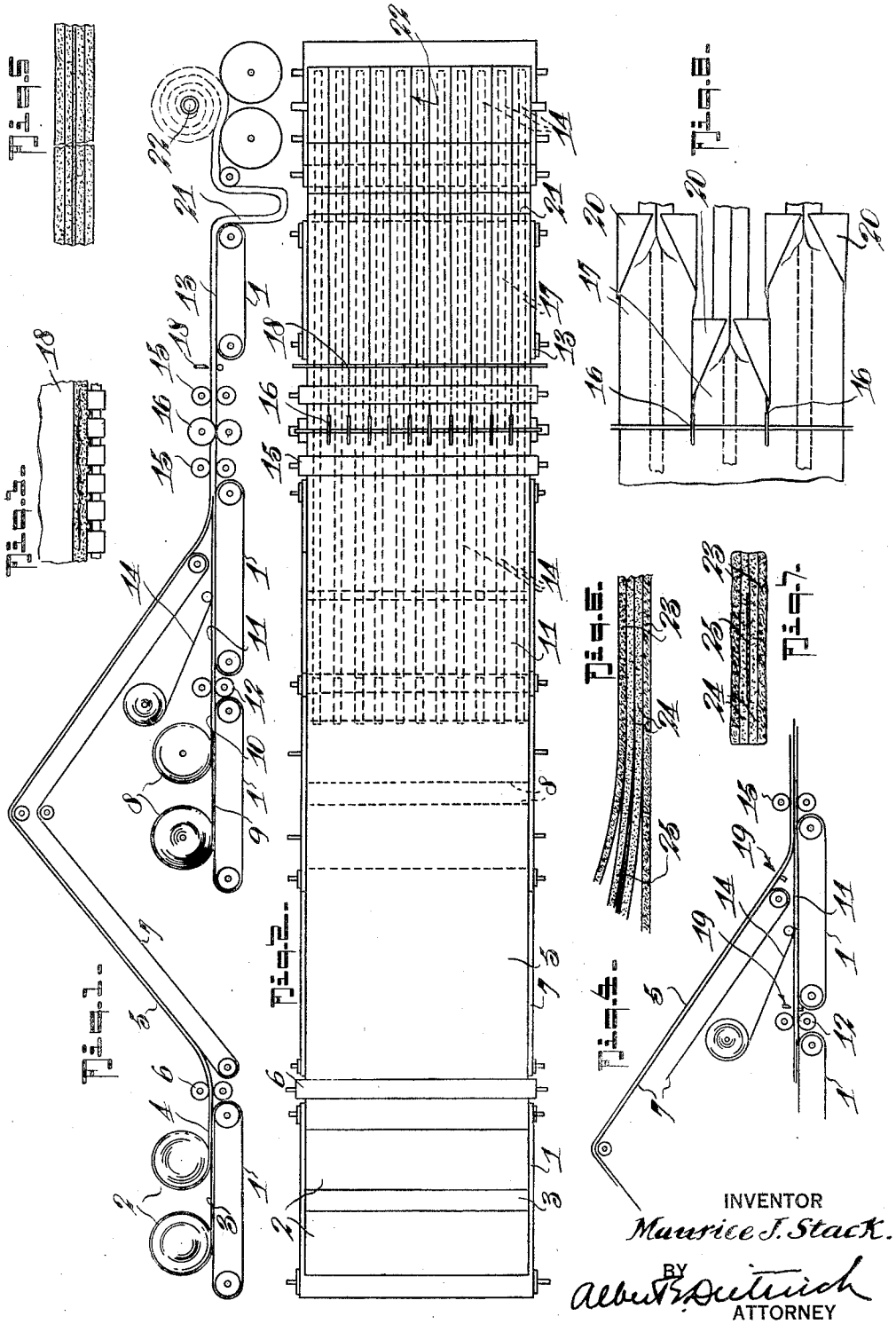
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METHOD OF MAKING BATS

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METHOD OF MAKING BATS.

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The invention has for its object to provide a new and improved method of making bats for use in upholstering automobile and Pullman car seats and the like by the employment of which method the bats may be much more economically produced than has heretofore been possible and are of a better quality for their intended purposes than conventional forms of bats now in use.

In its more detailed nature the invention resides in the provision of a new and improved method of making bats of the folded or unfolded type and comprehends the steps of forming a continuous wide bat stock sheet of a plurality of laps of like materials or combinations of materials, laying tensile strength giving strips between certain laps of the stock sheet in spaced relation, slitting the wide sheet between the strips to provide a series of individual bat units, dividing the sheet transversely at intervals to provide bat lengths serially arranged, folding the bat units when folded type bats are being formed, and winding the bats in individual spirals.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, my invention consists in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, then be particularly pointed out in the appended claims, reference being had to the accompanying drawing, in which:—

Figure 1 is a diagrammatic side elevation illustrating the method.

Figure 2 is a plan view.

Figure 3 is a fragmentary cross section illustrating one method of making the bats' dividing cross cut.

Figure 4 is a fragmentary diagrammatic side elevation illustrating another method of making the dividing cross cuts.

Figure 5 is a fragmentary central longitudinal section of the abutting ends of two individual bat lengths joined by their tensile strength providing strip and formed in accordance with the cross cut method illustrated in Figure 4.

Figure 6 is a fragmentary side elevation of a bat formed of composite laps.

Figure 7 is a vertical cross section of the bat shown in Figure 6.

Figure 8 is a fragmentary plan view illustrating the bat unit folding step.

In the drawing in which I have diagrammatically illustrated the steps of my method, 1 indicates a series of travelling aprons or tables preferably arranged horizontally to feed the material along, it being understood that any suitable means for so conveying the material may be employed. In the drawing four such aprons are shown and will be referred to in detail as first, second, third and fourth aprons.

The numeral 2 indicates any suitable lap laying means as for example two rolls of lap or batting sheet material from which individual laps 3 and 4 are laid upon the first apron in superimposed relation one upon the other to form a bat stock body portion 5. As it leaves the apron the body 5 passes through feed and presser rolls 6 which exert just enough pressure on the said body to interlock the fibres of the laps 3 and 4 without matting or appreciably compressing the said bat body portions.

The bat body portion 5 next passes over any suitable carry-over conveyor such as the camel-back apron 7 diagrammatically illustrated in the drawing.

Lap laying means 8 similar to the lap laying means 2 hereinbefore referred to may be employed to lay individual superimposed laps 9 and 10 upon the second apron 1 to form a bat body portion 11 similar in construction to the body portion 5 hereinbefore referred to. After being formed the body portion 11 passes through feed and presser rolls 12 which may be similar in construction and function to those 6 hereinbefore referred to in detail, and from the said rolls the said body portion passes upon and over the third apron, at or adjacent the end of which the bat body portion 5 is deposited thereupon so that the said portions

5 and 11 collectively form the bat stock body proper or the completed bat body 13. In this manner a bat stock body 13 is formed which is relatively wide and continuous in length.

Just before the bat body portions 5 and 11 are laid one upon the other to form the bat stock body 13 a plurality of tensile strength providing strips 14 are laid between the said portions 5 and 11 in equi-distantly spaced relation. The said strips are of continuous length and may be formed of ordinary paper, gummed paper, fabric, glazed wadding or soft rolled cotton rope.

The laps 3—4 and 9—10 may all be formed of cotton of the same grade or they may be arranged in combinations of different grades of cotton or of cotton and curled hair. See Figures 6 and 7 for examples. Thus inferior grades of cotton may be used toward the center of the finished bats and better grades of cotton at the outside, or the centers of the bats may be formed of cotton and the outer portions of curled hair as illustrated in the said figures. Thus by employing the method disclosed for forming the bat body proper of individual laps it is possible to form the bat stock to suit the requirements of particular orders being filled.

The bat stock sheet proper 13 after being formed is passed through the sets of presser and feed rolls 15 and is longitudinally slit as at 16 to form a plurality or series of narrow strips forming individual bats or bat units 17.

In the process of forming the completed bats the stock sheet is cross-cut or divided at regular intervals as at 18. This cross-cutting operation may be accomplished in the manner illustrated in Figure 3 of the drawing by a cross knife which descends upon a notched abutment rod so that the bats will not be completely severed but will be weakened so that a user of the bat can easily and conveniently sever them at will, or the said cross-cutting operation may be accomplished in the manner indicated in Figure 4 of the drawing. In this figure the bat body portions 5 and 11 are completely severed by suitably spaced and timed knives 19. The knives 19 are so spaced and timed in operation that after the operation has been started the cuts made by the knives will be arranged at like points in the finished bat as illustrated in Figure 5 of the drawing so that except for the tensile strength providing strips 14 the bats will be completely severed at regular intervals. Thus the bats are divided into predetermined regular lengths and the said lengths are held together only by the tensile strength providing strips which may be readily severed when it is desired to use the bats.

When it is desired to form bats of the folded type the longitudinal slicing means 16 are less in number so that the bat units are fewer and wider as illustrated in Figure 8 of the drawing. After being slit-formed the bat units are suitably folded as at 20 to form the desired finished bats.

On leaving the fourth or final apron 1 the finished bats form slack loops 21 and pass to any suitable winding means 22 to be wound into individual spirals or coils for convenient shipment and use.

In the drawing in Figures 6 and 7 curled hair laps are indicated at 23 and the ordinary cotton laps at 24, the paper or other tensile strength providing strip being indicated at 25.

In the foregoing description I have disclosed an economical and convenient method of forming a wide continuous sheet of batting stock having tensile strength providing strips therein, dividing the said sheet longitudinally to provide a plurality or series of individual bat units, cross-cutting said parts or units to provide weakened or bat length defining portions, folding the bat units (when the folded type of bats are being formed) and winding the finished bats in individual spirals or coils for shipment and use. The herein disclosed method is such that bats of composite materials may be formed much more conveniently and economically than has hereinbefore been possible, which are more easily adaptable for their intended purpose, and which may be manufactured at a great saving in production costs than is possible in bats now commonly used.

It is to be understood that this method may be carried on either by hand or by the employment of any suitable machinery capable of accomplishing the steps and results herein described, and while I have disclosed a machine capable of accomplishing the purposes referred to herein in my co-pending application, Serial No. 224,496 filed Oct. 6, 1927, the herein disclosed method may be carried on by the use of any other machinery designed for accomplishing the necessary steps.

From the foregoing description, taken in connection with the accompanying drawing, it is thought that the manner of carrying out my improved bat forming method and the advantages of the bat constructed in accordance with the method will be readily apparent to those skilled in the art to which it relates.

What I claim is:

1. In a method of making continuous bats, the steps which comprise progressively superposing several layers of batting material one on top of another to form a continuous wide bat stock sheet, slitting said sheet longitudinally to provide parallel rows of narrow bats, and dividing said bats transversely into series of predetermined lengths.

2. In a method of making continuous bats, the steps which comprise progressively superposing several layers of batting material one on top of another to form a continuous wide bat stock sheet, slitting said sheet longitudinally to provide parallel rows of narrow bats, dividing said bats transversely into series of predetermined lengths, and winding said narrow bats simultaneously side by side on a mandrel.

3. In a method of making continuous bats, the steps which comprise progressively superposing a plurality of layers of batting material one on top of another to form a continuous relatively wide bat-sheet, severing the same longitudinally into a plurality of narrow widths constituting bats, and dividing said sheet transversely into predetermined bat lengths.

4. In a method of making continuous bats, the steps which comprise forming a continuous relatively wide bat-sheet, severing the same longitudinally into a plurality of narrow width strips constituting bats, and dividing said sheet transversely into predetermined bat lengths, while maintaining said lengths in serial arrangement in the several narrow width strips respectively.

5. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips.

6. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips, and separating the batting material transversely to provide series of individual bats in each strip.

7. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips, separating the batting material transversely to provide series of individual bats in each strip, and maintaining the successive bats of each strip in series, and winding said strips on cores.

8. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips, and separating the strips into semi-connected bats, those of a strip being maintained end to end.

9. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips, and maintaining the successive bats of each strip in end to end contact until ready to be used.

10. In a method of making bats, the steps which comprise the laying of a continuous wide bat-stock-sheet, severing said sheet lengthwise into strips and folding the several strips to form continuous bats, and winding said continuous bats upon a mandrel in adjacent individual spirals.

11. In a method of making bats, the steps which comprise the formation of a continuous wide bat-stock-sheet, severing said sheet lengthwise into a series of strips, folding the strips lengthwise upon themselves to constitute a plurality of continuous endless bats, substantially as specified.

12. In a method of making bats, the steps which comprise the formation of a continuous wide bat-stock-sheet, severing said sheet lengthwise into a series of strips, folding the strips lengthwise upon themselves to constitute a plurality of continuous endless bats, and dividing said bats transversely into predetermined lengths and maintaining the lengths in each strip in serial arrangement.

13. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of flat reinforcing strips between the layers, and severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips.

14. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of flat reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips, and separating the batting material transversely to provide a series of individual bats in each strip.

15. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, in-

terposing a series of flat reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips, separating the batting material transversely to provide a series of individual bats in each strip, and maintaining the successive bats of each strip in series, and winding said strips on cores.

16. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of flat reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips, and separating the strips into semi-connected bats, those of a strip being maintained end to end.

17. In a method of making bats, the steps which comprise the laying of several sheets of batting material one upon another to form a wide continuous bat-stock-sheet, interposing a series of flat reinforcing strips between the layers, severing the sheet between adjacent reinforcing strips thereby providing a plurality of individual narrow bat strips, and maintaining the successive bats of each strip in end to end contact until ready to be used.

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