June 9, 1931. C. F. HETTINGER 1,808,774

SHEET PACKING

Filed Aug. 12, 1930 3 Sheets-Sheet 1

Fig. 1.

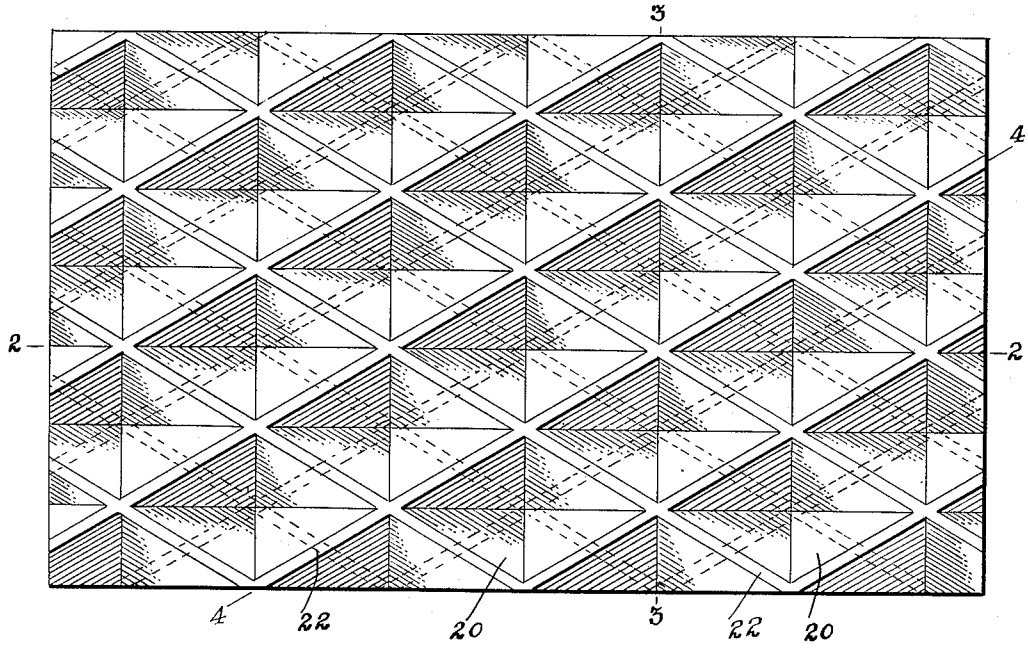


Fig. 2.

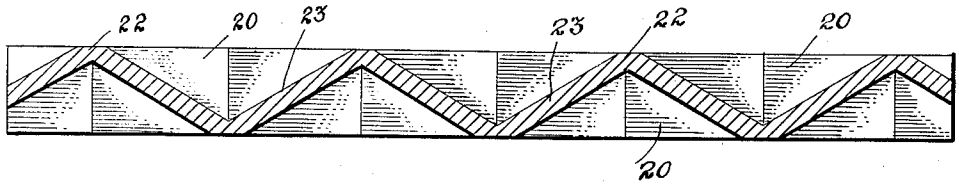
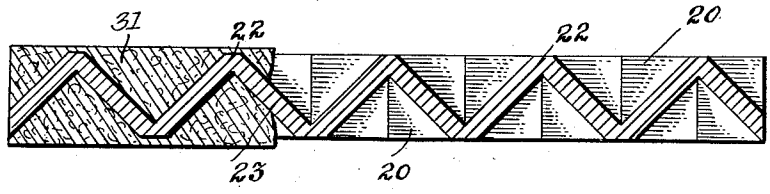


Fig. 3.



WITNESS:

A. M. Cook

Grace D. Brown

INVENTOR

Charles F. Hettinger

BY

Joshua R. H. Potts

HIS ATTORNEY

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SHEET PACKING

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Fig. 4.

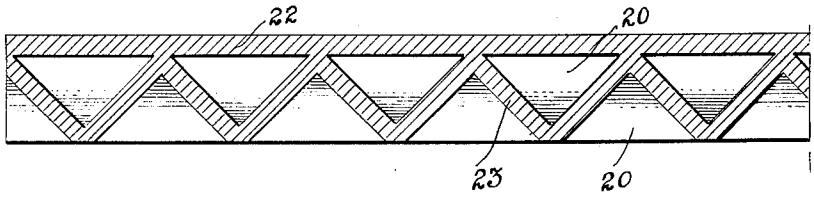


Fig. 5.

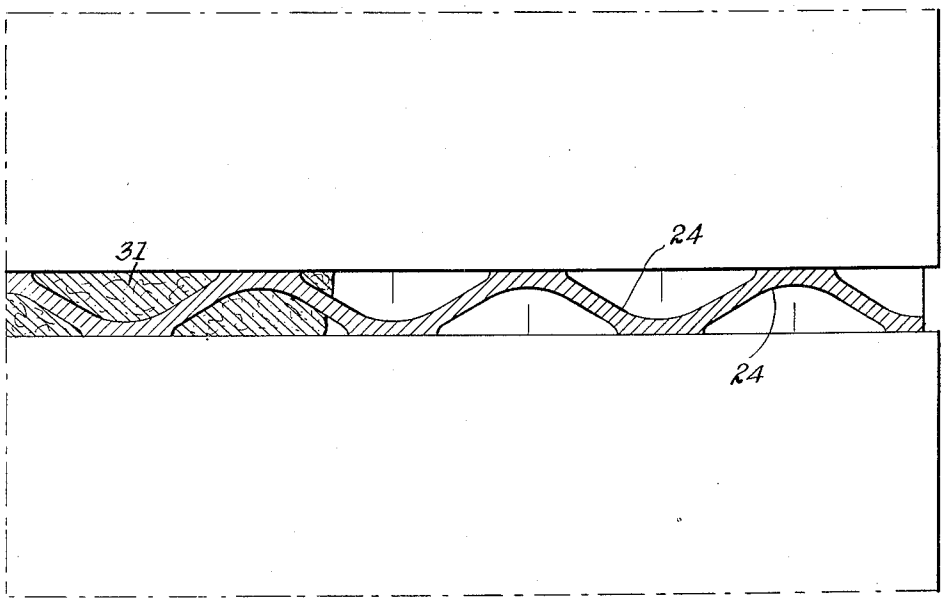


Fig. 6.



WITNESS:

A. H. Cook

Irma D. Brown

INVENTOR

Charles F. Hettinger

BY

Joshua R. H. Stone

HIS ATTORNEY

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asbestosclaims.law/library/23632/2

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SHEET PACKING

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Fig. 7

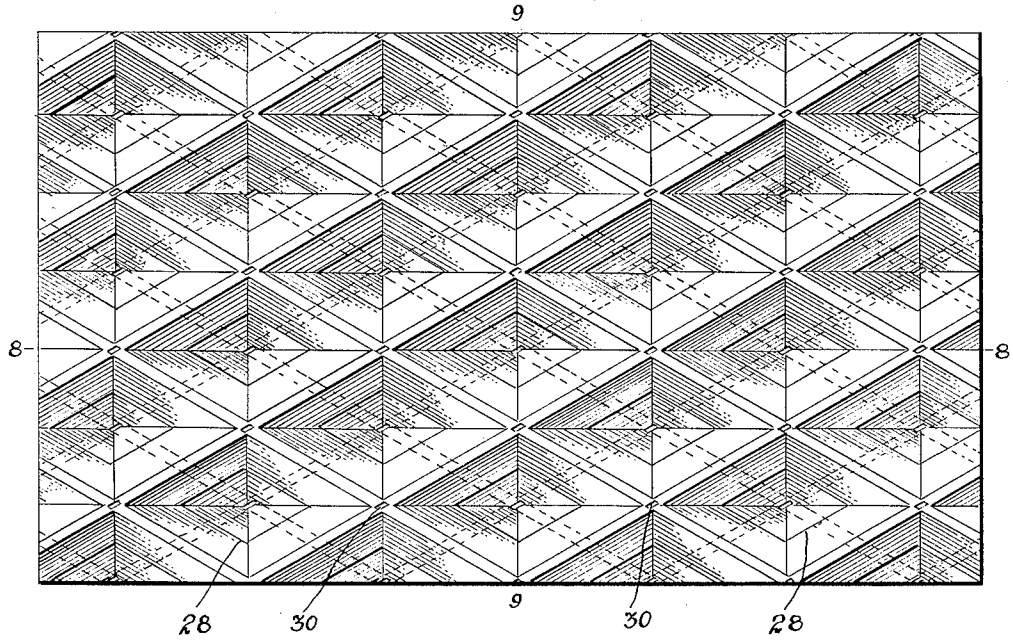


Fig. 8

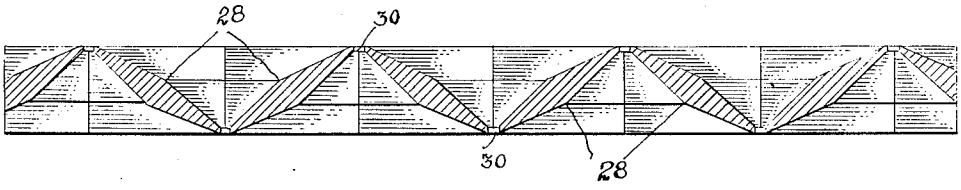


Fig. 9

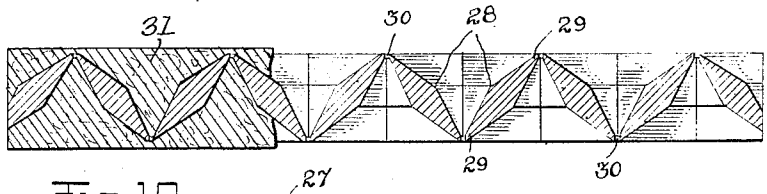
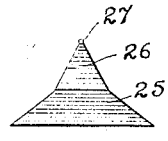


Fig. 10



WITNESS:

Chas. L. Cook

James D. Brown

INVENTOR

Charles F. Hettinger

BY

Joshua R. H. Stone

HIS ATTORNEY

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asbestosclaims.law/library/23632/3

Patented June 9, 1931 1,808,774

UNITED STATES PATENT OFFICE

CHARLES F. HETTINGER, OF CAMDEN, NEW JERSEY, ASSIGNOR TO THE FITZGERALD MANUFACTURING COMPANY, OF TORRINGTON, CONNECTICUT, A CORPORATION OF CONNECTICUT

SHEET PACKING

Application filed August 12, 1930. Serial No. 474,783.

This invention relates to sheet packing and has for an object to provide a packing which will be sufficiently soft to flow into the minute crevices of the faces between which the seal is to be made, and yet keep the flowed packing in the crevices under pressure so that a positive and permanent seal is made.

The present application is inclusive of the invention, application Serial No. 758,789, filed December 30, 1924, allowed June 19, 1926, and has for an object to provide, a sheet packing, identical upon opposite sides, each side presenting indentations or cavities, produced by dies or rollers, provided with pyramids properly spaced to reversely interpose the pyramids of one die, between the pyramids of the opposed die, to provide substantially equal thicknesses of the material arranged at inclinations, the planes of which are in all instances opposed to proximate inclinations.

A further object of the invention is to provide a sheet packing, identical upon opposite sides, which presents indentations or cavities, adapted to be filled by elastic, resilient or yielding material, completing a sheet packing having the yielding material spaced by interlying inclining walls.

A further object of the invention is to provide a sheet packing, having indentations, or cavities, of a pyramidal formation, the apices of which, pierce the sheet material, forming openings therethrough so that the resultant indentations are slightly truncated.

A further object of the invention is to provide a sheet packing, wherein the indentations do not conform to a single pyramid, but comprise a base of truncated pyramidal form, upon which is superimposed a second pyramidal structure with more acute sides than the base pyramid, which said superimposed pyramidal structure is slightly truncated, such indentations being produced from opposite sides of the sheet of material to produce identical formations, wherein the intervening walls are thicker intermediate their ends, tapering to both apices, forming at such apices thin structural walls, strengthened by the thicker structure intermediate the sides of the sheet.

The invention is directed to other objects and possesses other features of novelty and advantage, some of which, together with the foregoing, will be hereinafter more fully set forth.

In the drawings:—

Figure 1 is a view in plan, of either identical side of the sheet packing,

Figure 2 is a sectional view on line 2—2 of Figure 1,

Figure 3 is a sectional view on line 3—3 of Figure 1, showing a fragmentary part filled with resilient or yielding material,

Figure 4 is a sectional view on line 4—4 of Figure 1,

Figure 5 is a diagrammatic view, illustrating the action of the sheet packing when compressed between adjacent bodies,

Figure 6 is a view in side elevation of a pyramid, which is employed in conjunction of many others of similar size and shape, on opposed dies or rollers, to produce the type of packing shown at Figures 1 to 4 inclusive, and shows a fragmentary part filled with materi l,

Figure 7 is a view in plan, of either identical side, of a modified type of packing,

Figure 8 is a longitudinal sectional view on line 8—8 of Figure 7,

Figure 9 is a transverse sectional view on line 9—9 of Figure 7, showing a fragmentary part filled as in Figure 3,

Figure 10 is a view in side elevation of one of the pyramidal members employed upon the dies or rollers in conjunction with others for producing the type of packing shown at Figures 7 to 9 inclusive.

Like characters of reference indicate corresponding parts throughout the several views.

The packing, which forms the subject matter of this application, is identical upon opposite sides, and may be produced in any usual and ordinary manner, as by the use of dies or rollers. In either case, opposing dies of opposing rollers will also be identical, and both provided with upstanding or outstanding pyramidal members, which when pressed into the face of the material from opposite

sides, will produce in the material pyramidal cavities 20. The pyramids of the opposing members which produce such depressions, are illustrated by the numeral 21. Preferably, though not necessarily, these pyramids will have longer axes at their bases in one direction, than the other, whereby, the base of the pyramid and also the base of the indentations, will be equilateral parallelograms. These bases will be separated by narrow bands 22 which occupy position between the slightly spaced bases of the several pyramids of the dies. The walls 23, interlying the several opposed pyramids, will be of substantially the uniform thickness and will correspond substantially to the thickness of the bands 22.

As shown at Figure 5, when introduced between compressing bodies, these pyramidal indentations will be more or less flattened to assume curvatures, assumed to be represented by the curvatures 24, at Figure 5.

As a modification, the dies will be constructed of a truncated pyramidal base 25, as shown at Figure 10, upon which is superimposed a pyramid 26 of lesser angle than the pyramidal part 25, which latter part is also slightly truncated at 27. When this form is employed, the indentations 28 will differ from those shown at Figure 1, and will be as shown at Figures 7 to 9 inclusive, whereby the middle parts 28, of the intervening walls, will be thicker and adjacent to the surfaces of the sheet will be reduced in thickness to approximately an edge, as indicated at 29, with openings 30 through the sheet.

The type shown at Figures 7 to 9 inclusive, has the advantage of greater resiliency at the point of contact, with the bodies to which it is applied, and to conform more readily to inequalities of the surfaces presented.

In either embodiment, it is the intent that the several indentations shall be filled with some resilient, yielding or elastic material, such as rubber, or the like as fragmentarily shown in Figures 3, 5 and 9.

Figure 5 will adequately represent the action of the type shown at Figures 7 to 9 inclusive, as the compression will also distort the walls, and destroy the uniform thickness to some form not accurately ascertainable for the reason that it assumes such form only when under pressure.

Of course, the sheet packing, herein illustrated, may be modified in various ways without departing from the invention herein set forth and hereinafter claimed.

The invention is hereby claimed as follows:—

1. A sheet packing having intersecting ridges forming cavities on its opposite sides, the ridges on one side being in a plane passing between the ridges on the other side.

2. A sheet packing having intersecting ridges on its opposite sides forming cavities, the cavities on one side being opposite the intersecting point of the ridges on the other side.

3. A sheet packing having intersecting ridges on its opposite sides forming cavities, the cavities having downwardly converging walls and being disposed with the point of convergence on one side opposite the intersecting point of the ridges on the other side.

4. A sheet packing having intersecting ridges on its opposite sides with cavities interlying the ridges, the cavities upon one side being complementary to the cavities on the opposite side, and forming intervening inclined walls.

5. A sheet packing having cavities formed upon its opposite sides in intervening relation, the walls of said cavities being inclined to form substantial pyramids.

6. A sheet packing having similar opposite sides with pyramidal cavities on the one side intersecting the space between the bases of like pyramidal cavities upon the opposite side.

7. A sheet packing having similar sides with cavities formed therein, the bases of said cavities being pyramidal upon one inclination, and the apices pyramidal upon another inclination forming intervening walls thicker between the sides of the sheets than adjacent the surface of the sheet.

8. A sheet packing having similar sides comprising pyramidal interspersed cavities with perforations communicating from said cavities with the opposite side of the sheet.

9. A sheet packing having similar sides with interspersed cavities formed therein, with the apices of said cavities projected to form openings through the opposite side of the sheet.

10. A sheet packing having similar sides with interspersed cavities forming intervening walls, the walls being thinner at the faces of the cavities and thicker intermediate the faces of the apex, with the apices projected to form projections through the side of the sheet opposite the opposed base.

11. A packing comprising layers of yielding material, and an insert therebetween having a plurality of closely associated projections formed thereon and extending laterally from opposite sides of the plane of the insert, and openings extending through said insert adjacent said projections.

12. A packing comprising layers of yielding material, and a plate therebetween having plane surfaces with a multiplicity of spaced protuberances extending laterally from each side of the plane of the plate, the said protuberances on one side forming corresponding closed cavities on the opposite side.

13. A sheet packing having intersecting ridges forming cavities on its opposite sides, the ridges on one side being in a plane pass-

ing between the ridges on the other side, and yielding material in said cavities.

14. A sheet packing having intersecting ridges on its opposite sides forming cavities, the cavities on one side being opposite the intersecting points of the ridges on the other side, and yielding material in said cavities.

15. A sheet packing having similar sides with interspersed cavities formed therein, with the apices of said cavities projected to form openings through the opposite sides of the sheet, and yielding material in said cavities.

16. A sheet packing having similar sides comprising interspersed projections with perforations communicating with the opposite sides of the sheet, and yielding material on each side thereof.

In testimony whereof I have signed my name to this specification.

CHARLES F. HETTINGER.