Dec. 20, 1938. W. G. PANKONIN 2,140,593

STAPLE

Original Filed Sept. 5, 1935

Fig. 1

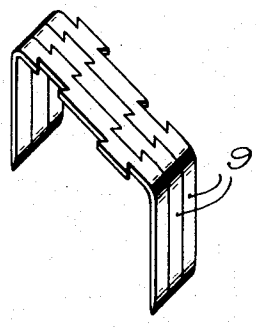


Fig. 2

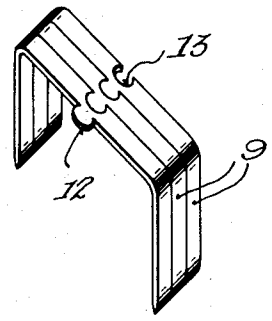


Fig. 3

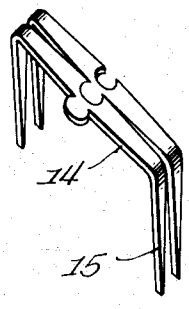
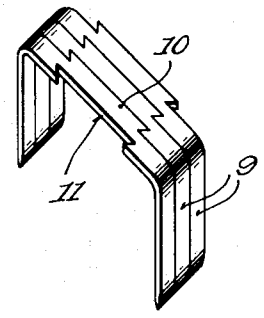


Fig. 4



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STAPLE

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Original application September 5, 1935, Serial No. 39,247, now Patent No. 2,111,404, dated March 15, 1938. Divided and this application October 4, 1937, Serial No. 167,133

7 Claims. (Cl. 1—56)

This invention relates to improvements in preformed staples of the type which are generally assembled in strip formation or clips and inserted as a unit into the magazine of stapling or tacking machines.

The present application is a division of the co-pending application of this applicant Serial No. 39,247, allowed August 26, 1937, for Staple.

One of the objects of this invention is to provide a staple with improved shape providing integral means for locking a series of such staples in strip formation.

Other objects and advantages reside in certain novel features of construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawing forming a part of this specification and in which:

Figure 1 is a perspective view of a group of staples assembled in strip formation, each staple having lugs and slots of dovetail shape symmetrically arranged and adapted to interfit with similar lugs and slots of adjacent staples;

Figure 2 is a view similar to Fig. 1, each staple having arcuate tabs and slots;

Figure 3 is a view similar to Fig. 2, the bridge and legs of each staple being tapered; and

Figure 4 is a view similar to Fig. 1.

To provide for convenient loading of the magazines of stapling machines and ease in handling, packing and shipping of staples, the conventional practice is to assemble a series of individual staples in row formation or clips. The staples are assembled contiguously with their respective bridge portions and legs in alignment and a layer or film of adhesive applied to the clip thus formed to secure the staples in assembled position. In many instances, the film adhesive has not proved adequate to maintain the staples thus assembled. In order to aid the adhesive in the performance of its function or to eliminate the adhesive entirely, this invention provides a special formation of the bridge portion of the staple.

Referring now to the illustrative embodiments of the present invention as illustrated in Figs. 1 to 4, inclusive, 9 illustrates a strip of staples which does not require the use of adhesive to be maintained in strips. The bridge portion of each staple is shaped or cut to provide an interlock between preceding and succeeding adjacent staples. A frictional fit between the interlocking portions of adjacent staples holds the several staples in a strip. Contrary to the conventional strip formed from a continuous piece of metal, each staple does not have to be actually severed from the strip by cutting through the metal. It need only be released from its frictional interfit with the strip by the driving tool. The normal driving movement of a staple driver without appreciable additional manual effort is sufficient to release each staple from the strip.

The bridge of the staple may have a projecting lug 10 of dovetail shape and a similarly shaped slot or recess 11 so placed with respect to each other that when the lug of one staple is fitted in the slot of another staple, the staples will be held with their bridges and legs in alignment. The lugs and slots may be located centrally with respect to the bridge, as indicated in Fig. 4, or each staple may have a pair of such lugs and slots arranged symmetrically of the center, one of such lugs and slots being formed forwardly of the staple and the other reawardly as illustrated in Fig. 1. The staples thus formed can be assembled without regard to whether they are positioned so as to face forwardly or reawardly. It is proposed to form the lug and slot of arcuate shape as indicated at 12 and 13 (Fig. 2). With the lug and slot thus formed, the bridge and legs of the staple may be tapered and pointed as indicated at 14 and 15 (Fig. 3). The arcuate shape of the lugs and slots provides a ball and socket joint, and when pressure is brought to bear against the rear staple of a strip of such staples, the foremost staple, being pivotally related to the next succeeding staple, is permitted to properly align itself with respect to the ejection chute of a stapling machine.

Staples embodying the interfitting lock are customarily formed by being cut or stamped from a sheet of metal. This method is preferable to forming the staple from square or rectangular stock wire. It is to be noted that the embodiments illustrated in Figs. 1 to 4, inclusive, as well as providing for the elimination of the adhesive binder, also provide for the increase in the effective driving contact between a driving tool and the staple to aid in preventing the staple legs from bending rearward and out of the vertical upon the staple being disconnected from the strip. In refilling a magazine which has been partially emptied, it is not necessary to interlock the new clip with the old clip.

It is to be understood that any one or all of the improvements herein described may be incorporated into staple strips whether the staples in such strips are cemented or adhesively secured or otherwise held together or whether the staples are made of square, round, flat or other

shaped wire or cut from sheet metal. Any single improvement or group of improvements may be combined as is best suited for the conditions to be met.

What is claimed as new and is desired to be secured by Letters Patent of the United States is:

1. A staple clip comprising a series of preformed individual staples in row formation, said staples having slidably engageable and disengageable integral means formed thereon for holding one staple in interlocking engagement with an adjacent staple.

2. A staple clip comprising a series of individual staples in row formation, each of said staples having a projection and recess formed thereon, the projection of one staple having a frictional slidable interlocking fit with the recess of an adjacent staple.

3. A staple adapted for assembly with a series of similar staples in row formation, said staple having a projecting lug and a recess both of similar dovetail shape.

4. A staple adapted for assembly with a series of similar staples in row formation, said staple having an arcuate tab and a similarly shaped arcuate recess, whereby with said staples assembled as aforesaid said tab frictionally engages in the recess of a similarly shaped adjacent staple and the tab of another similarly shaped adjacent staple frictionally engages in said recess.

5. A staple adapted for assembly with a series of similar staples in row formation, said staple having an arcuate tab and an arcuate recess, said staple having its lateral edges receding from said tab, whereby with said tab interfitted in the complemental recess of another similar staple, said staple is pivotally related to said another staple.

6. A staple clip comprising a series of individual staples, the bridges of each of said staples having symmetrically positioned and oppositely faced dovetailed lugs and corresponding recesses, the lugs of one staple removably and slidably fitted into the recesses of adjacent staples.

7. A staple clip comprising a series of individual staples, the bridge of each of said staples having symmetrically positioned and oppositely faced irregular projections and corresponding formed recesses, the lugs of one staple slidably fitted into the recesses of adjacent staples.

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