

April 18, 1961

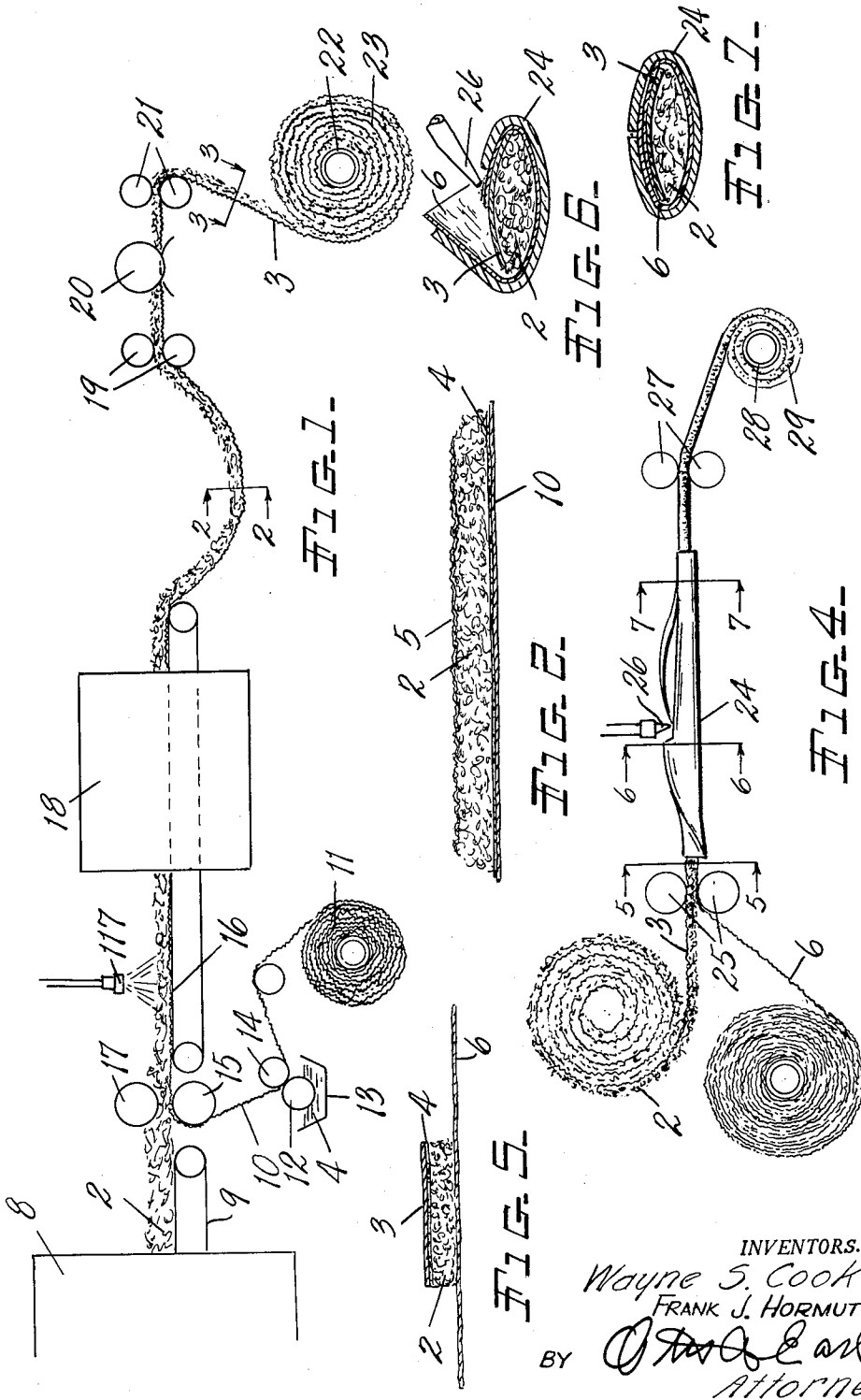
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2,980,570

PADDING UNIT

Filed Nov. 7, 1956

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

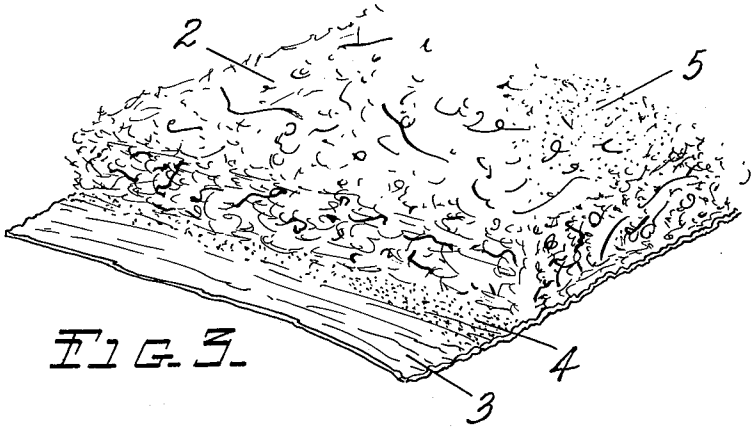


FIG. 3.

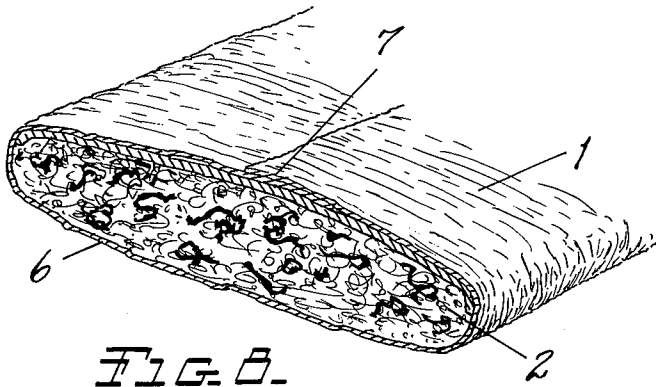


FIG. 4.

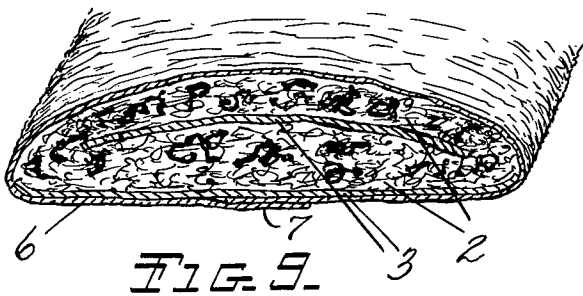


FIG. 5.

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PADDING UNIT

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10 Claims. (Cl. 154—53.6)

This invention relates to improvements in padding units.

The main objects of this invention are:

First, to provide a padding unit which is highly resilient and may be handled and applied as a unit in various relations to upholstery, in the lining of motor vehicles and in various other relations.

Second, to provide a padding unit having these advantages or characteristics which while maintaining its shape generally may be flexed and curved to adapt the same to widely varying shapes and conditions in the upholstered part.

Third, to provide a method of manufacture which enables the rapid, economical and uniform production of upholstery material having the above specified advantages.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a view largely diagrammatic illustrating an apparatus for practicing the first step of the method of our invention.

Fig. 2 is a somewhat enlarged fragmentary section on a line corresponding to line 2—2 of Fig. 1.

Fig. 3 is a fragmentary transverse section on a line corresponding to line 3—3 of Fig. 1, the supporting strip being extended beyond the batt to illustrate the general relation of the batt thereto.

Fig. 4 is a side elevational view of an apparatus for the application of the covering to the material shown in Fig. 3.

Fig. 5 is a fragmentary view in section on a line corresponding to line 5—5 of Fig. 4.

Fig. 6 is a transverse section on a line corresponding to line 6—6 of Fig. 4.

Fig. 7 is a transverse section on a line corresponding to line 7—7 of Fig. 4.

Fig. 8 is a fragmentary perspective view of one form of the padding unit embodying our invention as produced by the steps and apparatus of the previously described figures.

Fig. 9 is a fragmentary perspective view of a modified form or embodiment of our invention.

It will be understood that in the accompanying drawings the various parts of the apparatus for performing the steps of the method of our invention are illustrated conventionally. Also, that the materials constituting the padding unit of our invention are more or less conventionally illustrated and not shown in relative proportions as owing to the character thereof it is not practical to do so as will be apparent from the following description.

In the accompanying drawing 1 represents a preferred form or embodiment of our padding unit and it should be understood that it is produced in long strips which are commonly merchandized in rolls adapted to be cut off or sectioned to meet the particular uses.

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In this preferred embodiment the resilient batt 2 is made up of approximately 80% cotton linters and 20% thread waste. This material is mixed and garnetted into a batt. The batt is superimposed upon a strip of crinkled paper, preferably kraft paper 3, and bonded thereto by adhesive indicated at 4 in Figs. 2 and 3. A light film of adhesive 5 is applied to the opposite side of the batt, that is, opposite to which the strip 3 is secured. The strip 3 is arranged with the crinkles thereof extending transversely of the batt. A covering 6 is wrapped around the batt and its supporting strip with its edges 7 disposed in overlapping relation and adhesively bonded together. In applying the covering the batt is desirably conformed to provide a crowned outer surface.

It will be understood that in Fig. 8 the unit is shown in inverted position. The embodiment shown in Fig. 9 is designed for use where a thicker or stronger padding is desired and it is made up of two of the elements shown in Fig. 3 superimposed one upon the other prior to the application of the covering thereto. The second supporting strip greatly reinforces the padding unit and enables the production of padding units of substantial thickness and having sufficient strength to withstand careless or rough usage in installing or other handling. The outer wrap may desirably be of creped paper as indicated although the supporting strip functions effectively in supporting the batt which is uniformly secured thereto.

The application of the adhesive 5 to the upper surface of the batt does not affect its resiliency but does hold the fibers together for handling and prevents substantial creeping in use.

In Figs. 1 to 7 inclusive we illustrate a highly practical method of producing the padding units of our invention. Referring to Fig. 1, the numeral 8 represents a batt forming apparatus with the batt 2 discharged therefrom as by the conveyor 9 and delivered upon the web of crinkled paper 10 of substantial width, a roll of this paper being indicated at 11. Adhesive 4 is applied thereto by means of the roller 12 rotating in the tank or trough of adhesive 13 and a guide roller 14 being provided hold the web of paper in contact with the adhesive applying roller. The web is then passed over the guide and compression roller 15 onto the conveyor 16. The pressure roller 17 is disposed in opposed relation to the roller 15 to compress the batt prior to its delivery to the conveyor 16.

At the rear of the pressure roller is an adhesive applying sprayer 117 which applies adhesive to the upper surface of the batt prior to its passage through the oven or drying chamber 18 which sets the adhesive connecting the batt to the supporting strip and also dries the adhesive film 5. The material is discharged from the oven or drying chamber as is illustrated in Figs. 2 and 3.

From the conveyor 16 the supporting web with the batt thereon is carried between the guide rollers 19 to the slitter 20 which cuts the relatively wide web of combined batt and supporting web into strips which pass between the guide rollers 21 to the winding roller 22. The padding element thus produced being indicated at 23 desirably wound under substantial compression and remaining so wound until it is desired to apply the covering 6 which is of desired width as compared to the padding element to be wrapped therearound with its edges overlapping as has been described.

The wrapping device is conventionally shown at 24 in Fig. 4 and as wrapping devices of this general type are known we have not described or illustrated it in detail but in Figs. 5, 6 and 7 we have illustrated the successive steps in applying the wrapper to the padding element.

In applying the cover the padding element and wrapper 6 are guided between the guide rollers 25 to superimpose

the padding element upon the wrapper 6 in inverted relation, that is, with the supporting strip 3 on top of the batt. With the wrapper partially wrapped around the padding unit adhesive is discharged upon the inner of the overlapping edges by means of a nozzle 26, see Figs. 4 and 6. After the adhesive is applied the overlapping edges are brought together and pressed together by means of guiding the pressure rolls 27 to the winding roll 28, the wound finished material being indicated at 29.

With this apparatus and method the pad units may be rapidly and economically produced and as stated the product is desirably merchandized in rolls 29 to be cut into desired lengths for use.

The applicants are familiar with the padding material or filler strips of the product of the Sackner Patent No. 2,315,818, issued April 6, 1943. That filler strip when used as a padding for upholstery and the like loses its resiliency or becomes compressed in use so that the upholstery becomes indented or loses its desired shape. The padding unit of our invention is a very substantial improvement over that filler strip or padding disclosed in the Sackner patent and permits the use of material such as the batt being made up mainly of cotton linters with sufficient thread waste incorporated therein which serves to hold the linters together. The outer side of the batt strip having the bonding adhesive thereon with a wrapper wrapped around the batt and its supporting strip hold the linters in their uniformly distributed position without destroying the resilience of the batt. However, other padding formed of other material may be used if desired.

We have not attempted to illustrate the application of our padding unit but it is desired to point out that it is highly desirable for padding and upholstering the inner wall parts of automobiles, mattresses, edgings and the like.

Having thus described our invention, what is claimed as new and is desired to be secured by Letters Patent is:

1. A padding unit comprising a garnetted strip-like batt of approximately 80% cotton linters and 20% thread waste, a batt supporting strip of crinkled kraft paper of a width corresponding to the width of the batt and disposed with the crinkles thereof extending transversely of the batt and adhesively bonded to the inner side thereof, the outer side of the batt strip having a filament bonding adhesive thereon the batt material being otherwise conformingly free, and a wrapper of crinkled kraft paper wrapped transversely around said batt and its said supporting strip with its crinkles disposed transversely thereof and with the edges of the wrapper disposed in overlapping relation and bonded together centrally of said batt supporting strip and coacting therewith to provide a reinforced substantially flat inner side for the padding unit with the edges thereof curvedly conformed and the outer side thereof transversely curvedly crowned.

2. A padding unit comprising a garnetted strip-like batt of approximately 80% cotton linters and 20% thread waste, a batt supporting strip of crinkled kraft paper of a width corresponding to the width of the batt and disposed with the crinkles thereof extending transversely of the batt and adhesively bonded to the inner side thereof the batt material being otherwise conformingly free, and a wrapper wrapped transversely around said batt and its said supporting strip with the edges of the wrapper disposed in overlapping relation and bonded together centrally of said batt supporting strip and coacting therewith to provide a reinforced substantially flat inner side for the padding unit with the edges thereof curvedly conformed and the outer side thereof transversely curvedly crowned.

3. A padding unit comprising a garnetted strip-like batt of a mixture of cotton linters and strand-like material in which the linters substantially predominate in volume, a batt supporting strip of crinkled paper disposed with the crinkles thereof extending transversely of the batt and adhesively bonded to the inner side thereof the batt material being otherwise conformingly free, and a wrapper of crinkled paper wrapped transversely around

said batt and its said supporting strip with its crinkles disposed transversely thereof and with the edges of the wrapper disposed in overlapping relation and bonded together centrally of said batt supporting strip.

4. A padding unit comprising a garnetted strip-like batt of a mixture of cotton linters and strand-like material in which the linters substantially predominate in volume, a batt supporting strip of crinkled paper disposed with the crinkles thereof extending transversely of the batt and adhesively bonded to the inner side thereof the batt material being otherwise conformingly free, and a wrapper wrapped around said batt and its said supporting strip with the edges of the wrapper disposed in overlapping relation and bonded together centrally of said batt supporting strip.

5. A padding unit comprising a garnetted strip-like batt of a mixture of cotton linters and strand-like material in which the linters substantially predominate in volume, a batt supporting strip of crinkled paper disposed with the crinkles thereof extending transversely of the batt and adhesively bonded to the inner side thereof the batt material being otherwise conformingly free, the outer side of the batt strip having a filament bonding adhesive thereon, and a wrapper wrapped around said batt and its said supporting strip with the edges of the wrapper disposed in overlapping relation and bonded together centrally of said batt supporting strip.

6. A padding unit comprising a resilient strip-like batt comprising a substantially uniform mixture of cotton linters and strand-like material in which the cotton linters predominate, a batt supporting strip of crinkled paper of a width approximately the width of the batt and disposed with the crinkles thereof transversely of the batt and adhesively bonded to one side thereof, the other side of the batt having a filament bonding adhesive thereon, the batt material being otherwise conformingly free, and a wrapper of crinkled paper wrapped transversely around said batt and its said supporting strip with its crinkles disposed transversely thereof and with the edges of the wrapper disposed in overlapping relation and bonded together.

7. A padding unit comprising superimposed padding elements, each element comprising an elongated strip-like batt comprising a substantially uniform mixture of cotton linters and strand-like material intermixed therewith and in which the cotton linters predominate, the strand-like elements being of such length and quantity as to constitute binding elements for the linters, a batt supporting strip of crinkled paper of a width approximately that of the batt disposed with the crinkles thereof transversely of the batt and adhesively bonded thereto, the other side of the batt having a filament bonding adhesive thereon, the upper of the superimposed element being narrower than the lower and being disposed with its supporting strip in superimposed relation to the batt of the lower element with both of its side edges in substantially spaced relation to the side edges of the back on which it is superimposed, and a wrapper wrapped transversely around the superimposed padding elements with its edges disposed in overlapping relation on the under side of the supporting strip of the lower element and bonded together, the padding unit being transversely curvedly crowned.

8. A padding unit comprising superimposed padding elements, each element comprising an elongated strip-like batt comprising a substantially uniform mixture of cotton linters and strand-like material intermixed therewith and in which the cotton linters predominate, the strand-like elements being of such length and quantity as to constitute binding elements for the linters, a batt supporting strip of crinkled paper of a width approximately that of the batt disposed with the crinkles thereof transversely of the batt and adhesively bonded thereto, the upper of the superimposed element being narrower than the lower and being disposed with its supporting strip

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in superimposed relation to the batt of the lower element with both of its side edges in substantially spaced relation to the side edges of the back on which it is superimposed, and a wrapper wrapped transversely around the superimposed padding elements with its edges disposed in overlapping relation on the under side of the supporting strip of the lower element and bonded together, the padding unit being transversely curvedly crowned.

9. A padding unit comprising superimposed padding elements, each element consisting of an elongated strip-like batt comprising a substantially uniform mixture of cotton linters and strand-like material intermixed therewith and in which the cotton linters predominate, the strand-like elements being of such length and quantity as to constitute binding elements for the linters, a flexible batt supporting strip of a width approximately that of the batt disposed with the crinkles thereof transversely of the batt and adhesively bonded thereto, the other side of the batt having a filament bonding adhesive thereon, the upper of the superimposed padding element being narrower than the lower and being disposed with its supporting strip in superimposed relation to the batt of the lower element with both of its side edges in substantially spaced relation to the side edges of the back on which it is superimposed, and a wrapper wrapped transversely around the superimposed padding elements with its edges fixedly connected.

10. A padding unit comprising superimposed padding elements, each element consisting of an elongated strip-like batt comprising a substantially uniform mixture of

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cotton linters and strand-like material intermixed therewith and in which the cotton linters predominate, the strand-like elements being of such length and quantity as to constitute binding elements for the linters, a flexible batt supporting strip of a width approximately that of the batt disposed with the crinkles thereof transversely of the batt and adhesively bonded thereto, the upper of the superimposed padding element being narrower than the lower and being disposed with its supporting strip in superimposed relation to the batt of the lower element with both of its side edges in substantially spaced relation to the side edges of the back on which it is superimposed, and a wrapper wrapped transversely around the superimposed padding elements with its edges fixedly connected.

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