Feb. 7, 1961 C. E. STONE 2,970,353

CLAMP

Filed Aug. 25, 1958

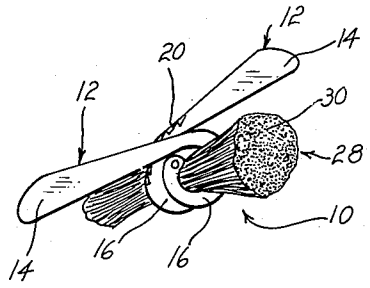


FIG-1

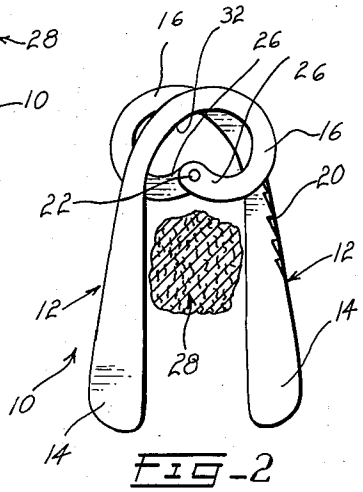


FIG-2

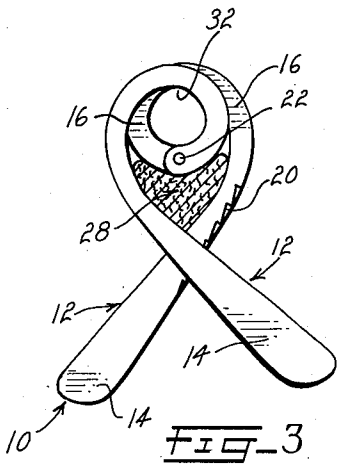


FIG-3

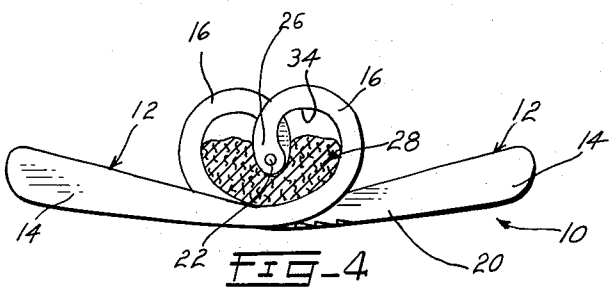


FIG-4

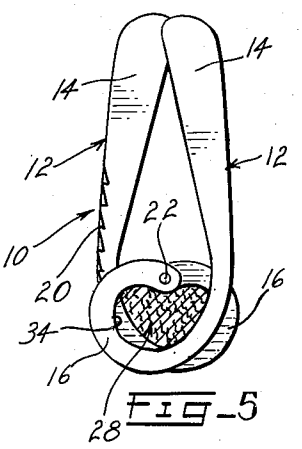


FIG-5

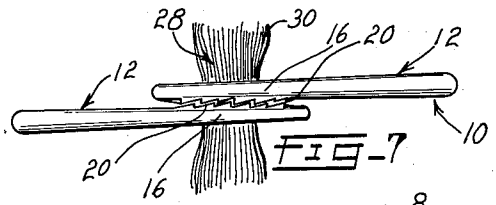


FIG-7

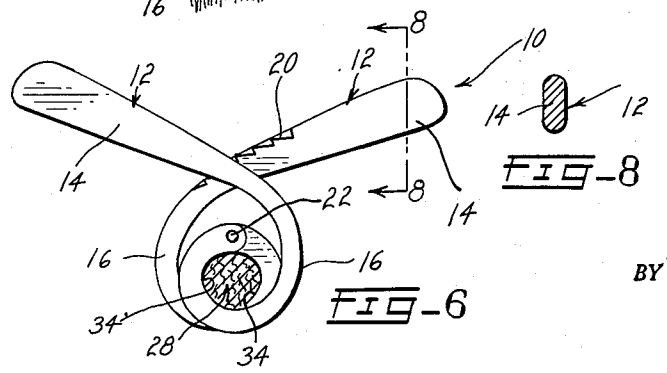


FIG-6

FIG-8

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CLAMP

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2 Claims. (Cl. 24—16)

This invention relates to a clasp or clamp adapted to maintain a plurality of elongated articles in a bundle.

In order to describe the construction and mode of operation of the clamp of my invention, it will be disclosed as applied in maintaining the hair of a woman in a "pony-tail" configuration, thus eliminating the necessity for the utilization of conventional expedients such as rubber bands, ribbons, and the like. Although the clamp of my invention is disclosed as being utilized in this particular environment, it is, of course, obvious that the principles thereof may be applied with equal cogency to maintaining various types of elongated articles in bundles, such as wire, fibers, thread, and the like.

It is, therefore, an object of my invention to provide a clamp of the aforementioned character which facilitates the maintenance of the plurality of elongated bodies to be maintained in a bundle during the clamping process by holding the elongated bodies in contiguity to each other as the clamp is disposed in encompassing relationship therewith. Therefore, once the legs of the clamp have been disposed about a bundle of elongated bodies and the process of clamping the same is initiated, there is no necessity for otherwise maintaining the individual elongated bodies in operative relationship with each other by auxiliary means.

Therefore, a woman utilizing the clamp of my invention as a hairdressing device can merely locate a plurality of strands of hair between the legs of the clamp and then manipulate the legs in a manner to be described in greater detail below to encompass the strands of hair without the necessity for maintaining the strands of hair in alignment by the use of a comb or other auxiliary means.

Another object of my invention is the provision of a clamp of the aforementioned character which includes a pair of elongated legs having straight portions at one extremity and scroll-shaped portions at the other extremity thereof, whereby when a bundle of elongated bodies is placed between said straight portions manipulation of the straight portions of the legs will cause the bundle of elongated bodies to be encompassed in the scroll-shaped portions of said legs.

Other objects and advantages of my invention will be apparent from the following specification and the accompanying drawing which is for the purpose of illustration only and in which:

Fig. 1 is a perspective view showing the clamp of my invention applied to a plurality of strands of hair;

Fig. 2 is a top plan view showing the manner in which the open clamp is adapted to initially encompass a bundle of elongated fibers or the like;

Fig. 3 is a view showing an intermediate step in the clamping process;

Fig. 4 is a plan view showing the manner in which the the clamp is partially engaged upon the bundle of elongated bodies;

Fig. 5 shows the clamp disposed in the next position of the elements thereof;

Fig. 6 is a view showing the ultimate position attained by the clamp with the bundle of elongated bodies located in the final clamped position therein;

Fig. 7 is a top, edge view of the clamp taken in the direction of the arrow 7 of Fig. 6 showing the manner in which the detent portions on the legs of the clamp mutually interengage; and

Fig. 8 is a vertical, sectional view taken on the broken line 8—8 of Fig. 6.

Referring to the drawing and particularly to Figs. 1–3 thereof, I show a clamp or clasp 10 constructed in accordance with the teachings of my invention and including a pair of legs 12 of identical configuration. The legs 12 may be formed from sheet metal, or the like, by conventional stamping processes, or may be injection molded from plastic materials such as the acrylic polymers or the like.

Each of the legs 12 includes an elongated, substantially straight outer extremity or portion 14 which has an inner extremity or portion 16 of curvilinear or scroll-like form formed integrally therewith. Thus, the legs 12 present the general appearance of a scroll with the inner extremities thereof turned inwardly to define a shape which substantially resembles the numeral "6" with the loop at the bottom of the numeral not being closed.

The straight, outer extremities or portions 14 of the legs 12 are provided with serrations 20 which serve as mutually interengageable detents to maintain the legs 12 in a predetermined location with respect to each other, as best shown in Figs. 6 and 7 of the drawing.

The scroll-shaped inner extremities or portions 16 of the clamp 10 are disposed in partially overlapping relationship when the clamp 10 is maintained in the open position shown in Fig. 2 of the drawing and it is characteristic of the clamp 10 that during the movement of the legs 12 through the progressive clamping positions which said legs are adapted to assume, some portions of the curvilinear or scroll-shaped inner extremities or portions 16 of the legs 12 are disposed in overlapping relationship. In any event, the extreme ends 26 of the scroll-shaped extremities 16 of the legs 12 are pivotally connected to each other by means of a pivot pin 22, said pivotal connection being located, when the clamp 10 is in the open position, between the straight extremities or portions 14 of the legs 12 and in the space 26 defined thereby.

When the clamp 10 is in the open position shown in Fig. 2 of the drawing, a bundle 28 of elongated bodies such as strands 30 of hair may be disposed in the space 26 between the straight portions or outer extremities 14 of the legs 12. With the clamp in the position of Fig. 2, the scroll-shaped, curvilinear inner extremities or portions 16 of the legs 12 define a substantially heartshaped opening 32.

After the bundle 28 is located between the legs 12, the legs 12 are rotated in opposite directions toward each other to cause them to intersect and to grasp the bundle 28 in the manner shown in Fig. 3 of the drawing. As the rotation of the legs 12 continues, the legs 12 ultimately assume the horizontal position shown in Fig. 4 of the drawing wherein continued movement of said legs eliminates the opening 32 and creates a new, relatively large opening 34 in which the bundle 28 of strands 30 is encompassed.

Rotation of the legs 12 is continued, said legs being moved upwardly into a position, best shown in Fig. 5 of the drawing, wherein the extreme outer ends of the outer extremities 14 of said legs overlap and the size of the opening 34 is substantially reduced although the bundle 28 is not, as yet, securely grasped by the contiguous edges of the scroll-shaped inner extremities 16 of the legs 12.

However, continued rotation of the legs 12 will ultimately cause mutual engagement of the serrations 20 on

said legs and will ultimately cause the edges of the scroll-shaped inner extremities **16** of the legs **12** to impinge upon and secure the bundle **28** in the substantially reduced opening **34**. When the legs **12** are located in the position shown in Fig. 6 of the drawing, the serrations **20** will interlock to maintain said legs in that position and to insure that inadvertent release of said legs from the position shown will not permit the bundle **28** to fall from the encompassing grasp of the scroll-shaped inner extremities of the portions **16** of the legs **12**.

In releasing the clamp **10** from operative engagement with the bundle **28**, it is merely necessary to reverse the operation of the clamp in the manner previously discussed. However, it should be noted that a relatively slight movement of the legs **12** from the position shown in Fig. 6 of the drawing to the position shown in Fig. 5 of the drawing will be sufficient to accomplish release of the bundle **28** and it is not necessary to manipulate the legs **12** of the clamp **10** to any greater extent to accomplish release of the bundle **28** from the encompassing grasp thereof. After the bundle **28** has been removed, the legs **12** of the clamp **10** can then be returned to the original starting position shown in Fig. 2 of the drawing.

If desired, the clamp can be utilized as a tying or lashing device wherein the string or other lashing means is attached to the oppositely disposed legs **12** of the clamp and, as the legs are rotated about the bundle within the clamp, the string is automatically wrapped around the bundle. Therefore, during the compaction of the bundle of fibers or other material disposed in operative relationship with the clamp, a lashing operation can be simultaneously achieved.

I thus provide by my invention a clamp adapted to accommodate a wide variety of different sizes of bundles of elongated fibrous bodies such as strands of hair or the like. Because of its inherently simple nature, the clamp of my invention can be manufactured at relatively low cost and because of its inherently simple operation, it can be readily manipulated in securing the clamp in operative relationship with bundles of elongated bodies. Therefore, the clamp of my invention is particularly adapted for use in the hairdressing arts where it can be utilized in a wide variety of applications.

I claim:

1. In a clamp, the combination of: a first, elongated leg having a free outer extremity and a curvilinear inner extremity, said curvilinear inner extremity having a length greater than that of a semi-circle, said inner extremity of said first leg curving back on itself; and a second, elongated leg having a free outer extremity co-operative with the outer extremity of said first leg and having a curvilinear inner extremity corresponding to that of said first leg, said inner extremity of said second leg curving back on itself, said curvilinear extremity of said second leg being of greater length than a semi-circle and underlying the corresponding curvilinear extremity of said first leg, said curvilinear extremities being pivotally connected to each other at the ends thereof, and said pivotal connection being located on a line drawn along the longitudinal axis of said clamp between the free outer extremities of said legs and said pivotal connection being located inwardly of the overlying curvilinear extremities of said legs.

2. In a clamp, the combination of: a first, elongated leg having a free outer extremity and a curvilinear inner extremity which is of greater length than a semi-circle, said inner extremity of said first leg having a return curvature; and a second, elongated leg having a free outer extremity co-operative with the outer extremity of said first leg and having a curvilinear inner extremity corresponding to that of said first leg, the inner extremity of said second leg being of greater length than a semi-circle, said inner extremity of said second leg having a return curvature, the curvilinear extremity of said second leg underlying the curvilinear extremity of said first leg and said curvilinear extremities being pivotally connected to each other at the ends thereof to define a substantially circular opening therebetween and said pivotal connection being located inwardly of the overlying curvilinear extremities of said legs on a line drawn along the longitudinal axis of said clamp.

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