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2,566,062

DEVICE FOR STORING AND HOLDING CLIPS

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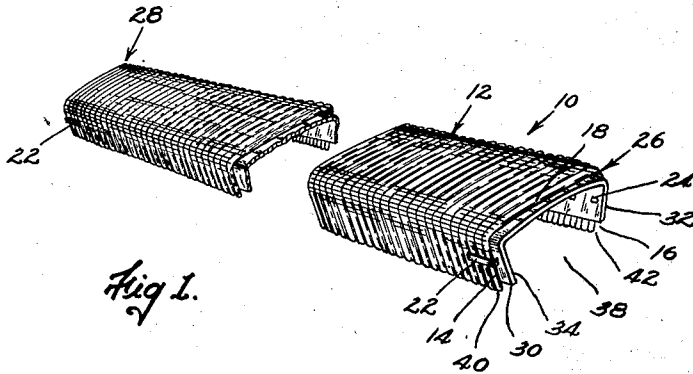


Fig 1.

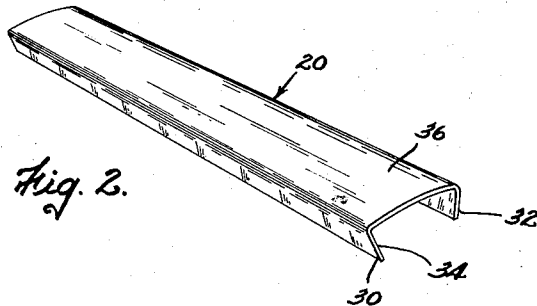


Fig. 2.

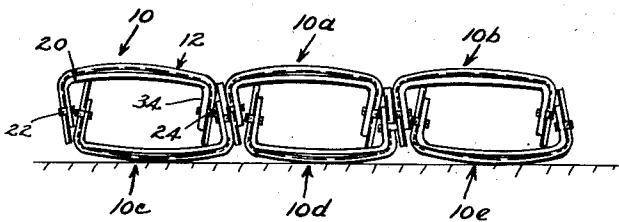


Fig. 3.

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DEVICE FOR STORING AND HOLDING CLIPS

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7 Claims. (Cl. 1—56)

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This invention relates to a device for storage and handling of clips such, for example, as those used in the packaging of plasterboard sheets. The clips referred to are of the type covered by Bicknell Patent No. 2,393,514 issued January 22, 1946.

The procedure followed prior to the application of the clips to the plasterboard bundles is this: After the clips have been formed and heat treated in one continuous process, they are removed from the forming and heat treating machine and transferred to the bundling machine for application to the plasterboard bundles, or placed in storage for subsequent transfer thereto. Heretofore in transferring the clips from one machine to the other, the clips were taken from the forming and heat treating machine and placed in a bucket-like receptacle for transfer to the bundling machine where, by hand, they were placed on a permanent mandrel of that machine. The shortcoming of this method of transferring the clips was the amount of time consumed in applying the clips to the permanent mandrel of the bundling machine.

Thus, it is one of the objects of this invention to provide a device for handling the clips after completion of the latter by one machine and before application thereof to a bundle by another machine, which will enable such an operation to be performed in a quick and efficient manner.

It is a further object of this invention to provide a device for handling clips subsequent to their removal from the forming and heat treating machine, which will hold a plurality of clips in a compact and uniform arrangement for ready storage or shipment, and which will permit of the same being readily fed into the bundling machine when desired.

It is still a further object of this invention to provide a device for handling the clips subsequent to their removal from the forming and heat treating machine, which is simple in construction, effective in operation, and inexpensive to produce.

Further and additional objects will appear from the description, accompanying drawings and appended claims.

In accordance with one embodiment of this invention, an elongated mandrel is provided for holding a plurality of substantially U-shaped clips having converging legs, in a side-by-side relationship. The top of the mandrel is of a width greater than the spacing between the ends of the legs of the clips. In other words, the mandrel is of substantially keystone shape in

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cross section. The end or outer clips are fastened to the mandrel by staples which engage the legs of said clips and penetrate the sides of said mandrel.

For a more complete understanding of this invention, reference should now be had to the drawings, wherein:

Figure 1 is a fragmentary perspective view of a mandrel with the clips mounted thereon;

Fig. 2 is a perspective view of the mandrel with the clips removed; and

Fig. 3 is an end view of pairs of mandrels with clips mounted thereon, showing the method of nesting the mandrels for storage.

Referring now to the drawings, a handling device 10 is provided for use in transferring substantially U-shaped clips 12 of the type disclosed in Bicknell Patent No. 2,393,514, subsequent to their removal from the forming and heat treating machine (not shown). The clips 12 are so shaped that their legs 14 and 16 are convergent and the middle section 18 slightly bowed outwardly. The handling device 10 comprises an elongated mandrel 20 constructed preferably of cardboard or some other inexpensive, penetrable sheet material, upon which the clips 12 are slidably mounted. Staple fasteners 22 and 24 embrace the outer or end clips 26 and 28 and penetrate the convergent sides 30 and 32 of said mandrel and are clinched on the inside face 34 thereof. The longitudinal dimension of the mandrel 20 is dependent on the number of clips to be mounted thereon. Mandrel 20, in this instance, is substantially channel-shaped with its sides 30 and 32 convergent at approximately the same angle as the convergent legs 14 and 16 of clip 12. The width of the top 36 of mandrel 20 is of greater dimension than the spacing 38 between the free ends 40 and 42 of the clip.

In the formation and heat treating of the clips 12, they are mounted on a steel mandrel (not shown). Upon removal of the clips 12 from the forming and heat treating machine, they are slid from the steel mandrel onto mandrel 20. After the desired number of clips have been mounted on mandrel 20 in a side-by-side relationship, as shown in Fig. 1, the legs 14 and 16 of the end or outer clips 26 and 28 are embraced by staples 22 and 24 respectively which penetrate the sides 30 and 32 of said mandrel and are clinched on the inside 34 thereof. The staples serve to temporarily hold the clips on the mandrel.

In storing or packing a plurality of full handling devices 10, 10a, 10b, 10c, 10d, and 10e for

subsequent transfer to the bundling machine (not shown), they are nested as shown in Fig. 3. The convergent open ends of the upper set of devices 10, 10a, and 10b are arranged adjacent the convergent open ends of the lower set of devices 10c, 10d, and 10e so that one leg of each device of the upper set extends into the convergent open side of each adjacent device of the lower set and rests on the embraced mandrel of said adjacent device and vice versa. With this arrangement it will be seen that a large number of full handling devices can be nested in a very limited space.

When it is desired to remove the clips 12 from mandrel 20 for application to the bundling machine, the staples 22 and 24 are removed from the outer clips 26 and 28 and the clips 12 slid onto the permanent mandrel of said machine.

Thus it will be seen that a means for handling clips subsequent to their removal from the forming and heat treating machine has been provided which greatly reduces the amount of time required in feeding the clips into the bundling machine. The handling device is of such a design as to enable the clips to be stored and shipped in a uniform and compact manner.

While a particular embodiment of this invention is shown above, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is contemplated, therefore, by the appended claims to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. Carrier means for holding a plurality of U-shaped clips having converging legs in a side-by-side relationship, comprising an elongated mandrel having a top and converging side portions embraced by said clips, the top of said mandrel being wider than the spacing between the lower edges of the side portions of said mandrel and wider also than the spacing between the ends of said converging legs, and means engaging the outermost clips for temporarily holding said plurality of clips on said mandrel.

2. Carrier means for holding a plurality of U-shaped clips having converging legs in a side-by-side relationship, comprising a penetrable elongated mandrel embraced by said clips and having a top and convergent sides, the sides of said mandrel engaging the corresponding legs of said clips, and the top of said mandrel being of a width greater than the spacing between the free ends of said clips, and means penetrating said mandrel for temporarily holding said clips thereon.

3. Carrier means for holding a plurality of U-shaped clips having converging legs in a side-by-side relationship comprising an elongated mandrel of substantially keystone cross section, embraced by said clips, the top side of said mandrel being of greater width than the spacing between the ends of the converging legs of said

clips, and means engaging the outermost clips for temporarily holding said plurality of clips on said mandrel.

4. Carrier means for holding a plurality of U-shaped clips having converging legs in a side-by-side relationship, comprising an elongated, substantially channel-shaped mandrel having convergent flange portions and a web portion embraced by said clips, the web portion of said mandrel being of a width greater than the spacing between the outer edges of said flange portions and the ends of the converging legs of said clips, and means mounted on either end of said mandrel for temporarily holding said plurality of clips thereon.

5. Carrier means for holding a plurality of U-shaped clips having converging legs in a side-by-side relationship comprising a penetrable, elongated mandrel embraced by said clips, the embraced top side of said mandrel being wider than the exposed bottom side thereof and wider also than the spacing between the ends of said converging legs, and means engaging the outermost clips and penetrating said mandrel for temporarily holding said plurality of clips thereon.

6. Carrier means for holding a plurality of U-shaped clips having converging legs in a side-by-side relationship comprising an elongated, channel-shaped mandrel having converging flange portions and being embraced by said clips, the open side of said mandrel corresponding to the open side of said clips and the side of said mandrel opposite said open side thereof being of greater width than the open sides of said mandrel and said clips, and means engaging the outermost clips and secured to said mandrel for temporarily holding said plurality of clips thereon.

7. Carrier means for holding a plurality of U-shaped clips having converging legs in a side-by-side relationship comprising a penetrable, elongated, substantially channel-shaped mandrel having the flange portions thereof convergent, the web and flange portions of said mandrel being of greater width than the open side of said clips, and means engaging the outermost clips and penetrating the adjacent flange portions of said mandrel for temporarily retaining said plurality of clips thereon.

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