Oct. 20, 1959 M. SOBEL 2,908,913

GARMENT BONE

Filed Dec. 4, 1958

FIG. 1

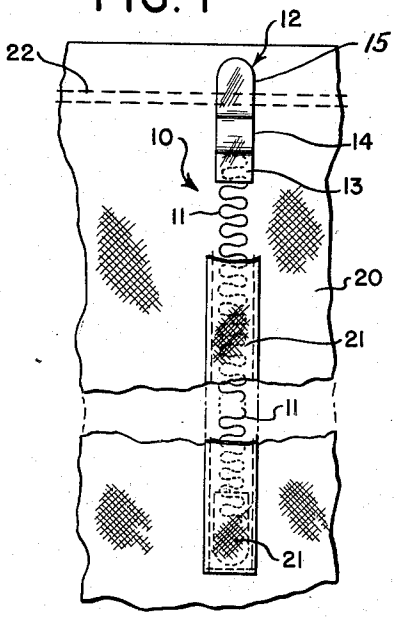


FIG. 2

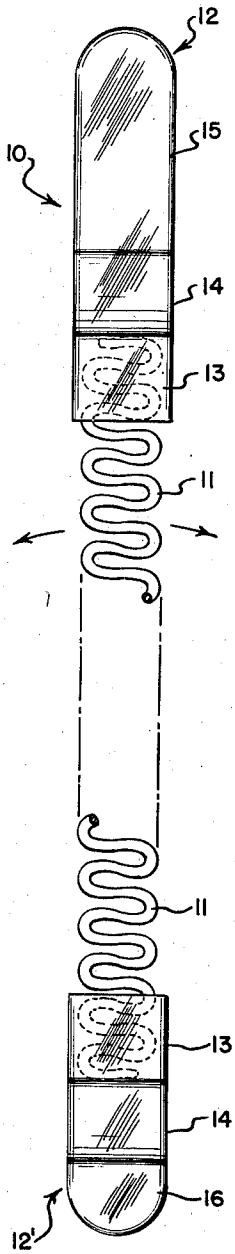


FIG. 3

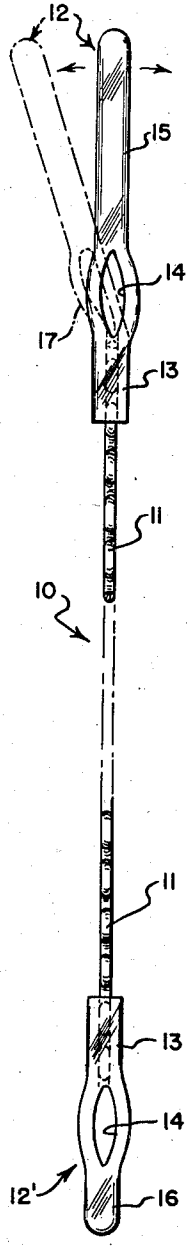


FIG. 4

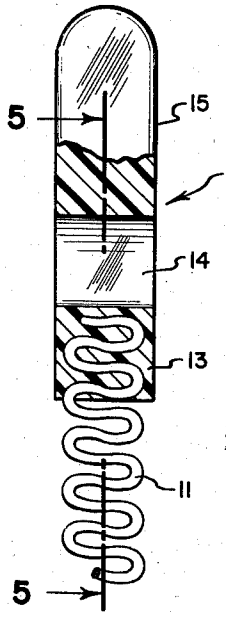
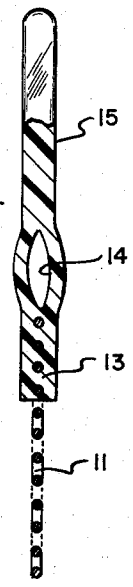


FIG. 5



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GARMENT BONE

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1 Claim. (Cl. 2—260)

This invention relates to stiffening and shaping members generally used in undergarments and more particularly known in the undergarment trade as boning members.

As the practice in the art, various means are employed to stiffen and furnish support and reinforcement to foundation garments where fabric alone is inadequate for the task. Various materials are employed, notable among which are flat, bent, zig-zagging, or spiraling wire of steel or plastic, and in earlier times even whale bone, from whence modern day terminology derives its name for such member.

In the use of wire and steel, sharp ends "stabbing" through layers of material have posed a difficult problem. In order to avoid such sharp ends, various means are employed to blunt these ends, some of which are the used of metal and plastic caps. Since these bones must be securely attached to the garment, the general practice is to provide pocketing structures to contain such members. Where metal caps are employed to blunt the ends of such members, additional stitching within the pockets was necessary to firmly secure such bones, which entails a tacking operation or careful stitching to span the metal tip.

To avoid additional operations, a variety of plastic caps over such steel members have been attempted, but although providing a partial solution to the aforementioned problem, in practice, the construction of these plastic caps has proven highly unsatisfactory in meeting the requirements for facility of manufacture and utility of the structures. Even slight pressure applied to present plastic caps have caused them to detach themselves from the body of the stay, and even the average pressure exerted by the body of a wearer against such plastic tips has been sufficient to cause such tip to fracture and break, leaving a sharp metal edge remaining in the garment.

It is the object of this invention to provide a bone insert for use in an undergarment which can be used with present day bone strips, especially of metal, but which will allow such bone strips to be sewn to a garment without special precautions.

Another object is to provide a cap for a metal stay of yieldable, semi-flexible material which is bendable without causing fracture or detachment of the cap from such stay.

A further object of this invention is the provision of a cap on a bone stay which will retain its original shape without fracturing, even under the greatest strains produced by movements of a wearer of the garment.

A further object of the present invention is to provide such a cap, in the nature of a lamination with a transverse aperture, extending therethrough to make the cap wholly flexible and thus not subject to easy fracture upon flexing of such cap.

In accomplishing the foregoing and other objects of the present invention, there is provided a plastic cap, one end of which is securely sealed to the body of a bone, the central portion of such cap having an aperture, and a solid opposite end comprising a sewing tip.

Other and further objects of the present invention will be apparent from the following description of an embodiment of the invention illustrated in the drawing, in which:

Fig. 1 shows the manner in which a bone is incorporated into a garment;

Fig. 2 is a side view of the bone as seen in Fig. 1;

Fig. 3 is a side view of the bone as seen in Fig. 2;

Fig. 4 is an enlarged view of one end of the bone according to this invention showing the major portions of said bone; and

Fig. 5 is a sectional side view taken at 5—5 of Fig. 4.

Referring now to the drawing, in which like numbers are applicable to the same elements in all of the figures, the bone **10** may be generally designated as having a body portion **11**, and a plastic cap **12** comprising a sealed portion **13**, an aperture **14** and a solid sewing tip **15** and **16**, on each end of the body portion **11** respectively.

The body **10** comprises a comparatively narrow body portion **11** having plastic caps not appreciably greater in thickness or width than body portion **11** sealed to each end thereof. The body portion **11** in the embodiment shown in the drawing is made of formed wire in a spaced, reversing pattern. However, it should be understood that spiraling, bent, zig-zag wire, flat steel or other resilient, semi-flexible material may be used for such body portion **11**.

The plastic caps **12**, **12¹** made of polyethylene or similar material which is penetrable by a sewing needle, tightly jackets the body of the bone **11** around several convolutions at either end of said body portion to form a single unified structure **13**.

To prevent the cap from fracturing and breaking, and to allow unlimited flexibility, an aperture **14** is provided extending across the width and medially between the sealed portion **13** and the end portion of the cap which serves as the sewing tip **15**, **16**.

The provision of the aperture **14** effectively relieves the pressure at the undersection **17** of the cap in a flexed position and thus prevents fracture of the cap and further allows for a bending and flexing of 180° in either direction without the possibility of separation or breaking of the cap from the body of the bone, as seen in Fig. 3.

The size of the aperture **14** is entirely dependent upon the required length of the cap. Where it is necessary to have a long tip, **15**, for sewing purposes, the size of the aperture is considerably enlarged. In the case of a small rigid tip **16**, the aperture **14** is considerably decreased.

In order to effect a tight jacketing of the cap with the body of the bone, it is contemplated that extruded strips of plastic generally of V shape be used. Several flat strips or other shapes and forms of extruded plastic may also be used. The end portions of the body of the bone are first heated in the range of 300–400° F. and then inserted between the arms of the generally V shape extruded strips. Sufficient pressure is applied to result in a firmly sealed jacket of the plastic around the body of the bone. The extruded lengths of plastic are then cut to furnish long, short, or intermediate sizes of tips or may be variously shaped to the tailored needs of the user.

Where the use of a bone calls for sewing therethrough, a long, comparatively soft, flexible tip may be jacketed to the bone, whereas, where no sewing requirement is called for, a short rigid cap may be incorporated into the bone.

The bone constructed according to this invention may be incorporated into a garment, a portion **20** of which is shown in Fig. 1. A pocket **21** which is formed by stitching of an overlaying fabric strip, ensheaths the bone. In order to further secure the bone firmly within the pocket,

a line of stitching **22**, as for example, a hem, can be made in the garment. The sewing needle, when forming this line of stitching can pass through the tip **14** of the plastic cap without danger of damage to the sewing needle.

While I have described a specific embodiment of my invention it is apparent that changes and modifications may be made therein, and the structure as so modified or changed will still fall within the ambit of my invention.

I claim:

A bone for use in an undergarment comprising an extended body and a flexible plastic end extending from said body, said plastic end having an inner end portion thereof tightly enveloping said body and having its other outer end portion of sufficient length and width to be pierceable by a sewing needle, a medial portion between said end portion, and a transverse opening extending entirely through said medial portion whereby said outer end portion may be flexed within a range of 360° without fracturing said flexible plastic end.

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