Aug. 21, 1951 E. L. SHEPARD 2,564,729

PACKING FOR FRAGILE ARTICLES

Filed Sept. 23, 1946 4 Sheets-Sheet 1

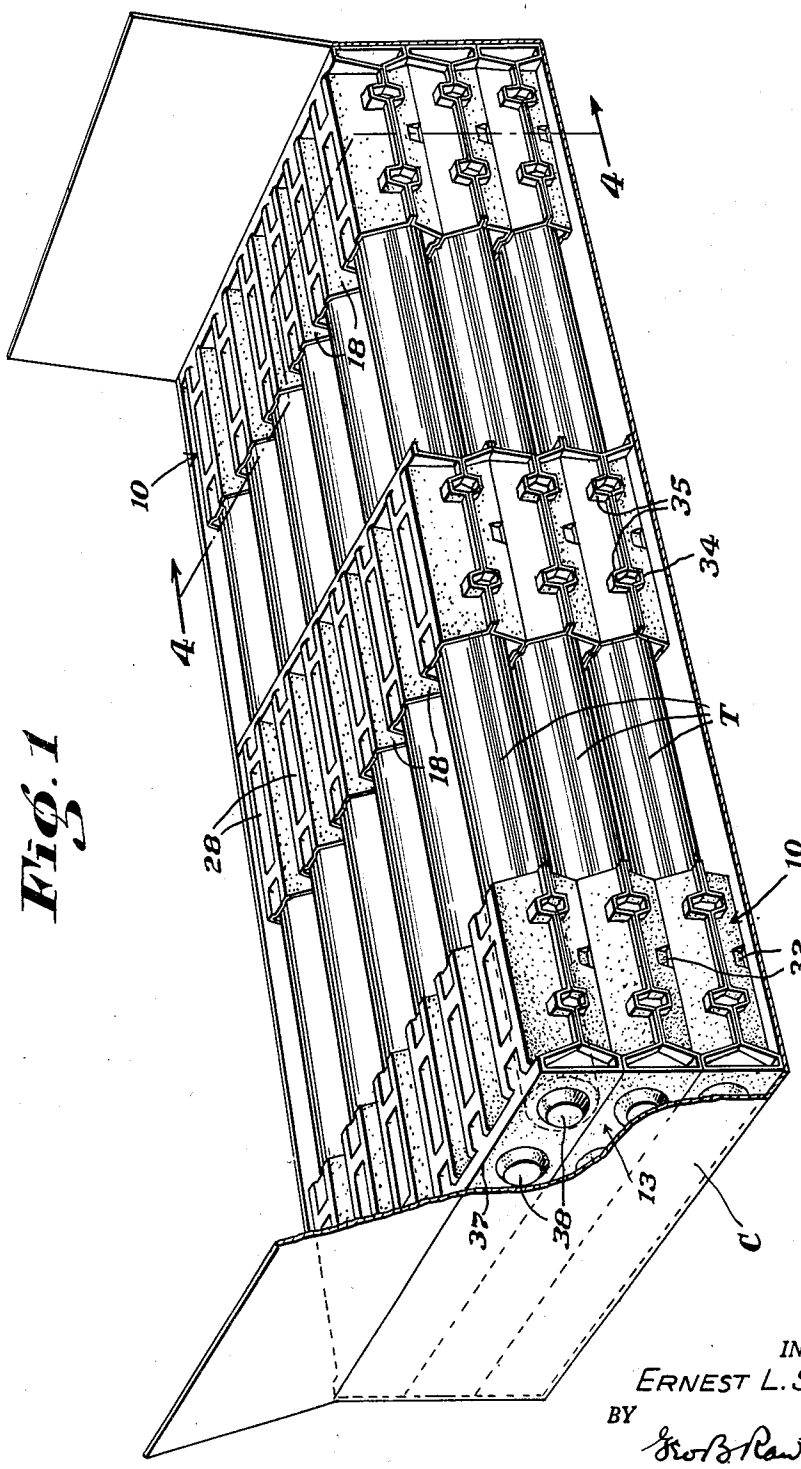


Fig. 1

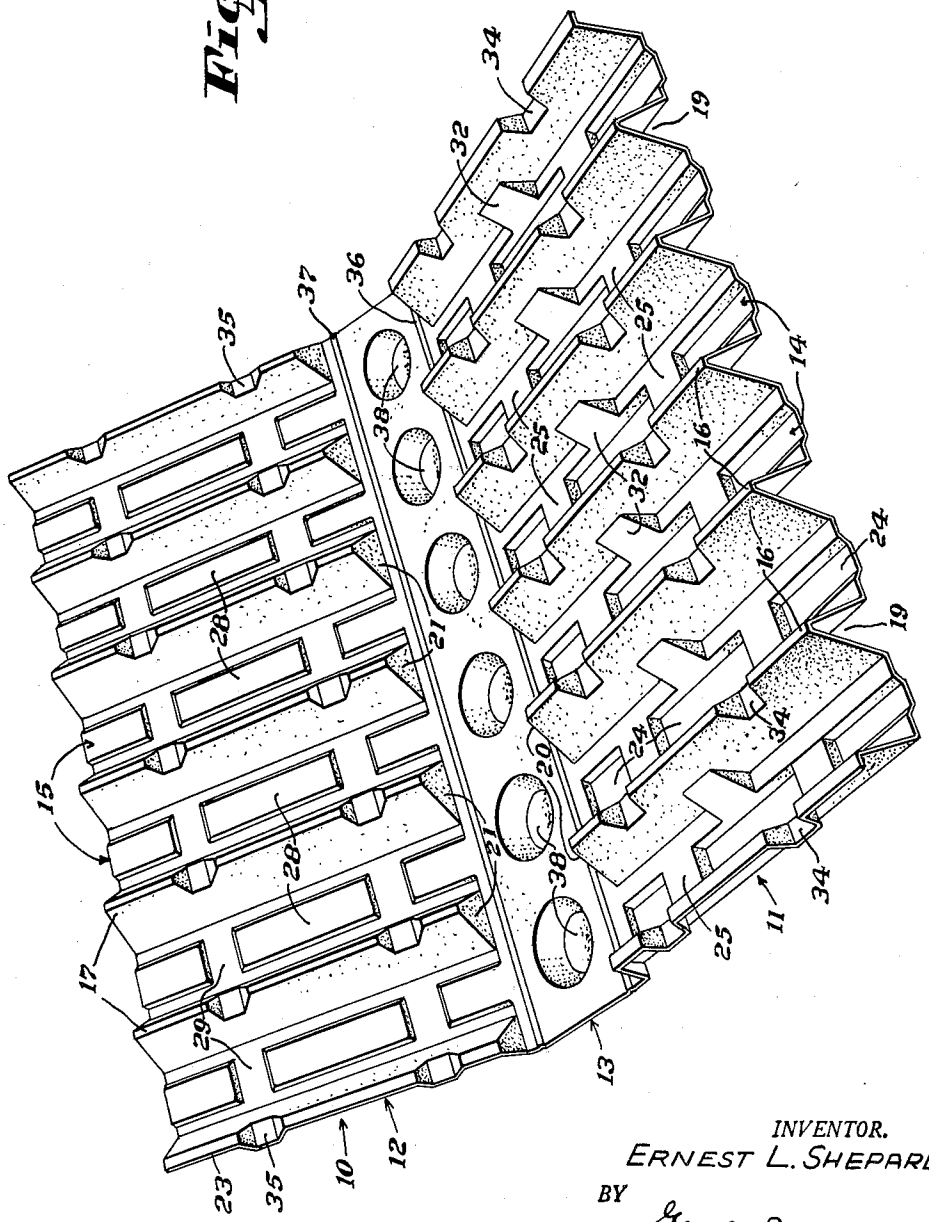
INVENTOR.
ERNEST L. SHEPARD
BY
Geo B Rawlings
ATTORNEY

Aug. 21, 1951 E. L. SHEPARD 2,564,729

PACKING FOR FRAGILE ARTICLES

Filed Sept. 23, 1946 4 Sheets-Sheet 2

Fig. 2



INVENTOR.
ERNEST L. SHEPARD
BY
Geo B Rawlings.
ATTORNEY

Aug. 21, 1951 E. L. SHEPARD 2,564,729

PACKING FOR FRAGILE ARTICLES

Filed Sept. 23, 1946 4 Sheets-Sheet 3

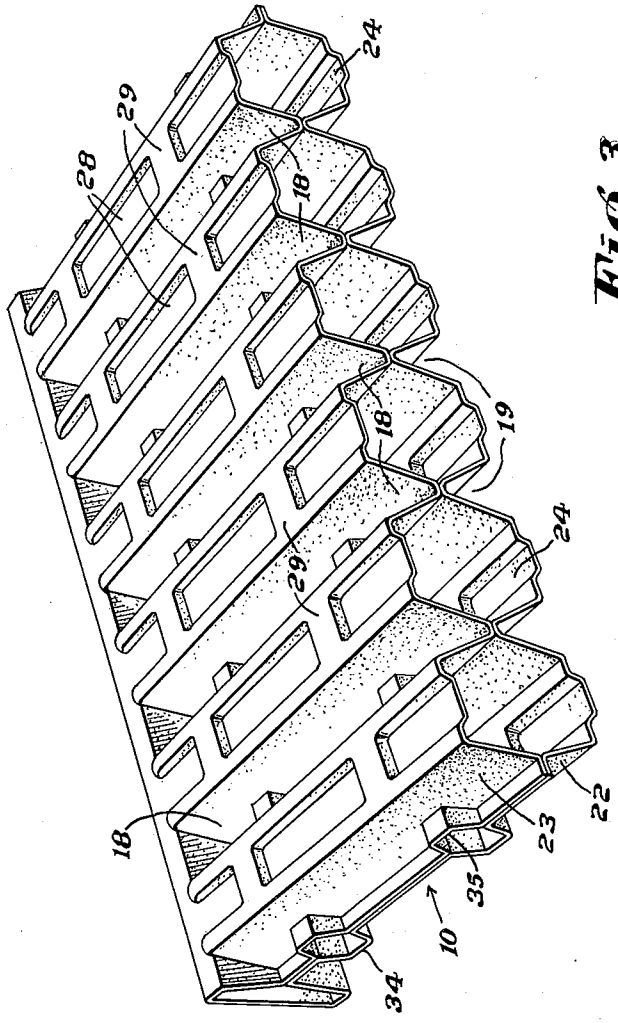


Fig. 3

INVENTOR.
ERNEST L. SHEPARD
BY
Geo B Rawlings.
ATTORNEY

Aug. 21, 1951 E. L. SHEPARD 2,564,729

PACKING FOR FRAGILE ARTICLES

Filed Sept. 23, 1946 4 Sheets-Sheet 4

Fig. 4

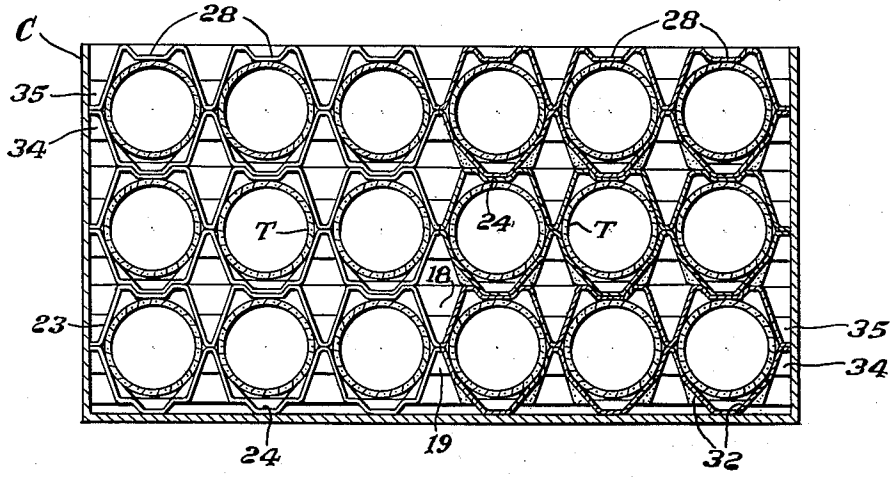
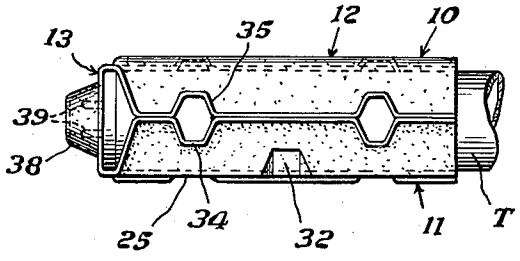


Fig. 5



INVENTOR.
ERNEST L. SHEPARD
BY
Robt B Rawlings.
ATTORNEY

Patented Aug. 21, 1951 2,564,729

UNITED STATES PATENT OFFICE

2,564,729

PACKING FOR FRAGILE ARTICLES

Ernest L. Shepard, Fairfield, Maine, assignor, by mesne assignments, to The Canal National Bank of Portland, and William B. Nulty, both of Portland, Maine, trustees

Application September 23, 1946, Serial No. 698,811

23 Claims. (Cl. 206—65)

1

This invention relates to packing to be used within a conventional shipping case for protecting shipments of elongated fragile articles, such as fluorescent light tubes or the like, against damage in transit, and has for its main object to provide an inexpensive and conveniently usable packing unit or sheet for safely packing a plurality of such articles in superimposed layers within the shipping case.

Another object is to provide packing units or sheets which when filled with elongated articles, such as tubes, and stacked in superimposed layers within a conventional shipping case will interlock with each other in such a manner that endwise or sidewise shifting movements of the several layers of sheets and tubes relative to one another within the case is prevented and the several layers of sheets and tubes become, in effect, a rigidly packed unit which carries far more safely in the shipping case than where the tubes are free to shift relative to one another.

A further object is to provide a packing unit or sheet of such design as to fully protect the ends of the tubes against injury, and particularly the contact pins at the ends of the tubes where the tubes are of the type that are equipped with such pins.

Other objects and advantages will appear as this description proceeds.

In attaining my objects, I prefer to construct my packing unit as a sheet of moulded pulp comprising two end sections and a center section hingedly connecting said end sections so that when the sheet is overfolded upon itself the end sections provide the top and bottom walls and the center section provides the end wall of a three-sided packing unit.

The two end sections are so contoured as to provide on the inner face of the sheet alined troughs or half pockets which when the sheet is overfolded upon itself register with each other to provide complete pockets which encircle and grip the walls of an inserted layer of tubes. The two end sections are furthermore so contoured as to provide on the outer face of the sheet spaced locking formations which when a stack of sheets and their inserted layers of tubes are assembled within the shipping case interlock with similar locking formations on adjacent faces of adjacent sheets in the stack to lock the assembly of sheets and tubes as a rigidly packed unit within the case.

The center section of each sheet is so contoured as to provide on the inner face of the sheet opposite the half-pockets of each end sheet section spaced recesses within which the ends of

2

the tubes, or their projecting pins, are received and protected against injury when the sheet is overfolded upon itself, these recesses furnishing on the outer face of the sheet projecting shock absorbing bumpers or cushions for contact with the end walls of the shipping case.

In using my sheets, I prefer to proceed as follows: I first place two open sheets on the bottom of the case adjacent the ends thereof, and then insert the end portions of a layer of tubes in the half pockets in the bottom wall of each sheet with the tube ends, or their contact pins, partially projecting over the cushioning recesses in the end wall sections of the sheets. I then close each sheet upon the layer of tubes by overfolding the top wall upon the bottom wall so that the half pockets in the top wall register with those in the bottom wall to thereby completely enclose and tightly grip the end portions of the layer of tubes and so that the protective recesses on the inner face of the end wall of each sheet enclose the ends of the tubes, or their contact pins, and the bumpers furnished by said recesses contact with the end walls of the shipping case. I next superimpose upon the layer of tubes so packed other identical packing sheets and other layers of tubes until the shipping case is filled with the desired number of tubes. The tubes in the several layers act as keys and the locking formations of the stacked sheets interlock with one another to prevent relative shifting movements of the sheets and tubes within the case. Thus the assembly of sheets and tubes becomes in effect a rigidly packed unit.

It will be noted that each packing sheet is of sufficient overall length to enclose the end portions of a layer of tubes for a substantial distance, but each sheet however, does not need to extend the entire length of the tubes. Instead, where the tubes are unusually long, other packing units may be used intermediate of the ends of the tubes. Such intermediate units may consist simply of the two end sections which constitute the top and bottom walls of the sheet just described, the center section of such sheet being omitted in molding or being subsequently torn off, as desired.

As shown, each packing sheet is contoured to provide pockets for accommodating a layer of six tubes but obviously may be contoured to receive a greater or lesser number of tubes. Alternatively, the sheet may be scored or otherwise weakened along predetermined longitudinal lines to enable sections thereof to be readily torn off and used for packing a lesser number of tubes.

In the accompanying drawings wherein I have

illustrated a preferred embodiment of my invention:

Fig. 1 is a perspective view, partly broken away, showing a conventional shipping case containing a complement of fluorescent light tubes packed in superimposed, interlocked layers by means of packing sheets or units in accordance with my invention;

Fig. 2 is a perspective view of one of my packing sheets or units, opened, and as seen from the inside;

Fig. 3 is a similar view of such sheet or unit, closed, and as seen from the outside;

Fig. 4 is a section on the line 4—4 of Fig. 1; and

Fig. 5 is a side elevation of one of my packing sheets or units, closed upon a layer of tubes, and particularly illustrating the cushion formations for protecting the ends of the tubes or the contact pins at the ends of the tubes.

I have indicated generally at 10 a packing sheet, or unit, in accordance with my invention. Such sheet may be made of any desired material and is preferably made of molded pulp or the like. It is shaped to provide two end sections 11 and 12 which are substantially coextensive with each other and an intermediate or central section 13 hingedly connecting said sections 11 and 12 and constituting an end closure when the sheet is overfolded upon itself along the spaced transverse lines of folds 36 and 37 (see Fig. 2). When so overfolded, the end sections 11 and 12 become the bottom and top walls, respectively, and the center section 13 becomes the end wall of a packing unit which is open at one end and closed at its other end (see Fig. 3).

The inner faces of the sheet sections 11 and 12 constituting the bottom and top wall portions of such packing unit are contoured to provide a plurality of spaced, longitudinally extending, alined troughs or half-pockets 14 and 15, respectively, which when the sheet is overfolded upon itself as shown in Fig. 3 register with one another to provide a plurality of parallel tube-encircling pockets within which the end portions of a layer of tubes T are received and gripped.

The half-pockets of each sheet section 11 and 12 are spaced apart from each other intermediate of the side edges of the sheet by a plurality of spaced, longitudinally extending, alined hollow formations or ribs 16 and 17, respectively (see Fig. 2). Ribs 16 rise from the inner face of sheet section 11 and ribs 17 rise from the inner face of sheet section 12, considering the sheet as shown in Fig. 2; and inasmuch as ribs 16 and 17 are alined with each other it results that when the sheet is overfolded upon itself, as shown in Fig. 3, the ribs 16 and 17 register with and abut against each other. Preferably the ribs 16 and 17 are V-shaped in cross section, but have apices wide enough to furnish adequate abutment surfaces to one another (see Fig. 3). Being hollow, said ribs furnish on the outer faces of their respective sheet sections V-shaped depressions 18 and 19. Ribs 16 and 17 are closed at their inner ends as indicated at 20 and 21 (see Fig. 2) and are open at their outer ends as shown, but may be closed.

The outer or side walls of the outermost half-pockets of each sheet section 11 and 12 are furnished by alined upstanding edge formations 22 and 23, respectively, at the side edges of the sheet (see Fig. 2). Formations 22 and 23 are of the same height as ribs 16 and 17 and register with and abut against each other when the sheet is overfolded upon itself.

The bottoms of the half-pockets 14 of sheet section 11, as viewed interiorly of the sheet, are provided with longitudinally extending depressions 24 (see Fig. 2) which are interrupted at spaced intervals by transversely extending ribs 25. The depressions 24 appear on the outer face of sheet section 11 as projections and the ribs 25 appear as depressions.

The bottoms of the half-pockets 15 of sheet section 12, as viewed interiorly of the sheet, are provided with longitudinally extending raised formations 28 (see Fig. 2) which are interrupted at spaced intervals by transversely extending grooves 29. The raised formations 28 appear on the outer face of the sheet section 12 as depressions and the grooves 29 appear as ribs (see Fig. 3).

Extending upwardly from the half-pockets 14 of sheet section 11 for a substantial distance along the side walls 22 and the ribs 16 are oppositely disposed inclined or wedge-shaped tube-gripping lugs 32. The apices of the ribs 16 and 17 and the tops of the side edges 22 and 23 of the sheet sections 11 and 12, as viewed in Fig. 2, are interrupted by one or more series of transversely alined notches 34 and 35, respectively, which appear on the outer faces of said sheet sections as connecting or tie ribs. Preferably although not necessarily, notches 34 are alined with ribs 25 of sheet section 11 and notches 35 are alined with grooves 29 of sheet section 12 so as to produce transversely across said sections 11 and 12 one or more alined, but discontinuous, stiffening reinforcements.

At the side edges 22 and 23 of said sheet sections 11 and 12 the material of the sheet at said notches 34 and 35 projects beyond the inclined sides of the outermost tube encircling pockets a distance sufficient (see Fig 4) to function as bumpers for cushioning the contact of said side edges against the side walls of the shipping case C.

The center section 13 of sheet 10 is contoured to provide on the inner face of the sheet a plurality of spaced recesses 38 alined with and separating the half pockets 14 and 15 from each other. On the outer face of section 13, recesses 38 appear as cushioning projections for contact with the end walls of the shipping case (see Fig. 1). Recesses 38 receive and protect the ends of the tubes, and/or the contact pins 39 of such tubes if the tubes are of the type which have such pins (see Fig. 5).

Referring to Figs. 1 and 4 wherein I have shown a conventional shipping case C filled with its complement of tubes T, it will be noted that the tubes are supported at their ends in superimposed layers by vertical stacks of my folded packing sheets 10. If desired, and as also shown in Fig. 1, the tubes may be supported between their ends by intermediate packing material consisting simply of the sections 11 and 12 of a packing sheet, section 13 having been torn off.

It will be further noted that each tube is gripped or wedged in the pocket defined by the registering half-pockets 14 and 15 of the overfolded sheet along a plurality of lines of contact. In the half-pockets 14 of the sheet section 11, the inclined side walls of the ribs 16 grip the sides of the tubes along two opposite lines of contact and tend to space the tube from the bottom proper of the half-pocket. The oppositely disposed pairs of lugs 32 supplement such line contact by tightly gripping the side walls of the tubes along two opposite but shorter lines of con-

tact. Thus in each half-pocket 14, the tube is gripped along four lines of contact.

In the registering half-pockets 15 of the opposite sheet section 12, the inclined side walls of the ribs 17 likewise grip the sides of the tubes along two opposite lines of contact and the ribs 28 contact the top surfaces of the tubes along relatively broad lines of bearing. Thus in each half-pocket 15, the tube is gripped along three lines of contact.

It will be further noted that in a stack of sheets the ribs and depressions on the outer faces of one sheet interlock with the corresponding depressions and ribs on the outer faces of the sheets next above and below in the stack so as to assist in restraining the sheets and their inserted tubes against relative shifting movement within the case.

While I have shown and described a preferred embodiment of my invention, it is obvious that many modifications thereof may be made without departing from the spirit and scope of my invention as defined by the appended claims.

I claim:

1. A packing unit consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable along spaced parallel lines of fold relative to said intermediate section to form a packing unit having spaced top and bottom walls formed by said end sections and an end closure wall formed by said intermediate section, each end section having spaced parallel hollow substantially V-shaped ribs extending longitudinally thereof and forming on its inner face half-pockets, the walls of said longitudinal ribs being connected by material constituting transverse tie ribs when viewed from the outer face, the half-pockets of one end section being alined with those of the other end section and spaced therefrom by the material of said intermediate section, and the half pockets of the respective end sections registering with each other when the sheet is overfolded upon itself to thereby form complete article-receiving pockets which are closed at one end by the intermediate section of the sheet and are open at their opposite end, and the apices of the ribs abutting each other when the sheet is overfolded.

2. The packing unit of claim 1 wherein the inner face of the intermediate section of the sheet is contoured to provide spaced individual recesses in line with the ends of the articles inserted in the article-receiving pockets.

3. The packing unit of claim 1 wherein the inner face of the intermediate section of the sheet is contoured to provide spaced individual recesses in line with the ends of the articles inserted in the article-receiving pockets and wherein said contourings on the outer face of said intermediate section project outwardly as cushioning elements.

4. The packing unit of claim 1 wherein there is a row of such tie ribs in transverse alinement adjacent to the open end of each end section.

5. The packing unit of claim 1 wherein there are a plurality of rows of transversely alined tie ribs.

6. The packing unit of claim 1 wherein transverse ribs are located in the top and bottom walls of the half-pockets and are in alinement with the tie ribs.

7. Packing material for engaging the under portions of a layer of tubes, consisting of a sheet section contoured to provide a plurality of spaced parallel half-pockets extending longitudinally thereof, said half-pockets being spaced apart from one another by upwardly extending hollow ribs of inverted V-shape which furnish the side walls of the half-pockets, and the side walls of said ribs being provided with oppositely disposed wedge-like formations for gripping the side walls of the tubes inserted in said half-pockets.

8. The packing of claim 7 in which the bottom walls of the half-pockets include portions extending below the plane of the sheet section and providing on the exterior face of the sheet section projections adapted to interlock with depressions formed in the exterior face of a subjacent sheet section.

9. A packing for engaging the upper portions of a layer of tubes, consisting of a sheet section contoured to provide a plurality of spaced parallel half-pockets extending longitudinally thereof, said half-pockets being spaced apart from one another by downwardly extending hollow ribs of V-shape which furnish the side walls of the half-pockets, the top walls of said half-pockets having portions extending below the plane of the sheet section and providing wide and relatively long projections adapted to bear upon the tops of a layer of tubes inserted in said half-pockets, and said projections on the exterior face of said sheet section furnishing depressions adapted to interlock with projections formed on the exterior face of a superadjacent sheet section.

10. A shipping package, comprising a shipping case, a plurality of elongated fragile articles, and two stacks of packing units for supporting said articles near their ends in superimposed layers within the case, each packing unit consisting of a sheet having two end sections and an intermediate section, said end sections being foldable relative to said intermediate section to form a packing unit having spaced top and bottom walls formed by said end sections and adapted to be disposed parallel to the bottom wall of the case and an end closure wall formed by said intermediate section and adapted to be disposed against an end wall of the case, each end section having spaced parallel contourings extending longitudinally thereof and forming on its inner face a plurality of half-pockets, the half-pockets of one end section being alined with those of the other end section so as to register therewith when the sheet is overfolded upon itself and thereby form complete article-receiving pockets which are closed at one end by said intermediate section of the sheet and open at their opposite end whereby the layers of articles are spaced from each other at their ends by double thicknesses of packing material.

11. The package of claim 10 wherein the outer faces of the end sections of each sheet within the half-pocket areas thereof are provided with depressions and raised surfaces, respectively, which interlock with corresponding raised surfaces and depressions in the outer faces of the end sections of sheets arranged above and below in the case to lock the stack of sheets and their inserted layers of articles as a rigidly packed assembly within the shipping case.

12. The package of claim 10 wherein the intermediate section of each sheet is contoured on its inner face to provide recesses alined with the ends of a layer of articles to be packed and wherein said contourings on the outer face of said sheet section provide bumpers or cushions for spacing the sheet from the adjacent end wall of the shipping case.

13. A packing unit for packing a layer of tubes,

rods or like elongated articles, consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable relative to said intermediate section to form a packing unit consisting of spaced top and bottom walls and an end wall, each end section having on its inner face a plurality of spaced parallel hollow ribs extending longitudinally thereof and forming on the inner faces of said sections spaced parallel half-pockets which register with each other when the sheet is overfolded upon itself and provide complete article receiving pockets which are closed at one end by the intermediate section of the sheet and are open at their opposite end, the ribs of each section being alined with the ribs of the complemental section and the ribs of both sections being of a depth to abut each other when the sheet is overfolded, the bottom walls of the half pockets of the bottom section having portions extending below the plane of said section and providing on the exterior face of said section projections adapted to interlock with depressions formed in the exterior face of a subjacent sheet section, the top walls of the half pockets of the top section having longitudinally extending portions located within the half-pocket areas of said section and providing projections adapted to bear upon the top surfaces of a layer of articles enclosed within half pockets of said top section and said projections on the exterior face of said top section furnishing depressions adapted to interlock with corresponding projections on the exterior face of a superposed sheet section.

14. A packing unit for packing a layer of tubes, rods or like elongated articles, consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable relative to said intermediate section to form a packing unit consisting of spaced top and bottom walls and an end wall, each end section having on its inner face a plurality of spaced parallel hollow ribs extending longitudinally thereof and forming on the inner faces of said sections spaced parallel half pockets which register with each other when the sheet is overfolded upon itself and provide complete article receiving pockets which are closed at one end by the intermediate section of the sheet and are open at their opposite end, the ribs of one section being alined with the ribs of the complemental section and the ribs of both sections being of a depth to abut each other when the sheet is overfolded, the side walls of the ribs in the bottom section being provided with oppositely disposed wedge-like formations for gripping the side walls of a layer of articles inserted in the half pockets of said section and the bottom walls of the half pockets of said section having portions extending below the plane of said section and providing on the exterior face of said section projections adapted to interlock with corresponding depressions formed in the exterior face of a subjacent sheet section, the top walls of the half pockets of the top section having longitudinally extending portions located within the half-pocket areas of said section and providing projections adapted to bear upon the top surfaces of a layer of articles enclosed within the half pockets of said top section and said projections on the exterior face of said top section furnishing depressions adapted to interlock with corresponding projections on the exterior face of a superposed sheet section.

15. Packing material for packing a layer of tubes, rods or like elongated articles, comprising a pair of oppositely disposed top and bottom sheet sections for engaging the top and bottom surfaces, respectively, of the articles in the layer, the sheet section which engages the under sides of the layer of articles being contoured to provide a plurality of spaced parallel half pockets extending longitudinally thereof and spaced apart from one another by upwardly extending hollow ribs which furnish the side walls of the half pockets, the bottom walls of the half-pockets in said bottom sheet section having depressions which extend below the plane of said section and provide on the exterior face thereof projections adapted to interlock with depressions formed in the exterior face of a subjacent sheet section, the sheet section which engages the upper sides of the layer of articles also being contoured to provide a plurality of spaced parallel half-pockets alined with the half-pockets of the bottom sheet and spaced apart from one another by downwardly extending hollow ribs which furnish the side walls of said half pockets in said upper sheet section, the top walls of the half pockets of said upper sheet section having projections extending below the plane of said section and providing bearing surfaces for engaging the top surfaces of the layer of articles inserted within said half-pockets and said projections on the exterior face of said top section furnishing depressions adapted to interlock with corresponding projections formed on the exterior face of a superposed sheet section.

16. Packing material for packing a layer of tubes, rods or like elongated articles, comprising a pair of oppositely disposed top and bottom sheet sections for engaging the top and bottom surfaces, respectively, of the articles in the layer, the sheet section which engages the under sides of the layer of articles being contoured to provide a plurality of spaced parallel half-pockets extending longitudinally thereof and spaced apart from one another by upwardly extending hollow ribs which furnish the side walls of the half pockets, the side walls of said ribs being provided with oppositely disposed wedge-like formations for gripping the side walls of the articles inserted in said half-pockets and the bottom walls of said half-pockets having depressions which extend below the plane of said sheet section and provide on the exterior face thereof projections adapted to interlock with depressions formed in the exterior face of a subjacent sheet section, the sheet section which engages the upper sides of the layer of articles also being contoured to provide a plurality of spaced parallel half-pockets alined with the half-pockets of the bottom sheet and spaced apart from one another by downwardly extending hollow ribs which furnish the side walls of said half-pockets in said upper sheet section, the top walls of the half-pockets of the said upper sheet section having projections extending below the plane of said section and providing bearing surfaces for engaging the top surfaces of the layer of articles inserted within said half-pockets and said projections on the exterior face of said top section furnishing depressions adapted to interlock with corresponding projections formed on the exterior face of a superposed sheet section.

17. A packing unit consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable relative to said intermediate section to form a packing unit having spaced top and bottom walls formed by said end sections and an end closure wall formed

by said intermediate section, each end section being contoured to form on its inner face a plurality of spaced parallel longitudinally extending half-pockets, the half-pockets of one end section being alined with those of the other end section and spaced therefrom by the material of said intermediate section, and the half-pockets of the respective end sections registering with each other when the sheet is overfolded upon itself to thereby form complete article-receiving pockets which are closed at one end by the intermediate section of the sheet and are open at their opposite end, the outer faces of the end sections of the sheet within the half-pocket areas thereof, being provided with depressions and raised surfaces, respectively, adapted to interlock with corresponding raised surfaces and depressions in the outer faces of the end sections of duplicate sheets arranged above and below.

18. A packing unit consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable along spaced parallel lines of fold relative to said intermediate section to form a packing unit having spaced top and bottom walls formed by said end sections and an end closure wall formed by said intermediate section, each end section having spaced parallel hollow substantially V-shaped ribs extending longitudinally thereof and forming on its inner face half-pockets, the walls of said longitudinal ribs being connected by material constituting transverse tie ribs when viewed from the outer face, the half-pockets of one end section being alined with those of the other end section and spaced therefrom by the material of said intermediate section, and the half pockets of the respective end sections registering with each other when the sheet is overfolded upon itself to thereby form complete article-receiving pockets which are closed at one end by the intermediate section of the sheet and are open at their opposite end, and the apices of the ribs abutting each other when the sheet is overfolded, the side walls of the ribs of the sheet section which furnishes the bottom wall of the packing unit being provided with oppositely disposed wedge-like formations for gripping the side walls of articles inserted in the pockets formed by said ribs.

19. A packing unit consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable along spaced parallel lines of fold relative to said intermediate section to form a packing unit having spaced top and bottom walls formed by said end sections and an end closure wall formed by said intermediate section, each end section having spaced parallel hollow substantially V-shaped ribs extending longitudinally thereof and forming on its inner face half-pockets, the walls of said longitudinal ribs being connected by material constituting transverse tie ribs when viewed from the outer face, the half-pockets of one end section being alined with those of the other end section and spaced therefrom by the material of said intermediate section, and the half pockets of the respective end sections registering with each other when the sheet is overfolded upon itself to thereby form complete article-receiving pockets which are closed at one end by the intermediate sections of the sheet and are open at their opposite end, and the apices of the ribs abutting each other when the sheet is overfolded, the inner face of the end section of the sheet which furnishes the top wall of the packing unit being contoured to provide in each half-pocket a broad, flat and relatively long projection for bearing against the top wall of an article inserted in such half-pocket.

20. A packing unit consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable relative to said intermediate section to form a packing unit having spaced top and bottom walls formed by said end sections and an end closure wall formed by said intermediate section, each end section being contoured to form on its inner face a plurality of spaced parallel longitudinally extending half-pockets, the half-pockets of one end section being alined with those of the other end section and spaced therefrom by the material of said intermediate section, and the half-pockets of the respective end sections registering with each other when the sheet is overfolded upon itself to thereby form complete article-receiving pockets which are closed at one end by the intermediate section of the sheet and are open at their opposite end, the contourings which provide the half-pockets in the bottom end section of the packing sheet including oppositely disposed wedge-like formations for gripping the side walls of articles inserted within said half-pockets.

21. A packing unit consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable relative to said intermediate section to form a packing unit having spaced top and bottom walls formed by said end sections and an end closure wall formed by said intermediate section, each end section being contoured to form on its inner face a plurality of spaced parallel longitudinally extending half-pockets, the half-pockets of one end section being alined with those of the other end section and spaced therefrom by the material of said intermediate section, and the half-pockets of the respective end sections registering with each other when the sheet is overfolded upon itself to thereby form complete article-receiving pockets which are closed at one end by the intermediate section of the sheet and are open at their opposite end, the contourings which provide the half-pockets in the top end section of the packing sheet including longitudinally extending ribs within the areas of said half-pockets for overhead bearing upon the upper surfaces of the articles inserted within said half-pockets.

22. A packing unit consisting of a single sheet of molded pulp of substantially uniform thickness having two end sections and an intermediate section, said end sections being foldable relative to said intermediate section to form a packing unit having spaced top and bottom walls formed by said end sections and an end closure wall formed by said intermediate section, each end section being contoured to form on its inner face a plurality of spaced parallel longitudinally extending half-pockets, the half-pockets of one end section being alined with those of the other end section and spaced therefrom by the material of said intermediate section, and the half-pockets of the respective end sections registering with each other when the sheet is overfolded upon itself to thereby form complete article-receiving pockets which are closed at one end by the intermediate section of the sheet and are open at their opposite end, the contourings which provide the half-pockets in the bottom end section of the packing

sheet including oppositely disposed wedge-like formations for gripping the side walls of articles inserted within said half-pockets and the contourings which provide the half-pockets in the top end section of the packing sheet including longitudinally extending ribs within the areas of said half-pockets for overhead bearing upon the upper surfaces of the articles inserted within said half-pockets.

23. A packing unit for elongated articles, said unit consisting of a single sheet of molded pulp of substantially uniform thickness having a pair of spaced parallel fold lines dividing it into an intermediate section between the folds, and two end sections on the outside of the respective folds, a set of spaced parallel hollow substantially V-shaped interrupted ribs projecting out from one face of the sheet and extending perpendicularly of the fold lines but only along the end sections, said ribs having a height substantially half the distance between the fold lines for forming a set

of article-receiving elongated pockets when the sheet is folded on both fold lines to bring the upstanding ribs together, and the apex portions of the V-shaped ribs having spaced depressed tie portions extending across above said face of the sheet from one wall of the V-shaped ribs to the other, said depressed portions forming ribs when the sheet is viewed from its other face.

ERNEST L. SHEPARD.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,121,232	Davis	Dec. 15, 1914
1,337,978	La Fleur	Apr. 20, 1920
1,956,955	Kronenberger	May 1, 1934
1,960,279	Read	May 29, 1934
2,100,516	Read	Nov. 30, 1937