Jan. 12, 1926. 1,569,685

M. J. STACK

UPHOLSTERY PIPING BAT AND METHOD OF MAKING THE SAME

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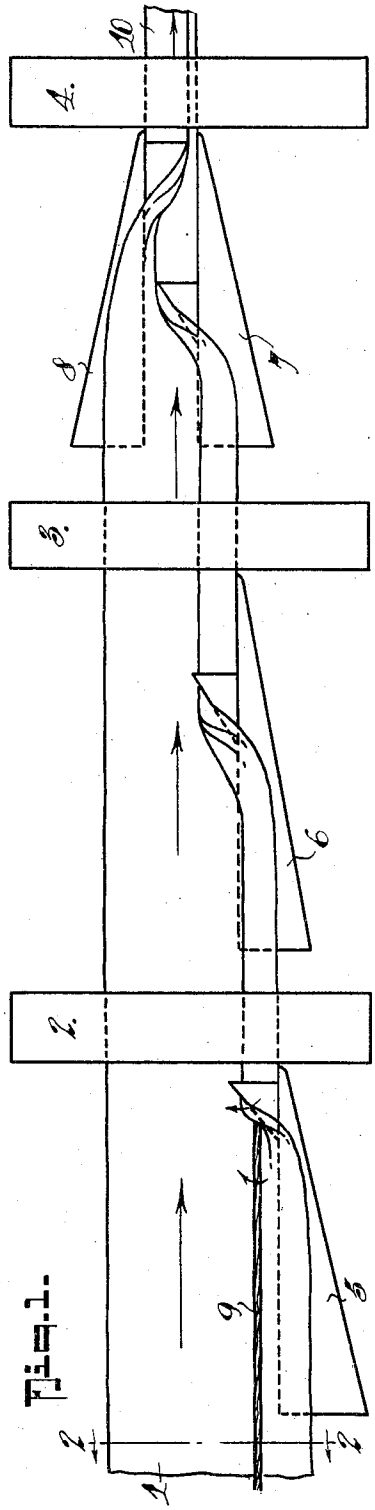


Fig. 1.



Fig. 2.

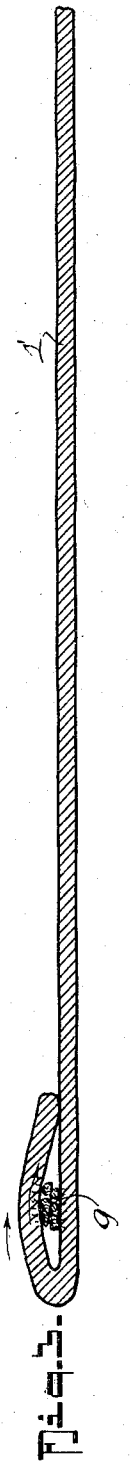


Fig. 3.

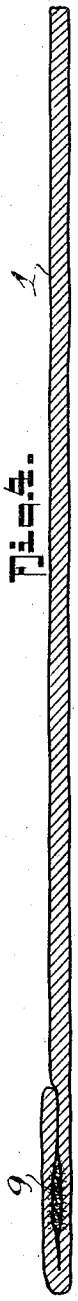


Fig. 4.

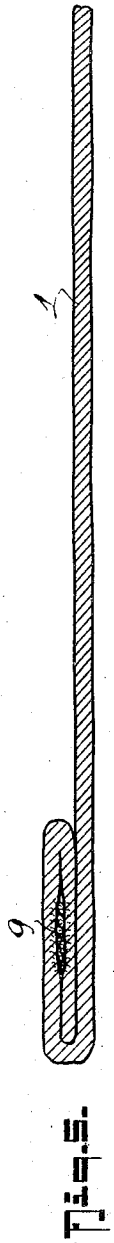


Fig. 5.

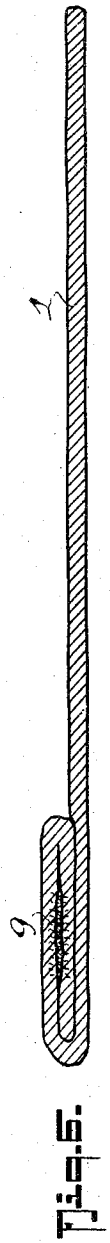


Fig. 6.

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Fig. 10.

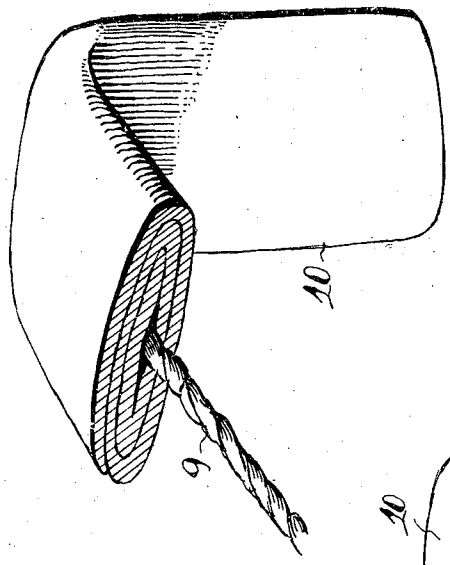


Fig. 11.

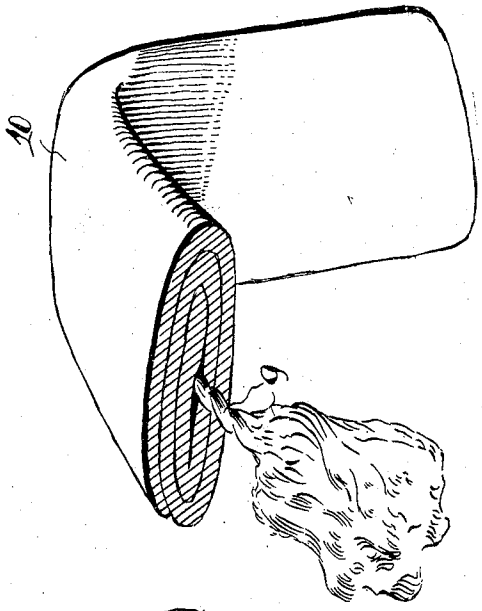


Fig. 7.

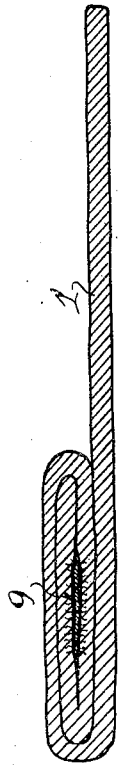
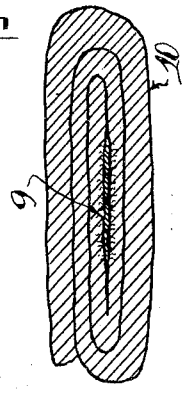


Fig. 8.



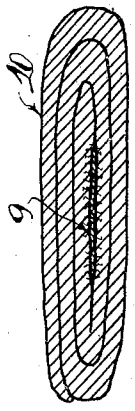


Fig. 9.

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UNITED STATES PATENT OFFICE.

MAURICE JOSEPH STACK, OF COHOES, NEW YORK.

UPHOLSTERY PIPING BAT AND METHOD OF MAKING THE SAME.

Application filed March 16, 1925. Serial No. 16,079.

To all whom it may concern:

Be it known that I, MAURICE J. STACK, a citizen of the United States, residing at Cohoes, in the county of Albany and State of New York, have invented certain new and useful Improvements in Upholstery Piping Bats and Methods of Making the Same, of which the following is a specification.

The invention has for its object to provide a new and improved construction of and method of manufacturing upholstery piping batting for use in upholstering automobile seat backs, cushions, quarter top pads and the like.

In the now commonly used methods of manufacturing such batting the same is made in continuous lengths and of a width formed by folding a relatively wide sheet of batting upon itself at successive intervals to provide the desired width and thickness of said batting. To provide desired tensile strength in the batting, cores are laid into the central or other folds thereof, such cores consisting of continuous lengths of fabric or paper and when the latter is used it is usually gummed to hold it to position and frequently to hold the folds of the bat together. The great additional expense of manufacture occasioned by such use of fabric and paper cores and the inconveniences and inefficiencies of such use should be readily apparent to those skilled in the art in which such batting is used. A few of the undesirable features alluded to are here mentioned; First, the cost of such materials and the labor and expenses incident to their purchase, storage and use: second, the waste occasioned by the necessity of throwing away sections of the batting which, by fault of machinery or human attention at an interval in the process of its manufacture, become unfit for commercial use, it being impractical to remove the cores from such sections and therefore necessary that the whole thereof, including the cotton batting proper which could otherwise be re-worked and used, be thrown away: and third, the impracticability of the most commonly used paper cores in that they utterly fail to accomplish their intended purpose of providing tensile strength to the batting and break from their secured points or some place throughout their length upon the first sudden shock in actual use.

It is therefore the object of my present invention to provide a construction of batting and method of making the same in which the desired tensile strength is provided by use of a core of the same material of which the batting is formed, not subject to ready breakage, in the manufacture of which it is unnecessary to employ any materials other than the cotton batting material itself, and which is more strong and commercially desirable than those now known of and used.

With the above and other objects in view that will hereinafter appear, the invention further resides in the novel details of construction, and arrangement of parts and the various steps and acts incident to the manufacture of such construction and arrangement, all of which will be first fully described in the following detailed description, then particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1 is a diagrammatic plan view illustrating the manner in which the batting sheet is twist folded at successive intervals to form the complete continuous length of batting, the manner of laying-in the soft rope core being also shown.

Figure 2 is an enlarged cross section taken on the line 2—2 of Figure 1 showing the batting sheet with the soft rope core thereupon before any folding or rolling action has taken place.

Figure 3 is a view similar to Figure 2 showing the position of the parts after the first twist-fold has been made but before the folds have been rolled or compressed by the first rolling operation.

Figure 4 is a view similar to Figure 3 showing the relation of the parts after passing through the first set of presser rolls.

Figure 5 is a view similiar to Figure 3 showing the relative position of the parts after the second twist-fold has been made and before the second rolling operation takes place.

Figure 6 is a view similar to Figure 4

showing the relation of the parts after the second rolling operation has been completed on the second fold.

Figure 7 is a view similar to Figures 3 and 5 illustrating the relation of the parts after the third twist-fold has been completed and before the final twist-fold has been made and the final rolling operation occurs.

Figure 8 is a view of the bat as finally folded but before the final rolling or compressing operation takes place.

Figure 9 is a cross section of the finished bat after the same has passed through the final rolling operation.

Figure 10 is a detail perspective view and part section showing a section of batting with its soft rope core projecting therefrom.

Figure 11 is a view similar to Figure 10 showing the extended soft rope end unravelled.

In Figure 1 of the drawings in which like numerals of reference indicate like parts in all the figures, I have illustrated, diagrammatically, the method of forming my improved continuous-length soft rope cored batting, and in the said figure the numeral 1 designates the fabricated cotton sheet (usually the unabsorbent cotton now commonly employed for the purpose of making upholstery batting). The numeral 2 designates the first set of compressing rollers, 3 the second set, and 4 the final set, while 5, 6, 7 and 8 designate the respective twist-folders, by means of which the cotton sheeting 1 is twist-folded into the desired continuous length batting form.

The numeral 9 designates the soft-rope core of the batting which is made up of the same cotton batting material as is the sheeting 1, which may be made more or less strong according to how tightly the same is twist-formed, and which has the quality of not elongating to any considerable degree under stresses of use, thereby giving tensile strength to the finished batting into the folds of which it is laid and matted in the manner soon to be explained.

In making up the batting the soft-rope core 9 is laid such a distance from the edge of the cotton sheeting 1 as to enable the folder 5 to twist-fold over the shorter width to the side thereof as indicated in Figure 3 of the drawings.

After passing the first twist-folder (it being understood that the cotton sheeting is travelling in the direction of the arrows on Figure 1) the folded parts are compressed by passing between rollers 2 or beneath roller 2 and over an immovable table as may be found convenient in practice (it being understood that apparatus for manufacturing this batting forms no part of my present invention). The amount of compression exerted by the roller or rollers 2 is such as will reduce the thickness of the material to the desired degree before the second twist-fold is made. Having passed the roller or rollers 2 the material is given a second twist-fold by the folder 6. The parts will then appear as illustrated in Figure 5, and after passing through the second set of presser rolls 3 the part will appear as illustrated in Figure 6.

After passing the second set of rolls 3 the third and fourth twist-folds will be imparted successively to the material by the folders 7 and 8 respectively, the parts then appearing as illustrated in Figures 7 and 8 respectively, after which they will pass through the final presser rolls 4 and the batting be compressed to its final condition as indicated in Figure 9 and generally indicated in the drawings by the numeral 10.

As before stated the core 9 is in the nature of a soft-rope formed of the same cotton batting material of which the batting sheet is formed and the strength of the same may be varied according to how tightly the material from which it is formed is twisted to make the same.

I prefer to use a twist-formed core rather than a soft rope of the plaited type for a purpose soon to be explained.

By using such a core I have found by actual test that the finished batting is much stronger than that formed with paper cores and the many disadvantages of cost, ready breakage, and rattling of the batting so equipped is entirely eliminated.

By using a soft rope of the twisted type and laying that rope with the direction of its twist opposed to the direction of the first and the two successive twist-folds accomplished by the folders 5, 6 and 7, as the folds mentioned are made in the direction indicated by the arrows on Figure 3 the effect will be to somewhat unwrap the soft rope core with the double purpose of facilitating the intermingling and flattening out of the fibres of that rope and the causing of the fibres thereof to become tightly enmeshed with those of the fold into which the rope is laid. The effect of this function is so efficient that much greater tensile strength is given to the batting than by the use of paper cores and the fibres become so enmeshed that the parts become substantially as one and more than fill the need for a holding medium heretofore answered only by the more or less undesirable use of the gummed feature in such paper core use.

Should it become necessary to discard a portion of batting made by my improved method because of faulty handling or similar reasons, wasting of that portion is unnecessary as, because of the use of a core of like material as the batting, the whole thereof may be reworked and re-used.

In Figure 10 of the drawings a section of

batting is illustrated with a section of soft-rope core projecting therefrom. In Figure 11 is illustrated substantially the manner in which the fibres of the core are unravelled and caused to flatten out and intermingle with the fibres of the fold into which the said core is laid.

As stated the use of such core provides batting of greater tensile strength, which is not open to the objections urged to the use of a gummed paper core, viz: occasioning complete waste of imperfect uncommercial sections, objectionable rattling and ready breakage under slight shock.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the novel details of construction, method of manufacturing and the advantages of my invention will be readily apparent to those skilled in the art to which it relates.

What I claim is:

1. Cotton batting of the class described formed of successively folding a sheet of fibrous material and having a core of soft-rope of the twist-formed type laid in one fold thereof, the twist of said core being opposed to the direction in which said folds are made.

2. The method of making cotton batting of the class described which consists in laying a core of soft-rope of the twist-formed type upon a sheet of fibrous material, and successively folding that sheet to enfold said core and to provide the desired batting width, the twist of said core being opposed to the direction in which said folds are made to cause the same to be partially untwisted by said folding action and the fibres of the same and those of the sheet being folded to enmesh.

3. The method of making cotton batting of the class described which consists in laying a core of soft-rope of the twist-formed type upon a sheet of fibrous material, the said sheet and the said core being of the same material, and successively folding that sheet to enfold said core and to provide the desired batting width, the twist of said core being opposed to the direction in which said folds are made to cause the same to be partially untwisted by said folding action and the fibres of the same and those of the sheet being folded to enmesh.

4. Cotton batting of the class described formed by successively folding a sheet of fibrous material and having a core of soft-rope of the twist-formed type laid in one fold thereof, the twist of said core being opposed to the direction which said folds are made, the said sheet and the said core being of the same kind and grade of material.

5. The method of making continuous bats which includes the steps of taking some bat material and twisting it into a rope, laying the rope on a batting strip and folding the strip over the rope as a core while permitting the rope to untwist more or less thereby to cause its fibres to rub and interlock with the fibres of the strip.

6. The method of making continuous bats which includes the steps of taking some bat material and twisting it into a rope, laying the rope on a batting strip and folding the strip over the rope as a core while permitting the rope to untwist more or less thereby to cause its fibres to rub and interlock with the fibres of the strip, and applying flattening pressure to the folded bat to flatten the core.

7. A continuous bat with a core composed of the same material as the bat loosely twisted into the form of a rope and having its fibres interlocked with those of the bat proper.

8. A bat reinforced by a core which has greater tensile strength than the bat, said core being composed of fibres adapted to mix with those of the bat, said fibres being so loosely interengaged with each other that they may be readily picked apart when the bat is reworked.

9. A cotton bat comprising a body of batting material enclosing a soft rope core of a material suitable to mix with the stock of the bat.

10. A cotton bat comprising a body of bat material enclosing a core of soft loosely twisted rope of a material suitable to mix with the stock of the bat.

MAURICE JOSEPH STACK.