J. W. SCHLOSS.

GARMENT STIFFENER.

APPLICATION FILED JUNE 12, 1915.

1,221,005. Patented Mar. 27, 1917.

Fig. 1.

Fig. 2.

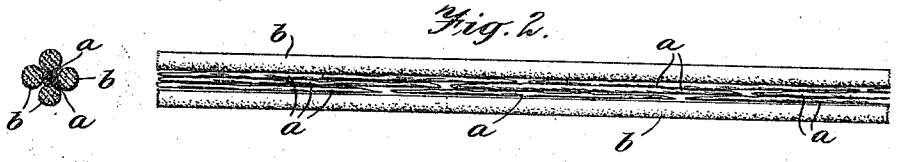


Fig. 3.

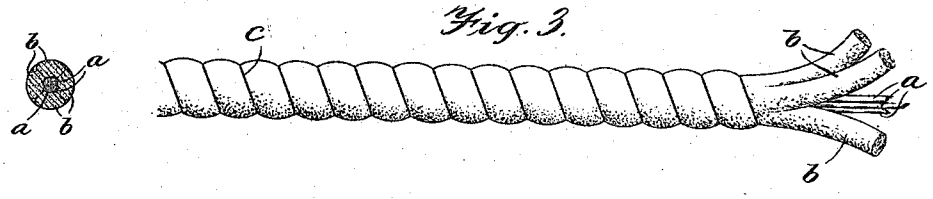
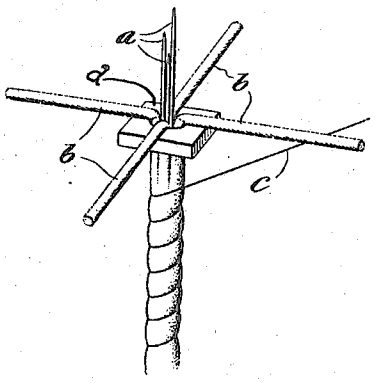


Fig. 4.



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JOSEPH W. SCHLOSS, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE WARREN FEATHERBONE CO., A CORPORATION OF ILLINOIS.

GARMENT-STIFFENER.

1,221,005. Specification of Letters Patent. Patented Mar. 27, 1917.

Application filed June 12, 1915. Serial No. 33,641.

To all whom it may concern:

Be it known that I, JOSEPH W. SCHLOSS, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Garment-Stiffeners, of which the following is a full, clear, and exact description.

This invention is an improved stiffening cord for garments. The prevailing styles in women's apparel require a stiffening material in the form of a cord and the cord is used in various lengths running from a few inches to several yards, and it is therefore sold to the consumer in packages or coils containing several yards of the material. One of the most popular and serviceable materials for making up this stiffening cord is featherbone, which, as well known, consists of the quills of feathers split or stranded, and bound together.

In making up a cord of featherbone it has been customary heretofore to bunch the fibers or strands of the quill together, placing them so that the ends overlap, so as to break joints, and holding the bunched fibers together by a serving of thread wound spirally around the outside thereof. The fibers of quill are somewhat rough when split up in this manner and when bound together with a serving thread their frictional engagement is such as to impart to the cord considerable tensile strength. This cord of featherbone is provided with a covering of textile material, put on heretofore in various ways, as by running it through a machine which will knit or braid a covering upon the cord, or by making pockets or envelops of tape and passing the featherbone core into the same. Covers thus applied are loose and independent of the fiber core, and serve only as a covering. Furthermore, such coverings are expensive to apply to the core, since a braiding or knitting operation is slow and the making of a pocket of tape is expensive, and the cover, of whatever form, must be applied in a separate operation after the core of fibers has been made up, in the manner described.

My invention aims to reduce the cost of manufacturing a covered featherbone cord, and at the same time produce a cord which has even greater tensile strength than the cords heretofore supplied to the trade. I accomplish these objects primarily by simultaneously assembling the strands or fibers of feather quills in their loose and overlapped condition with a covering material consisting of strands of yarn arranged longitudinally around the outside of the featherbone core and then winding or serving a thread upon the outside of the yarn under sufficient tension to bind the cover and core snugly together. In this way a single serving thread serves to hold the cover and the quill fiber together, and the soft yarn being thus pressed against the rough fibers of the quill, the latter will be prevented from moving in a longitudinal direction with respect to each other by the added friction between the yarn and the fibers. The covering will therefore become an integral part of the cord and will add to its strength as well as cover the unsightly appearance of the fiber.

In the accompanying drawings,

Figure 1 represents somewhat conventionally in side view and cross section, the core of quill fibers or strands.

Fig. 2 represents in longitudinal and cross sectional views, the core with its covering of yarn before the serving thread is applied thereto;

Fig. 3 represents in side view and cross section, the finished cord, and

Fig. 4 illustrates part of a machine for carrying out the process.

The strands of quill fiber comprising the core of the cord are indicated by *a*, *a*. These are laid together loosely with their ends overlapping each other and with the joints between succeeding strands staggered so that there will be no complete break or interruption of the structure anywhere in its length. While these strands are being thus laid up or assembled, I place around the outside thereof a plurality of strands of soft yarn, preferably wool, cotton, or silk. Each strand of this yarn is continuous in length and is preferably laid on parallel to the axis of the core of fiber and with a sufficient number of the strands to practically hide or cover the core at all points. I have shown four of such strands indicated by *b*, but a fewer or greater number may be used, as conditions may require. A convenient way of thus assembling the yarn strands with the loose fibrous core is to feed the strands of yarn through an orifice in a die plate *d*, and while they are passing insert the quill fibers between the yarn in the center of the orifice, as

indicated in Fig. 4. Such a device for making the cord forms no part of the present invention, and is therefore not more completely illustrated. As the strands of yarn and quill fibers thus assembled emerge from the orifice in the die plate they are immediately served or wound with a thread *c*, which is placed externally around the outside of the yarn and wound spirally under a slight tension. Fig. 3 shows the effect of winding the serving thread under tension against the soft yarn; it compresses the yarn and flattens the neighboring strands toward each other and all of the strands are compressed against the fibrous core, thus making the covering yarn and the core a unitary structure and not only serving to hold the cover upon the core but also binding the fibers of the core so tightly together that they cannot move longitudinally with respect to each other.

It will be seen that a cord made up in this manner can be manufactured much cheaper than one in which the core and cover are made and applied separately and at different times. The fact that the single binding thread serves to hold the fiber strands together, as well as to hold the cover upon the same, also lowers the cost of manufacture as well as producing a stronger and better cord.

I claim:

A stiffening cord for garments consisting of a cord composed of loosely laid-up strands or shreds of stiffening material, a plurality of continuous lengths of soft yarn applied to the core parallel to its axis and completely covering said core and a thread spirally wound around the exterior of the cords and binding the strands of the core and the covering together.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

JOSEPH W. SCHLOSS.

Witnesses:

WALDO M. CHAPIN,

MARY G. HART.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."