M. A. McGUIRE.

PAPER MATERIAL.

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925,128. Patented June 15, 1909.

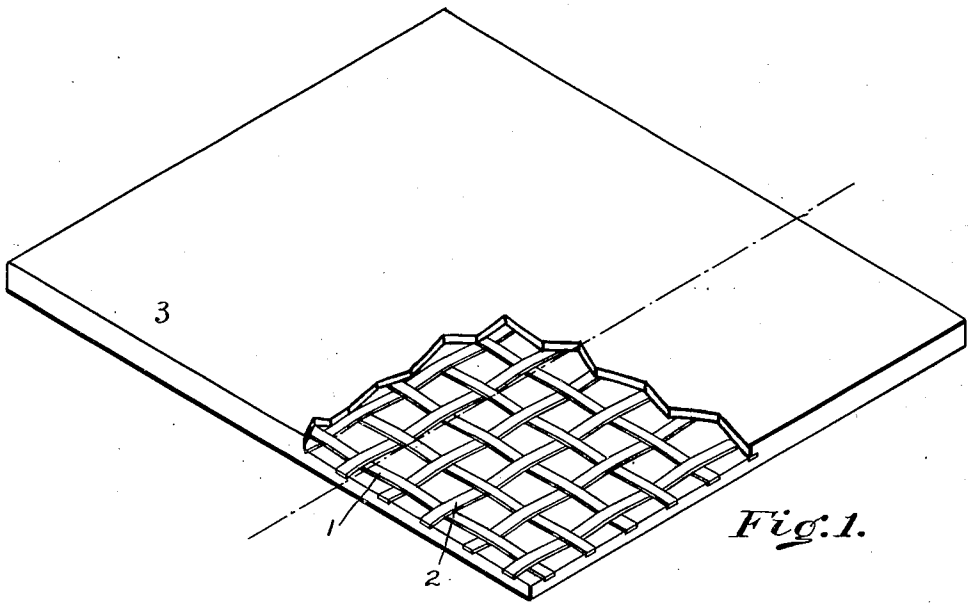


Fig. 1.



Fig. 2.

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PAPER MATERIAL.

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To all whom it may concern:

Be it known that I, MICHAEL A. McGUIRE, a citizen of the United States, residing in Cincinnati, county of Hamilton, and State of Ohio, have invented certain new and useful Improvements in Paper Material, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

My invention relates to improvements in what is known as vulcanized fiber for use in the manufacture of trunks, suit cases and the like, and it has for its object, to render such material elastic and better adapted to stand the strains of usage than the paper material now in use for such purposes.

For many years it has been customary to use vulcanized fiber for the manufacture of packing cases, trunks and the like, but the great objection to the use of the material is that when indented by rough handling, or contact with other baggage, there is not sufficient resiliency in the material, and the depressions and marks of rough usage remain permanently.

My invention consists in embedding in the paper fiber in the manner and for the purpose to be hereinafter particularly pointed out and claimed, a mat or mesh of thin spring steel strips, whereby the necessary resiliency will be imparted to the paper material.

In the drawings Figure 1 is a perspective view of a sheet of my improved paper board, with a portion of the upper portion of the sheet removed down to the steel mat. Fig. 2 is a cross section of the same.

In carrying out my invention, I first weave a mat of thin and flat strips of spring steel 1 and 2, as shown in Fig. 1, and this mat is then subjected to a bath of grained shellac varnish to render same thoroughly water proof. I then take sheets of vulcanized fiber paper material and subject them to a steaming process to thoroughly soften, and I then dry one side of each sheet by subjecting same to heat, and I then lay the steel mat between the two sheets with the dried surface toward the mat, and then subject the sheets to hydraulic pressure, which forms one homogeneous mass of fiber material 3, with the steel springs embedded in the mass, so that a new sheet of vulcanized fiber results with the steel strips an integral part of the paper board.

Instead of making use of vulcanized fiber material after the same has been manufactured, and is ready for use, and then softening same by steam, the spring steel mat may be embedded in the fiber during the process of the manufacture of the fiber material. That is to say, after the treatment of the paper pulp by which the vulcanizing is effected, and before the sheets are rolled or subjected to other pressure, and while the sheets are still soft, the mat may be embedded between the sheets.

I am aware that it is old to embed wire mesh in paper pulp fabric, but the embedding of such wire mesh in vulcanized fiber material, would not impart to the vulcanized fiber the quality of elasticity which will overcome the objections above referred to in the use of such material for the manufacture of trunks, packing cases and the like.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:

1. As a new article of manufacture, elastic sheet material consisting of flat spring steel strips interlaced together to form flat mat completely embedded in layers of vulcanized fiber whereby flat contacting surfaces are provided to permit of the ready adherence of the layers of vulcanized fiber substantially as described.

2. The process of manufacturing elastic sheet material for trunks and the like, which consists in softening sheets of vulcanized fiber by the application of steam, then drying one side of each sheet by the application of heat, then laying a mat of spring steel strips previously subjected to a bath of anti-rust material between the softened sheets with dried sides together, and then uniting the sheets and strips together by compression.

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