May 3, 1955 C. M. LINDSTROM 2,707,278

FASTENER-APPLYING IMPLEMENT

Filed June 21, 1950 2 Sheets-Sheet 1

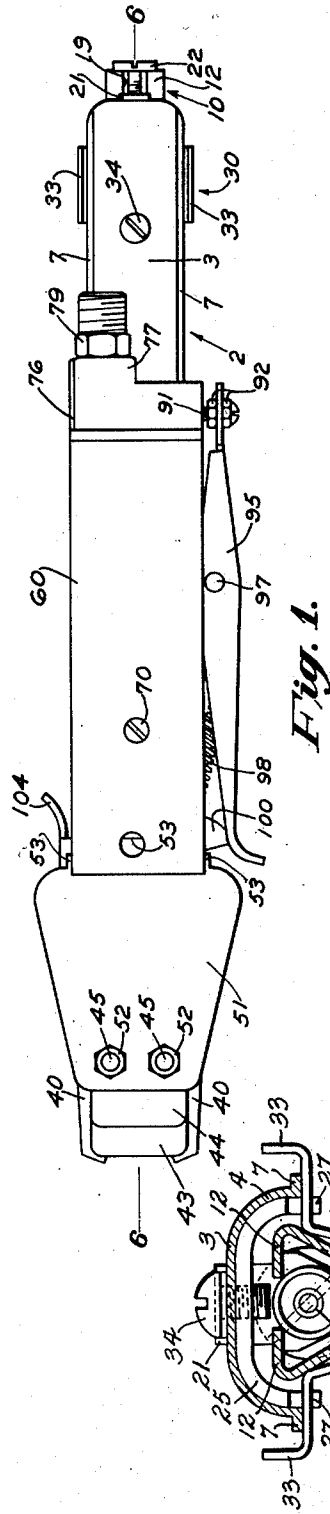


Fig. 1.

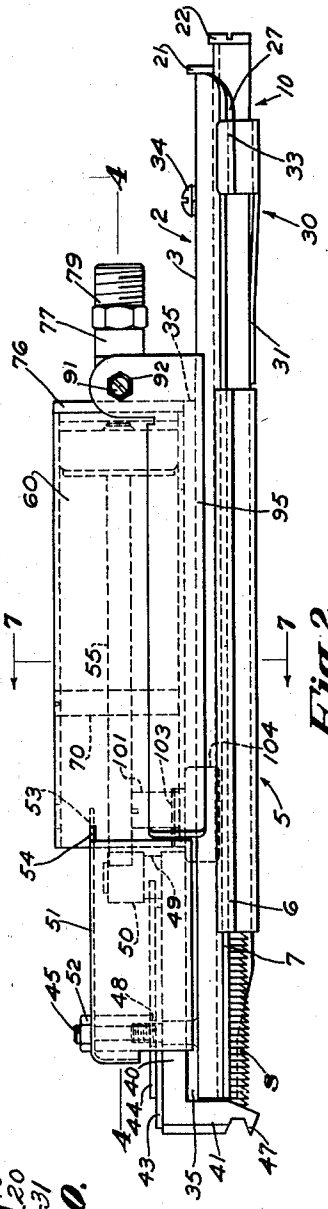


Fig. 2.

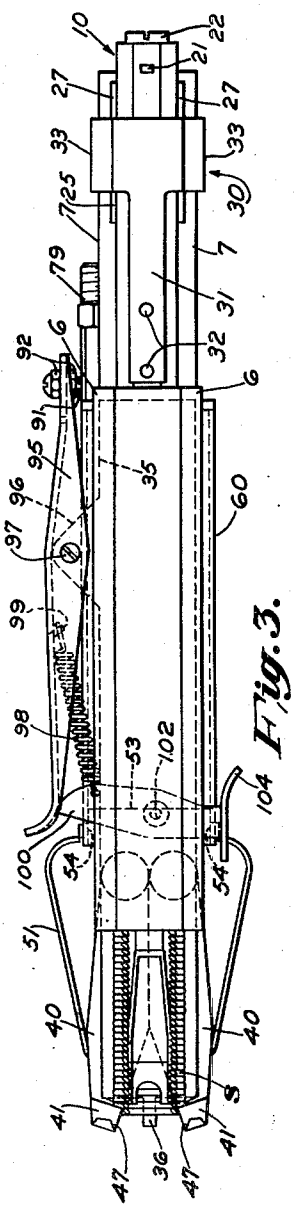


Fig. 3.

Fig. 10.

Inventor:
Charles M. Lindstrom
By Pennington & Hicks
Attorneys.

May 3, 1955 C. M. LINDSTROM 2,707,278

FASTENER-APPLYING IMPLEMENT

Filed June 21, 1950 2 Sheets-Sheet 2

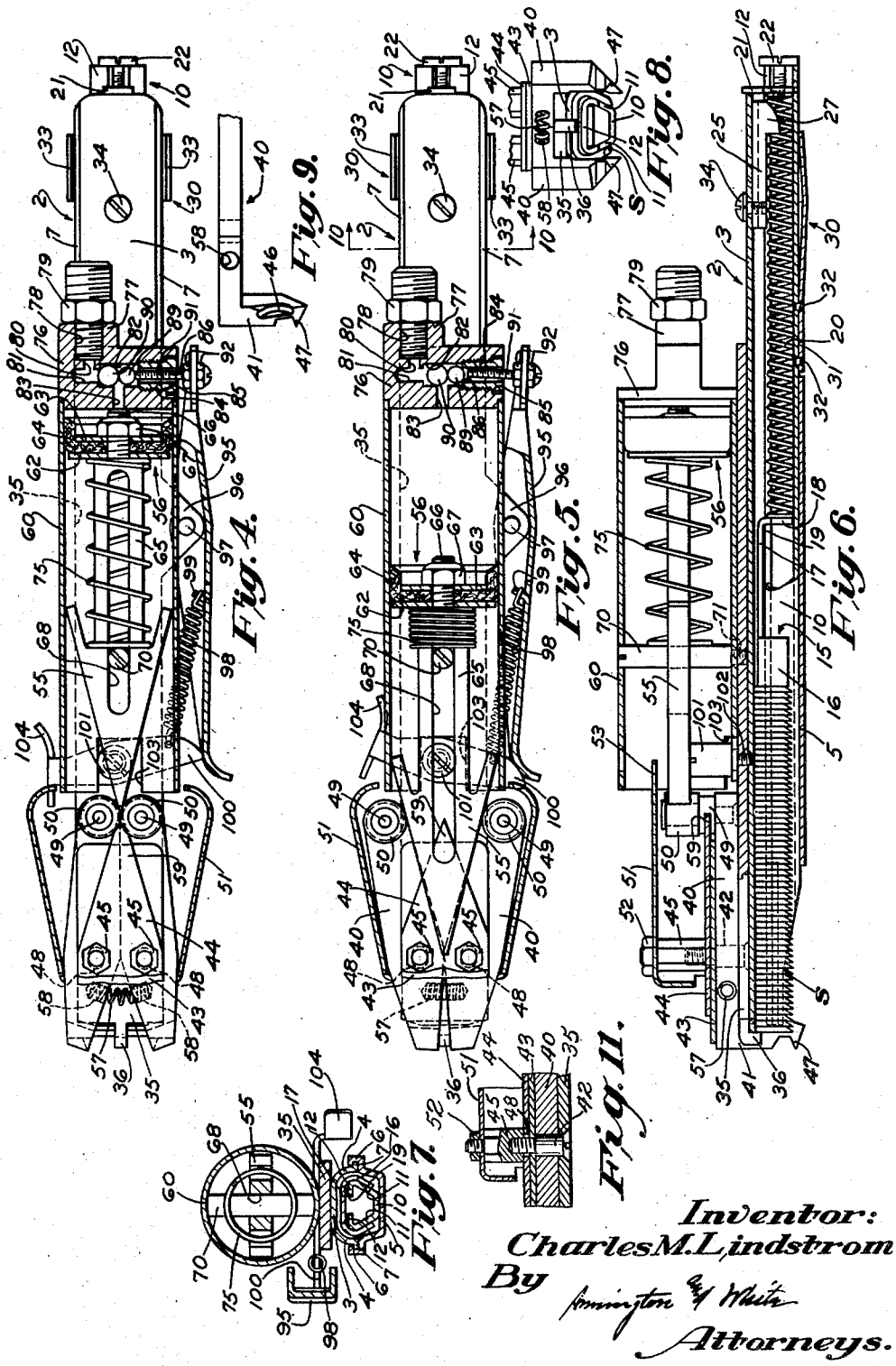


Fig. 4.

Fig. 5.

Fig. 6.

Fig. 9.

Fig. 8.

Fig. 11.

Fig. 7.

Inventor:
Charles M. Lindstrom
By Pennington & Haseltine
Attorneys.

United States Patent Office 2,707,278
Patented May 3, 1955

2,707,278

FASTENER-APPLYING IMPLEMENT

Charles M. Lindstrom, Westerly, R. I., assignor to Bostitch, Inc., Stonington, Conn., a corporation of Rhode Island

Application June 21, 1950, Serial No. 169,318

8 Claims. (Cl. 1—187)

This invention relates to an improved pneumatically-operated staple-applying implement for clinching the legs of preformed staples to form them into loops or rings with their legs overlapped in contiguous relationship for fastening various objects and articles in place.

More particularly, the invention relates to an implement adapted for convenient manipulation to apply staples of the hog-ring type to the work in various arts such as upholstery manufacture; for example, attaching fabric to the frames of seats and cushions, coverings to mattresses, binding together the cross-wires of fencing, screening and the like, and for a multitude of other uses in different arts.

One object of the invention is to provide an implement of the type indicated embodying a magazine for holding a supply of preformed staples fastened together in a stick or refill with means for feeding the staples to clinching means which forms them around the parts of the work.

Another object is to provide an implement of the type indicated embodying a pneumatically-operated piston for operating the clinching means with convenient manually-operable control-means for actuating the clinching means rapidly and positively in applying the staples to the work.

Another object is to provide in an implement of the type indicated, means for gripping a fabric to stretch it and hold it in place before the staple is applied, said means being adapted to gather the fabric together and to form it around an object simultaneously with the operation of the staple-applying means.

Another object is to provide a safety device to prevent accidental or unwarranted operation of the staple-applying means until manual release of the safety device.

Another object is to provide means for preventing partial release of the air-pressure to cause vibration or chattering of the pneumatically-operated mechanism when handling the implement.

Further objects of the improvement are set forth in the following specification which describes a preferred form of construction of the implement as illustrated in the accompanying drawings. In the drawings:

Fig. 1 is a plan view of the implement showing its manually-operable pressure-control means;

Fig. 2 is a side view of the same;

Fig. 3 is a bottom plan view of the implement showing the magazine for preformed staples;

Fig. 4 is a longitudinal sectional view of the implement on line 4—4 of Fig. 2 showing the staple-clinching means and the pneumatically-controlled piston for operating it;

Fig. 5 is a similar sectional view showing the pneumatically-operated piston at the end of its stroke for operating the clinching means;

Fig. 6 is a longitudinal sectional elevation of the implement taken on line 6—6 of Fig. 1;

Fig. 7 is a transverse sectional view of the implement taken on line 7—7 of Fig. 2;

Fig. 8 is a front view of the clinching jaws and their means for seizing and gathering the fabric to which the staple is to be applied;

Fig. 9 is a detailed view in elevation of the forward portion of one of the clinching jaws showing its gripper means for gathering and holding the fabric;

Fig. 10 is an enlarged transverse sectional view of the rearward end of the implement taken on line 10—10 of Fig. 5; and

Fig. 11 is a detailed sectional view showing the arrangement of the nuts for fastening certain parts of the implement together at its forward end.

In a preferred form of construction the present improved implement comprises, in general, a longitudinally-extending magazine for containing preformed staples; a slidable cover on the magazine embodying a hollow core adapted for insertion through the staples to retain them in the magazine; a resiliently-actuated pusher slidable on the core for feeding the staples forwardly in the magazine; a pair of individually-pivoted jaws shaped to engage around the legs of the staple; and a pneumatically-actuated piston for closing the ends of the jaws together to clinch the legs of a staple and form it into a loop or ring.

The piston for operating the clinching jaws is slidable in a cylinder arranged with its axis extending parallel with the staple-magazine and having an air-inlet at one end controlled by valve-means for admitting compressed air into the cylinder to slide the piston forwardly therein. The piston carries a tapered prow or wedge-shaped cam which is projected forwardly to engage between a pair of rollers on the jaw-members to separate their rearward ends and force their forward ends together to clinch the legs of the staple into overlying contiguous relationship. The valve-means are operated by a hand-lever which is normally held inoperative by a safety device or catch that must be released by another finger of the hand before the valve-means can be operated to admit the air for sliding the piston.

The present implement is adapted to be held in one hand and operated in various positions, for example horizontally, vertically, or at different angles in relation to the work. As shown in the present drawings and for convenience of description it will be considered that the implement is disposed in horizontal position with the staple-magazine at the bottom, the pneumatic cylinder overlying it at the top and the means for operating the jaws also superimposed above the magazine, see Figs. 2 and 7.

Referring to Fig. 7 of the drawings, the magazine 2 of the implement is preferably constructed of sheet-metal formed into inverted trough-shape in cross-section with a relatively flat upper wall 3 and arcuately-shaped sides 4 conforming to the shape of the staples to be used in the device. It will be understood that the staples *s* are of a type in general use having a straight or slightly arched head with legs connected thereto by curved portions of relatively large radius and continued in straight portions depending in angular or inclined relation to each other.

A sheet-metal cover 5 for the magazine of trough-shape has a flat bottom, outwardly-inclined sides and flanges at the top of the sides folded around to form grooved runners 6 adapted to engage with and slide on laterally-projecting ribs or flanges 7 on the magazine 2. The cover 5 is thus adapted to be withdrawn by sliding it rearwardly along the magazine 2 to open the latter for insertion of a supply of staples thereinto; the staples *s* being usually joined together by an adhesive in a "stick" or refill for convenience in packaging and handling them in groups. The staples *s* are retained within the magazine 2 by means of a hollow core 10 inserted through the whole series of staples in the stick by sliding the cover

5 forwardly on the magazine. As shown in Fig. 7, the core 10 has a flat base welded or otherwise fastened to the flat bottom wall of the cover 5 with slides 11 folded upwardly therefrom at divergent angles and flanges 12 bent inwardly at the top.

The means for feeding the staples forwardly in the magazine 2 to position the foremost one between the jaws of the implement may be of usual construction consisting in a pusher 15 having a head 16 shaped to overlie the core 10 and straddle its sides. The pusher 15 is provided with a relatively narrow tail-piece 17 projecting rearwardly therefrom and bent downwardly at its end in a portion 18 engaging through a longitudinally-extending slot 19 in the top of the core 10. A helical spring 20 enclosed within the sides of the core 10 is arranged with its rearward end abutting a vertical plate 21, see Fig. 6, in the end of the core and its forward end bearing against the down-turned end portion 18 of the pusher 15 for sliding it on the core. The plate 21 forms an abutment for the end of the spring 20, being held in slots in the inturned flanges 12 on the core 10 and fastened in place by means of a screw 22 having its head set up against the end of the core. It will be understood that when the cover 5 is slid forwardly on the magazine 2 the head 16 of the pusher 15 will be carried against the end of the stick of staples *s* and continued movement of the cover will contract and load the spring 20 to adapt it to function to feed the staples forwardly to the forming or clinching jaws. The cover 5 and its attached core 10 are latched in operative position on the magazine 2 by manually-releasable means as next described.

A catch or detent-member 25 constructed of folded sheet-metal is welded or otherwise fastened to the top wall 3 of the magazine. The catch 25 is formed with sides folded downwardly from its upper portion and terminating in shouldered portions providing projections 27 with curved or tapering edges. A finger-operable latch 30 (Fig. 10) constructed of spring-metal is shaped at its rearward end to underlie the core 10 and enclose its sides with laterally-projecting wings bent upwardly to overlie the sides of the magazine 2. The latch 30 is provided with a tail-portion 31 riveted to the bottom wall of the core 10 at 32 to adapt it to act as a leaf-spring for maintaining the latch engaged with the shoulders on the detent-portions 27 of the catch 25. As shown more particularly in Figs. 2 and 3, the rearward portion of the latch 30 extends across the bottom of the core 10 and is then folded upwardly at its sides and extended laterally in the wings 33 adapted to engage the shoulders of the detent-portions 27 of the catch 25. Through this engagement of the latch-member 30 with the detent-shoulders on the catch 25 the core 10 may be locked in position with its fore portion inserted through the whole series of staples *s* to retain them in the magazine; the latch being manually releasable from the detent-shoulders to allow retraction of the cover 5 and core 10 whereof to open the magazine for the insertion of the staples. A screw 34 passing through a hole in the top of the magazine 2 and through a hole in the catch 25 projects downwardly therefrom for engagement with the end portion 18 of the pusher 15 to prevent complete withdrawal of the cover 5 and core 10. A lug or finger 36 projecting forwardly from a plate 35, later described as overlying the magazine 2, see Fig. 6, serves as a detent or stop to prevent the staples being ejected from the forward end of the core 10 and also serves to locate the foremost staple in alinement with the grooves in the clinching jaws, also to be later described.

The magazine 2 has suitably attached thereto, by welding or otherwise, a flat plate 35 of greater thickness than the top wall of the magazine, this plate forming a base or support for the clincher-jaws 40 at the forward end of the implement. The plate 35 also forms a base for mounting the cylinder 60 in which the piston for the jaws operates. Referring particularly to Figs. 4, 5 and 6, the two jaws 40 are constructed of relatively thick, hardened metal and pivoted on individual studs 42 riveted through the plate 35 to project upwardly therefrom. The studs 42 are reduced in diameter above the jaws 40 to form shoulders supporting a pair of overlying plates 43 and 44. The two plates 43 and 44 are held down against the shoulders on the studs 42 by means of relatively long nuts 45 screwed onto the upper threaded portions of the studs as shown more particularly in Fig. 11, it being understood that the bottom plate 43 overlies the top of the jaws 40 with a clearance therebetween so that the latter will pivot freely on the studs 42.

Each nut 45 (Fig. 11) terminates at the top in a reduced screw-threaded portion which projects through a relatively thin sheet-metal cover or shield 51 fastened in place by nuts 52 screwed down thereagainst. The cover or shield 51 is of tapering shape in plan view as shown in Fig. 1 with inclined sides folded downwardly therefrom and a forward wall of less height. The cover 51 overlies and encloses the pivoted jaws 40 and their operating mechanism to be later described. At its rearward end the top wall of the cover 51 is provided with a projecting lip 53, see Fig. 3, which is inserted into slots 54 at the forward end of the cylinder 60 to assist in holding it in place. In Figs. 4 and 5 of the drawings the cover 51 is shown in section to more clearly illustrate the construction of the jaws 40 and their operating mechanism next described.

Each clincher-jaw 40 has a depending portion 41 at its forward end, see Fig. 9, formed with a recess 46 adapted to receive one of the legs of a staple prior to bending the legs into overlying relationship when the jaws are closed together. The groove or recess 46 may be staked or milled into the depending portion 41 of the jaw. The lower end of the projection 41 on each jaw 40 is formed at the front to provide a sharp-pointed prong 47 adapted to engage through the fabric or other part to be stapled to hold it in place and also, in the case of fabrics or other flexible materials, to act in cooperation with the opposite jaw to gather the material together. At the rearward end of each jaw 40 is a stud 49 riveted therethrough and projecting upwardly therefrom with a roller 50 held rotatively on its reduced upper portion. The rollers 50 serve as the means for operating the jaws 40 to cause them to pivot on their studs 42 with their forward ends closing together to clinch the legs of the staple into the form of a ring or loop. For this purpose a wedge-shaped cam 55 is slid forwardly between the rollers 50 by the action of the piston 56 in the cylinder 6 under pneumatic pressure. When the piston 56 is forced forwardly the pointed prow of the cam 55 is entered between the two rollers 50 to swing the rearward ends of the jaws 40 apart and force their forward jaw-portions 41 toward each other in the manner indicated in Figs. 4 and 5. A helical spring 57 arranged with its ends held in pockets 58 in the adjacent faces of the jaws 40 at their forward ends normally tends to move the jaws apart and adjust the rollers 50 toward each other.

The plate 44, previously referred to, is formed with a rearwardly-directed pointed portion 59. The inclined edges of the pointed portion 59 of the plate 44 are arranged to engage against the peripheries of the studs 49 on which the rollers 50 are journaled to locate the rollers in proper relation for alining the forward ends of the jaws 40 with the staples fed thereto. In order to adjust the jaws in their lateral relationship the plate 44 is adapted to be moved forwardly or rearwardly to alter the relationship between the rollers 50. For this purpose the plate 44 is provided with slots 48 through which the threaded ends of the studs 42 project and by releasing the holding nuts 45 the plate 44 may be moved in one direction to force the rollers apart to close the forward ends of the jaws toward each other; or moved in the

opposite direction to cause the rollers to move toward each other for providing wider spacing between the jaws. The pointed end **59** of the plate **44** also acts to aline the adjacent peripheries of the rollers **50** with the leading apex end of the cam **55**.

As shown in Figs. 4 to 6, inclusive, the piston **56**, which may be of any preferred construction, has a head **61** at its end constituted by a pair of washers **62** and **63** overlying a flexible cup-shaped member **64** constructed of leather or other suitable material with its rim engaging the bore of the cylinder **60**. The cam **55** is formed as a substantially flat projection at the end of a stem **65** connected to and extending forwardly from the piston **56**. The stem **65** is formed with a screw-threaded neck-portion **66** inserted through the washers **62**, **63** and **64** with a nut **67** tightened against the washer **63** to fasten the parts in connection. The stem **65** is formed with a longitudinal slot **68** through which a pin **70** engages to guide the stem as the piston is slid forwardly in the cylinder **60**. The pin **70** may be formed with a reduced threaded portion **71** screwed into the base-plate **35** to fasten it in place with its upper end projecting through a hole in the top of the cylinder **60**. A helical spring **75** encircles the stem **65** of the piston **56** and when the latter is advanced to close the jaws **40** together the end of the spring engages the pin **70** to cause the spring to be compressed and loaded whereby it will react to return the piston to first position after the air-pressure in the cylinder **60** is relieved. As the piston **56** is retracted in the cylinder **60** to withdraw the cam **55** from between the rollers **50**, the spring **57** will react to open the jaws **40** and engage the studs **49** against the edges of the pointed end **59** of the plate **44** to locate the rollers with their adjacent peripheries in alinement with the apex of the cam.

The rearward end of the cylinder **60** is closed by a head or member **76** formed with a boss **77** on its rearward end having a threaded bore **78**. Screwed into the bore **78** is a nipple **79** formed with an outer threaded-portion to which may be attached a hose for supplying compressed air to the cylinder. A duct **80** leads from the nipple **79** into a transverse-bore **81** in the member **76** which communicates with a larger transverse bore **82** having a passage **83** extending axially into the interior of the cylinder **60**. Screwed into the transverse-bore **82** from the side of the closure-member **76** is a plug **84** having its head **85** set up against a shoulder at the end of the bore. The plug **84** is provided with an axial bore **86** of somewhat smaller diameter than that of the bore **82**.

The valve-closure means comprises two balls **89** and **90** of different diameter, the larger one **90** being free to move in the main bore **82** to close its inner end at the inlet port; while the smaller one **89** is adapted to close the outlet port at the end of the bore **86** in the plug **84**, see Figs. 4 and 5. The ball **89** is smaller than the ball **90** in order to provide sufficient space in the bore **82** for the air to exhaust rapidly through the port at the end of the bore **86** in the plug **84**. Normally, the larger ball **90** is engaged with the inner end of the bore **82** to close the inlet port and prevent the air from entering the cylinder **60** through the nipple **79**, see Fig. 4, being held in this relationship under pressure of the smaller ball **89** actuated by a screw-threaded pin **91** slidable in the bore **86** of the plug **84**. The pin **91** is fastened to a hand-lever **95** by means of nuts **92** set up against the sides of the upwardly-projecting ear at the end of said lever, see Fig. 2. The hand-lever **95** is of U-shape in cross-section having lateral flanges folded at right-angles to straddle a bearing **96** projecting from the side of the base-plate **35**. A screw **97** threaded through one lateral flange of the lever **95** and journaled in the bore of the bearing **96** forms a pivotal mounting for the lever. The end of the lever **95** opposite from that carrying the pin **91** terminates in an outwardly-extended curved finger-rest for convenience in operating the lever with the thumb or fingers of the hand. A helical spring **98** attached to a lug **99** punched out and bent inwardly from the lever **95**, see Fig. 5, extends forwardly therefrom with its opposite end fastened to a latch-lever **100** which functions similarly to the "sear" or safety-catch of a pistol or gun for holding the trigger cocked to prevent it from firing.

The latch-lever **100** is constituted as the safety-catch for preventing unwarranted or accidental movement of the operating lever **95** until the latch-lever is released by finger pressure on the opposite side of the implement. The latch-lever **100** is pivoted on a stud **101** having a shouldered end portion with a screw-threaded shank **102** screwed through the base-plate **35**, see Fig. 6, to fasten it thereto within a cut-out recess **103** at the end of the cylinder **60**. The latch-lever **100** has a curved end in the form of a cam adapted to slide along the forward curved end of the lever **95** to sustain the latter in inoperative relationship as shown in Fig. 4. The opposite end of the latch-lever **100** projects outwardly beyond the opposite side of the cylinder **60** and is bent downwardly to terminate in a curved projection **104** in convenient position for engagement by the operator's finger. By pressing on the finger-piece **104** the latch-lever **100** may be rocked into the position shown in Fig. 5 against the tension of the spring **98** to release the hand-lever **95** and permit it to withdraw the plunger-pin **91** so that the balls **89** and **90** may be moved to open the inlet port at the end of the bore **82**. Operation of the hand-lever **95** in this manner will admit air-pressure into the cylinder **60** to actuate the piston **56** as more particularly explained hereinafter in connection with the method of operation of the complete implement.

The present implement may be operated by holding it in the hand in any convenient manner; for example, with the palm of the hand overlying the cylinder **60**, the thumb extended across the end of the hand-lever **95** and the forefinger pressed against the finger-piece **104** of the latch-lever **100**. The latch-lever **100** is first rocked to release its cam-shaped end from the hand-lever **95** so that the latter can be pressed inwardly by the thumb to open the air-valve. As the lever **95** is pressed inwardly the plunger-pin **91** will be withdrawn to admit compressed air through the nipple **79** and into the main bore **82** as the balls **89** and **90** are moved into the position shown in Fig. 5 of the drawings. With the balls in this relationship the smaller ball **89** is pressed against the end of the bore **86** in the plug **84** to close the outlet port and prevent the escape of air therethrough. The air is allowed to circulate around the larger ball **90** and flow through the passage **83** to enter the interior of the cylinder **60** and act against the piston **56**.

The piston **56** is slid forwardly under pressure of the air in the cylinder **60** to force the wedge-shaped cam **55** between the two rollers **50** at the ends of the jaws **40**. The rearward ends of the jaws **40** will thus be swung apart to close their forward ends against the foremost staple *s* in the magazine **2**, see Figs. 5 and 6. Continued pressure of the cam **55** against the rollers **50** will cause the depending portions **41** of the jaws **40** to bend the legs of the staples *s* inwardly toward each other and into contiguous overlapping relationship to form a loop or ring enclosing the part of the work to be fastened in place. Prior to forming the staple, the pointed prongs **47** on the jaws **40** may be engaged with the fabric or other material to be stapled and as the jaws move together to clinch the legs of the staple the material is gathered or puckered so as to conform to the interior of the staple and overlie the part to which it is fastened. In this way an extremely neat and self-conforming connection is made between the material and the rod or other element of the frame to which it is attached, thus effecting an important improvement in the method of operation of the present implement.

After each staple is clinched in place pressure on both levers is released so that the spring **98** will rock the latch-

lever **100** back into the position shown in Fig. 4 and its cam-shaped end will force the forward end of the hand-lever 95 outwardly to rock its rearward end inwardly. The plunger-pin **91** will then be projected into the bore **86** of the plug **84** to shift the balls **89** and **90** back into first position and close the air-inlet port at the end of the bore **82**. When the pressure of the air is shut off in this manner the spring **75** acts to retract the piston **56** and force the air through the bore **83** to exhaust it through the bore **86** in the plug **84**. The retraction of the piston **56** withdraws the cam **55** from between the rollers **50** and the two jaws **40** are returned to open position under the tension of the spring **57** at their forward ends. The implement may be operated continuously with the staples *s* feeding forwardly under the impulse of the pusher **15** advanced by the spring **20**. The staples are thus fed along the core **10** in the magazine **2** to carry each foremost one into position between the depending portions **41** of the jaws **40**.

It will be observed from the foregoing specification that the present invention provides an implement that is most convenient to operate for forming staples into loops or rings to attach fabric and other materials to frames, or for other purposes such as binding together the meshed wires of fencing, screens and the like. Besides being convenient to operate and positive in action the present implement is protected against accidental or unwarranted actuation by the safety device which must be released manually before the hand-lever can be operated. As an added feature of improvement the clinching jaws are provided with pointed prongs for engagement with the fabric so that the prongs move toward each other simultaneously with the closing of the jaws to gather the fabric around the article to which it is to be fastened.

While the invention is herein described and illustrated as embodied in a preferred form of construction it is to be understood that changes may be made in the structure and method of arrangement of the parts of the device without departing from the spirit or scope of the invention as expressed in the following claims. Therefore, without limiting myself in this respect, I claim:

1. In an implement of the type indicated having a pair of pivoted jaws provided with clinching portions at their forward ends movable toward each other, rollers journaled on studs projecting upwardly from the rearward ends of the jaws, a wedge-shaped cam engageable with the rollers to close the forward ends of the jaws to clinch the legs of a staple, a cylinder, a piston slidable in said cylinder to actuate the cam, and manually-operable means for admitting compressed air to the cylinder to slide the piston, the combination therewith of means for adjusting the lateral relationship of the rollers to regulate the distance between the forward ends of the jaws to properly aline them with the staples fed thereto from a magazine, said adjusting means comprising a V-shaped member having inclined edges adapted to engage between said studs on which the rollers are journaled, and means to fasten said V-shaped member in different positions of adjustment with its inclined edges engaging at varying distances between said studs whereby to regulate the relationship between the opposite jaws to vary the relative position of their forward ends.

2. In an implement of the type indicated having a pair of pivoted jaws adapted to swing towards each other to clinch a staple held therebetween, studs at the rearward ends of the jaws, rollers journaled on said studs, a cylinder, a piston slidable in said cylinder, a wedge-shaped cam slidable by the piston to enter it between the rollers and swing the jaws to close their forward ends against a staple, and a manually-controlled valve for admitting air to the cylinder to slide the piston, the combination therewith of a V-shaped member having its inclined edges engageable with the studs of the rollers to locate the latter in relation to each other, and means for adjusting said V-shaped member longitudinally with respect to the studs to advance its inclined edges to a greater or lesser extent between the studs of the rollers to thereby regulate the width of the opening between the forward ends of the jaws, and means to fixedly secure said V-shaped member in its different positions of adjustment.

3. In a stapling implement comprising a pair of pivoted members having jaws at their forward ends for clinching the legs of a staple with means engageable at their rearward ends for pivoting said members, and a wedge-shaped member slidable to engage the means at the rearward ends of said jaw-members to force their jaws against the legs of a staple, the combination therewith of a slidable cam-shaped element adapted to engage said means at the rearward ends of the jaw-members to pivot said members for adjusting their jaws to initially regulate the spacing therebetween, and means for fastening said adjustable element in position to maintain the jaws in adjusted relationship.

4. In a stapling implement comprising a pair of pivoted clincher-members having jaws at their forward ends for clinching the legs of a staple with means at their rearward ends engageable for pivoting said members to force their jaws against a staple entered therebetween, and cam-means movable for engaging said means at the rearward ends of the jaw-members for actuating said members, the combination therewith of an adjusting element slidable between the rearward ends of said pivoted members to initially position said members with their jaws in predetermined spaced relationship for receiving a staple, and means for fixedly retaining said adjusting element in adjusted relationship.

5. In an implement of the type specified comprising a pair of pivoted members having opposed jaws at one end for clinching the legs of a staple with means at the opposite ends of said members displaceable for pivoting said members, and means movable between said displaceable means for actuating said jaw-members to force their jaws against a staple, the combination therewith of a slidable adjusting element having cam-means for engaging said displaceable means at the rearward ends of the jaw-members to initially adjust their jaws in spaced relationship for receiving a staple therebetween, and means for fastening said adjusting element in fixed position to maintain the jaws of said members in proper spaced relationship for receiving a staple.

6. In an implement of the type indicated having a pair of pivoted jaw-members shaped at their forward ends for engaging and clinching the legs of a staple positioned therebetween and a movable cam-member engageable between the rearward ends of said jaw-members to actuate said members for forcing their jaws against the staple, the combination therewith of an element slidable between the rearward ends of said jaw-members to adjust them with their jaws in proper spaced relationship to receive a staple, and means for fastening said slidable element in fixed position for initially holding the jaws of said members in spaced-apart adjusted relationship.

7. In an implement of the type indicated comprising a pair of jaw-members pivotally mounted to adapt their jaws to be moved toward each other for clinching the legs of a staple received therebetween with means engageable at the rearward ends of said members for pivoting them, and means movable between said engageable means at the rearward ends of said jaw-members to force their jaws against a staple, the combination therewith of a slidable adjusting element for engaging the means at the rearward ends of said jaw-members to set their jaws in proper spaced relationship for receiving a staple therebetween, and means for fastening said adjustable element in fixed position to retain the jaws in adjusted relationship.

8. In an implement of the type indicated comprising a pair of members pivoted together intermediate their ends and formed with jaws at one end for clinching the legs of a staple, with studs on the opposite ends of said

jaw-members engageable for forcing their jaws against a staple held therebetween, and means engageable with said studs for actuating said jaw-members, the combination of a manually-adjustable element having cam-shaped means for engaging the studs at the rearward ends of said jaw-members to adjust their jaws in proper relationship for receiving a staple therebetween, and means for fastening said adjusting element in position to maintain the jaws in adjusted relationship.

References Cited in the file of this patent

UNITED STATES PATENTS

1,205,237	Maliha	Nov. 21, 1916
1,464,286	Lundblad	Aug. 7, 1923
1,746,496	Palmgren	Feb. 11, 1930
2,396,562	Forss	Mar. 12, 1946
2,487,475	Powers	Nov. 8, 1949