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A. H. RISCH
MOLDED PULP CORNER PROTECTOR
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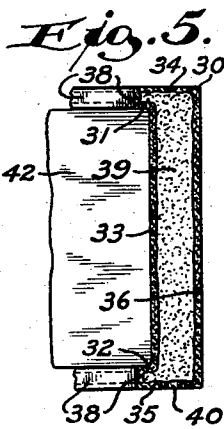
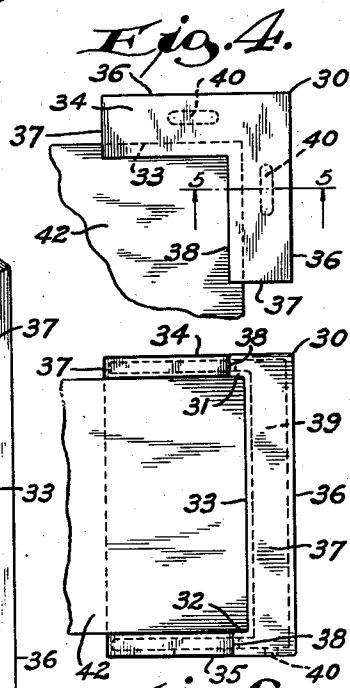
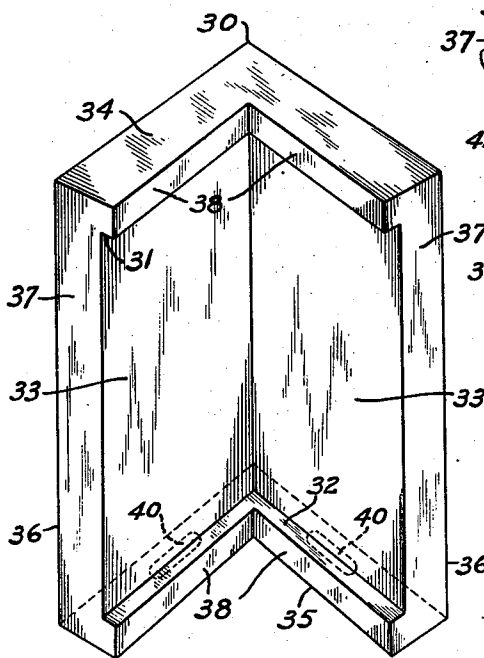
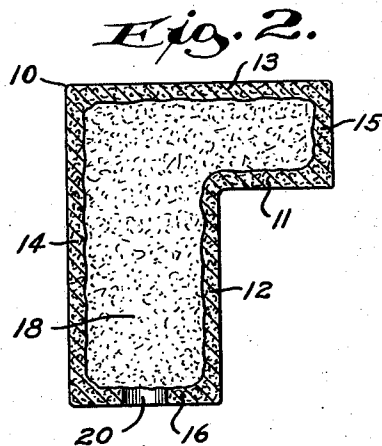
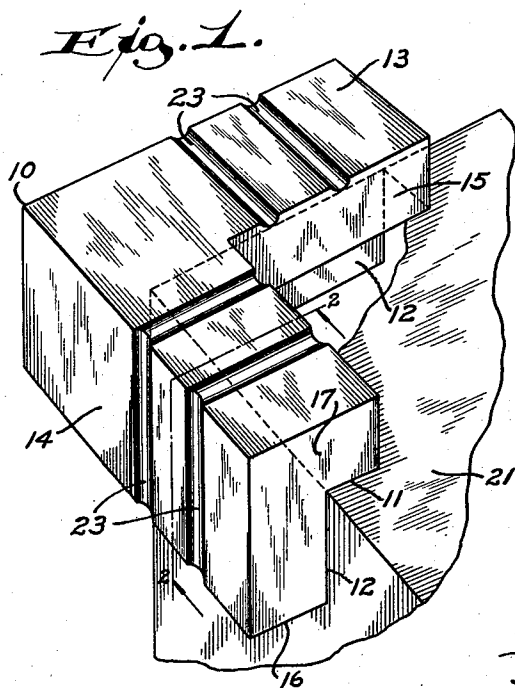


Fig. 6.
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UNITED STATES PATENT OFFICE

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MOLDED PULP CORNER PROTECTOR

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3 Claims. (Cl. 206—46)

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The invention relates generally to improvements in the art of packaging prismatic articles for safe handling, storage and shipment, and relates more specifically to improvements in the construction of molded paper pulp corner protectors for diverse prismatic products which are liable to be easily damaged due to impact.

The primary object of my present invention is to provide an improved article corner protector which may be readily manufactured and applied to the corners of various products to most effectively protect the same against damage, during handling, transportation and storage of the prismatic items.

Many different types of rubber and corrugated paper corner protectors for preventing possible damaging of relatively bulky prismatic products such as articles of furniture, during handling and shipment thereof, have heretofore been proposed and utilized with varying degrees of success, but none of these prior devices have proven entirely satisfactory. Some of these previous corner protectors were formed of sheet material which had to be folded in order to apply them to the articles, and these foldable devices were difficult to manipulate and to maintain in proper position while the usual outer cartons or protective crates were being applied. The prior corner protection pads which were constructed of rubber or rubber compositions, were not only costly, but tended to mar the finish of the protected corner surfaces especially when subjected to variations in temperature and to excessive moisture; while the previous protection units which were formed of corrugated paper were insufficiently strong to withstand the impact and abuse to which the articles are often subjected during handling and transportation.

It is therefore an important object of the present invention to provide a simple and relatively inexpensive but efficient corner protection device, formed primarily of molded paper pulp or the like.

Another important object of the invention is to provide a unitary box-like corner protecting pad formed hollow and having resilient moisture and heat resistant walls, and which is constantly in condition for quick application to the goods.

A further important object of my invention is to provide a corner protective unit which may be conveniently and safely applied to relatively delicate prismatic articles of diverse sizes and shapes to most effectively protect the corners and intervening surfaces of such products.

Still another object of this invention is to pro-

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vide an improved paper pulp corner protector for prismatic items, which is compact and durable in construction, and which may also be readily formed to fit and to properly coat with and to most effectively protect corners of various angles at very moderate cost.

These and other objects and advantages of the invention will be apparent from the following description.

A clear conception of the features constituting my present improvement, and of the mode of constructing and of utilizing several typical protectors embodying the invention, may be had by referring to the drawing accompanying and forming a part of this specification wherein like reference characters designate the same or similar parts in the various views.

Fig. 1 is a perspective view of a typical molded fibrous pulp single corner protector for rectangular prismatic articles, showing the same applied to a corner of the protected goods;

Fig. 2 is a transverse section through the corner protector of Fig. 1, taken along the plane of the angular line 2—2;

Fig. 3 is a perspective view of another typical molded fibrous pulp double corner protector for rectangular prismatic articles;

Fig. 4 is a reduced top view of the protector shown in Fig. 3, showing the same applied to a fragment of the protected article;

Fig. 5 is a similarly reduced transverse section through the protector of Figs. 3 and 4, taken along the line 5—5 of Fig. 4, and also showing it applied to the goods; and

Fig. 6 is a likewise reduced end view of the double corner protector of Figs. 3, 4 and 5.

While the invention has been illustrated and described as being advantageously applicable to prismatic articles having right angle corners, it is not the intent to unnecessarily limit the scope and utility of the improved features by virtue of this restricted disclosure. The invention involves primarily the production of assembled corner protective units, hollow and from fibrous molded pulp, having bounding walls reinforced in any suitable manner either internally or externally to provide relatively resilient but durable snug fitting corner assemblages. These hollow protective bodies are preferably produced by well-known suction molding methods in order to provide uniform wall thicknesses, and reinforcement of the wall structures may be effected in various ways so as to augment the wall strength while still retaining desired resiliency and protection against moisture and temperature variations.

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The relative angularity and shape of the article engaging surfaces of the walls may also be varied throughout a considerable range, and the two embodiments specifically shown herein are merely typical of numerous commercial forms which these protectors may assume.

Referring specifically to Figs. 1 and 2, the single fibrous pulp corner protector shown therein, comprises in general a unitary box-like molded pulp body 10 having inner article engaging top and side walls 11, 12 respectively integrally connected to outer top and side walls 13, 14 respectively by upper vertical connecting walls 15, by lower horizontal connecting walls 16, and by upright end walls 17 to form a hollow interior or chamber 18 communicating with the ambient atmosphere through one or more openings 20 formed in the lower horizontal connecting wall 16. The walls 11, 12, 13, 14, 15, 16, 17 are of approximately the same uniform thickness throughout, and while the internal surfaces of these walls which bound the chamber 18 may be relatively rough due to the suction action of the molding apparatus, the outer surfaces thereof, and at least the article engaging surfaces of the walls 11, 12, are preferably formed smooth so as to snugly engage the goods 21 which is to be protected. The walls of the unitary structure while being inherently resilient, may be coated or otherwise treated with resin or other suitable substance in order to add strength and to protect the structure against moisture and heat; and the outer top and side walls 13, 14 may be additionally reinforced by the provision of transverse corrugations 23 as shown in Fig. 1.

Referring specifically to Figs. 3 to 6 inclusive, the double fibrous pulp corner protector shown therein, likewise comprises in general a unitary box-like molded pulp body 30 having parallel horizontal inner top and bottom walls 31, 32 respectively connected by upright inner side walls 33, and also having outer top and bottom walls 34, 35 respectively connected by upright outer side walls 36 and which are integrally united with the walls 31, 32, 33 by end walls 37 and by inner walls 38 to provide a hollow interior or chamber 39 communicating with the ambient atmosphere through openings 40 formed in the bottom wall 32. All of these walls 31, 32, 33, 34, 35, 36, 37, 38 are of approximately the same uniform thickness throughout, and while the interior wall surfaces which bound the chamber 39 may be relatively rough due to the suction molding action, the article engaging surfaces of the walls 31, 32 should preferably be smooth so as to snugly engage the item 42 which is to be protected. The inherently resilient paper pulp walls of the unitary protector body 30 may be strengthened by the application of moisture resistant coating material; and additional strength may be gained by applying corrugations 23 as in Fig. 1, if so desired.

As previously indicated, these improved protectors may be readily produced with standard paper pulp suction molding apparatus, and while the units illustrated in the drawing have the article engaging walls thereof disposed perpendicular to each other, these walls may be disposed at any oblique angle desired. The unit of Fig. 1 will fit any right angled corner, but the unit of Fig. 3 is custom built to fit an article 42 of definite dimensions and is adapted to also protect the goods along the entire side surfaces between corners. By utilizing suction molding apparatus in the manufacture of the pulp corner protectors, they may be accurately produced in rapid succession in var-

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ious sizes and at very moderate cost, and the strengthening coatings may be applied by spraying liquid resin or the like upon the wall surfaces. When the protective units have been properly constructed, they may be readily applied to the corners of articles 21, 42 as shown in the drawings and thereafter held in proper position by means of outer cartons or crates in a well known manner, and the resilient walls separated by an intervening chamber will effectively protect the corners of the goods against damage by impact.

From the foregoing detailed description, it should be apparent that my present invention in fact provides a simple, inexpensive and efficient article corner protector adapted to be readily applied to items of various sizes and shapes. The box-like protective units are adapted to withstand considerable impact and abuse by virtue of the provision of resilient walls separated by an intervening chamber and these walls may be conveniently strengthened and protected by the application of suitable coatings, and by the addition of corrugations 23 as depicted in Fig. 1 if necessary. The relatively soft velvet-like outer surfaces of the article engaging walls will not mar the protected surfaces of the articles 21, 42, and in cases where it is desirable to protect delicate side surfaces as well as corners of the items, the article engaging walls may be readily enlarged and extended to provide for such additional protection.

It should be understood that it is not desired to limit this invention to the exact details of construction of the corner protectors herein specifically illustrated and described, because obvious modifications within the scope of the appended claims may occur to persons skilled in the art; and it is also contemplated that descriptive terms used herein be given the broadest possible interpretation consistent with the disclosure.

I claim:

1. In a protector for the corner of an article during storage and shipment, a unitary body of molded fibrous paper pulp having three resilient inner walls snugly engageable with the three intersecting corner surfaces of the article, and also having three resilient outer walls spaced from and disposed approximately parallel to said inner walls and integrally connected to the bounding edges of the latter by resilient transverse walls to provide a substantially enclosed air filled cushioning chamber within the wall assembly, all of said parallel and transverse walls being of approximately the same uniform thickness throughout their entire areas.

2. A package comprising an article and a corner protector, said protector comprising a unitary body of molded fibrous paper pulp having three resilient inner walls snugly engaging the three intersecting corner surfaces of the article, and also having three resilient outer walls spaced from and disposed approximately parallel to said inner walls and integrally connected to the bounding edges of the latter by resilient transverse walls to provide a substantially enclosed air filled cushioning chamber within the wall assembly, all of said parallel and transverse walls being of approximately the same uniform thickness throughout their entire areas, and said outer walls also being provided with local reinforcing corrugations disposed substantially parallel to said article corner surfaces.

3. In a protector for the right-angular corner of an article during storage and shipment, a uni-

tary body of molded fibrous paper pulp having three resilient plane inner walls disposed perpendicular to each other to snugly engage the three intersecting corner surfaces of the article, and also having three resilient plane outer walls spaced from and disposed perpendicular to each other and approximately parallel to said inner walls and integrally connected to the bounding edges of the latter by resilient transverse walls to provide a substantially enclosed air filled cushioning chamber within the wall assembly, all of said walls being of approximately the same uniform thickness throughout their entire areas and said outer walls being spanned by reinforcing corrugations disposed within the plane outer surfaces thereof.

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