April 28, 1942. J. F. CAVANAGH 2,281,232

FASTENER-APPLYING IMPLEMENT

Filed March 8, 1939 2 Sheets-Sheet 1

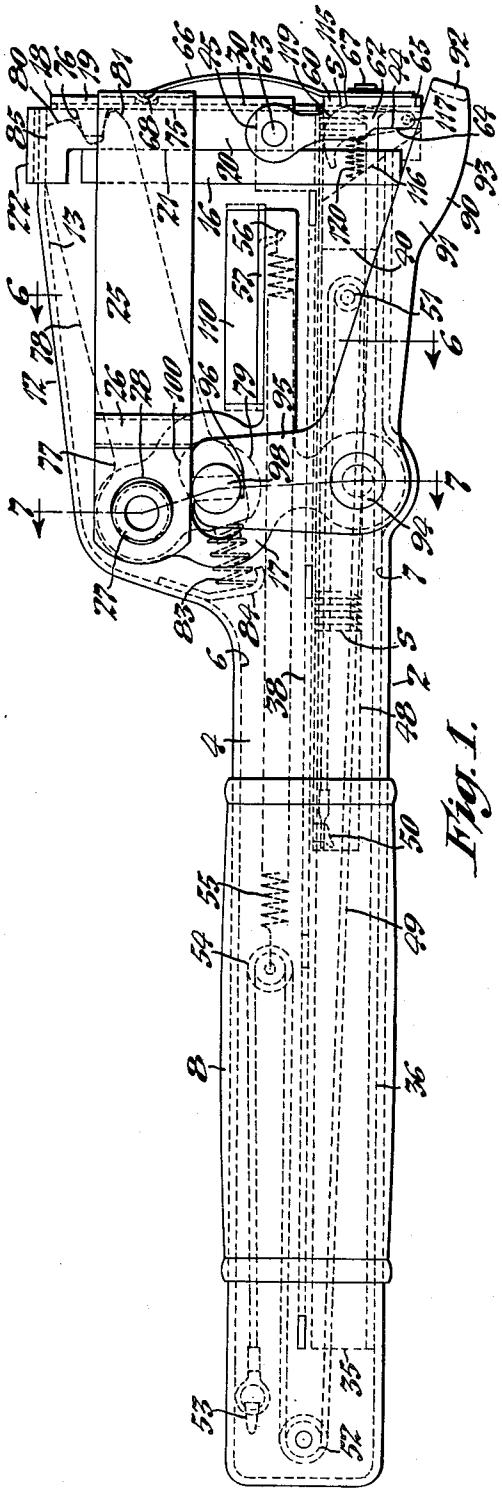


Fig. 1.

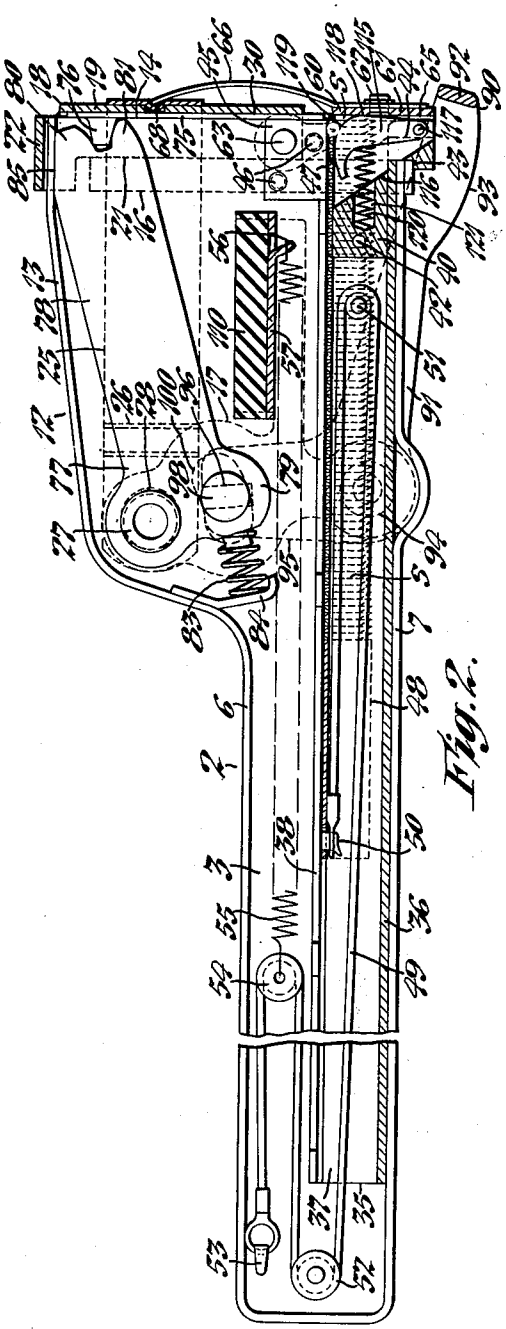


Fig. 2.

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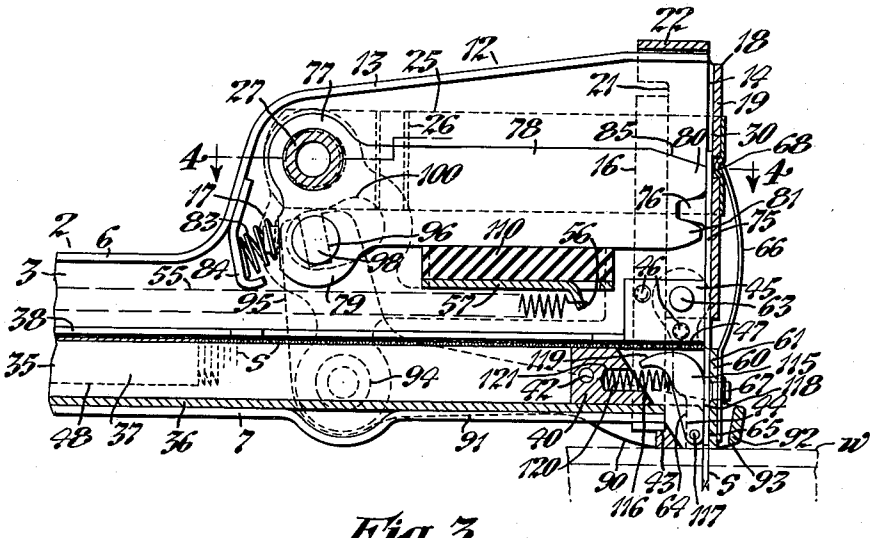


Fig. 3.

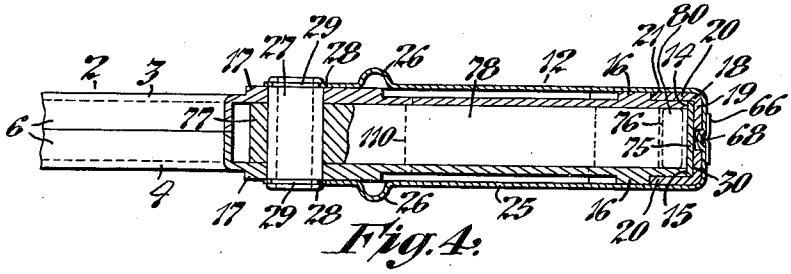


Fig. 4.

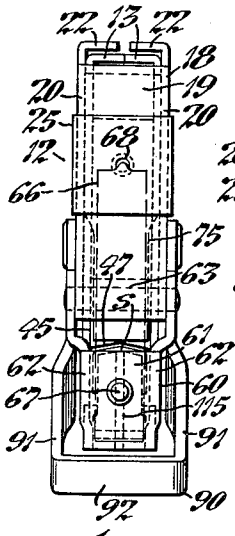


Fig. 5.

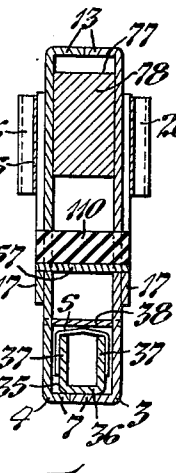


Fig. 6.

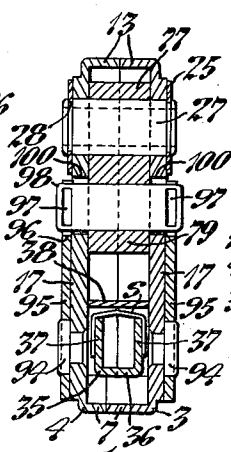


Fig. 7.

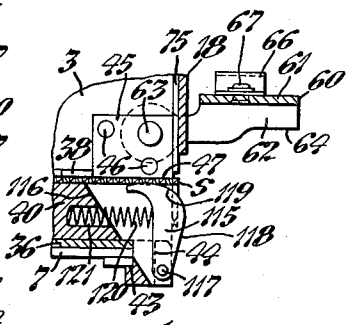


Fig. 8.

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Patented Apr. 28, 1942

2,281,232

UNITED STATES PATENT OFFICE

2,281,232

FASTENER-APPLYING IMPLEMENT

John F. Cavanagh, Providence, R. I., assignor to Boston Wire Stitcher Company, Warwick, R. I., a corporation of Maine

Application March 8, 1939, Serial No. 260,536

11 Claims. (Cl. 1—49)

This invention relates to fastener-applying implements for feeding and driving staples, double-pointed tacks and other types of fasteners and more particularly to improvements in implements of the type illustrated and described in my prior United States Letters Patent No. 2,001,092 issued May 14, 1935.

One of the objects of the present invention is to provide an implement of the type indicated which may be wielded in the hand in the manner of a hammer and operated automatically by impact with the work to feed and drive the fasteners.

Another object of the invention is to provide an implement of the type indicated in which interchangeable drivers may be used to adapt the implement to apply different forms of fasteners.

Another object of the invention is to provide an implement of the type indicated having a fastener-applying head with a removable bonnet yieldingly held in position thereon to protect the parts in the head while permitting access thereto.

Another object of the invention is to provide an implement of the type indicated having a resilient abutment for cushioning the movement of the fastener-applying means adjacent the end of its stroke in driving a fastener.

Another object of the invention is to provide a magazine in the implement having a movable closure at its forward end and a single element for supporting the fasteners as they are being driven and dogging the fasteners when the closure is open to prevent their ejectment from the magazine.

Still another object of the invention is to provide a device of the type indicated of simple and compact construction to adapt it for economical manufacture and capable of being used over long periods of time without requiring repair or replacement of its parts.

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

Fig. 1 is a side elevational view of an implement incorporating the novel features of the present invention;

Fig. 2 is a longitudinal sectional view of the implement showing the relationship of the parts at the beginning of a fastener-applying operation;

Fig. 3 is a longitudinal sectional view through the head of the implement showing the relationship of the parts of the fastener-applying means at the completion of a fastener-applying operation and illustrating the actuating lever for the driver in engagement with a resilient abutment in the head to cushion the movement of the parts;

Fig. 4 is a sectional plan view of the head taken on line 4—4 of Fig. 3 showing the resilient U-shaped strap for yieldingly holding the removable bonnet in position on the head;

Fig. 5 is a front view of the head shown with the gate-spring removed but indicated by dash-lines to disclose the relationship of the parts at the front of the head;

Fig. 6 is a transverse sectional view on line 6—6 of Fig. 1 showing the resilient abutment mounted between the side walls of the head;

Fig. 7 is a transverse sectional view on line 7—7 of Fig. 1 showing the means pivotally connecting the striker to the actuating lever for the driver; and

Fig. 8 is a longitudinal sectional view of the forward end of the magazine with the closure shown in open position and illustrating the combined retainer and supporter in dogging engagement with the fasteners.

Hammer-tackers heretofore used are capable of applying fasteners of a certain size or shape only so that a different implement must be used for each kind of work requiring a particular form of fastener. A hammer-tacker is swung in the manner of a hammer to give it a momentum sufficient to drive the fastener into the work and in actual practice the momentum given to the implement is in excess of that actually necessary to insure a complete driving of the fastener. Consequently, the motion of the fastener-applying mechanism is arrested abruptly at the end of a driving stroke and after a relatively short period of time the repeated shock and jar causes the parts to loosen and even to break.

In general, the present invention relates to a hammer-tacker adapted to mount interchangeable drivers which are held in position on the head by means of a removable bonnet yieldingly attached to the head by a resilient strap. A resilient abutment is also provided in the head for cushioning the movement of the fastener-applying means adjacent the end of its stroke to dampen and reduce the shock. The present invention also provides a combined supporter and retainer adapted to support the fastener being driven and to retain the fasteners in the maga-

zine when the closure at the end of the latter is open.

Referring to the drawings, the hammer-tacker herein illustrated is adapted to apply U-shaped staples and comprises an elongated hollow handle 2, preferably constructed of opposite sheet-metal members 3 and 4 of channel-shape in cross-section. The channel-shaped members 3 and 4 are assembled with the edges of their upper and lower flanges 6 and 7 abutting to form a tubular structure of rectangular cross-section convenient to be grasped in the hand. Preferably, the handle 2 is enclosed within a rubber sleeve 8, see Fig. 1, which serves as a hand-grip to prevent slipping and also to absorb the shock of the blows which the hammer delivers when in use.

At the forward end of the handle 2 is a hollow head 12 of generally rectangular shape preferably constructed by extending the sheet-metal side members 3 and 4 upwardly and turning their upper edges inwardly to provide abutting flanges 13, see Fig. 5. The forward portions of the side walls of the members 3 and 4 of the handle and head 12 terminate abruptly and form vertical shoulders 14 and 15, see Fig. 4. Vertically-extending pads 16 are provided on the outer faces of the channel members 3 and 4 adjacent the shoulders 14 and 15, see Fig. 4, and similar pads 17 of greater width are provided adjacent the rearward end of the head 12. The front of the head 12 is closed by a bonnet 18 of U-shaped form having a front wall 19 and side walls 20 adapted to embrace the front and side walls of the head with inwardly-projecting flanges 22 overlying the top of the head. The rearward edges 21 of the side walls 20 of the bonnet 18 engage the forward edges of the pads 16 on the sides of the head 12 to hold the front wall 19 in spaced relation to the shoulders 14 and 15 whereof to provide a guideway 30 therebetween.

The bonnet 18 is yieldingly held in position on the head 12 by means of a U-shaped strap 25 which closely fits around the front of the bonnet and the sides of the head. The sides of the strap 25 are formed with loops 26 upset therefrom to render the strap resilient and are provided with holes 28 adjacent their ends through which the laterally-projecting ends of a pin 27 on the head 12 engage to attach the strap thereto. As illustrated most clearly in Fig. 4 the pin 27 extends transversely of the head 12 with its ends projecting through alined holes in its sides and the holes 28 in the strap 25 and the ends of the pin have peripheral slots 29 for engaging the rearward edges of the holes in the strap. To lighten the weight of the implement the pin 27 is preferably made hollow as illustrated in Fig. 3. In accordance with the present invention interchangeable bonnets 18 are adapted to be substituted one for another to vary the form or shape of the guideway 30.

The hollow handle 2 serves as a magazine for a supply of staples *s* and extending longitudinally therein is a staple core or trackway 35 across which the U-shaped staples *s* are straddled. The staple-core 35 consists of a channel-shaped sheet-metal strip having its bottom wall 36 welded or otherwise fastened to the bottom flange 7 of the side member 3 of the handle 2. Referring to Fig. 6, the lower flange 7 on the side member 3 is wider at this point than the corresponding flange 7 of the side member 4 to provide for attaching the staple core thereto midway between the sides of the handle, the attachment being made by welding, soldering or the like. The parallel side walls 37 of the core 35 extend upwardly to support the staples in straddled relation thereon and a transverse plate 38 extends between the side walls 3 and 4 of the handle above the top edges of the side walls of the core to retain the staples in position thereon.

A hardened block 40 is provided at the bottom of the head 12 as shown in Figs. 2, 3 and 8, its upper portion being received between the sides of the staple-core 35. The block 40 may be secured to the core 35 by means of a transverse rivet 42 and arranged in alinement therewith to form a continuation thereof. The forward portion of the block 40 depends below the head 12 and is formed with a recess 43 to receive the ends of the lower flanges 7 of the side members 3 and 4 and the end of the core bottom 36, see Fig. 8. The block 40 has laterally-projecting abutments at either side of its depending portion to provide vertical shoulders 44, see Figs. 1 and 2. Thus the block 40 forms a rigid unit with the head 12 and the staple-core 35 and the impact of blows struck by the hammer head is borne by the block and distributed along the handle 2. Above the block 40 is a bridge-block 45 which extends transversely between the side members 3 and 4 of the head 12 and is attached to the member 3 by means of rivets, pins or the like indicated at 46, see Fig. 8. The bottom 47 of the bridge-block 45 is of inverted V-shape as shown in Fig. 5 and arranged in spaced relation to the top of the block 40 a distance equal to the thickness of the crossbars or crowns of the staples *s*.

Preferably, the staples *s* are of the arched crown type illustrated and described in my prior Patent No. 2,052,553, issued September 1, 1936. The staples *s* are slid forwardly on the core 35 to advance them to the driving mechanism by means of a staple-pusher 48, see Fig. 2. The staple-pusher 48 is of inverted trough-shape, being arranged with its sides straddling the sides of the core 35 to adapt it to slide thereon and held in position on the core by the retaining plate 38. The pusher 48 is advanced forwardly in the magazine by means of a cord 49 having one end attached to a depending lug 50 on the pusher, extending forwardly around a transverse stud 51, and then rearwardly around a transverse stud 52 with its opposite end connected to a hook 53 on the side 3 of the handle 2, see Fig. 2. Between the stud 52 and hook 53 the cord 49 is looped around a pulley 54 attached to one end of a spring 55, the opposite end of the spring being attached to a depending lug 56 on a plate 57 in the head 12. Due to the looped arrangement of the cord 49 around the pulley 54 the pusher 48 is adapted to be yieldingly advanced by the spring 55 and the longitudinal movement of the pusher is twice that of the longitudinal movement of the pulley 54, thus permitting the use of a relatively short spring.

A movable closure or gate 60 at the forward end of the magazine provides that a supply of staples *s* may be inserted thereinto by forcing them rearwardly against the action of the pusher 48. The gate 60 has a front wall 61 and side walls 62 embracing the forward portion of the block 40. The side walls 62 extend upwardly above the front wall 61 to provide ears for receiving the projecting ends of a transverse pin 63 in the head 12 to pivotally mount the gate thereon. The rearward ends 64 of the side walls 62 of the gate 60 cooperate with the shoulders 44 on the sides of the block 40 to position the front wall 61 in spaced relation to the forward

face of the block to provide a throat 65 through which the staples are driven. The gate 60 is yieldingly held in closed position with its rearward edges in engagement with the shoulders 44 on the block 40 by means of a leaf-spring 66, see Fig. 1. The spring 66 has one end pivoted on a pin 67 on the front wall 61 of the gate 60 to adapt it to be swung laterally of the head, the upper end of the spring being engageable with a recess 68 in the strap member 25. Thus the leaf-spring 66 being tensioned between the front wall of the head 12 and the front wall 61 of the gate 60 causes the latter to be held yieldingly in closed position.

The staple-applying mechanism comprises a driver 75 positioned in the guideway 30 between the front wall of the bonnet 18 and the forward edges 14 and 15 of the side members 3 and 4 of the head 12 and having a rearwardly-extending tooth 76 adjacent its upper end. The driver 75 is adapted to reciprocate in the guideway 30 and the throat 65 to drive the staples *s* as they are advanced by the pusher 48. In accordance with the present invention interchangeable drivers 75 for driving different forms and sizes of staples are adapted to be substituted one for another.

The driver 75 is actuated by means of a bell-crank-lever 77 pivotally mounted on the hollow pin 27, previously described, and having a forwardly-projecting arm 78 and a downwardly-projecting arm 79 at opposite sides of the pivot pin. The forward end of the arm 78 of the lever 77 is curved generally and has a pair of teeth 80 and 81 which mesh with the teeth 76 projecting rearwardly from the driver 75. Thus rocking motion of the lever 77 on its pivot 27 is translated into reciprocatory motion of the driver 75 in the hammer-head 12. A coiled spring 83 acting between an abutment 84 on the head 12 and the depending arm 79 of the lever 77 tends to rock the lever in a counterclockwise direction as viewed in Fig. 2 to maintain the driver 75 in raised position, this latter movement of the lever being limited by the engagement of the beveled portion 85 at the forward end of its arm 78 with the flanges 13 at the top of the head.

A striker 90 in the form of a U-shaped loop has side arms 91 which straddle the sides of the members 3 and 4 of the head 12 and project forwardly and downwardly below the block 40, being connected at their outer ends by a cross-strip 92, see Fig. 5. The striker 90 is pivotally mounted on studs 94 projecting laterally from the sides of the members 3 and 4 of the head 12 through its side arms 91. The lower edges of the forward ends of the arms 91 are arcuately shaped at 93 to adapt them to conform to the surface of the work *w* with which the striker contacts in substantially any position of inclination of the implement in which it may be held in relation to the work. The shorter arms 95 of the striker 90 reach upwardly with their ends connected to the driver-actuating lever 77. As illustrated in Fig. 7, the upper ends of the arms 95 straddle the end of the depending arm 79 of the lever 77 and are slotted at 96 to engage the slotted end portion 97 of a pin or stud 98 projecting laterally therefrom. The ends of the pin 98 project through elongated apertures 100 in the sides 3 and 4 of the hammer head 12 to provide the necessary clearance. Thus the rocking motion of the striker 90 is transmitted through the connecting pin 98 to the lever 77 and the rocking motion of the latter is translated into reciprocatory movement of the driver through the intermeshing teeth 76, 80 and 81.

In accordance with the present invention a yielding abutment 110 is adapted to be engaged by the arm 78 of the bell-crank-lever 77 to cushion the movement of the parts of the staple-driving means adjacent the end of each driving stroke. As illustrated in Figs. 3 and 6, the yieldable abutment is in the form of a resilient block supported on the plate 57 extending between the side walls 3 and 4 of the head 12. The abutment 110 may be made of any suitable resilient material such as rubber, but preferably a synthetic rubber such as the material sold under the trade-mark "Duprene" is used to prevent deterioration from the effect of oils or grease. It has been found in practice that the resilient abutment 110, together with the resilient attachment of the bonnet 18 to the forward end of the head 12, act to cushion the blows struck by the implement to lessen the effect of wear and tear and breakage of its parts.

Another feature of improvement in the present invention resides in the use of a single element 115 to serve the dual function of supporting the staples *s* as they are being driven through the throat 65 while also retaining the staples in the magazine when the gate 60 is opened. The combined staple-supporter and staple-retainer 115 is positioned in a vertical slot 116 in the block 40 and pivoted at its lower end on a pin 117 extending transversely across the slot. The forward edge 118 of the element is straight and merges into an arcuate edge 119 disposed eccentrically of the axis of the pivot 117. A spring 120 seated in a socket 121 in the block 40 bears against the rearward edge of the element 115 and tends to yieldingly rock the latter forwardly on its pivot-pin 117. One embodiment of the invention having been described in detail its mode of operation is explained as follows:

One of a series of interchangeable drivers 75 and an appropriate bonnet 18 are mounted on the head 12 to adapt the implement to apply a particular form of staple. The bonnet 18 is clamped in position on the head 12 by the U-shaped strap 25 which is applied thereto by springing its bowed portions 26 to engage its apertured ends over the laterally-projecting ends of the pin 27. The driver 75 thus is held in position on the head 12 by the bonnet 18 to adapt it to reciprocate in the guideway 30 and with its rearwardly-extending tooth 76 meshing with the teeth 80 and 81 on the actuating lever 77. The closure gate 60 being yieldingly held in closed position by the leaf-spring 66 is adapted to yield to accommodate staples of different sizes and shapes within predetermined limits or, if required, interchangeable gates may be applied to the head by merely removing the pivot-pin 63.

The implement is prepared for operation by turning the spring 66 on its pivot 67 to release the gate 60 and then swinging the gate on its pivot-pin 63 to the position shown in Fig. 8 to open the forward end of the magazine. A supply of staples *s*, preferably in the form of a self-contained stick, is then slid rearwardly onto the core 35 against the action of the spring-controlled pusher 48. As the staples *s* are slid rearwardly onto the core 35 they pass over the eccentrically-disposed arcuate edge 119 of the combined staple-supporter and retainer 115 and act to rock it rearwardly on its pivot 117 against the tension of the spring 120, see Fig. 8. Then when the staples *s* are released the spring 120

rocks the element 115 forwardly on its pivot 117 to engage its eccentric edge 119 with the staples to dog them against the overlying bottom face of the bridge-block 45. Thereafter, the element 115 is self-energized in that any forward movement of the staples causes it to rock on its pivot to wedge its eccentric edge 119 tightly against the staples.

After the magazine has been loaded with a supply of staples *s* the gate 60 is swung to closed position and the spring 66 turned to engage its free end with the front of the bonnet 18. The front wall 61 of the gate 60 will engage the forward edge 118 of the element 115 and rock the latter rearwardly about its pivot 117 to the position illustrated in Fig. 2 to release its curved edge 119 from engagement with the staples *s*. The pusher 48 under the action of the spring 55 and cord 49 then acts to advance the staples *s* to position the foremost staple in the throat 65 directly beneath the end of the driver 75.

The implement is grasped by the handle 2 and swung in the manner of a hammer to make impact with the work *w* to apply a staple thereto. The arcuately-shaped edges 93 of the striker 90 first engage the work and due to the momentum of the head 12 upon impact with the work the striker is caused to rock on its pivots 94 from the position shown in Fig. 2 to that shown in Fig. 3. The upwardly-extending arms 95 of the striker 90, being pivotally connected to the depending arm 79 of the lever 77 by the pin 98, cause the lever to rock on its pivot 27 and the end of its forward arm 78 to move downwardly. The intermeshing engagement of the tooth 76 on the driver with the teeth 80 and 81 at the end of the arm 78 of the lever 77 causes the driver 75 to descend in the guideway 30 and throat 65 to drive the foremost staple into the work *w*.

Adjacent the end of the stroke of the driver 75 the arm 78 of the lever 77 engages the resilient abutment 110 which acts to cushion its movement. It has been found in practice that the provision of the resilient abutment 110 and the resilient strap 25 for yieldingly holding the bonnet 18 on the head 12 reduces the wear and tear of the parts and eliminates breakage of the drivers common to prior types of fastener-applying implements. Thus, the present construction of the head 12 improves the operation and extends the life of the implement. After the force of the blow has been expended the head 12 recoils from the work *w* and the spring 83 acts to return the striker 90 and lever 77 to first position as illustrated in Fig. 2.

At the beginning of the staple-driving operation the element 115 is rocked on its pivot 117 by the spring 120 to engage the upper portion of its straight forward edge 118 with the rearward face of the front wall 61 of the gate 60 as illustrated in Fig. 2. As the staple *s* descends through the throat 65 its crossbar engages the arcuate edge 119 of the element 115 adjacent the straight edge 118 and cams the element rearwardly about its pivot 117 to the position illustrated in Fig. 3. The straight-edged portion 118, however, remains yieldingly pressed against the crossbar of the staple *s* during its passage through the throat 65 and acts to support the staple during the driving operation. The single element 115 thus serves as both a staple-retainer and staple-supporter.

It will be observed from the foregoing description that the present invention provides an improved implement in which interchangeable drivers may be used to adapt the implement to drive fasteners of different forms and shapes. It will also be observed that the movement of the parts of the fastener-driving means is cushioned adjacent the end of a driving stroke to reduce the wear and tear on and breakage of its parts. It will be observed still further that the present invention provides a single element for retaining the staples in the magazine when the gate is opened and also supporting the staples in the throat as they are driven.

While I have herein illustrated and described a preferred embodiment of the invention it is to be understood that various modifications may be made in the structure and arrangement of its parts without departing from the spirit or scope of the invention. Therefore, without limiting myself in this respect, I claim:

1. A hammer-type implement for applying fasteners comprising a handle, a head at one end of the handle having an open forward side, a removable bonnet having a front wall and side walls enclosing the front and sides of the upper portion of the head and providing a closure for the open side thereof throughout the greater portion of its length, a resilient strap embracing the bonnet and sides of the head for yieldingly attaching the bonnet to the head, a movable gate for closing the open side of the head at the lower portion thereof, fastener-driving means wholly enclosed within the head, and means for operating the fastener-driving means.

2. In a hammer-type implement for applying fasteners, a handle, a head at the end of the handle having an open side, a bonnet enclosing the front and sides of the head and forming a closure for its open side throughout the greater portion of the length thereof, a resilient strap for yieldingly attaching the bonnet to the head, a driver reciprocable between the forward side of the head and the bonnet, a lever for reciprocating the driver, and means for actuating said lever by impact with the work when the implement is swung thereagainst.

3. In a device of the type indicated, a handle, a head at one end thereof having an open side, a removable bonnet for closing the open side of the head, fastener-driving means in the head adapted to be guided by the bonnet, attaching means projecting laterally from the opposite sides of the head, a U-shaped strap embracing the bonnet and sides of the head with its ends attached to the laterally-projecting attaching means on the head, said strap having loops at its sides to render it resilient to yieldingly hold the bonnet in position on the head, and means movable by impact with the work when the device is swung thereagainst for operating the fastener-driving means.

4. In a device of the type indicated, a handle, a head at one end thereof having an open side, a removable bonnet for closing the open side of the head, a pin projecting laterally from the sides of the head, a driver mounted to reciprocate in the head while guided by the bonnet, a lever pivotally mounted on the pin and connected to operate the driver, a U-shaped resilient strap embracing the bonnet and the sides of the head with its ends connected to the ends of the pin for clamping the bonnet to the head, and a striker movable by impact with the work when the device is swung thereagainst and connected to operate the lever.

5. In a device of the type indicated, a handle, a head at one end thereof having an open side, a removable bonnet for closing the open side of the head, a driver mounted to reciprocate in the head while guided by the bonnet, a pin having its ends projecting laterally from the sides of the head, a lever pivotally mounted on the pin and connected to operate the driver, a U-shaped strap embracing the bonnet and sides of the head with its ends attached to the ends of the pin on the head, said strap having loops at its sides to render it resilient to yieldingly hold the bonnet in position on the head, and a striker movable by impact with the work when the device is swung thereagainst and connected to operate the lever.

6. In a hammer-type implement for applying fasteners, a handle, a head at the end of the handle having an open forward side, a bonnet having a front wall and right-angular side walls enclosing the head and providing a closure for the open side thereof, a resilient strap embracing the bonnet and the sides of the head for yieldingly attaching the bonnet to the head, fastener-applying means wholly enclosed within the head, means for operating the fastener-applying means, and a yielding abutment in the head engageable by the fastener-applying means adjacent the end of a driving stroke to cushion its movement.

7. In a hammer-type implement for driving fasteners, a hollow handle constituting a magazine for holding a supply of fasteners, a head at one end of the handle having an open side, a gate pivotally mounted on the head for closing the magazine in the head, a bonnet for closing the open side of the head, a resilient strap embracing the bonnet and the sides of the head to yieldingly clamp the bonnet to the head, fastener-driving means in the head, and a yielding abutment in the head engageable by the fastener-driving means adjacent the end of a driving stroke to cushion its movement.

8. In a device for applying fasteners, a magazine for holding a supply of fasteners, a bridge overlying the fasteners in the magazine, means for feeding the fasteners forwardly in the magazine, means to drive the fasteners, a movable closure for the magazine, and a fastener-retainer pivotally mounted on the magazine below the fasteners and having an eccentrically-disposed edge engageable with the fasteners, said retainer being operable to engage its edge with the fasteners when the gate is opened and the feeding movement of the fasteners tending to rock the retainer to tightly bind the fasteners against the bridge.

9. In a device for applying fasteners, a magazine for holding a supply of fasteners, a bridge overlying the fasteners in the magazine, means for advancing the fasteners in the magazine, means for driving the fasteners, a movable closure for the magazine, and an element pivoted to the magazine below the fasteners and having a straight portion adjacent the closure and an arcuate portion disposed eccentrically of its pivot, said straight portion of the element acting to support the fasteners as they are being driven and said arcuate portion being engageable with the fasteners when the gate is opened to dog them against the bridge.

10. In a device for applying fasteners, a magazine for holding a supply of fasteners, a bridge overlying the fasteners in the magazine, means for advancing the fasteners in the magazine, means for driving the fasteners, a movable closure for the magazine, a combined fastener-retainer and supporter pivotally mounted on the magazine below the fasteners, said combined fastener-retainer and supporter having a straight portion adjacent the closure for supporting the fasteners as they are driven and an eccentrically-disposed arcuate portion for dogging the fasteners against the bridge when the closure is opened, and a spring for rocking the fastener-retainer and supporter on its pivot.

11. A hammer type implement for applying fasteners comprising a handle and a head at the end of the handle, said handle having a magazine for holding a supply of fasteners, a driver in said head movable relatively of the magazine for driving the fasteners therefrom, a pusher for advancing the fasteners in the magazine to position them beneath the driver, a cord wholly enclosed within the handle and having one end connected to the pusher and its opposite end connected to the handle with a looped portion intermediate its ends, and a spring acting on the looped portion of the cord whereby the pusher will have a movement equal to twice the movement effected by the spring.

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