

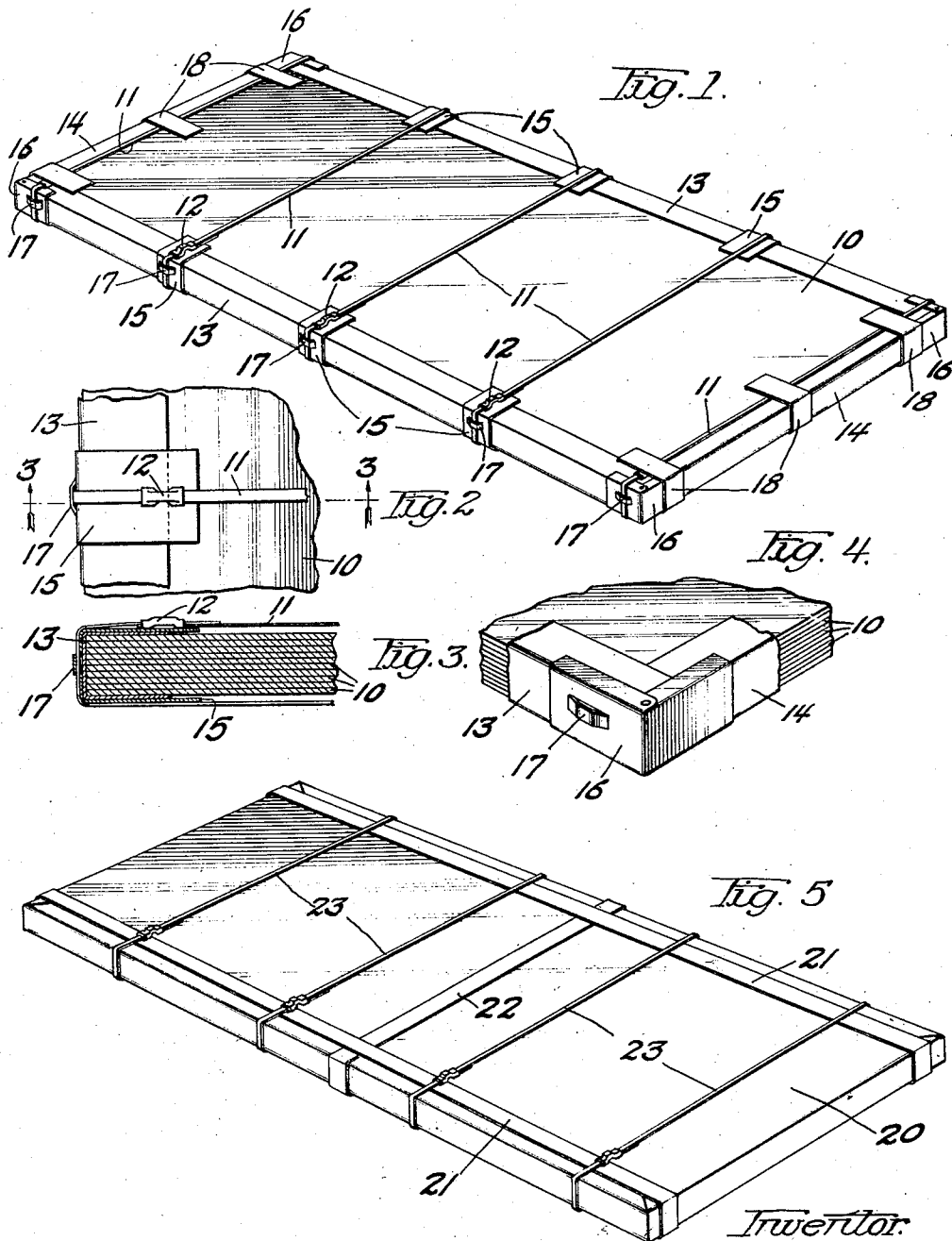
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WALL BOARD PACKAGE

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UNITED STATES PATENT OFFICE

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WALL-BOARD PACKAGE

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This invention relates to packaging materials of sheet or plate form, which must be put up in flat piles rather than in rolls.

Among other objects, the invention is intended to provide a reliable package, of light and economical type, for the safe handling and transportation of flat building materials such, for instance, as fibre wall board. This material, on account of its limpness and susceptibility to breakage and mutilation, requires careful protection in shipment, particularly for export trade; while at the same time the marketable value of such material imposes a low limit of permissible packaging and freight costs for absorption in the sales price at destination.

It has been customary to ship wallboard in wooden crates but the practice of crating has proven costly, both on account of the expense of crating materials and added freight costs, since it has been found necessary to employ strong heavy lumber for crates of practicable capacity in order to carry the contents safely to destination. Moreover crates unless excessively heavy have proven unsatisfactory and inefficient as carriers and have resulted in considerable losses from damaged contents. The present invention therefore aims to dispense with the objectional practice of crating, and to provide a light type package which will reduce packing and carriage costs while assuring safe carriage of the contents.

An illustrative package embodying the invention is shown in the accompany drawings, in which:

Fig. 1 is a perspective view of the package in an incomplete stage of production, i. e. before application of the outside wrapper and external bindings.

Fig. 2 is a plan view of a fragment of a side of the package as represented in Fig. 1.

Fig. 3 is a cross section on the line 3—3 of Fig. 2.

Fig. 4 is a perspective view of one of the package corners before application of the binder shown in Fig. 1.

Fig. 5 is a perspective view of the completed package, with its outside wrapper and external bindings which are additional to the bindings shown in Fig. 1.

The illustrative package comprises a pile of uniform rectangular sections of flat material, for instance fibre wallboard panels 10, securely bound together by metallic binders 11 encircling the pile at its ends and at appropriate intervals between the ends. Ten or twelve ordinary fibre board panels, for example, will form a pile of convenient merchandizable size and of sufficient thickness to supply considerable transverse stiffness to resist crosswise buckling by the action of the binders. The binders hold the superposed layers of material together at the ends and intermediate points, so that the pile, even though more or less limp, may be handled as a unit without likelihood of falling apart. The binders also cooperate with the herein-after mentioned reinforcing members to stiffen and brace the pile of panels as a whole.

The binders 11 may consist of flexible steel straps or flat bands drawn more or less taut around the pile and having their ends overlapped and securely united by seal fasteners 12. The type of seal fastener shown is formed by enclosing the overlapped strap ends in a sheet metal sleeve and marginally deforming or crimping the sleeve and enclosed strap ends to form interlocking shoulders, which will effectually resist separation. Tools for tensioning the straps or bands and sealing their overlapped ends with fasteners of the character described, are well known in the box-strapping art. The use of flat metal straps or bands as binding means is advantageous for efficiently holding the superposed layers of flat material together, as well as to avoid undue cutting action of tensioned binders.

Bound with the panels by the encircling bands or binders is material applied around the margins of the pile for reinforcing and stiffening the same and for protecting the edges and corners of the panels from injury by breakage or denting. As shown in the drawings, the sides and ends of the pile are encased all around with reinforcing and protecting material forming side covers 13 and end covers 14. These cover members 13 and 14 may be formed of a single strip or may consist of a plurality of strips of tough stiff material, for instance, vulcanized fibre,

wide enough to cover the sides and ends of the pile and to overlap the top and bottom panels thereof; the said strips being appropriately creased and bent into channel-shaped covers to embrace the marginal portions of the pile. The said cover members may overlap or be folded at the corners of the pile to provide an increased thickness of reinforcing and protecting material at those points.

Additional protection and reinforcement at the sides of the pile is afforded by so-called side protectors 15, consisting of U-shaped straps of vulcanized fibre or other suitable material, interposed between the encircling binders 11 and the side covers 13; that is to say, the protectors 15 embrace the side covers 13 and are bound in place by the binders. Thus the additional protecting material under the binders protects the edges of the panels and the side margins of the exposed top and bottom panels from indentation or injury by any biting tendency of the binders. The protectors 15 overlap the top and bottom of the pile far enough to provide bearings or seats for the binder fastenings 12, in order to protect the surfaces of the top and bottom panels from scarring or indentation by said fastenings when a number of the illustrative packages are stacked or piled one upon another.

At the corners of the pile are corner protectors 16, which may consist of strips of vulcanized fibre or other suitable material bent to angular shape and flanged to embrace the corners of the pile over the adjacent, folded or overlapped ends of the side and end covers 13 and 14, as shown more clearly in Fig. 4. These corner protectors 16, which are bound in place by the bands or binders around the ends of the pile, contribute to retain the end covers 14 in place. In addition to protecting the corner edges of the panels from indenting action of the binders, they serve to stiffen and reinforce the corners of the package and to protect the contents against injury in the event of striking the corners during handling in shipment or storage.

The reinforcing and protecting devices above referred to provide a sort of stiffening frame around the pile of wallboard panels, cooperating with the binders or bands 11 to maintain the form and integrity of the package, besides effectually reinforcing and protecting the corners and edges of the pile. The side and end covers 13 and 14 and corner fittings 16 embracing their adjacent, folded or overlapped ends also serve to protect against entrance of dust or moisture between the superposed panels or layers of material.

To prevent displacement of the binders or bands 11 relative to the side and corner protectors 15 and 16, the said elements 15 and 16 are formed or provided with keepers 17,

which if desired, may be formed as straps or loop keepers cut from the material of the said elements. The binders or bands 11 are passed through such keepers, thus insuring at all times the maintenance of the protecting elements between the binders and the sides and marginal surfaces of the pile of wallboard panels. As the side protectors 15 and corner fittings 16 are drawn firmly over the material of the side and end covers 13 and 14 by the binders, there will be sufficient frictional engagement between the parts to restrain the protectors 15 and 16 from slippage or lateral displacement, thus contributing to prevent lateral displacement or disalignment of the binders or bands 11.

For further insuring the preservation of the form and integrity of the package, by preventing any accidental dislodgement of the corner protectors 16 and the binders or bands around the ends of the pile, these elements are further held in place by holders 18, which may consist of strips of strong adhesive tape folded over the ends of the pile and adhesively uniting the corner protectors 16 and the top and bottom panels of the pile.

Fig. 1 of the drawings represents the structure as thus far described, which in itself possesses desirable characteristics as a package for use in handling merchandise of the class mentioned; but for further protection and security the metal bound pile of wallboards is encased in an outside wrapper or envelope and provided with additional binding means as shown in Fig. 5.

Referring to Fig. 5, the outside wrapper or envelope 20 may consist of tough water-proof paper or fabric, for instance, water-proof cross cord line paper. The wrapper may be conveniently applied by folding its longitudinal edges over the sides and upon the top of the package, and sealing the same with longitudinal strips 21 of adhesive tape; while the transverse meeting edges of the wrapper at the center of the package may likewise be covered and sealed with a transverse sealing strip of adhesive sealing tape 22. After application of the wrapper, additional metal binders or bands 23 may be tensioned around the package and fastened in the same manner as the bands 11; the bands 23 being arranged at positions altering with the inside bands 11.

Among other advantages, a package of the character described may be subjected to the ordinary rough handling incident to transportation and storage without undue danger of dislocation of the elements or injury of the contents. The arrangement and coaction of the binders, bound material, and inside protecting devices will tend to maintain the pile of flat elements in shape, and will resist diagonal and distortive strains on the package more effectually than wooden boxing; while at the same time the packaging materials em-

ployed are much lighter and cheaper than boxing. The water-proof wrapper is a further desirable feature, particularly in case of export shipments of materials which require protection against moist salt air. Furthermore, the wrapper prevents deterioration of the contents during long periods of storage.

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

GEORGE EDWARD GRIFFITH.

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Obviously, the present invention is not limited to the precise details of construction, mode of operation and arrangement shown and described, since the same may be variously modified appropriately to the dimensions, weight and characteristics of the units of material to be packaged. Moreover, it is not indispensable that all of the features of the invention be used conjointly as they may be used to advantage in various combinations and subcombinations.

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I claim:

1. A package of the class described comprising, in combination, a pile of rectangular sections of material; separate cover members of reinforcing and protecting material encasing the side and end margins of said pile; parallel metal bindings around the pile; corner protectors encasing the corners of the pile and bound thereto by the end bindings; and strips of adhesive tape straddling the end cover members and end bindings and adhesively united to the top and bottom of the pile; a wrapper encasing the metal-bound pile; and additional metal bindings applied outside of the wrapper and alternating with the first mentioned bindings.

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2. A package of the character described comprising in combination, a pile of superposed, individually flexible panels of material aggregating a thickness sufficient to resist transverse buckling, relatively rigid metal edge bindings each embracing an edge of the package, and binding means around the package and adhered thereto to hold the edge bindings firmly in place, whereby relative shifting and sliding of individual panels is resisted and the rigidity of the package increased.

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3. A package of the class described comprising, in combination, a pile of panels which are individually flexible; a plurality of binders around the pile; protecting means interposed between the binders and edges of the pile and which cooperate to resist relative movement of the panels, thereby increasing the rigidity of the package; there being connection between binders and protecting means to prevent relative displacement thereof.

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4. A package of the class described comprising, in combination, a pile of individually flexible panels; side and end covers therefor; corner protectors overlapping the side and end covers for protecting the corners of the package; binders around the ends of the pile engaging said corner protectors; and adhesive

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