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D. C. GOESSEL

2,400,988

STAPLE PULLER

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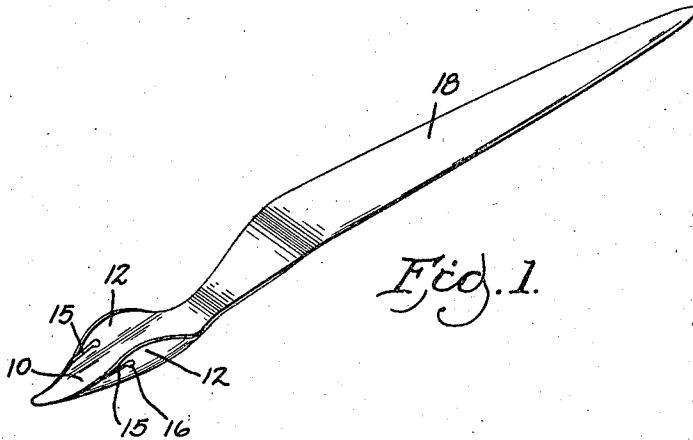


Fig. 1.

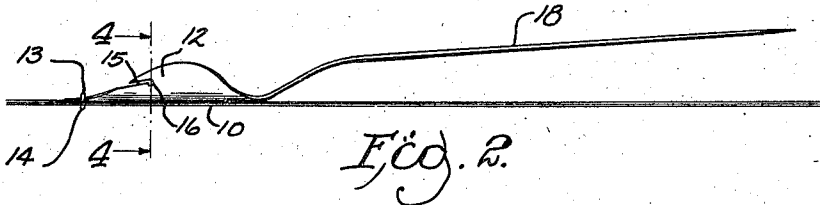


Fig. 2.

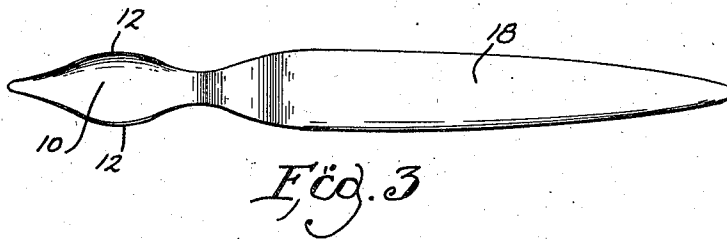


Fig. 3.

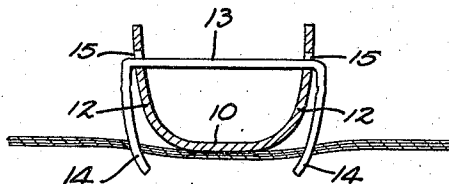


Fig. 4.

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STAPLE PULLER

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3 Claims. (Cl. 254—28)

My invention relates to staple pullers.

The primary object of my invention is to provide a convenient tool for withdrawing wire staples of the type employed to bind together sheets of paper or fabric.

More specifically, it is my object to provide convenient means for applying a withdrawing tension at both corners of a staple, under such conditions as to draw both of the clinched ends toward the lines of tension with as nearly equal force as possible, whereby both ends of the staple may be simultaneously released.

A further object is to provide such a tool with means whereby a released staple will be retained by the tool instead of being projected into space by its own resilient reaction when released.

In the drawing:

Figure 1 is a perspective view of my improved staple puller.

Figure 2 is a side view, showing the tool as it is being applied to a staple for the removal thereof.

Figure 3 is a plan view.

Figure 4 is a cross sectional view, drawn generally to line 4—4 of Figure 2, but showing the tool advanced to its final stage of staple removal.

Like parts are identified by the same reference characters throughout the several views.

My improved staple puller has a working portion composed of a substantially flat plate 10 which tapers to a point at its front end, and the side margins of which are progressively upturned along rearwardly divergent lines to form wedge-shaped lifters or lifting flanges 12 adapted to be forced underneath at or near the corner portions of the staple at the junction of its crown 13 with its legs or sheet penetrating portions 14.

Each of the lifter flanges 12 is provided with an open-ended slot 15 extending from an elevated portion of its margin rearwardly and preferably upwardly in the flange to a downturned recess 16 located at a substantial distance from the open end of the slot, whereby, as the point of the tool is advanced underneath the crown 13 of the staple the latter will be progressively lifted into registry with the slots 15, whereupon it rides upon and is additionally lifted by the lower walls of the slots until it enters the recesses 16. The latter are located at such an elevation that by the time the crown of the staple enters these recesses it will have been sufficiently lifted to wholly or partially straighten the clinched portions of the staple, after which the tool may be additionally advanced to complete the withdrawal of the staple, if necessary, and remove it to a point of discharge.

The divergence of the lifter flanges 12 and their progressively increased elevation in the rearward direction adapts the tool for use on staples of differing size, while still utilizing the maximum wedging pressure in close proximity to the corner portions.

This is due to the fact that since the smaller staples have shorter legs and are made of finer wire, their withdrawal may be completed before reaching the wider portion of the tool at the rear ends of the slots 15.

After the staple has entered the slot 15, the tool may be either advanced or used as a lever to complete the withdrawal. In either case, the released staple will be held to the tool by its engagement in the slots 15 instead of being thrown violently into the air by its own resilient reaction when the clinched portions are released from the sheets or members against which they had been clinched.

While my improved tool may be provided with any suitable type of handle, I prefer to form the tool and handle 18 integrally from a piece of sheet metal in a single stamping operation, during which the respective ends may be cut or pressed to a knife-like edge, thus facilitating entry of the pointed front end underneath the crown of the staple, or the use of either end as a paper cutter.

I claim:

1. A staple removing tool comprising a strip of sheet metal, handle shaped at one end and having its other end pointed and provided with upturned side flanges of progressively increasing elevation rearwardly from the pointed end and adapted to serve as staple lifting wedges, the wedge-shaped margins of said flanges having intermediate open-ended staple receiving slots.

2. A staple removing tool, comprising a flat tapered and pointed plate having progressively upturned side margins extending rearwardly from the pointed portion and adapted to engage the corner portions of a staple when the point is forced underneath its crown, whereby advancement of the tool may lift both ends of the crown with substantially equal force to compel the clinched portions to straighten and withdraw, said upturned side margins having open-ended slots extending upwardly and rearwardly therein with reference to the normal level of the pointed portion.

3. A staple removing tool, comprising a flat tapered and pointed plate having progressively upturned side margins extending rearwardly from the pointed portion and adapted to engage the corner portions of a staple when the point is forced underneath its crown, whereby advancement of the tool may lift both ends of the crown with substantially equal force to compel the clinched portions to straighten and withdraw, said upturned side margins having open-ended slots extending upwardly and rearwardly therein with reference to the normal level of the pointed portion and terminating in downwardly extending recesses.

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