

Oct. 6, 1942.

G. H. HARRED

2,298,123

MAGAZINE FOR FASTENER APPLYING INSTRUMENTS

Filed Sept. 4, 1940

2 Sheets-Sheet 1

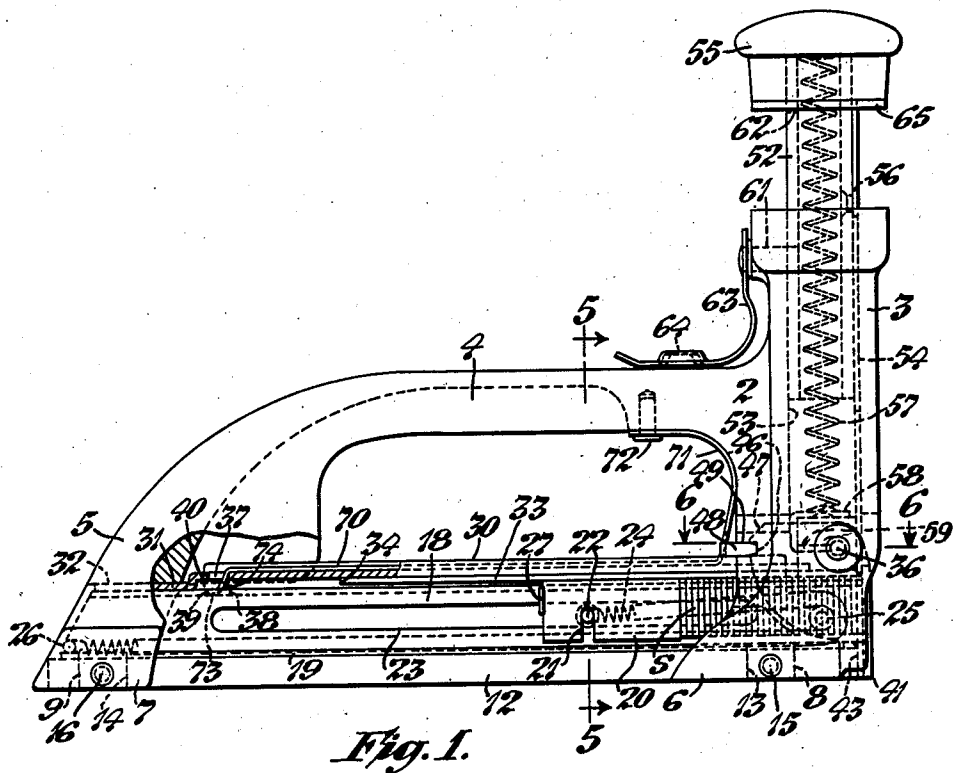


Fig. 1.

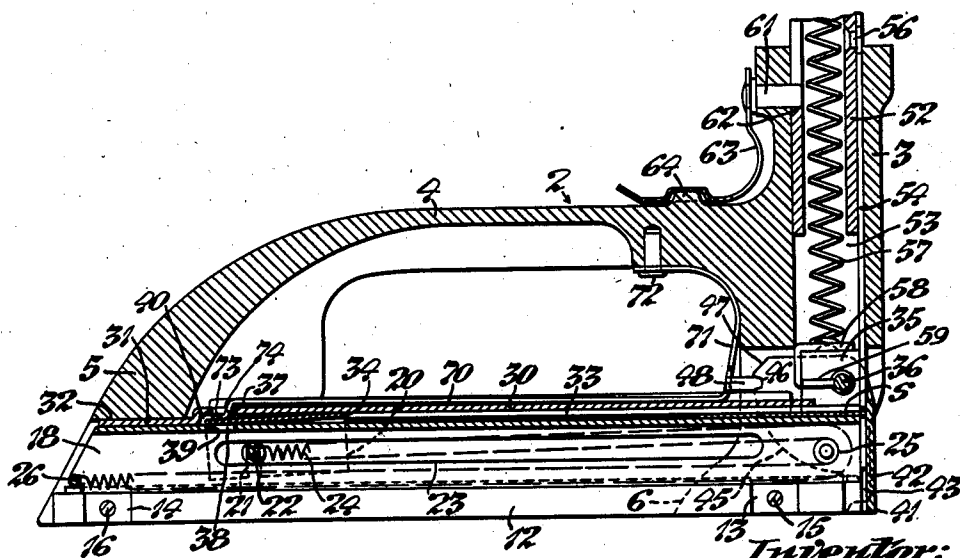


Fig. 2.

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2 Sheets-Sheet 2

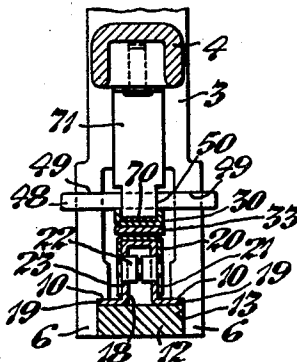


Fig. 5.

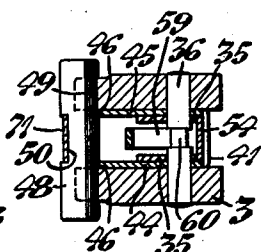


Fig. 6.

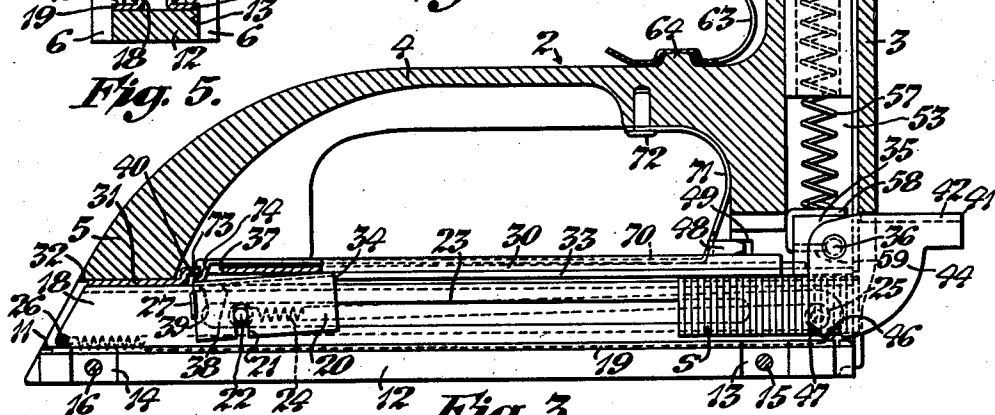


Fig. 3.

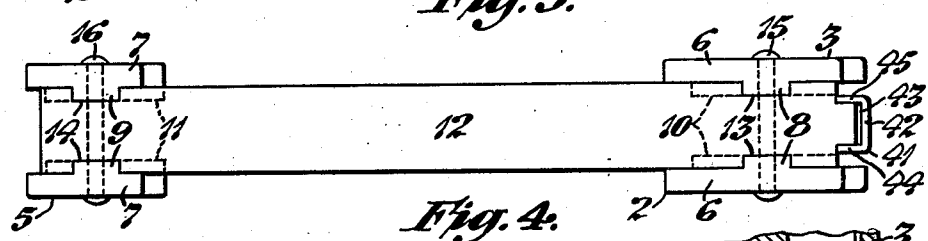


Fig. 4.

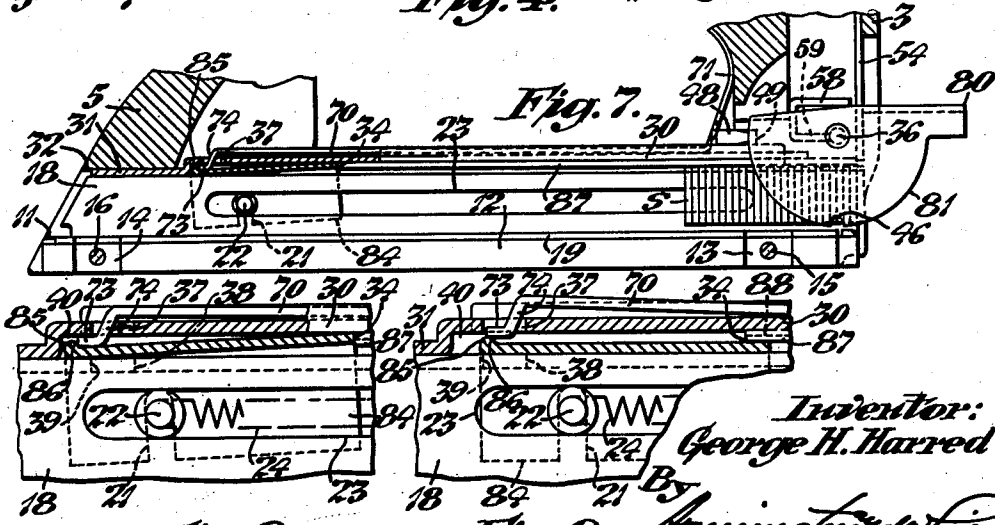


Fig. 7.

Fig. 8.

Fig. 9.

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UNITED STATES PATENT OFFICE

2,298,123

MAGAZINE FOR FASTENER APPLYING INSTRUMENTS

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Application September 4, 1940, Serial No. 355,353

19 Claims. (Cl. 1—49)

The present invention relates to fastener-applying devices for attaching papers and other sheets, securing tags and labels to articles of commerce and for use generally in fastening or stitching together various objects and articles. More particularly, the invention relates to fastener-applying implements of the type having a movable gate for opening the magazine to adapt it to be supplied with fasteners.

When the gate of such an implement is opened any fasteners in the magazine are apt to be ejected therefrom by the pusher unless some means are provided for holding the pusher or dogging the fasteners against movement in the magazine. It has heretofore been proposed to provide manually-operable detent means for latching the pusher in retracted position in the magazine before the gate is opened, but if the operator fails to properly latch the pusher the fasteners will be propelled from the magazine when the gate is released. Various types of dogging means have been proposed for engaging the fasteners when the gate is opened, but such means, although quite satisfactory in use, occasionally fail to retain the fasteners when the gate is opened due to wear or improper adjustment of the parts.

One of the objects of the present invention is to provide a fastener-applying implement of the type indicated with interlocking mechanism for positively holding the gate in closed position on the magazine until the pusher is latched in retracted position.

Another object of the invention is to provide an interlocking mechanism of the type indicated for positively retaining the pusher in its retracted position until the gate is latched in closed position on the magazine.

Another object of the invention is to provide an interlocking mechanism of the type indicated which is automatically operated to maintain the gate closed when the pusher is released or retain the pusher retracted when the gate is opened.

Still another object of the invention is to provide an interlocking mechanism of the type indicated which is of simple construction to adapt it for economical manufacture and one which is dependable in operation.

Further objects of the invention are set forth in the following specification which describes two forms of interlocking mechanism, by way of example, as illustrated by the accompanying drawings. In the drawings:

Fig. 1 is a side elevational view of a fastener-applying implement incorporating the interlock-

ing mechanism of the present invention and showing the relationship of the parts for positively holding the gate in closed position;

Fig. 2 is a longitudinal sectional view of the implement showing the pusher moved to retracted position to release the interlocking member which holds the gate in closed position on the magazine;

Fig. 3 is a view similar to Fig. 2 showing the gate swung to open position;

Fig. 4 is a bottom plan view of the fastener-applying implement;

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 1 showing the magazine core and the pin on which the pusher is rockably mounted;

Fig. 6 is a longitudinal sectional view taken on line 6—6 of Fig. 1 showing the latch-bar in engagement with the locking recesses in the gate to latch the gate in closed position on the magazine;

Fig. 7 is a fragmentary sectional view similar to Fig. 2 showing a modified form of interlocking means for positively locking the gate in closed position on the magazine when the pusher is operative and positively locking the pusher in retracted position when the gate is opened;

Fig. 8 is an enlarged detail view of the rearward end of the magazine showing the pusher locked in its retracted position; and

Fig. 9 is a view similar to Fig. 8 showing the manner in which the pusher is released.

Referring to the drawings, the present invention is shown as applied to a "tacker" type of implement generally similar to that illustrated and described in United States Letters Patent to Arthur H. Maynard, No. 2,001,104, issued May 14, 1935. It will be understood, however, that the interlocking means of the present invention may be applied to other types of fastener-applying implements such as desk type staplers, hammer-tackers or in fact any type of fastener-applying implement having a movable gate for closing the magazine and a movable pusher for advancing the fasteners therein.

The implement herein illustrated comprises a generally U-shaped frame 2 which may be die-cast or otherwise suitably formed to provide a head 3, an arched handle portion 4 and a tail-portion 5. The head 3 and tail-portion 5 depend at opposite ends of the handle portion 4 and are bifurcated at their lower ends to provide forward spaced flanges 6 on the head and rearward spaced flanges 7 on the tail-portion, see Fig. 4,

The pairs of flanges 6 and 7 are each provided with opposed vertically extending ribs 8 and 9 and longitudinally extending shoulders 10 and 11, indicated by dotted lines in Fig. 4. A base-plate 12 is mounted on the bottom of the frame 2 between the pairs of depending flanges 6 and 7 and is provided with opposite pairs of rectangular recesses 13 and 14 adjacent its opposite ends adapted to interlock with the inwardly-projecting ribs 8 and 9. The base-plate 12 is permanently attached to the head 3 and tail-portion 5 of the frame 2 by means of pins or rivets 15 and 16 extending transversely through holes in the respective pairs of spaced flanges 6 and 7 and in the plate, see Figs. 3 and 4.

The magazine comprises an inverted channel-shaped core 18 extending longitudinally of the bottom of the frame 2 throughout its length and adapted to support a supply of fasteners in straddled relation thereon. The magazine core 18 has laterally-extending flanges 19 which are clamped between the upper face of the base-plate 12 and the longitudinally-extending shoulders 10 and 11 on the under side of the frame 2, see Fig. 5. It will be understood that the flanges 19 are provided with rectangular recesses, similar to the recesses 13 and 14 on the base-plate 12, which interlock with the inwardly-extending ribs 8 and 9 on the frame 2 to hold the core 18 against longitudinal movement.

The fasteners, herein illustrated in the form of U-shaped staples s, are advanced along the magazine core 18 by means of an inverted U-shaped pusher 20 closely fitting the core and slidable therealong. The pusher 20 has vertical slots 21 at its opposite sides for receiving the reduced ends of a pin 22 projecting transversely through longitudinally-extending slots 23 in the sides of the magazine core 18. The pusher 20 is adapted to be yieldingly advanced along the core 18 by a helical spring 24 having one end connected to the pin 22 and extending forwardly between the sides of the magazine core, looped around a stud 25 at the forward end of the magazine and then extending rearwardly with its opposite end attached to a transverse pin 26 at the rear of the magazine, see Figs. 1, 2 and 3. A finger-piece or flange 27, see Figs. 1 and 3, projects laterally from one side of the pusher 20 and is positioned above the axis of the pin 22. Manual pressure applied to the finger-piece to retract the pusher on the core 18 acts automatically to rock the pusher in a counterclockwise direction about the axis of the pin 22.

Overlying the magazine core 18 is a guide-member 30 of channel-shape having a downwardly-offset rearward end 31 positioned between the top of the magazine core and a transverse shoulder 32 extending between the spaced depending flanges 7 on the tail-portion 5 of the frame 2. Attached to the bottom face of the guide-member 30, as by welding, riveting or the like, is a guide-plate 33 for holding the fasteners s and the pusher 20 from riding up on the magazine core 18. The rearward end of the guide-plate 33 is spaced from the offset end 31 of the guide-member 30 a distance slightly greater than the length of the pusher 20 and forms an abrupt right-angular latching shoulder 34 for engagement by the forward end of the pusher, see Fig. 3. The forward end of the guide-plate 33 projects beyond the end of the guide-member 30 and has wings 35 folded laterally upward in parallel spaced relationship, see Figs. 2, 3 and 6. The guide-plate 33 is spaced from the top of the

magazine core 18 a distance equal to the thickness of the crowns or crossbars of the staples and its forward end is attached to the frame 2 by means of a transverse pin 36 extending through holes in the spaced flanges 6 of the head 3 and the wings 35 projecting upwardly from the guide-plate. The guide-member 30 and the top of the magazine core 18 are provided with aligned apertures 37 and 38, see Fig. 2, located adjacent the offset end portion 31 of the member, the rearward side of the aperture 38 serving as a locking shoulder 39 for a purpose as will later appear. At the rear of the apertures 37 and 38 the guide-member 30 and the top of the core 18 form a slot 40.

The forward end of the magazine core 18 is closed by a pivoted gate 41. Although the gate 41 may be slidable vertically or mounted for lateral movement, as herein illustrated it is hinged to adapt it to swing in a vertical plane. The gate 41 comprises a front wall 42 for cooperation with the end of the magazine core 18 to provide a throat 43 through which the fasteners s are driven and side walls 44 and 45 extending rearwardly from the front wall in spaced relation to the sides of the magazine core. The gate 41, see Figs. 3 and 6, is positioned within the opening between the depending flanges 6 at the lower end of the head-portion 3 of the frame 2 and pivotally mounted on the pin 36, previously mentioned, which extends through bearing apertures in its side walls 44 and 45. The edges of the side walls 44 and 45 are curved on the arc of circles concentric to the axis of the pin 36 and extend through substantially 90°. The curved edges of the side walls 44 and 45 of the gate 41 are provided with latching recesses 46 positioned at right-angles to the front wall 42 and angular cam-faces 47 above the recesses.

The gate 41 is held in closed position at the end of the magazine core 18 by means of a latch-bar 48, see Figs. 1, 5 and 6, which is bodily slidable in guideways 49 in the flanges 6 and engageable with the latching recesses 46 in the side walls 44 and 45 of the gate. The rearward edge of the latch-bar 48 is provided with a rectangular recess 50, see Fig. 6, for engagement by a resilient locking member to be described hereinafter.

The fastener-applying means comprises a hollow plunger 52 of rectangular cross-section which fits closely within a vertical guideway 53 of corresponding shape in the head-portion 3 of the frame 2. The plunger 52 has a knob 53 at its upper end and a driver 54 attached to its front face by means of a pin 56 or the like, with the lower portion of the driver depending below the bottom of the plunger. The plunger 52 is normally held in its raised position by means of a helical spring 57 enclosed therein with one end bearing against the knob 55 and its opposite end seated on a plate 58 supported on the upper ends of the wings 35 of the guide-plate 33 of the magazine. Preferably, the plate 58 has a reentrant tail portion 59, see Figs. 1 and 6, of reduced width engaging an annular groove 60 in the pin 36 to hold the latter against lateral displacement, see Fig. 6. The plunger 52 is slidable in the rectangular opening or guideway 53 in the head 3 and the end of the magazine core 18 is so located as to adapt the depending portion of the driver 54 to reciprocate closely adjacent thereto in the throat 43. The upward movement of the plunger 52 is limited by means of a pin 61, see Fig. 2, extending through the rearward side of the head 3

with its end projecting into a groove or slot 62 in the rearward wall of the plunger. The pin 61 is carried at one end of a leaf-spring 63 held in position by a detent 64 on the frame 2. Preferably, a resilient washer 65 is provided on the bottom of the knob 55 to cushion the blow of the plunger and driver at the end of their stroke.

In accordance with the present invention the implement is provided with interlocking mechanism which acts automatically to positively lock the gate 41 in closed position on the magazine core 18 at all times when the pusher 20 is operative to advance the fasteners therein. The interlocking mechanism is preferably in the form of a slidable member 70 engageable with the latch-bar 48 and pusher 20. Although the interlocking member 70 may have other constructions, as herein illustrated it is in the form of a resilient metal strip having its forward bent end 71 attached to the bottom of the handle-portion 4 of the frame 2 by means of a pin 72. The member 70 follows the curved contour of the joinder of the handle with the head 3 of the frame 2 and extends downwardly and then rearwardly within the channel of the guide member 30, see Figs. 1, 2 and 8. At the rear of the latch-bar 48 the width of the interlocking member 70 is reduced to adapt it to seat in the rectangular recess 50 in the latch-bar to hold it against lateral displacement. Due to the curved depending portion 71 of the interlocking member 70 it acts resiliently as a leaf-spring at the rear of the latch-bar 48 for yieldingly maintaining the latter in engagement with the latching recesses 46 in the side walls 44 and 45 of the gate 41. The rearward free end of the interlocking member 70 has two angular bends to provide a downwardly offset detent 73 with an adjacent inclined face 74. The inherent resiliency of the interlocking member 70 also acts to normally depress the offset detent 73 through the apertures 37 and 38 in the guide member 30 and the top of the magazine core 18 to position its end in abutting engagement with the shoulder 39 at the rearward side of the aperture 38 in the core as illustrated in Fig. 1. Due to the engagement of the end of the offset detent 73 with the shoulder 39 on the magazine core 18 the longitudinally-extending portion of the interlocking member 70 is prevented from movement rearwardly and thereby it normally acts positively to hold the latch-bar 48 against rearward movement to lock it in engagement with the latching recesses 46 in the side walls 44 and 45 of the gate 41.

To release the detent 73 at the rearward end of the interlocking member 70 it is necessary to manually retract the pusher 20 to the position illustrated in Fig. 2 to engage its rearward end with the inclined face 74 of the detent 73 whereby to lift the latter out of the aperture 38. When the pusher 20 is manually retracted to the position illustrated in Fig. 3, due to the arrangement of the finger-piece 27 above the axis of the pivot-pin 22 the pusher is rocked automatically to engage its forward edge with the latching shoulder 34 at the rearward end of the guide-plate 33. The latch-bar 48 may then be manually retracted out of engagement with the latching recesses 46 in the side walls 44 and 45 of the gate 41 and the gate rocked on its pivot-pin 36 to open the magazine as illustrated in Fig. 3.

During the retraction of the latch-bar 48 the longitudinally-extending portion of the interlocking member 70 slides along the top of the guide-member 30 and the offset detent 73 de-

pending through the aperture 37 slides along the top of the pusher 20 and into the slot 40 between the top of the magazine core 18 and the guide-member. When the gate 41 is rocked to closed position on the magazine core 18 the curved forward portion 71 of the resilient interlocking member 70 acts as a spring for pressing the latch-bar 48 into engagement with the latching recesses 46 in the edges of the side walls 44 and 45 of the gate 41. By positively rocking the pusher 20 manually it is released from engagement with the latching shoulder 34 and the spring 24 will then advance the pusher from under the offset detent 73. The inherent resiliency of the interlocking member 70 will then act to depress the offset detent 73 through the aperture 38 in the top of the magazine core 18 and into engagement with the shoulder 39 at the rear of the aperture. One embodiment of the invention having been described in detail, its mode of operation is explained as follows:

The implement is operated in the usual manner to drive the staples *s* by depressing the knob 55 and plunger 52 against the action of the spring 57, thus causing the depending portion of the driver 54 to descend through the throat 43 and drive the foremost staple into the work. Upon release of pressure on the plunger 52 it is raised automatically by the spring 57 and its upward movement is limited by the engagement of the stop pin 61 with the end of the slot 62. The pusher 20 under the action of the spring 24 will then advance the staples *s* to position the foremost one in the throat 43. The implement is thus operated until the supply of staples is nearly or entirely exhausted.

During the operation of the implement as above explained the gate 41 is locked positively in closed position on the magazine core 18 by the engagement of the end of the offset detent lug 73 of the interlocking member 70 with the shoulder 39 at the rear of the aperture 38 in the magazine core. The interlocking member 70 thus is held positively against rearward movement and its forward curved portion 71 bears against the rearward side of the latch-bar 48 to prevent its retraction. To release the gate 41 to adapt it to be rocked to open the end of the magazine core 18 the pusher 20 must be latched in retracted position. To this end the pusher 20 is retracted manually by pressing rearwardly on its laterally-extending finger-piece or flange 27. Near the limit of the rearward movement of the pusher 20 its rearward end will engage the inclined face 74 of the offset detent 73 at the rearward end of the interlocking member 70 and cam it upwardly and out of the aperture 38 to release the interlocking member. Simultaneously with the release of the interlocking member 70 the pusher 20 will be rocked automatically in a counterclockwise direction, as viewed in Fig. 3, due to the application of the manual force at a point above the axis of the pivot-pin 22, thus causing its forward end to engage with the latching shoulder 34 at the rearward end of the guide-plate 33. With the pusher 20 thus latched in its rearward position it is held against the tension of the spring 24 to prevent it from ejecting any staples remaining in the magazine when the gate 41 is opened.

After the pusher 20 has been latched in its retracted position the latch-bar 48 may be withdrawn from the latching recesses 46 in the rearward edges of the side walls 44 and 45 of the gate 41 against the action of the resilient forward

portion 71 of the interlocking member 70. The gate 41 then may be rocked to open position on the magazine core 18 to permit a supply of staples s to be inserted in the machine.

Upon rocking the gate 41 to close the end of the magazine core 18 the angular cam-faces 47 on the edge portions of the side walls 44 and 45 of the gate 41 will first engage the latch-bar 48 to press it rearwardly and the arcuate edges of the side walls will then slide across the bar. When the latching recesses 46 in the side walls of the gate 41 come into register with the latch-bar the latter is pressed into engagement with the recesses under the tension of the resilient portion 71 of the interlocking member 70. The pusher 20 may then be released by rocking it manually in a clockwise direction and under the action of the spring 24 is advanced into engagement with the rearmost staple s on the magazine core 18. Immediately the pusher 20 is moved from under the offset detent 73 at the rearward end of the locking member 70 the latter is automatically depressed into the aperture 38 whereby its end engages with the shoulder 39 at the rear of the aperture. The interlocking member 70 will then be held positively against rearward movement to lock the latch-bar 48 in engagement with the latching recesses 46 in the side walls 44 and 45 of the gate 41 to prevent unwarranted opening of the gate.

Figs. 7 to 9 illustrate a modified form of interlocking mechanism which, in addition to locking the gate closed when the pusher is operative, also functions to positively lock the pusher in retracted position while the gate is open. In this modified form of construction the gate 80 is similar to the gate 41 previously described except that the arcuate edges 81 of its side walls are continued through substantially 180°. The pusher 84 is also similar to the pusher 20, previously described, except that it is provided at its rearward end with a centrally located detent-projection or lug 85 having a rounded or inclined cam-face 86 at its forward side. The guide-plate 87 which overlies the magazine core 18 is provided on its under side with a suitable longitudinal groove 88 in which the projection 85 on the pusher 84 slides, see Figs. 8 and 9.

When the pusher 84 of this modified construction is moved to retracted position its rearward edge engages the offset detent 73 and raises it out of the aperture 38 in the magazine core 18 to release the interlocking member 70 in the manner as previously explained. The latch-bar 48 may then be withdrawn to release the gate 80 and the rearward sliding movement of the interlocking member 70 will cause the offset detent 73 at its rearward end to enter the slot 40 between the top of the magazine core 18 and the guide-member 30 to engage its rearward end with the detent-lug 85 on the pusher 84 as shown in Fig. 8. As the rearward end of the offset detent 73 of the interlocking member 70 closely fits in the slot 40 it will prevent the lug 85 on the pusher 84 from movement outwardly of the slot and thereby positively lock the pusher in retracted position. After the latch-bar 48 has been withdrawn the gate 80 may be rocked to the position illustrated in Fig. 7 to open the magazine to receive a supply of staples. The latch-bar 48, however, will be held in retracted position by its engagement with the arcuate edges 81 on the side walls of the gate 80 which extend beyond the latching recesses 46 to positively hold the offset detent 73 at the rearward end of the interlocking member 70 in the

slot 40. By this means the pusher 84 is locked positively in retracted position until the gate 80 is closed so that there is no chance of its being accidentally released to eject any staples which may remain in the magazine.

Upon rocking the gate 80 to closed position on the magazine core 18 the latch-bar 48 is pressed forwardly into the latching recesses 46 in the gate 80 by the upper resilient portion 71 of the interlocking member 70. Simultaneously with the engagement of the latch-bar 48 with the latching recesses 46 in the gate 80 the offset detent 73 at the rearward end of the interlocking member 70 is advanced to underlie the aperture 37 in the guide-member 30. The pusher 84 may then be unlatched as previously explained by positively rocking it in a clockwise direction on the pin 22 so that it may be advanced under the tension of the spring 24. During the forward movement of the pusher 84 the inclined cam-face 86 on the forward side of the detent-lug 85 rides under the offset detent 73 of the interlocking member 70 to lift it out of locking engagement with the lug; it being understood that the aperture 37 in the guide-member 30 permits the upward movement of the detent. The pusher 84 will then be free to advance by sliding under the offset detent 73 of the interlocking member 70. The offset detent 73 will then be depressed into the aperture 38 as previously explained to cause its end to engage with the locking shoulder 39 whereby to lock the latch-bar 48 in engagement with the recesses 46 in the side walls of the gate 80.

It will be observed from the foregoing specification that the present invention provides an interlocking mechanism for positively locking the gate in closed position on the magazine while the pusher is operative to advance the fasteners and to positively lock the pusher in retracted position while the gate is open. It will further be observed that the present invention provides a simple construction of interlocking mechanism to adapt it for economical manufacture and one which is automatically operated by the movement of the pusher to lock the gate closed and operated by the movement of the gate to lock the pusher in retracted position.

While two forms of interlocking mechanism are herein shown and described it will be understood that further modifications may be made in the construction and arrangement of the parts without departing from the spirit or scope of the invention. Therefore, without limiting myself in this respect, I claim:

1. In a fastener-applying implement, a magazine for holding a supply of fasteners, a gate pivoted to open or close the magazine, a pusher movable to advance the fasteners in the magazine, and means to positively lock the gate in closed position on the magazine while the pusher is operative to advance the fasteners, said positive locking means being movable by the pusher to release it when the pusher is retracted to inoperative position.

2. In a fastener-applying implement, a magazine for holding fasteners, means for driving fasteners, means for feeding the fasteners from the magazine to the driving means, means for latching the feeding means in retracted position, a closure for retaining the fasteners in the magazine, means for latching the closure in closed position on the magazine, and means cooperating with the closure-latching means for positively locking the closure in closed position, said last-named means being actuated to releasing posi-

tion by the feeding means when the latter is moved to retracted position.

3. In a fastener-applying implement, a magazine for fasteners, a closure pivotally mounted on the magazine to open or close the latter, feeding means for advancing the fasteners in the magazine, said feeding means being manually-operable to retracted position, means for latching the feeding means in retracted position, and closure-locking means comprising a slide, said slide being operative in one position to lock the closure in closed position on the magazine and in another position to release the closure to permit it to be opened manually, and said feeding means acting upon retraction to actuate the slide from closure-locking position to closure-releasing position.

4. In a fastener-applying implement, a magazine for holding a supply of fasteners, said magazine having a latching shoulder, a gate movable to open or close the magazine, a pusher movable to advance the fasteners in the magazine, means for latching the pusher in inoperative position, and interlocking means engaging the gate and latching shoulder on the magazine for positively locking the gate in closed position while the pusher is operative to advance the fasteners, said interlocking means being operated automatically by the pusher to release it from engagement with the latching shoulder on the magazine when the pusher is latched in inoperative position.

5. In a fastener-applying implement, a magazine for holding a supply of fasteners, a gate movable to open or close the magazine, a pusher movable to advance the fasteners in the magazine, means on the magazine for latching said pusher in retracted position, said pusher and latching means being so constructed and arranged as to interengage upon manual retraction of the pusher, and interlocking means for positively locking the gate in closed position on the magazine while the pusher is operative to advance the fasteners and automatically operated by the pusher when the latter is latched in retracted position to release the gate.

6. In a fastener-applying implement, a magazine for holding a supply of fasteners, a gate movable to open or close the magazine, means for locking the gate in closed position on the magazine, a pusher movable to advance the fasteners in the magazine, means for latching the pusher in inoperative position, and an interlocking member engageable with the gate-locking means to positively lock the gate in closed position on the magazine when the pusher is operative to advance the fasteners, said interlocking member being operated by the pusher to release the gate-locking means when the pusher is latched in inoperative position.

7. In a fastener-applying implement, a magazine for holding a supply of fasteners, said magazine having a locking shoulder, a gate movable to open or close the magazine, a pusher movable to advance the fasteners in the magazine, and interlocking means movable relatively of the pusher and engageable with the locking shoulder on the magazine to lock the gate in closed position while the pusher is operative to advance the fasteners, said pusher acting to release the interlocking means from the locking shoulder on the magazine when the pusher is moved to inoperative position whereby to release the gate.

8. In a fastener-applying implement, a magazine for holding a supply of fasteners, a locking shoulder on the magazine, a gate movable to open

or close the magazine, means for latching the gate in closed position on the magazine, a pusher movable to advance the fasteners in the magazine, means for latching the pusher in retracted position, and interlocking means engageable with the locking shoulder on the magazine and the gate-latching means to positively lock the gate in closed position while the pusher is operative to advance the fasteners, said pusher acting to release the interlocking means from the locking shoulder on the magazine when the pusher is latched in retracted position.

9. In a fastener-applying implement, a magazine for holding a supply of fasteners, a closure pivotally mounted to open or close the magazine, feeding means for advancing the fasteners in the magazine, means for latching the feeding means in inoperative position, a slide engageable with the feeding means to positively lock it in retracted position, and means for holding the slide against movement while the closure is open to prevent release of the feeding means.

10. In a fastener-applying implement, a magazine for holding a supply of fasteners, a closure pivoted on the magazine to open or close the latter, a pusher movable to advance the fasteners in the magazine, said pusher having a locking detent thereon, means for latching the pusher in inoperative position, a slide engageable with the locking detent on the pusher to positively lock the latter in retracted position, and means on the closure operative when the latter is open for holding the slide against movement to prevent release of the detent on the pusher.

11. In a fastener-applying implement, a magazine for holding a supply of fasteners, said magazine having a slot adjacent its rearward end, a gate movable to open or close the magazine, a pusher movable to advance the fasteners in the magazine, said pusher having a locking detent, means for latching the pusher in retracted position with its locking detent in the slot in the rearward end of the magazine, and a slidable interlocking member for normally locking the gate in closed position on the magazine, said interlocking member having a detent at its end adapted to enter the slot in the magazine when the interlocking member is slid rearwardly to release the gate, and said gate having means for retaining the interlocking member in its rearward position whereby its detent engages the locking detent on the pusher in the slot in the magazine to positively lock the pusher in inoperative position while the gate is open.

12. In a fastener-applying implement, a magazine for holding a supply of fasteners, said magazine having a slot adjacent its rearward end and a latching shoulder forwardly of the slot, a gate movable to open or close the magazine, a pusher movable to advance the fasteners in the magazine, said pusher having a locking detent at its rearward end, the forward end of the pusher engaging the latching shoulder on the magazine when the pusher is retracted to position the locking detent in the slot, and a slidable interlocking member for normally locking the gate in closed position on the magazine, said interlocking member having an offset detent at its rearward end adapted to enter the slot in the magazine when the member is slid rearwardly to release the gate, and said gate having means for retaining said interlocking member in its rearward position whereby its offset detent engages the locking detent on the pusher in the slot in the magazine

to positively lock the pusher in retracted position while the gate is open.

13. In a fastener-applying implement, a magazine for holding a supply of fasteners, a closure pivotally mounted to open or close the magazine, a pusher for advancing the fasteners in the magazine, means for latching the pusher in retracted position, a slide for locking the closure closed on the magazine in one position and the pusher retracted in another position, and means for holding the slide against movement when the pusher is operative or the gate is open.

14. In a fastener-applying implement, a magazine for holding a supply of fasteners, a closure pivotally mounted to open or close the magazine, means for latching the closure in closed position on the magazine, a pusher movable to advance the fasteners in the magazine, said pusher having a locking detent thereon, means for latching the pusher in retracted position, and an interlocking member engageable with the closure-latching means and detent on the pusher for locking the closure closed on the magazine in one position and the pusher retracted in another position, and means for holding the interlocking member against movement to release the pusher when the closure is open or to release the closure when the pusher is operative.

15. In a fastener-applying implement, a magazine for holding a supply of fasteners, a closure movable to open and close the magazine, means for latching the closure in closed position on the magazine, a pusher for advancing fasteners in the magazine, means for latching the pusher in inoperative position, and interlocking means co-operating with the closure-latching means and pusher for positively locking the closure in closed position on the magazine until the pusher is latched in its inoperative position and acting to positively lock the pusher in its inoperative position until the closure is latched in its closed position on the magazine.

16. In a fastener-applying implement, a magazine for holding a supply of fasteners, said magazine having a latching shoulder, a gate movable to open or close the magazine, a latch for retaining the gate in closed position on the magazine, a pusher for advancing fasteners in the magazine, a latch for retaining the pusher in inoperative position, and an interlocking member engageable with the gate-latching means and the shoulder on the magazine to prevent opening of the gate when the pusher is operative to advance fasteners in

the magazine, said interlocking member being operated by the pusher during the movement of the latter to inoperative position to release the interlocking member from engagement with the shoulder on the magazine and the interlocking member being movable by the gate-latching means to lock the pusher in inoperative position.

17. In a fastener-applying implement, a magazine for holding a supply of fasteners, said magazine having a locking shoulder adjacent its rearward end, a gate movable to open or close the magazine, means for latching the gate in closed position on the magazine, a pusher for advancing the fasteners in the magazine, said pusher having a detent thereon, means for latching the pusher in retracted position, and an interlocking member engaging the gate-latching means and having a detent engageable with the locking shoulder on the magazine to positively lock the gate in closed position, said pusher engaging the detent on the interlocking member to release the latter from the shoulder on the magazine when the pusher is moved rearwardly to latch it in retracted position and said last-named detent engaging the detent on the pusher when the gate-latching means is retracted whereby to positively lock the pusher in retracted position.

18. In a fastener-applying implement, a magazine for holding a supply of fasteners, a pivoted gate for opening and closing the magazine, said gate having an arcuate portion with a latching recess therein, a latch-bar engageable with the latching recess in the gate, and resilient means for pressing the latching bar toward the arcuate portion of the gate to cause it to engage in the latching recess.

19. In a fastener-applying implement, a magazine for holding a supply of fasteners, said magazine having a latching shoulder thereon, a gate movable to open and close the magazine, a pusher for advancing the fasteners in the magazine, said pusher being pivotally mounted and having a finger-piece positioned eccentrically of its pivotal axis whereby the application of a force to retract the pusher automatically rocks the latter to cause it to engage the latching shoulder on the magazine, and an interlocking member co-operating with the gate and pusher for locking the gate in closed position on the magazine when the pusher is operative to advance fasteners and locking the pusher against movement in the magazine when the gate is open.

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