

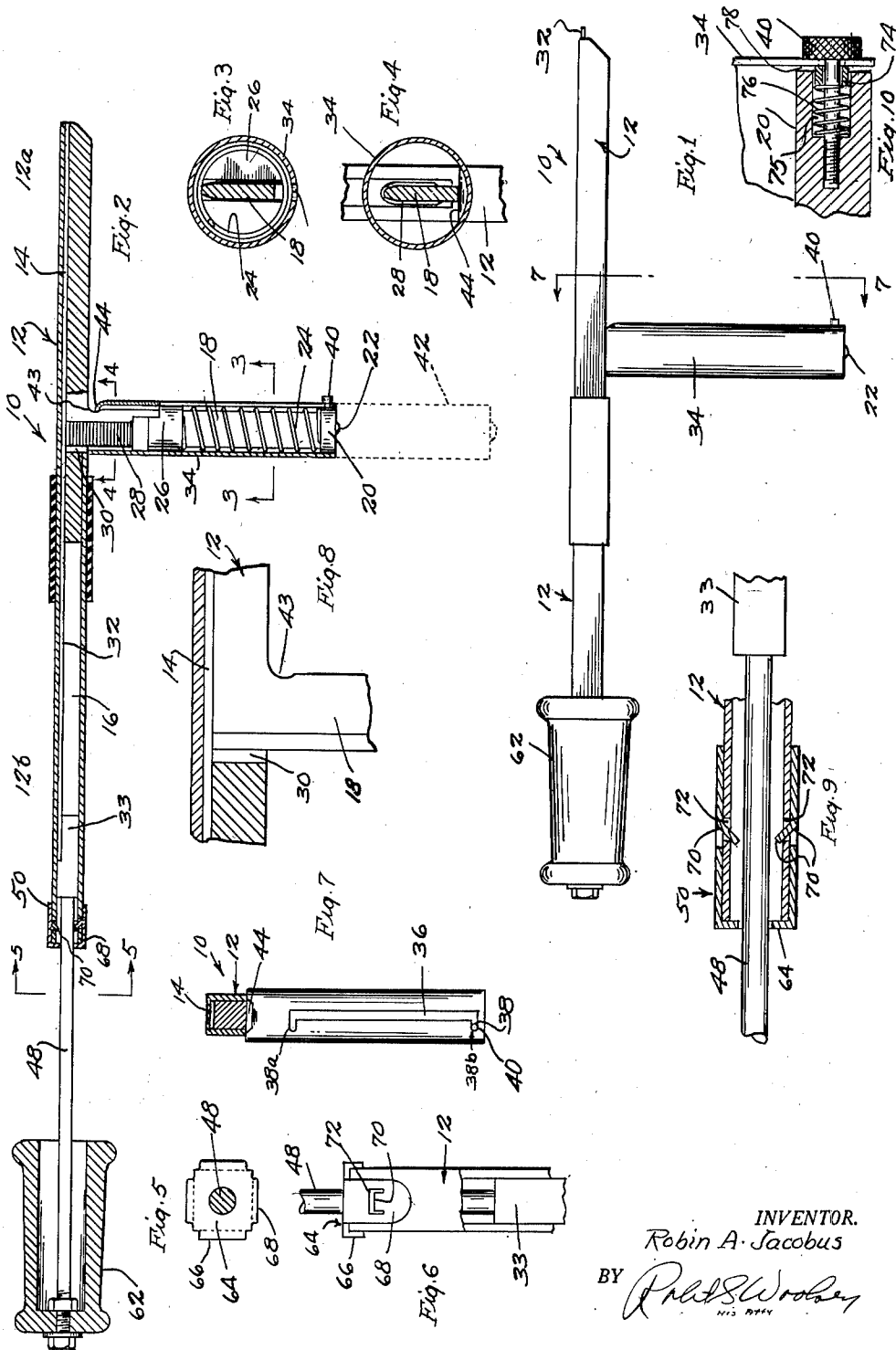
March 11, 1952

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2,588,929

MAGAZINE FOR STAPLING TOOLS

Filed May 3, 1949



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2,588,929

MAGAZINE FOR STAPLING TOOLS

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Application May 3, 1949, Serial No. 91,101

5 Claims. (Cl. 1—49)

1

The improvement constituting the present invention relates to staplers of the type used in various industrial operations, such as staple attachment of bed springs to the wooded frame or base therefor in building box springs, the securing of wire around wooden cases, and other like or similar operations wherein it is necessary to securely staple separable items together.

In relationship to staplers of the above referred to type, an object of the invention is to provide a new and simplified arrangement to load the magazine of a stapler with staples, and in addition thereto; it is,

Another object of the invention to provide a new and improved guide for the plunger bar, the guide being in the nature of a clip in detachable relationship to the body of the tool whereby the driver blade is held in medial longitudinal alignment with the body of the tool in an improved manner, and whereby, upon being worn under blows of the hammer, the guide may be readily removed for replacement without harm or damage having been done to the body of the tool.

The foregoing, and other objects, features, and advantages of the invention may be noted from a study of the accompanying drawing, the specification, and the sub-joined claims.

In the drawing:

Figure 1 is a side-elevational view incorporating the improvements of this invention; and,

Figure 2 is a longitudinal sectional elevational view showing the improvements in their relation to the stapler illustrated in Figure 1.

Figure 3 is a transverse sectional view of the magazine as seen substantially on line 3—3, Figure 2; and,

Figure 4 is a similar view taken along line 4—4, Figure 2, showing construction at this point along the staple carrier bar.

Figure 5 is a view taken along line 5—5 showing the guide in plan, in functional position upon the body of the tool; and,

Figure 6 is a side-elevational view of the guide showing a tab-like ear struck therefrom and inserted within a slot in the body of the tool, as a means to secure the guide thereon.

Figure 7 is a view taken along line 7—7, Figure 1 showing the slidable tubular cover of the magazine, and the means used to hold the cover when staples are being placed upon the carrier bar.

Figure 8 is a detail showing the carrier bar in relationship to the body of the tool, and showing the carrier bar in relationship to the slot therein through which staples are fed and through which they are directed for application to the work.

2

Figure 9 is a detail in section showing the tabs which are struck from two opposed sides of the guide-clip, and showing application of and insertion of these tabs in preformed slots in the tool body as a means of attachment therefor.

Figure 10 is a detail of construction showing a spring pressed pin adapted to aid support of the tubular cover or sleeve against accidental dislodgement in either of its two positions.

The stapling tool 10 is formed with an elongated, rectangular body 12, the forward end 12a of which is solid in transverse section, except for a slot 14 through which staples are ejected, while the back end 12b is hollow as shown at 16. A staple carrier bar 18 is formed as an integral part of the solid forward end of the tool, and extends laterally therefrom as shown in Figures 2 and 8. The free end of the carrier bar is provided with a disc 20 which is secured upon the end thereof by means of a screw 22, and provides a base for one end of an extensile spring 24 which encircles the bar 18 and which has its opposite end in pressure contact with a staple pusher 26 upon the carrier bar, whereby the part 26 is urged along the bar toward the body of the tool, so that staples 28 are progressively pushed along the carrier bar and through a slot 30 upon three of the sides of the bar and into the slot 14 previously mentioned, and from which point the staples are picked up by the driver blade 32 and driven through the slot 14 and into the work.

A slidable tubular cover 34 is slip fitted upon the disc 20 and normally encloses the whole of the length of the carrier bar as shown in Figure 1, however, since the cover is retractable upon the carrier bar 18 to approximately the position shown in dotted lines in Figure 2, and since it is necessary to hold the cover in this retracted position when the magazine is being loaded with staples, I form an elongated slot 36 in what may be called the forward side thereof, and this slot terminates in lateral recesses 38 for the head 40 of a screw extending through the slot 36 and into the body of the disc 20. A recess 75 bored into one side of the disc 20 in alignment with the shank of the screw 40 is adapted to receive a spring 76 and a bushing 74 centered upon the pin with the spring under a certain amount of compression so as to force the bushing outwardly into frictional clutching contact with the inner surface of the tubular cover 34, thereby providing a centering means for the cover, as well as providing means to releasably hold the cover in frictionally gripped locked position for normal handling, or in retracted position during the

3

period that the magazine 29 is being loaded with staples.

The inner and forward edge of the cover 30 is bent inwardly toward the carrier bar 18 to form a lip 44 which rides in slidable edge contact therewith, and is adapted to engage the staple pusher 26 and carry it toward the free end of the carrier bar when the cover is being retracted or moved toward the dotted line position 42, thereby compressing the spring 24 as a means to apply a returning force upon the adjacent end of a clip of staples for feeding into the body of the tool for application to the work.

The assembly of the driver blade 32 comprises of course, the blade 32 which is adapted to move longitudinally within the slot 14 to tear one staple at a time from the clip thereof, and as shown, is welded to a relatively short length of bar metal 33 which is adapted to slidably move within the rectangular passage-way 16 in the tool, and this bar is provided with a pusher rod 48 which extends through the guide 50 upon the end of the body of the tool and has a hollow, hand lifted weight 62 upon the end thereof, which partially slides over the adjacent end of the body of the tool, when functionally applied thereto, and which serves as a hammer formed integrally with the driver blade assembly to provide force to drive a staple in the work.

Reference has been made to the guide 50. Figures 2, 5, 6, and 9 show the guide which is formed of sheet metal stock, the central body 64 of which is apertured to permit passage of the pusher rod 48, and from the sides of which there are four leaf-like extensions, one diametrically opposed pair of leaves 66 are relatively short and are bent at right angles to the body portion 64 to lie against two sides of the body of the tool, as a centering and stabilizing means, while the other diametrically opposed pair of leaves 68 are likewise bent at right angles to the body thereof, and lie against the other two sides of the body of the tool, but are longer than the lips 66, and are die punched to form tongues 70 which extend inwardly and convergently toward the body portion 64 thereof, and are adapted to snap in slots 72 formed in the walls of the body of the tool, whereby the guide is held against accidental withdrawal therefrom in using the stapler.

Those familiar with the general art to which the present invention is related, will readily understand its use or operation; suffice to state that the magazine is loaded with a clip of staples by first rotating the cover in a clockwise direction to effect withdrawal of the screw head 40 from the recess by relative motion between the parts, and then drawing the cover outwardly over the carrier bar to the dotted line position 42, and then partially turning the cover 30 again, to cause the screw head 40 and the outer recess 38b to be engaged to hold the cover in extended position against the inward pressure of the spring 24. A clip of staples is then laid upon the carrier bar in the customary manner, and the cover is released from the screw head 40 and is manually slid upwardly against the body of the tool to enclose all of the staples upon the bar, and is held in this position by the lip 44 which, in the uppermost position of the cover, rests within a slight recess 43 at the junction of the carrier bar 18 and the body of the tool. Each forward movement of the driver blade carries one staple from the clip to its point of application, and during this process, the weight 62 will hammer the end of the tool body, except in the degree

4

that this end of the tool is protected by the guide 64 which serves the dual purpose of not only protecting this end of the body of the tool, but also serving as a guide for the pusher rod 48. The guide is easily and quickly removed from installed position when replacement thereof is necessary or when it is necessary to withdraw the driver blade for replacement, repair, or cleaning, or for any other reason.

Having thus described my invention in its presently preferred form, that which I seek to protect by Letters Patent, is as follows:

1. In a stapling tool, a staple magazine therefor, said magazine including a staple carrier bar formed as an integral element of the body of the tool, a staple pusher saddled upon the carrier bar and adapted for slidable movement longitudinally thereon, a collar secured upon the free end of said carrier bar, and a spring based upon said collar urging said staple pusher inwardly along the bar, a slotted tubular magazine cover centered upon said bar enclosing and in sliding surface contact with said collar and staple pusher, a lip upon the magazine cover adapted and arranged to engage and retract said staple pusher upon said bar against said spring upon longitudinal movement of the tubular cover so as to provide unrestricted access to the carrier bar for ready placement of staples thereon, and a bayonet coupling adapted to hold said tubular cover in its extreme outer and inner positions with respect to said collar.

2. A magazine for a stapling tool comprising, in combination with a staple carrier bar having a flanged outer end and a spring pressed staple pusher operably based thereon, a stud on the flange of the carrier bar, and a sleeve centered upon the carrier bar in slidable engagement with said staple pusher and the flange of the carrier bar, said sleeve being formed with a slot extending substantially the length thereof and having uni-laterally disposed pockets in the ends thereof, said pockets and said stud being so disposed that upon partial rotation of the sleeve, the sleeve may be moved to and from a locked position covering the carrier bar.

3. A magazine for a stapler tool, comprising in combination with a staple carrier bar having a flanged outer end and a spring pressed staple pusher operably based thereon, a tubular sleeve, said tubular sleeve being longitudinally centered upon said carrier bar and being slidably positioned upon said staple pusher and the flanged end of the carrier bar, said tubular sleeve being formed with an inwardly inclined lip adapted to engage the staple pusher for retraction thereof against its associated spring, a stud upon the flange of the carrier bar, and said tubular sleeve being formed with a bayonet slot for cooperable union with said stud, said stud and said bayonet slot being so constructed and arranged as to enable the sleeve to be moved longitudinally of the carrier bar and detachably locked in either of its extreme positions thereon.

4. The structure of claim 3 in which, said stud is provided with a spring pressed bushing bearing upon the inner surface of said tubular sleeve and resisted by a head on the stud exteriorly thereof, so as to provide a releasable clutching action upon the tubular sleeve in either of its extreme functional use positions.

5. The structure of claim 3 in which, a clutch device is centered upon and cooperable with said stud and positioned in a recess formed in the

5

flange on the carrier bar, said clutch device being adapted and arranged to frictionally engage the tubular sleeve in either of its extreme longitudinal positions with reference to said stud, so as to prevent free movement of the sleeve when the stud is disengaged with respect to said bayonet slots.

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