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MANUFACTURE OF RUGS AND THE LIKE

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FIG. 1.

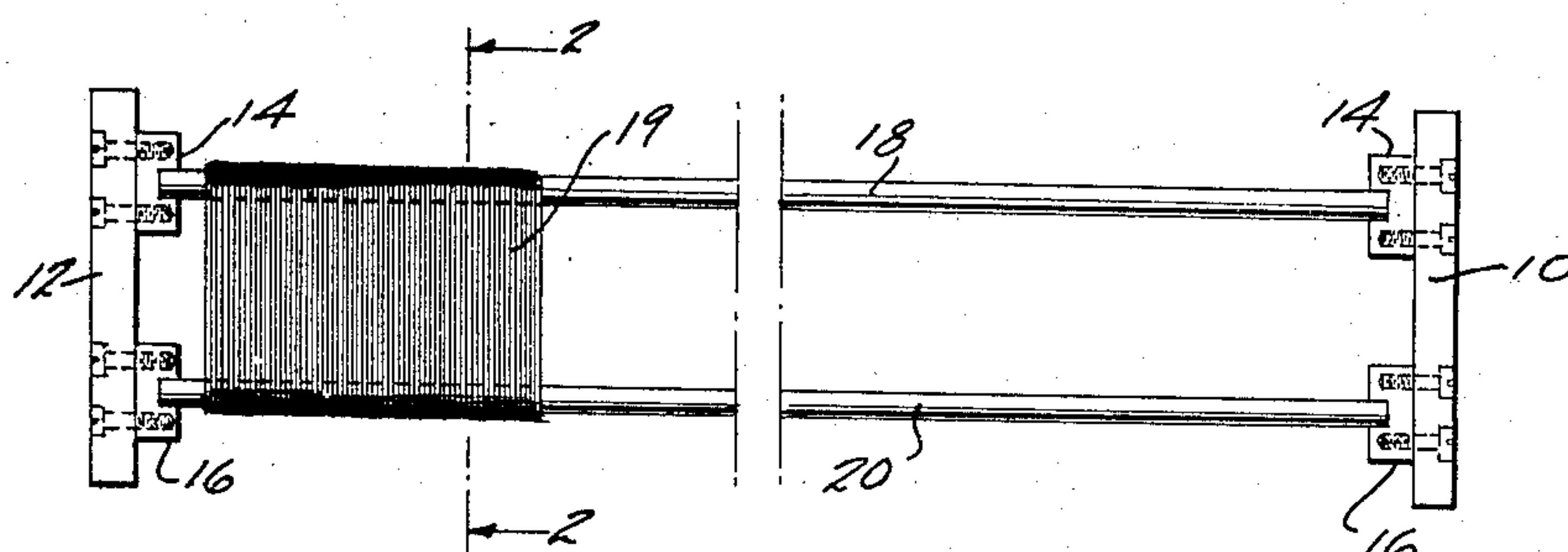
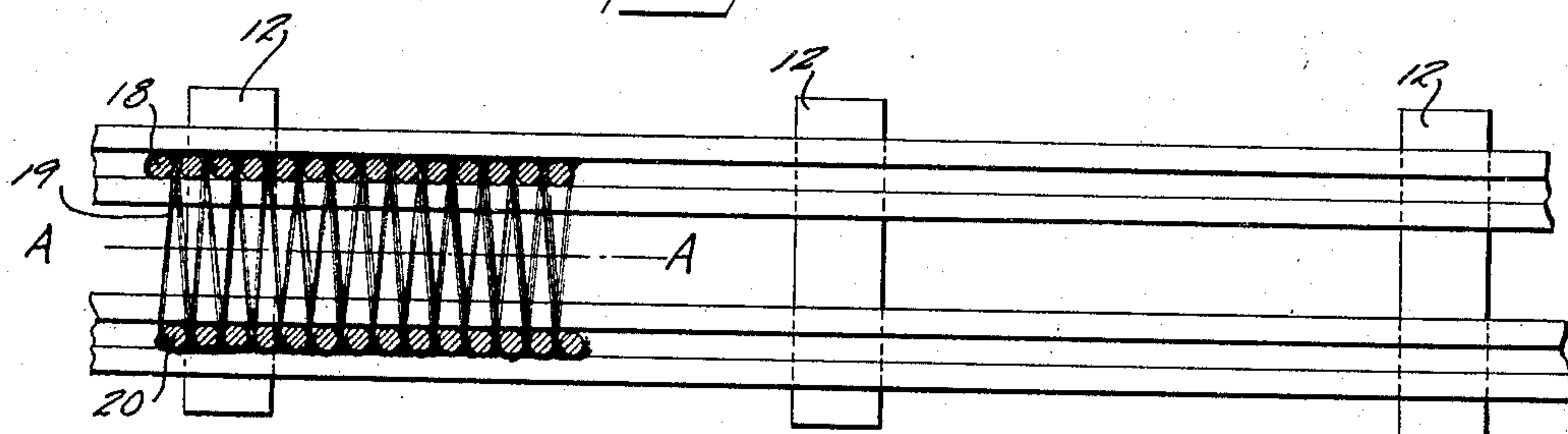


FIG. 2.



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MANUFACTURE OF RUGS AND THE LIKE

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This application relates to a method of making rugs, mats or carpets by imbedding fibrous material in rubber so that the fibres are held in place without the necessity of
5 their being engaged by a fabric backing.

According to the present invention, the fibrous material is arranged with the fibres more or less parallel as by making a bat, or by arranging threads or strands side by
10 side so that the material has a sheet-like form, though it is not intended to imply by this statement that it is necessary to have a sheet-like structure. The fibrous material arranged as stated, is folded by ap-
15 propriate mechanism back and forth around a series of bars or rods which are afterwards pressed together gripping the material between adjacent bars. The bars are arranged in two rows which are spaced apart
20 so that the material is stretched between them in folds with loops about the bars. There is thus formed an almost solid mass of fibrous material which ordinarily will be made somewhat less than one inch thick
25 and of any desired length and breadth.

While the material is still held in place by the rods or bars, both faces of the fibrous mass are spread with a compound of rubber which will closely engage the fibrous ma-
30 terial. For this purpose I prefer to use a compound which includes a liquefying agent so that the compound is tacky, and a certain amount of permeation may be obtained without exerting undue pressure on
35 the mass. Such a compound may for example comprise rubber dissolved in an appropriate solvent or preferably rubber latex is used. After drying, an additional layer of rubber of a denser nature may be spread
40 on if desired or a backing sheet of burlap or other material may be applied. The rubber is then cured so that the fibres are firmly locked in place. The rods may now be with-
45 drawn and then the mass is cut through the middle so that the free ends of the fibres are exposed and two identical mats or rugs are produced.

The exact nature of the rubber carrying compound may be varied to suit the nature
50 of the fibrous material. Thus if a jute mat

is being made, there should first be an impregnation with a rubber carrying liquid of low viscosity which will permeate the twists of jute fibre and protect them from rotting, after which a relatively viscous compound is
55 spread on the surface as an anchor for the fibre. If animal fibres such as wool or silk are being used, the preliminary impregnation may be omitted and a viscous, tacky backing can be applied directly. 60

In order that my invention may be better understood, I show diagrammatically in the accompanying drawing a method which I have used in making small jute mats. In the drawing Fig. 1 is an end view of a portion
65 of the apparatus and Fig. 2 is a sectional view on line 2—2 of Fig. 1.

The frame members 10 and 12 each carry an upper channel guide 14 and a lower channel guide 16. A bar 18 is first put in
70 one pair of these channels (here shown in the upper pair 14) and the ends of a series of jute threads 19 are attached to this bar in such a way that the threads lie parallel and close together. The threads are then
75 brought down below the channels 16 and a lower bar 20 is inserted in these lower channels and brought approximately under the first bar 18. The threads are brought up
80 around the bar 20 to a point above the channels 14, and another bar 18 is inserted in the upper channels 16 and pushed close up to the first bar 18. The threads are then bent
85 down and another bar 20 inserted and pushed into place, and these operations are continued until a structure of the desired size is obtained.

In this case in order to protect the jute from rotting, the fibre was impregnated with rubber latex and then a layer of rub-
90 ber was spread over the loops of fibre which formed the two surfaces, and cured. The rods 18 and 20 were slipped out of the channels 14 and 16 and withdrawn from be-
95 tween the folds of the fibres. The double-faced structure was cut in half, as on the line A—A, producing two mats.

It is to be understood that this example is given only by way of illustration and that in actual production these operations or their
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equivalents would be done by automatic machinery, and that many other methods may be used of bringing fibres of various types into proper relation with the bars which
5 hold them in folds.

What I claim is:

1. The process of making mats or the like which comprises the steps of forming a parallel series of connected loops of fibrous material about a pair of substantially parallel
10 bars and then forming an additional series of loops connected with said first loops about additional pairs of bars so that said loops lie substantially in two substantially parallel
15 planes, with their outer portions forming surfaces extending in every direction in said planes a distance at least as great as the thickness of a plurality of loops, coating the ends of said loops with adhesive material
20 while leaving portions of the fibrous material which connect the loops uncoated, whereby the loops are locked in place, and cutting the resulting structure through the middle in a plane substantially parallel to
25 the planes of the loops, whereby two mats are produced.

2. A process as defined in claim 1 in which the adhesive material comprises rubber.

3. A process as set forth in claim 1 which
30 further includes the step of applying a fibrous backing to the rubber coated loops.

4. The process of making mats and the like which comprises the steps of forming an extended series of substantially parallel
35 loops of fibrous material about two extended series of bars arranged with the bars in each series approximately parallel both to the bars in the same series and to the bars in the other series, whereby a mass of fibrous
40 material is obtained having two extended dimensions in the plane of the loops, and applying a rubber compound to such loops to attach the same together.

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