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T. A. BRIGGS

METHOD OF PACKAGING STAPLES OR THE LIKE AND PACKAGE PRODUCED THEREBY

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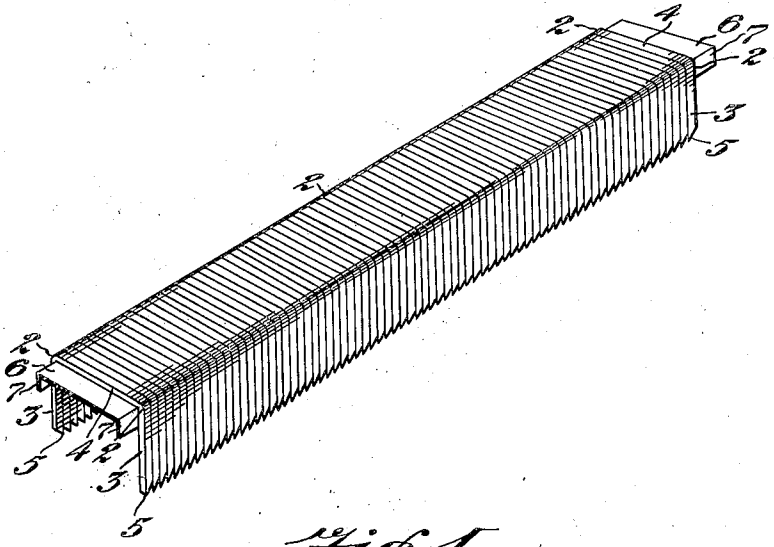


Fig. 1.

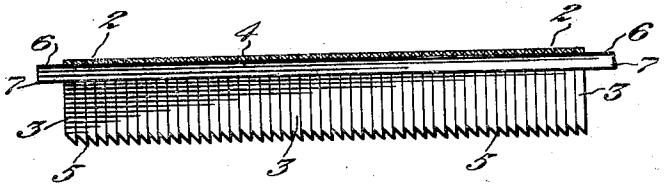


Fig. 2.

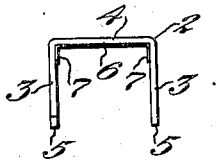


Fig. 3.

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UNITED STATES PATENT OFFICE.

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METHOD OF PACKAGING STAPLES OR THE LIKE AND PACKAGE PRODUCED THEREBY.

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This invention relates to an improved method of packaging wire staples or the like and to the package produced thereby.

One object of the invention is to provide a method of putting up staples or similar fasteners in strips for convenient handling and transporting, and as a merchantable package to supply refills for hand-stapling machines, or for use in the feed magazines of wire-stitching machines.

Another object of the invention is to provide a strip or package in which the staples are held in alinement in contiguous relation to adapt them to be delivered individually therefrom to the staple-setting mechanism of the machine.

Another object of the invention is to provide a staple strip or package which does not require an inner holder or support or an outer wrapper, whereby greater compactness is secured and more convenient application of the staples to the machine is made possible.

Futher objects of the improvement are set forth in the following specification which describes a preferred method of carrying out the process, and a preferred form of the package as illustrated by the accompanying drawings. In the drawings:

Fig. 1 is a perspective view of the improved strip or package of staples;

Fig. 2 is a sectional view of the same taken in a medial plane extending longitudinally of the strip; and

Fig. 3 is an end view of the strip.

The invention consists broadly in alining the staples in contiguous relation and cementing or amalgamating them together by means of a coating of size, shellac, varnish or other suitable adhesive medium. Preferably, I employ a thin strip of tissue or other material on which the staples are strung to aline them in a row, and which strip serves to hold them in place during the application of the coating while further acting as a base for the adhesive.

Referring to Fig. 1 of the drawings, the staples or fasteners 2 may be of any usual type, and as here shown are constructed of flat wire, although in other cases they may be formed from round wire. The common type of staple used in hand-operated machines employed as office appliances, in tacking machines for attaching tags and labels, and also in wire-stitching machines as applied to book-binding and kindred arts, is formed with opposite parallel legs 3 joined at the top by a crossbar 4, as illustrated in the several views of the present drawings. Usually, the ends of the legs 3 are pointed at 5 to adapt them to more easily pierce the material into which they are driven. Various other forms of staples or fasteners are susceptible of the present method of packaging, however, and it is to be understood that the present invention is not limited to the precise form of article herein shown and described.

In packaging the staples 2 in a strip they are alined in a row with the sides of their legs 3 and cross-bars 4 in parallel contiguous relation as shown in Figs. 1 and 2. Preferably, a thin strip or band 6 of tissue paper, or other light-weight easily frangible material, is laid along the under side of the cross-bars 4 of the staples 2 with its edges folded down at 7 to abut the legs of the staples to hold them from twisting out of position. The strip 6 acts to hold the staples in alinement and its surface is gummed or coated with a suitable adhesive such as size, shellac, varnish or any other air-drying cement. The staples 2 will thereby be caused to adhere to the strip 6 to hold them in position and a coating of the adhesive is then applied to the top and legs of the staples to cement them together at their contiguous edges.

Any suitable gelatinous, resinous, glutinous or like viscous material may be employed for the cementitious coating agent and it may be applied with a brush, in a spray, or by dipping the assembled staples therein. In some cases the staples may be held on a rigid support or former while being coated with the cementing fluid, the support being removed after the cement hardens. It has been found however that the tissue strip or band 6 serves adequately as an assembling and supporting medium during the coating operation and besides acting as a basis for the cement makes for greater convenience and facility in handling the staples.

After the staples have been treated in the manner above described and the size or cement has dried the projecting ends of the strip 6 are cut off so that the paper is not evident in the completed package. The cementing fluid insinuates between the abutting edges of the staples and when dried and

solidified provides a strong, tenacious binder, effectually uniting and amalgamating the individual staples in a single continuous body or strip. These strips may be conveniently handled, and boxed or wrapped for shipment without danger of breakage or disintegration and thus they provide a compact handy unit or package for general use. The strips may be put up in convenient lengths for vending as refills for hand-stapling machines and tackers, or they may be employed for loading wire-stapling machines, either as cartridges or in relatively long continuous belts.

When the staples are used in the machine in this form they feed to the setting-mechanism in a continuous row, and as the staple-driver descends on the individual staples fed therebeneath to drive them into the work the cementitious bond holding the unit is broken by the blow of the driver without rupturing the connections between the other units. As each staple is thus separated from the strip the paper 6 is sheared away, and since the paper or other tissue is thin and extremely frangible it does not impede the operation of the machine or materially affect the setting or clinching of the staple in the work.

Heretofore in the art it has in some cases been the practice to join the staples in a strip by means of lugs or bonds of metal extending between the individual units. This requires that the staples be spaced at a distance apart so that they cannot be arranged and held compactly. Furthermore, in this type of fastener the staples must be formed from sheet stock bent and punched in dies, and therefore there is considerable waste of metal, while the staples are otherwise more expensive to manufacture than those formed from wire. Moreover, this form of fastener does not have as neat and finished appearance as a wire staple because when cut from the strip the connecting lugs are left more or less rough and are apt to tear the paper or to catch in other objects.

The usual method of packaging wire staples has been to assemble them on a metal or wooden "stick" shaped to the form of a trough or channel. These sticks or holders are relatively expensive to manufacture and are discarded or thrown away when the staples are applied to the machine so that they represent an economic loss and add to the cost of the staples.

With the present improved method of assembling or packaging the staples the units themselves form the stick or strip without the use of a support or holder, and thus the package is much lighter in weight, less bulky in size, more economical to produce and more convenient for packing and shipping.

While I have herein described a preferred method of carrying out the packaging process and a preferred form of the package, it is to be understood that the steps in the process may be varied, that different binding mediums may be employed for cementing the staples together, and that the shape of the strip or package may be altered without departing from the spirit or scope of the invention. Moreover, the process may be applied to other types of fasteners than that herein illustrated. Therefore, without limiting myself in this respect, I claim:

1. As a new article of commerce, a staple package constituted by a strip of relatively thin sheet-material such as paper folded along its longitudinal edges to form downwardly extending marginal portions, a series of substantially U-shaped staples straddled across the top of the strip in contiguous relation with their sides in contact, and a coating of adhesive applied over the staples to cement them in place while adapting the strip and coating to be readily broken to allow the detachment of the individual staples as they are applied to the work.

2. An improved method of packaging staples consisting in providing a strip of relatively thin material such as paper folded along its longitudinal edges to provide down-turned marginal portions, placing a series of substantially U-shaped staples across the strip with their legs in straddled relation thereon and with their sides contiguous and closely abutting, and coating the staples with an adhesive to cement them to the strip and to secure them together in the manner and for the purpose substantially as described.

In testimony whereof I affix my signature.

THOMAS A. BRIGGS.