June 14, 1938. E. R. CHATTERTON 2,120,885

MOLDED TRIMMING

Filed June 1, 1936

Fig. 1.

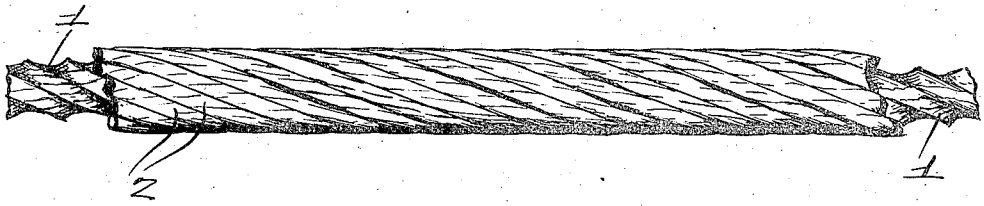


Fig. 2.

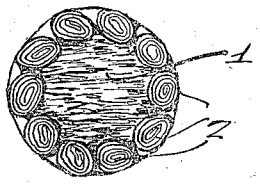


Fig. 3.

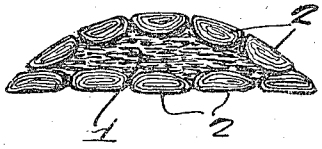
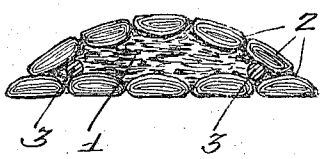


Fig. 4.



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UNITED STATES PATENT OFFICE

2,120,885

MOLDED TRIMMING

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Application June 1, 1936, Serial No. 82,978

6 Claims. (Cl. 117—53.5)

This invention relates to improvements in shaped trimmings or moldings of the class used on upholstery and extensively in automotive work for both inside and outside finishing. Conventionally, these trimmings or molding materials are used as a filler in leather or upholstery-covered welts or gimps.

Heretofore shaped trimmings or moldings of this class have consisted of a filler or core of suitable material embraced by a braided, interlaced or concatenated cover. Trimmings of this construction while having the necessary flexibility and being susceptible to curves or bends without undue distortion of the molded cross sectional shape have been unduly expensive due to the unavoidable production limitations, it being possible to manufacture these products only at a relatively slow production rate. As a consequence of the high cost of this product, its use has been seriously restricted.

The object of my invention is to make available to the consumers an efficient and durable trimming or molding of the class described that will have the necessary flexibility and susceptibility to curves and bends without bodily distortion and at a price sufficiently low to permit its use generally wherever a product of this nature may be required.

In the practice of my invention I have produced by methods hereinafter described a composite cylindrical strand consisting of a central portion composed preferably of crushed paper and an outer portion consisting of a plurality of paper cords, either twisted or crushed, said cords being formed in spiral convolutions about the said central portion, and said central portion being twisted and compressed as a result of the application of the said cords thereto in spiral formation whereby the two portions form in effect an interlocked unit wherein the said cords are in effect embedded in the said central portion, and the latter portion in part is carried outwardly between the convolutions of the surrounding cords. This product differs from the prior conventional products, which employ as previously set forth a core embraced by an interlaced, braided or concatenated cover, in an essential respect. In these prior products, the interlaced, braided or concatenated covers function merely as a containing envelope for the core which remains unaffected by the process of applying said cover. In my product on the other hand, by reason of the character of the stranding operation wherein the outer cords are assembled with the inner or central portion, the latter portion is compressed, twisted and interlocked with said cords in a manner integrating the outer and inner portions to an extent affording in effect an integral structure wherein the parts combine to produce a stable elongated body having a distinct tendency to maintain its normal cross sectional form under even extreme bending conditions.

The cylindrical strand described above constitutes an intermediate product in the formation of the trimming or molding forming the subject of my invention. As a further step in the production of the finished product, I may or may not subject the cylindrical strand to a treatment with a suitable rubber suspension or solution, such, for example, as latex or a rubber cement, and subsequently subject the strand, treated or untreated as the case may be, to a molding operation to produce the desired cross sectional shape.

The process of manufacture will be more readily understood by reference to the attached drawing, in which:

Figures 1 and 2 are, respectively, longitudinal and cross sectional views of a section of the intermediate cylindrical product;

Fig. 3 is a cross sectional view showing the finished product produced by molding the cylindrical intermediate product, and

Fig. 4 is a transverse sectional view illustrating a modification within the scope of the invention.

With reference to Figs. 1 and 2, the reference numeral 1 designates the central portion which may, as previously set forth, consist of crushed paper. In this portion, I prefer to employ tissue paper. The outer cords which surround the inner portion 1 in spiral formation are indicated by the reference numeral 2. These cords, formed of paper, are preferably slack twisted to render them relatively pliable, although for certain types of trimmings a hard twisted and, therefore, less pliable paper cord may be employed; or if extreme pliability is required, the cords may be formed merely of crushed paper. The elements 1 and 2 are assembled into the cylindrical strand in a twisting and stranding machine of well known type, wherein the elements in passing through a small die are compressed together and simultaneously twisted. As a result of this action, the spirally wound cords are forcibly embedded in the crushed paper center and portions of the latter are pressed up between the convolutions of the cords, as illustrated in Fig. 2, and the elements are thereby united into a substantially integral interlocked strand, which has a distinct tendency to maintain its original cross sectional form and condition even when sharply

bent. This unified strand, if desired, may now be passed through a bath of a rubber cementing medium or latex, and is again drawn through a die to force the rubber into the body of the strand and to remove the surplus rubber from the external surface. After a period of time, during which the rubber medium is permitted to "set" or cure, the treated strand is passed between the conventional molding rolls to give the strand a shape such, for example, as shown in Fig. 3, this molding operation leaving unaffected the aforedescribed desirable characteristics of the strand.

It has been found that a trimming or molding strip formed as described has no tendency to separate or disintegrate and constitutes an extremely efficient and durable trimming or molding strip. It further has a distinct advantage over the prior conventional trimmings and moldings, in that by reason of its method of fabrication it may be produced at a relatively high rate of speed and at low cost. For this reason it fills a definite requirement in the trade for an efficient low-cost trimming or molding material, and is available for use in upholstery or finishing work for which the prior conventional moldings were unavailable by reason of their relatively high cost.

In Fig. 4, I have illustrated a modification within the scope of the invention. In this case the trimming or molding strip is in all essential respects the same as that described above, but in addition is provided, longitudinally, with one or more flexible wires **3**, which have the effect of maintaining the strip in bent or curved forms, this being a desirable feature for certain types of work.

While for general purposes the use of the crushed paper center is desirable, I have found that an entirely practicable trimming or molding strip may be formed by the process described above utilizing, however, only the cords **2**. In such cases, the cords are passed through the twisting and stranding machine in the conventional manner, are thereafter treated with the rubber-bonding medium, and subsequently molded to the desired cross sectional shape. In this form of trimming, it is desirable to employ the rubber-bonding material by reason of the absence in the strand of the interlocking effect obtained, as described above, with the crushed paper center.

I claim:

1. A shaped trimming or molding strip consisting of a central portion of crushed paper and an outer portion consisting of several strands of formed paper embracing the said central portion in spiral convolutions, the outer strands being embedded in said central portion and said central portion at the periphery thereof extending outwardly between and interlocking with the strands of the spirally-formed outer portion and forming with the latter a unified structure capable of flexure to curves or bends without material distortion from its normal cross sectional form.

2. A trimming or molding material in accordance with claim 1 wherein the elements are bonded together by means of a flexible adhesive.

3. A shaped trimming or molding strip consisting of a central portion of crushed paper and an outer portion consisting of several cords of crushed paper embracing the central portion in spiral convolutions, the outer cords being embedded in said central portion and said central portion at the periphery thereof extending outwardly between and interlocking with the cords of the spirally-formed outer portion and forming with the latter a unified structure capable of flexure to curves or bends without material distortion from its normal cross sectional form.

4. A shaped trimming or molding strip consisting of a central portion of crushed paper and an outer portion consisting of several cords of twisted paper embracing the central portion in spiral convolutions, said cords being embedded in the central portion and said central portion at the periphery thereof extending outwardly between and interlocking with the cords of the spirally-formed outer portion and forming with the latter a unified structure capable of flexure to curves or bends without material distortion from its normal cross sectional form.

5. A shaped trimming or molding strip as described in claim 3 and wherein the central portion is slightly twisted and further interlocks the core and the outer strands.

6. A shaped trimming or molding strip as described in claim 4 and wherein the central portion is slightly twisted and further interlocks the core and the outer strands.

EDWARD R. CHATTERTON.