2 Sheets—Sheet 1.

G. W. McGILL.

Staple-Inserting Device.

No. 220,933. Patented Oct. 28, 1879.

Fig. 1.

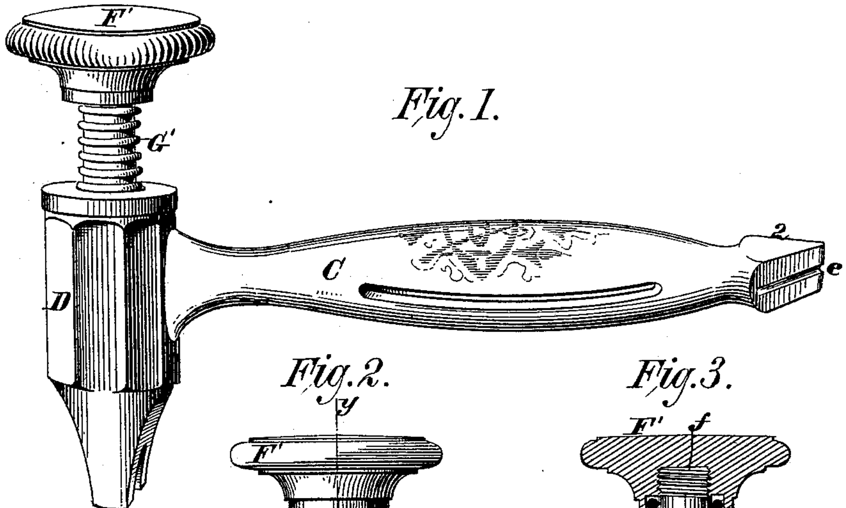


Fig. 2.

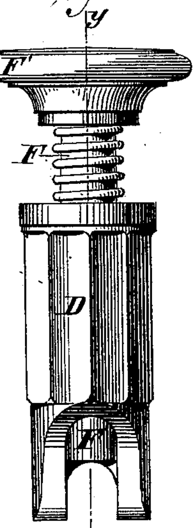


Fig. 3.

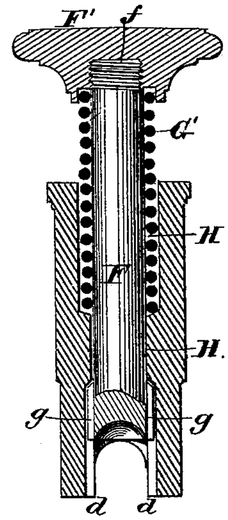


Fig. 4.

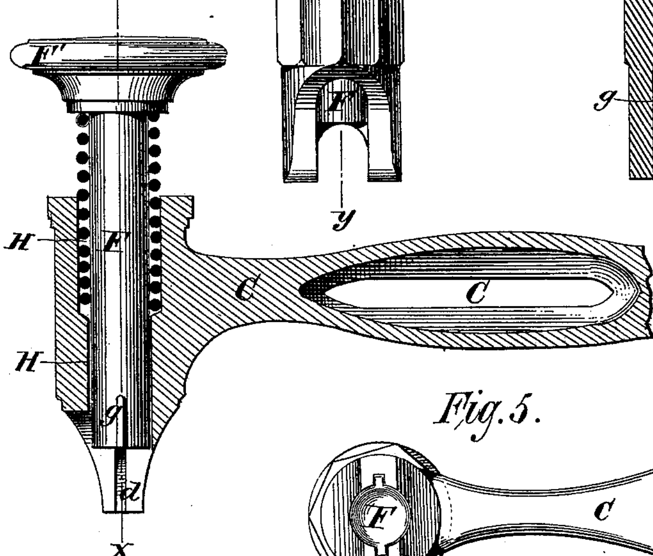
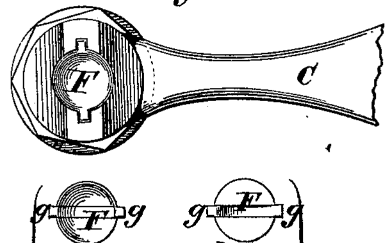


Fig. 5.



WITNESSES:

Gustav Dieterich

Vinton Coombe

Fig. 6.

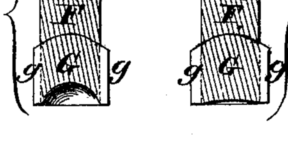


Fig. 7.

INVENTOR:

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Fig. 8.

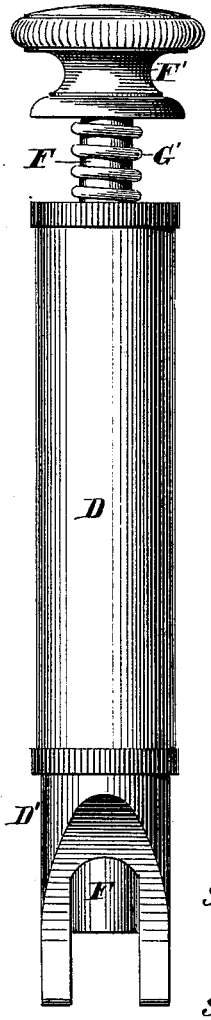


Fig. 9.

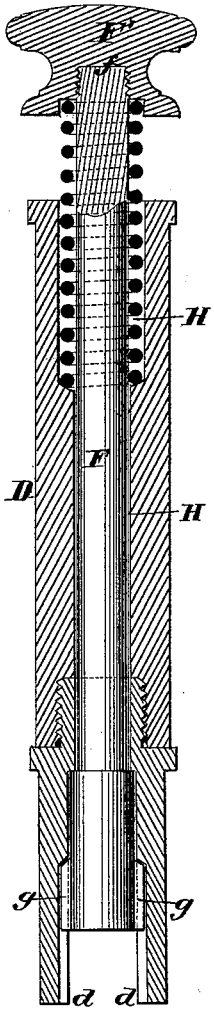


Fig. 19.

Fig. 11.

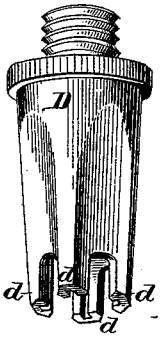


Fig. 13.

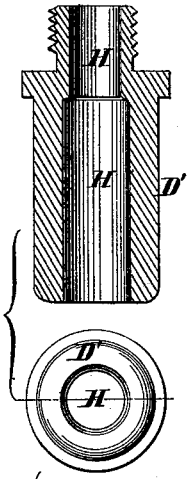


Fig. 10.

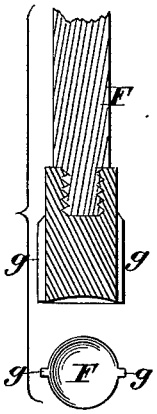


Fig. 12.

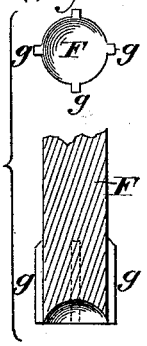


Fig. 16.

Fig. 17.

Fig. 18.

Fig. 14.

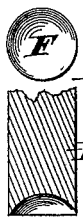
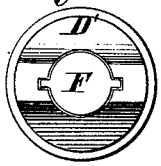


Fig. 15.



WITNESSES:

Gustave Dieterich

Victor Coombs

INVENTOR:

George W. McGill

UNITED STATES PATENT OFFICE.

GEORGE W. McGILL, OF NEW YORK, N. Y.

IMPROVEMENT IN STAPLE-INSERTING DEVICES.

Specification forming part of Letters Patent No. **220,933**, dated October 28, 1879; application filed June 20, 1879.

To all whom it may concern:

Be it known that I, GEORGE W. McGILL, of the city and county of New York, in the State of New York, have invented certain new and useful Improvements in the Staple-Inserting Device patented to me February 18, 1879, of which the following is a description, reference being had to the accompanying drawings, making part of this specification, and to the figures and letters of reference marked thereon.

My invention in the present instance is arranged as a hand-tool; and it consists of the staple-inserting mechanism of the device patented to me, as above stated, arranged in a manner adapting it to be used independently of the clinching mechanism of said device.

In the device patented to me, as above stated, the position at which the staple may be inserted in the object being stapled is limited to the length of the lever-arm upon which its staple-inserting mechanism is mounted, and the description of the article to be stapled is limited to such as may properly be introduced between the lever-arm and the clinching-anvil.

The object of my present improvement is to enable the device to insert staples in articles, irrespective of their size or position, and enable the staples to be as readily used for laying carpets, upholstering, bottoming chairs, &c., and similar uses, as for binding pamphlets and other papers.

In the accompanying drawings, Figure 1 represents a side elevation of the device, consisting of the case D, containing the staple-inserting mechanism, provided with the handle C, terminating in the clinching-nose Q. Fig. 2 is a front elevation of the device. Fig. 3 is a vertical cross-section of Fig. 2, taken on the line *x x* of Fig. 4, showing the position and form of the vertical chamber H of the case D, and its staple-grooves *d d*, plunger F, and its blade or feathers *g g*, and of the spiral spring G′. Fig. 4 is a vertical section of Fig. 1, taken on the line *y y* of Fig. 2. Fig. 5 is a bottom view of the device, and Figs. 6 and 7 represent modifications in the construction of its plunger-face. Fig. 8 represents the device without the handle C, its case D being lengthened to form a cylinder adapted to be conveniently held in the hand, and its foot or base made detachable. Fig. 9 is a vertical section of Fig. 8. Fig. 10 is a vertical sectional and bottom view of the plunger. Fig. 11 is a perspective view of the detached case-foot D′ modified, and the compound Fig. 12 is a bottom view and vertical section of the plunger F, correspondingly modified. Fig. 13 is a vertical sectional view of another modification of the case-foot D′, and the compound Fig. 14 is a bottom view and vertical section of the plunger, correspondingly modified. Fig. 15 is a bottom or end view of the case-foot D′, constructed as shown in Figs. 8 and 9; and Figs. 16, 17, 18, and 19 represent different forms of staples which the device is adapted to insert.

The device consists of the case D, plunger F, and spiral spring G′, which are constructed and put together as follows: The case D is provided with a cylindrical chamber, H, running vertically through its center, its lower portion or foot, D′, being furnished with the staple grooves *d d*, cut vertically in its opposite sides.

The plunger F, which is intended to be moved up and down in the chamber H, consists of a cylindrical metal rod, having in its base a vertical cross-slot, in which is inserted the steel-plate G, the ends of which project beyond the diameter of the plunger on each side and form the feathers *g g*. The upper end of the plunger is provided with the cap F′, secured thereto by the screw-connection *f*, as shown in Fig. 3. The cap F′ being removed, the capping end of the plunger is run up through the chamber H, the feathers *g g* on its foot occupying the staple-grooves *d d*. The spiral spring G′ is placed over the upper end of the plunger, and its lower portion, surrounding the same, passed down into the chamber H, the diameter of the upper portion of which is enlarged for the reception of the same. The cap F′ is screwed onto the plunger, which locks both it and the spring G′ in the case D, as shown in the drawings.

The first coil of the upper end of the spring G enters an annular groove in the under side of the cap F′ for its better security. The office of the spring G′ is to hold the plunger up in the chamber H, as shown in the drawings,

and to bring it back to that position so soon as pressure is removed from its cap. The plunger F is of a length that, in connection with the spring G′, on being pressed upon, its face will clear or pass a little below the bottom of the case D.

The device is operated by taking hold of its handle C, or of its case D, when made as shown on Sheet No. 2 of the drawings, and inserting a metallic staple of suitable size and construction in the staple-grooves *d d* in the foot of the case, with its shanks pointing outward. The foot of the case is now placed upon the article to be stapled, and a blow or pressure applied to the plunger, which forces its feathered foot down upon the head of the staple, driving the shanks of the latter down out of the guiding or supporting grooves *d d* through the articles being stapled.

If the article stapled is of a thickness less than the length of the staple-shanks, and it is desired to clinch the shanks down on the back of the same, the clinching nose or end C′ of the handle C will be found conveniently shaped for that purpose. This nose, as shown in Fig. 1, is of an angular shape, and provided with a groove, *e*, adapted to hold the staple-leg while the same is being bent or clinched down.

A staple provided with almost any shape or struck-up form of head may be inserted with this device by using in it plungers with faces correspondingly mortised or shaped, provided the bottom of the plunger-feathers *g g* will always rest on the top or shoulders of the shanks of the staple.

Fig. 11 represents the foot of the case D detached, and provided with four staple-guiding grooves, *d d d d*, to admit of the reception and insertion of the four-legged staple shown in Fig. 16. Fig. 12 represents the plunger F, correspondingly feathered. Fig. 13 represents the foot of the plunger made cylindrical through its entire length and unprovided with the staple-guiding grooves *d d*, and having its plunger, Fig. 14, provided with a concave face.

The device when so constructed will insert a staple having a head convexed to fit the concave face of the plunger, as shown in Fig. 19, without the aid of the guiding-grooves *d d* and feathers *g g*.

The foot of the case D and of the plunger F may be made detachable, as shown in Fig. 9, to admit of the use, with the same case and plunger, of feet of different forms of grooving and feathering, as shown in Figs. 11 and 12, or of feet without grooves and feathers, as shown in Figs. 13 and 14.

The staples herein shown and described form no part of my present invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The staple-inserting mechanism herein described, consisting of the case D, plunger F, and spring G′, arranged in a tool adapted to be held in the hand and to insert staples of two or more prongs in articles of various width and bulk and at any point therein desired, substantially as described.

2. In combination with the case D, plunger F, and spring G′, constructed to operate substantially as described, the handle C, as and for the purposes described.

3. In a staple-inserting machine constructed to operate substantially as described, the case D and plunger F, having their respective feet detachable, as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of the subscribing witnesses.

GEORGE W. McGILL.

Witnesses:
VINTON COOMBS,
J. A. RUTHERFORD.