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METHOD OF MAKING CARPET CUSHIONS

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Fig. 1.

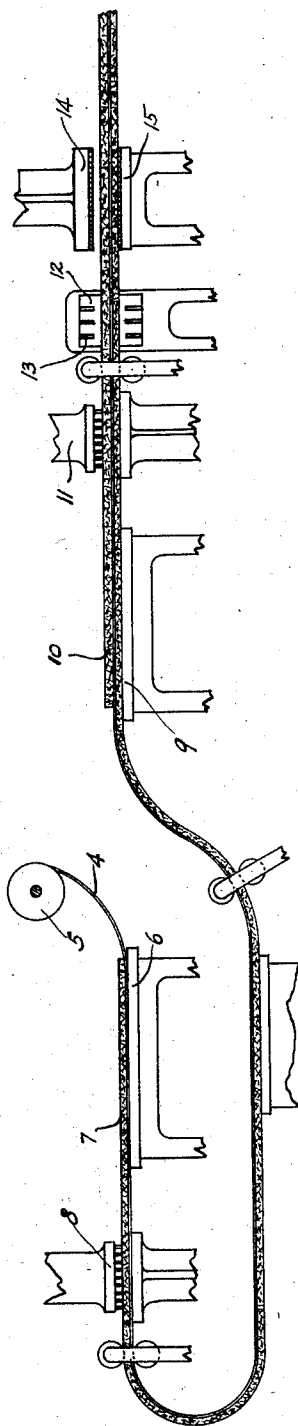
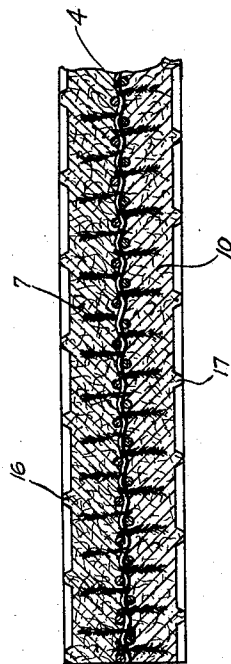


Fig. 2



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METHOD OF MAKING CARPET CUSHIONS

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The invention relates to a method of making carpet cushions.

In United States Letters Patent No. 1,508,221, issued to A. H. Gallagher, on September 9, 1924, there is disclosed a carpet cushion and method of making the same which involves the use of adhesive for securing the bats of felt to the burlap reinforcement, which necessitates several handlings of the material and extreme care in the gluing and subsequent drying operation to prevent the glue from souring. By the present process the felt bats are secured to the burlap reinforcement by punching with needle looms and the stock thus formed is run between superheated platens which put corrugations on both the upper and lower sides of the cushion and smooths and toughens the outer surfaces of the product, which has a loosely felted or matted body.

Under the prior process it is necessary to use a canvas feeding-apron to carry the stock through the space between the felter plates, but by the present process, since the felt has become fastened to the burlap reinforcement by punching, the material may be fed through the space between the felting platens without an apron or other auxiliary equipment, and thus the present process eliminates the cost of much handling and possible damage to the stock.

The present process has the following advantages over the former Gallagher process: The process is a continuous one; elimination of the gluing operation and the steps connected therewith; elimination of the auxiliary feeding means, such as a canvas apron above referred to; the product is stronger and more uniform in thickness; there is a saving in the time of manufacture.

The invention further consists in the several features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings Fig. 1 is a diagrammatic view of the apparatus used in the process of making the cushion, arranged to show successive steps of the process;

Fig. 2 is a detail sectional view through the carpet cushion.

The material used in the cushions consists of hair felt and loosely-woven fabric reinforcement. The hair felt is usually made of animal hair, such as the hair of cattle, calf or goat.

The animal hair is first prepared by washing, drying and cleaning it and during the drying bringing it into intimate contact with air containing a certain percentage of ozone, in order to deodorize it. Following this the hair is carded and formed into bats. The fabric reinforcement is preferably a fabric of open mesh and high tensile strength, such as burlap, netting or cheesecloth.

Referring to Fig. 1 of the drawings, the numeral 4 designates a sheet of burlap that is unwound from a supply roll 5 and passes over a table 6 and in passing has bats of animal hair felt 7 successively laid thereon which travel with the burlap through a needle loom 8, which is of known construction and which punches portions of the felt through the meshes and fabric parts of the burlap so that following this operation the burlap has a layer of felt secured to one side thereof. Thereafter this material is fed along to another table 9 so as to dispose the uncovered burlap uppermost on the table and felt bats 10 are laid on this exposed side of the burlap and fed along with it to another needle loom 11 where the upper bat is punched into the burlap and into the layer of felt on the opposite side of the burlap so that both bats are firmly secured to the burlap through the interlocking relation of the felt and the burlap, after which the material passes through a steam-box 12, having spray openings 13 therein, to thoroughly heat the material and dampen it but not to saturate it. The product then passes between two corrugated felter plates 14 and 15, the upper plate 14 being a vibrating plate. This top plate is vibrated so that successive portions of the product are intermittently subjected to the reciprocating, vibrating action of the plate. These plates have their faces heated with steam or by other suitable sources of heat and they press a pattern on both the upper and lower sides of the cushion and smooth and toughen the surfaces of the product, though it will be

understood that the resulting product is one in which the body of the felt is loosely felted or matted so as to provide the requisite resiliency for use under carpets. The steam-heated platens heat the moistened surfaces of the felt and thus assist in the drying. In case the product is not thoroughly dry it may thereafter be run through a drier but owing to the fact that very little moisture is used, as compared to former processes, such drying as may be necessary is quickly accomplished.

In Fig. 2 of the drawings I have shown a section through the completed product, wherein the numeral 4 designates the burlap and 7 and 10 the layers of felt which have been secured to the burlap by punching, as above described, and have themselves been subjected to the action of the felter plates so as to provide corrugated surfaces 16 and 17 in which the corrugations of one surface are staggered with reference to the corrugations of the other surface.

It will, of course, be understood that instead of successively securing the bats to opposite sides of the reinforcing strip said bats may be simultaneously secured thereto by punching in a suitable machine.

What I claim as my invention is:

1. The method of making a carpet cushion which consists in laying felt bats on the top side of a continuously moving sheet of fabric while moving in a horizontal plane, punching these bats into the fabric, turning this punched product during its continuous movement to bring the under side of said fabric uppermost, laying other bats on this uppermost side of the fabric during its movement, punching these bats into the fabric and the felt on the opposite side thereof, dampening and heating said punched product during its continued forward movement and thereafter subjecting the material to the action of felter plates to loosely felt the same together and toughen its outer surfaces.

2. The method of making a carpet cushion which consists in laying felt bats on one side of a continuously moving sheet of fabric while travelling in a horizontal plane, punching these bats into the fabric, turning this punched product during its movement to bring the underside uppermost, laying other bats on this uppermost side of said fabric during its movement, punching these bats into the fabric and the felt on the opposite side thereof, and thereafter during further continued movement of the material subjecting it to the action of felter plates to loosely felt the same together and toughen its outer surfaces.

In testimony whereof, I affix my signature.
PERCY R. BETTISON.