

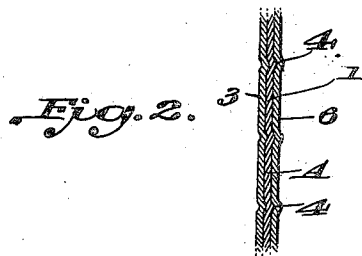
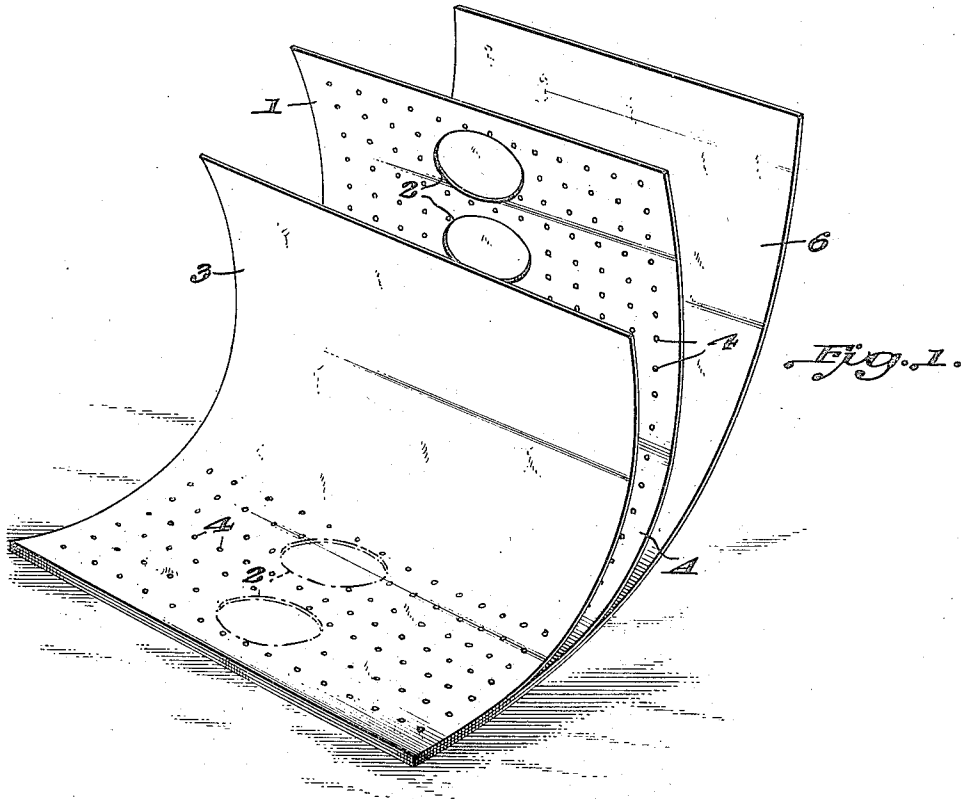
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J. W. BUNKER ET AL

LAMINATED STRUCTURE

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UNITED STATES PATENT OFFICE.

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LAMINATED STRUCTURE.

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To all whom it may concern:

Be it known that JOHN W. BUNKER and ASHTON M. BONEY, residents of the city of New York, county of New York, and State of New York, citizens of the United States, have invented certain new and useful Improvements in Laminated Structures, of which the following is a specification.

Our invention is an improved material and it consists of laminations, the inner of which is of thin metal or alloy and the outer laminations of some fabric such as paper or textile material all of which layers are united inseparably to form a material out of which different articles may be cut or stamped, such, for example, as envelope fasteners and the like.

In the accompanying drawings, Figure 1 is a view in perspective showing the laminations partly together and partly separated.

Figure 2 is an enlarged section through the layers.

A, represents an intermediate lamination of thin sheet metal. This may be in the nature of an alloy, if desired, but it is intended to have the quality of being easily and repeatedly bent and it is adapted when bent to take a set.

In the preferred form moderately large holes 2, are punched through this intermediate layer of metal.

The numeral 3 represents a sheet or lamination of paper or textile such as cloth. The two layers A and 3 are preferably secured together by forming small indentations 4, of which there are a great number in the metal layer A, into the layer 3, of paper or fabric whereby they are inseparably secured together. A third layer or lamination 6, of paper or fabric is made to adhere to the back of the metal plate and to facilitate this the layer 6 may be processed on the inner surface to dissolve the superficial cellulose somewhat as vulcanized fibre is formed by the well-known zinc chloride treatment, or it may be made adherent by the application of any well-known agglutinant. The several layers or laminations A, 3 and 6, and more, if desired, may be carried on as many different

rollers, and then brought together as indicated at the lower end of Figure 1, by drawing them off and subjecting the several layers or laminations to pressure sufficient to cause a permanent juncture of the several layers or laminations thereby forming a single composite product of alternate layers of metal and paper or other fabric such as some textile, the pressure to which these layers are subjected, causing the projected ends of the indentations 4, to enter the back of lamination 3, and the agglutinant on layer 6, into the recesses formed in the back of layer A, by the formation of these indentations, and the two laminations 3 and 6 to adhere to each other through the holes 2, in the metal layer.

In this way we provide a composite material out of which various things may be stamped, such, for example, as handles and fasteners for paper bags and clips of various descriptions in which the article formed is adapted to be bent and to remain in that position until rebent. In other words, we provide a product of this general description which is capable of being repeatedly bent without breaking and of sufficient strength to maintain the position into which it is bent until occasion may require a rebending of the article formed.

We claim,

A flexible, composite material composed of a plurality of laminations, including an intermediate lamination of thin sheet metal having holes therethrough and indentations made from one side thereof, the projecting ends of which are made to enter and fasten to the adjacent lamination and an agglutinant between the metal layer and the other adjacent fibrous layer which causes the two to adhere by covering the adjacent surfaces, entering the indentations and extending through the holes to the layer on the opposite side of the metal layer whereby a single product is formed of the several layers.

In testimony whereof we hereunto affix our signatures.

JOHN W. BUNKER.
ASHTON M. BONEY.