upwardly curved portions 30 terminating in edges 31. The side walls 17 have rear edges 33 extending down substantially vertically. Extending from the edges 33 are downwardly and forwardly sharply inclined edges 34 from which extend forwardly horizontal edges 35. The edges 35 extend to the neck portions 26. Extending from said edges 35 are downwardly and forwardly curved edges 36 forming a pair of small symmetrically disposed, hook shaped, outwardly embossed grooves or slots 40 (Figs. 1 and 13). The grooves or slots 40 are open at the rear edges 36 just above the edges 31 forming mouths. From said mouths said grooves extend forwardly as at 41, decreasing in width. Extending from the portions 41 of said grooves are upwardly and rearwardly curved portions 42 terminating in semi-circular groove portions 43 forming semi-circular half bearings for the purpose hereinafter appearing.

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The centers of the semi-circular half bearing portions 43 are in a horizontal plane bisecting the semi-circular edges 23.

Within the frame 14 is the staple magazine 13. Said staple magazine 13 (Figs. 2 and 7) comprises a magazine body 50 having a bottom wall 51, upstanding parallel side walls 52 and flanges 53 extending inwardly from the upper ends of the side walls 52. The inner edges of said flanges 53 are spaced from one another, forming a slot therebetween. The bottom wall 51 is formed at its rear edge 54 with a pair of parallel notches or slots 55, adjacent the side walls 52. The slots 55 are similar and symmetrically disposed one with respect to the other. The bottom wall 51 furthermore has a front edge 56 spaced rearwardly of the front edges 57 of the side walls 52. Said front edge 56 is formed at its ends with a pair of rearwardly extending slots 58. The slots 58 extend to the side walls 52 and are similar and symmetrically disposed one with respect to the other. The bottom wall 51 is formed with a transverse slot 59 (Fig. 6) and the side walls 52 are formed with downwardly extending ears 60. The ears 60 may be made from the metal taken from the bottom wall to form the slot 59. The ears 60 are formed with aligned openings 61 through which is inserted a pivot pin 62, extending beyond said ears, as at 63, shown in Fig. 6 of the drawing, for the purpose hereinafter appearing.

The pivot pin 62 is thus located somewhat below the underside of the bottom wall 51. Extending upwardly from the inner ends of the front portions of the flanges 53 of walls 52 are parallel neck portions 64. Extending outwardly from said neck portions 64 are flanges 65 parallel to the flanges 53. Extending upwardly from the flanges 65 are side walls 66 in alignment with side walls 52. Extending inwardly from the side walls 66 are aligned front flanges 67 (Fig. 5). The inner edges of said flanges 67 are spaced apart to form a slot 68 therebetween, for the purpose hereinafter appearing. The side walls 52 are formed, just rearwardly of the slots 58, with a pair of notches 69 (Fig. 10). The notches are aligned with one another.

Attached to the front end of the body 50 is a front cover 70. Said front cover 70 has a front wall 71 formed at the sides thereof with rearwardly recessed shoulders 72 (Fig. 6). Extending from the shoulders 72 are parallel side walls 73. Said walls 73 contact the outer surface of the side walls 66 (Figs. 5 and 10). The shoulders 72 contact the front edges 57 of the side walls 52 of the body 50. The side walls 73 may be spot welded to the side walls 66 or riveted or otherwise fixed thereto. The lower edges of the side walls 73 are flush with the underside of the bottom wall 51. The front wall 71 of cover 70 is formed with a central longitudinal slot 75 which registers with the slot 68 between flanges 67 of side walls 66. The front wall 71 is spaced from the flanges 67 of side walls 66 leaving a track 76 therebetween. The front edges 57 of the side walls 52 contact the inner sides of the shoulders 72. The side walls 73 are formed with indentations 78 which are received within the notches 69 of side walls 52 so as to accurately locate the front cover relative to the staple magazine body to insure an accurate track for a plunger or driver blade 80 slidably mounted in the track 76, and also for the staples 81 which are driven from the staple strip as will be explained hereinafter.

The lower end of the front wall 71 of cover 70 is formed with a notch 71a terminating inwardly

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of the side walls 73 for the purpose hereinafter appearing.

Fixed within the body 50 is a staple guide 83 (Figs. 7 and 17). Said staple guide 83 comprises a top wall 84, parallel to the flanges 53, and spaced therebelow. Extending downwardly from the top wall 84 are side walls 85 parallel to and spaced inwardly of the side walls 52. Thus, between the guide 83 and the body 50 is a channel shaped chamber through which the staple strip passes. Punched from the top wall 84 are downwardly extending tongues 84a having tabs 86 at their lower ends welded to the upper surface of the bottom wall 51. The punching of the tongues 84a form slots 87 in the top wall 84. A pair of said tongues are shown in (Fig. 7). The rear slot 87 forms an edge 88 in the top wall 84 for the purpose hereinafter appearing.

The side walls 85 (Figs. 6 and 18) are provided at their rear ends with tongue extensions 89 received in the slots 55 and contacting the inner edges of said slots for centering the staple guide 83. At the front end of the staple guide the side walls 85 are formed with tongue extensions 90 projecting into the slots 58 and contacting the inner edges of said slots. With such construction the staple guide 83 is not only accurately centered with respect to the magazine body, but lengthwise shifting or movement of the staple guide, relative to the magazine body, is prevented.

The front edges 91 of the side walls 85 of the staple guide 83 are in alignment with the front edges 57 of the side walls 52 and hence spaced rearwardly from the front walls 71 of cover 70 sufficiently to provide a track through which the foremost staple 81 may be ejected by the blade 80. The staple strip, designated by the letter "S," thus rides on the guide 83 and within the body.

Pusher means is provided to press the staple strip "S" forwardly against the front wall 71. To this end there is slidably mounted on the staple guide 83 a pusher 93 of channel shape and having a top wall 94 and downwardly extending side parallel walls 95. The top wall 94 is formed adjacent its forward edge with a slit 96 and the metal in front of the slit is pushed upwardly to form an upwardly projecting strip 97, the front edge of which is flush with the front edge of the pusher as a whole. Thus if all the staples are used up the strip 97 will contact the front edge of the blade and will not allow the pusher to move beneath the blade.

The top wall 97 of the pusher is furthermore formed with an upwardly recessed longitudinal portion 98 (Figs. 7 and 19). The portion 98 is formed with longitudinal slot 99. Attached to the upwardly recessed portion 98 is a sleeve member 100 for slidably carrying a pusher rod 101. The sleeve member 100 comprises a split sleeve 102 from which extend contacting portions 103 passing through the slot 99. Extending outwardly from the lower ends of the contacting portions 103 are wings 104 engaging the underside of the upwardly recessed portion 98.

The push rod 101 is formed with a flattened stop lug 105 at its front end. Riveted to the rear end of the push rod 101 is a latch member 106 for disengageably connecting the rod to the staple guide. Said latch member 106 comprises a vertical wall 107 formed with a through opening through which the push rod passes. The rear end of the push rod is riveted to the wall 107. Extending forwardly from the lower end of the

wall 107 is a horizontal wall 108. At the end of the wall 108 is a bent back portion 109 from which extends a downwardly and rearwardly inclined wall 110. Extending downwardly from the rear end wall 110 is a tab 111. The bent back portion 109 is formed with a slot and the metal taken from the slot is pressed forwardly and upwardly to form lip 112. Wall 108 contacts the underside of wall 84. The lip 112 engages the edge 88 of the top wall 84. Pressed from wall 110 is an upwardly extending strap shaped lug 113.

It will be noted that the engagement of the lip 112 with the edge 88 retains the push rod on the guide member 83. The wall 107 contacts the rear edge of the top wall 84. The tab 111 contacts the rear edge of the bottom wall 51 of the body 50. By pressing upwardly and rearwardly against tab 111, lip 112 is disengaged from edge 88 and the pusher rod can then be pulled rearwardly off the guide.

Interposed between the sleeve 100 and wall 107 is a coil compression spring 114 which normally pushes the pusher 93 forwardly. The forward end of the pusher engages the rear end of the staple strip "S" to press the foremost staple 81 against the rear surface of the front wall 71. In such a position, the foremost staple 81 is in the track 76, and when the plunger 80 is depressed, in the manner hereinafter explained, said staple will be ejected.

Mounted on the bottom walls 28 of the lower jaw of the main frame 11 is an anvil 115 against which driven staples are pressed. The anvil 115 comprises a top wall 116 (Fig. 16) from which extend downwardly side walls 117. The side walls 117 contact the inner surfaces of the side walls 27. Extending downwardly from the front end of the wall 116 is front wall 118 interconnecting the walls 117. The walls 117 are preferably welded to the side walls 27. The anvil thus interconnects the walls 28 and serves to retain the main frame from being pulled apart. The anvil furthermore holds the side walls 17 of the main frame in parallel relationship with each other. The upper surfaces of the top wall 116 of the anvil is formed with the usual notches 119 for opening inwardly arms 81a of the staple 81, as shown in Fig. 12 of the drawing.

In the event that the stapler is used fast without a paper within the slot 27a, between the lower jaw 27 and the upper jaw or the upper front portion of the frame, when the blade is released, it will rise and instead of the closed staple remaining on the anvil it may remain in the track. The next driven staple instead of being pushed inwardly may then open, that is, the arms 81a might engage the stuck staple which serves as an anvil and will be pushed outwardly. Such action causes jamming of the staples. By providing the clearance 71a in the cover 70, a pencil may be inserted behind the anvil 115 and within the slot 27a between the jaws, and the next time the plunger is pressed downwardly, as will appear hereinafter, the track will be cleared of the jammed staples.

In assembling the staple magazine with the main frame 11 the outer ends 63 of the pivot pin 62 are pushed through the mouth of the embossed grooves or slots 40 (Figs. 1 and 13) and work into the half round hook ends 43 of said grooves which serves as a bearing for the pivot pins, allowing rotation of the staple magazine 13 relative to the frame 11.

The handle 12, as will be explained hereinafter,

serves as a means for depressing the blade 80. Said handle 12 is a combination handle and driver and may be made of a single piece of properly shaped sheet metal. Said handle comprises a downwardly and rearwardly curved bottom wall 120 from which extend upwardly parallel side walls 121. Extending from the side walls 121 are longitudinal inwardly extending shoulders 122 from which extend upwardly, parallel side walls 123, slidably engaging within the inner surfaces of the side walls 17 of the main frame (compare Figs. 1 and 8). At the front ends of said walls 121 are shoulders 124 from which extend forwardly and upwardly, parallel walls 125. The walls 125 are formed with aligned circular outwardly embossed hub portions 126 (Fig. 13), coaxial with the pivot pin 62. The portions 126 are formed with central bearing openings 127 for the outer ends of the pivot pin 62. The portions 125 are inclined upwardly and inwardly as shown in Fig. 8 of the drawing, and extending forwardly therefrom are portions 130 from which extend portions 131 inclined toward each other and decreasing in height. The portions 131 thus have downwardly and forwardly inclined upper edges 132 terminating in forwardly extending contacting fingers 133 passing through the slot 89a in the upper end of the blade 80. Thus the fingers 133 pass through the slot 75 in the front wall 71. It will now be understood that when such handle member 12 is squeezed and moved in a counterclockwise direction, looking at Fig. 8 of the drawing, the fingers 133 will depress the blade 80 as the fingers move through the slots 75 and 68. The lower end of the blade will then depress the foremost staple 81 of the staple strip "S" thereby forcing the arms of the staple against the anvil. The contacting fingers 133 may be welded to each other or otherwise attached together if desired.

It will be understood that the handle member can rotate relative to the staple magazine and also relative to the frame, and that the staple magazine can also pivotally move relative to the frame and handle member.

Spring means is provided to control the pivotal movement of the handle and the staple magazine. To this end there is provided a spring 135 (Fig. 2) made of a strip of spring steel. Said spring 135 comprises a portion 136 which passes between the pivot pin 62 and the underside of the staple magazine body 50. The pivot pin is spaced sufficiently from the underside of wall 51 to permit the spring to pass between said pivot pin and said wall. Portion 136 is formed at opposite sides with notches 137 (Fig. 6) to receive the arms 60 and thereby to prevent longitudinal shifting of the spring relative to the staple body. Extending forwardly from portion 136 is a downwardly inclined portion 138 from which extends a downwardly inclined tongue 139. The tongue 139 is received beneath the anvil. The underside of the anvil is hollow, and thus the tongue 139 extends between the wall 116 of the anvil and walls 28 of the bottom jaw of the main frame. In inserting the tongue 139 into the anvil said tongue must be pressed upwardly and has a tendency to press downwardly against the bottom of the lower frame jaw for urging rotation of the staple magazine in a clockwise direction relative to the frame.

Extending rearwardly from portion 136 of the spring 135 is a downwardly curved portion 140 from which extends a bent back portion 141. Extending from said bent portion 141 is a forwardly extending tongue 142 which contacts the upper

surfaces of the bottom wall 120 of the handle. The spring portions 140, 141 and 142 tend to press downwardly against the rear end of the handle and thereby urge rotation of the handle in a clockwise direction relative to the frame.

The staple magazine is normally in the position shown in Fig. 1 of the drawing. When the rear end of the handle is squeezed upwardly toward the frame, the staple magazine is first rotated by the rear end of the spring in a counter-clockwise direction to depress the forward end of the staple magazine. When the front end of the staple magazine contacts the paper or work to be stapled, it stops rotating. However, the squeezing movement of the handle will cause the plunger or blade 80 to be depressed to drive the staple through the work. The work is designated in the drawing by the letter "W" (see Fig. 8). When the handle is then released the handle will first rotate relative to the staple magazine until the fingers 133 reach the top of the slot 75; then both the handle and the staple magazine will rotate in a clockwise direction together, relative to the frame, back to normal position.

It will be noted that the pivot pin locks the spring to the magazine. In assembling the device, first take the staple magazine, lay in the spring in position, insert the driver blade in the staple magazine so that the top of the blade is flush with the top of the front cover, then slip the handle onto the spring from the rear of the magazine. Locate the front end of the driver fingers 133 on the handle within the slotted blade 75 registering in the slot 75 in the front cover, and with the front end of the handle passing through both slots. Align the holes of the handle with the pivot holes of the magazine frame. Then insert the pivot pin, making sure that the spring 135 is between the pin and the magazine. The outer ends of the pin will protrude sufficiently on both sides of the handle to form a pivot to assemble with the main frame. The ends of the pivot pin are passed through the embossed grooves 40 through their rear ends and the pin ends are worked into the hooked inner ends 43 of the embossed grooves.

It will be noted that as the handle is squeezed the pivot pin presses upwardly in the bearing 43 to keep the pivot pin ends in their hooked bearings. When you squeeze the handle you first rotate the staple magazine with the handle. When the magazine reaches the work being stapled, continued squeezing drives the blade because the handle then rotates relative to the magazine. The movement of the front end of the magazine toward the cover is controlled by the front end of the spring. The return of the driver end of the handle itself to normal position is controlled by the rear end of the spring.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

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

1. A plier type stapler comprising a frame having side walls formed with a pair of aligned hook shaped slots each formed with a mouth at one

end and with a half round bearing at its opposite end, a staple magazine within the frame, a pivot pin on said staple magazine, the outer ends of said pivot pin engaging said half round bearings of said slots, and a handle having side walls, located between the staple magazine and the side walls of the frame and formed with bearing openings through which the ends of the said pivot pin pass, the outer ends of the pivot pin being movable through said hook shaped slots for withdrawing the handle and magazine from said frame, said magazine including means to carry a staple strip, a driver blade for ejecting the foremost staple in the staple strip, and said handle having means to engage said blade for moving the blade relative to the staple magazine.

2. A plier type stapler comprising a frame having side walls formed with a pair of aligned hook shaped slots each formed with a mouth at one end and with a half round bearing at its opposite end, a staple magazine within the frame, a pivot pin on said staple magazine, the outer ends of said pivot pin engaging said half round bearings of said slots, and a handle having side walls, located between the staple magazine and the side walls of the frame and formed with bearing openings through which the ends of the said pivot pin pass, the outer ends of the pivot pin being movable through said hook shaped slots for withdrawing the handle and magazine from said frame, said magazine including means to carry a staple strip, a driver blade for ejecting the foremost staple in the staple strip, and said handle having means to engage said blade for moving the blade relative to the staple magazine, spring means to rotate the staple magazine relative to the frame and spring means to rotate the handle relative to the staple magazine.

3. A plier type stapler comprising a frame having a top wall and downwardly extending side walls, said side walls having downward extensions from which extend forwardly, lower jaw members, spaced from the forward ends of the side walls of the frame, an anvil mounted on said lower jaw members, said extensions having hook shaped slots each slot having a rearwardly opening mouth from which the slot extends forwardly and then upwardly, terminating in a half bearing, a staple magazine within said frame, a pivot pin on said staple magazine, the outer ends of said magazine being adapted to pass into said slots and said outer ends of said pivot pin being movable into the half bearings, a handle pivoted on said pivot pin and having side walls located between the staple magazine and means on the handle to engage the blade from moving the blade upon squeezing the handle relative to the frame.

4. A plier type stapler comprising a frame having a top wall and downwardly extending side walls, said side walls having downward extensions from which extend forwardly, lower jaw members, spaced from the forward ends of the side walls of the frame, an anvil mounted on said lower jaw members, said extensions having hook shaped slots each slot having a rearwardly opening mouth from which the slot extends forwardly and then upwardly, terminating in a half bearing, a staple magazine within said frame, a pivot pin on said staple magazine, the outer ends of said magazine being adapted to pass into said slots and said outer ends of said pivot pin being movable into the half bearings, a handle pivoted on said pivot pin and having side walls located

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between the staple magazine and means on the handle to engage the blade from moving the blade upon squeezing the handle relative to the frame, a spring made of strip spring metal and having a portion disposed between the pivot pin and the staple magazine, a portion extending forwardly from the first portion and engaging the lower jaws of the frame and a portion extending rearwardly from the first portion and interposed between the handle and the underside of the staple magazine.

5. A plier type stapler comprising a frame having a top wall and parallel side walls, said parallel side walls being formed with slots extending rearwardly from the front ends forming lower jaws, said side walls being formed with outwardly embossed grooves, said grooves opening to the rear and extending inwardly and then being curved upwardly and rearwardly terminating in half round bearings, a staple magazine comprising a staple body having side walls and a bottom wall and ears extending downwardly from said side walls and said body, said ears being formed with through openings, pivot pins extending through the openings in ears and extending beyond said ears at opposite sides, the outer ends of said pivot pins projecting into said slots, a handle member having rearward handle extension disposed below said staple magazine and said handle extension having side walls disposed between staple magazine and the side walls of the frame, said handle member being formed with bearing openings through which the ends of pivot pin pass, and said handle member being provided with a forwardly extending finger, said staple magazine comprising a front cover attached to the front end of the magazine body and formed with a slot, a staple guide fixed within said body and forming a track with the front wall of the cover, a driver blade within said track, said driver blade being formed with a slot, the forward end of said handle member passing through the slot in the blade and projecting into the slot in the first cover.

6. A plier type stapler comprising a frame having a top wall and parallel side walls, said parallel side walls being formed with slots extending rearwardly from the front ends forming lower jaws, said side walls being formed with outwardly embossed grooves, said grooves opening to the rear and extending inwardly and then being curved upwardly and rearwardly terminating in half round bearings, a staple magazine

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comprising a staple body having side walls and a bottom wall and ears extending downwardly from said side walls and said body, said ears being formed with through openings, pivot pins extending through the openings in ears and extending beyond said ears at opposite sides, the outer ends of said pivot pins projecting into said slots, a handle member having rearward handle extension disposed below said staple magazine and said handle extension having side walls disposed between staple magazine and the side walls of the frame, said handle member being formed with bearing openings through which the ends of pivot pin pass, and said handle member being provided with a forwardly extending finger, said staple magazine comprising a front cover attached to the front end of the magazine body and formed with a slot, a staple guide fixed within said body and forming a track with the front wall of the cover, a driver blade within said track, said driver blade being formed with a slot, the forward end of said handle member passing through the slot in the blade and projecting into the slot in the first cover, an anvil mounted on said lower jaws and a spring made of spring strip steel and having a portion clamped between the pivot pin and the underside of the staple body and a portion extending forwardly of the first portion and engaging beneath the anvil and contacting said lower jaws, and a portion extending rearwardly from the first portion and interposed between the rear handle extension and the underside of the magazine.

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