July 7, 1936. H. D. RANDALL 2,047,129

PAPER CLIP OR THE LIKE

Filed Nov. 1, 1933



Fig. 3.

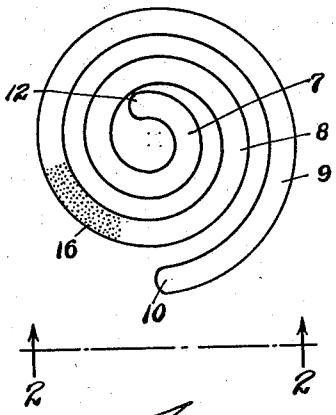


Fig. 1.

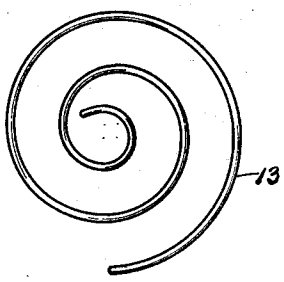


Fig. 4.

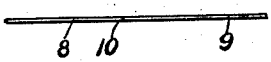


Fig. 2.

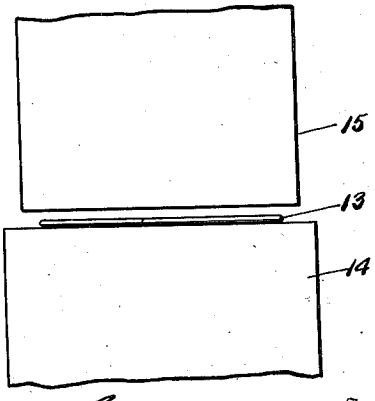


Fig. 5.

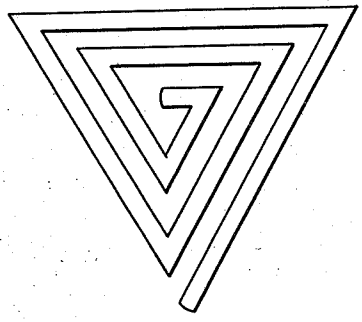


Fig. 6.

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PAPER CLIP OR THE LIKE

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Application November 1, 1933, Serial No. 696,237

5 Claims. (Cl. 24—261)

This invention relates to a novel type of paper clip or the like.

An object of the invention is to provide a very inexpensive and effective paper clip or the like, distinguishable from others by reason of its spiral formation and certain advantages resulting from such formation.

Another object of the invention is to provide a novel type of paper clip or the like, so constructed that it cannot tear or otherwise damage sheets of paper held thereby, when the clip is removed from such sheets.

A further object of the invention is to provide a novel paper clip or the like having inner and outer convolutions with different gripping strengths or compressive forces, whereby either thin or thick stacks of sheets may be effectively clipped without springing the clip out of shape and detracting from its continued usefulness.

The foregoing and other advantages are attained by the means described herein and disclosed in the accompanying drawing, in which:

Fig. 1 is an enlarged plan view of the novel clip of the invention.

Fig. 2 is a side view of the clip of Fig. 1, taken on line 2—2 of Fig. 1.

Fig. 3 is a plan view of a length of wire, which may be either round or angular in cross-section, and from which the clip is formed.

Fig. 4 is a plan view showing the wire as it is initially bent into spiral formation during manufacture of the clip.

Fig. 5 is a side view showing how the spiral formation of Fig. 4 is flattened or swaged to produce the ultimate formation of the clip.

Fig. 6 is a plan view of a modification.

The clip illustrated in Figs. 1 and 2 is constituted of a single piece of flattened resilient wire of a proper length to form a spiral shape having two or more convolutions 7, 8 and 9. Although any reasonable number of convolutions or spiral turns of wire may constitute the clip, it is found that from three to six thereof provides a clip which satisfactorily holds together the sheets of all ordinary sized stacks or compilations of sheets.

As is clearly indicated in Fig. 2, the finished clip is substantially flat, and has a rounded terminal end 10 which is easily formed during the single stamping operation with which the entire clip is made. The inner terminal end of the material forming the clip is indicated at 12, and this end may also be rounded if desired.

In manufacturing the clip of this invention a length of resilient wire or the like 13, which may be either round or angular of cross-section, is bent into spiral formation as shown in Fig. 4, and thereafter it is placed between the pressing die elements 14 and 15 which flatten the spirally wound wire to the extent indicated in Fig. 2. The flattening of the wire, or the heat generated by the swaging or flattening operation, have the effect of increasing the resiliency of the clip material, thereby rendering the clip more effective and satisfactory than the initially formed spiral shape of Fig. 4. In other words, a superior product results from the swaging treatment.

Either before or after the swaging operation, the material of the clip may, if desired, be bonderized or treated with a suitable coating 16 containing a gritty or frictional material adapted to provide a frictional finished surface upon each of the convolutions of the clip. This treatment, however, is not essential to the proper functioning of the clip, and may be omitted if desired.

Clips made in accordance with the above teaching are found to tenaciously hold a thin stack of sheets when the stack is gripped between the inner convolutions, while thicker stacks may more readily be held by the outermost spirals or convolutions. It is not to be understood that the thinner stacks of sheets must necessarily be inserted between the inner convolutions, for the clip is sufficiently resilient and forceful to hold the thinner stacks between any of the spiral turns.

The clip of Fig. 6, instead of being formed generally circular, is made angular in general contour, and it may be produced by the same method as is employed in producing the clip of Fig. 1. The disclosure of Fig. 6 suggests clips of square or other polygonal shapes, made in accordance with the above explained method.

What is claimed is:

1. As a new article of manufacture, a holding clip consisting of a length of flat faced resilient material wound substantially spirally to provide a series of convolutions lying substantially in a plane, the flattened faces of the length of material being parallel to the plane of the convolutions.

2. As a new article of manufacture, a holding clip for detachably holding together a stack of correspondence sheets, and consisting of a length of flat faced resilient material wound substantially spirally to provide a series of spaced convolutions lying substantially in a plane, the flattened faces of the length of material being parallel to the plane of the convolutions.

3. As a new article of manufacture, a holding clip consisting of a length of resilient wire bent

into substantially spiral formation with the convolutions thereof lying substantially in a plane, and a coating of frictional substance on the wire to increase the holding power of the clip.

4. As a new article of manufacture, a holding clip consisting of a length of flat faced resilient material treated to increase the coefficient of friction of the faces and wound substantially spirally to provide a series of convolutions lying substantially in a plane, the flattened faces of the length of material being parallel to the plane of the convolutions.

5. As a new article of manufacture, a holding clip for detachably securing together a compilation of correspondence sheets, and consisting of a length of flat faced resilient material wound substantially spirally to provide a series of convolutions lying substantially in a plane, the convolutions being sufficiently large and resilient to embrace a relatively thick stack of sheets, the flattened faces of the length of material being normally parallel to the plane of the convolutions.

HOWARD D. RANDALL.