June 8, 1943. D. A. DI CICCO 2,321,187

MEANS FOR PACKAGING SHEET MATERIAL AND THE LIKE

Filed Jan. 7, 1942

FIG. 1.

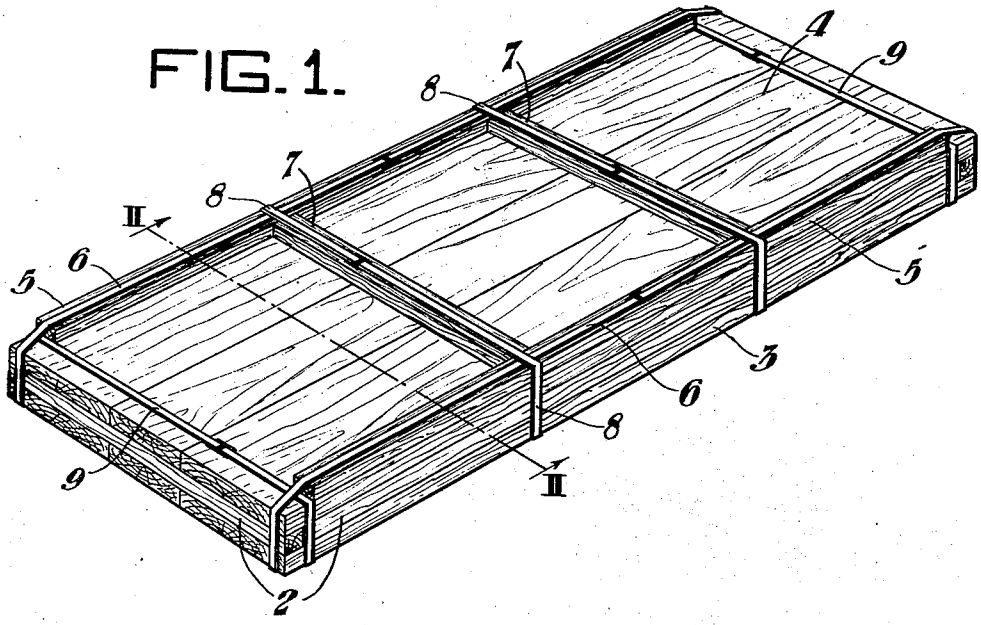


FIG. 2.

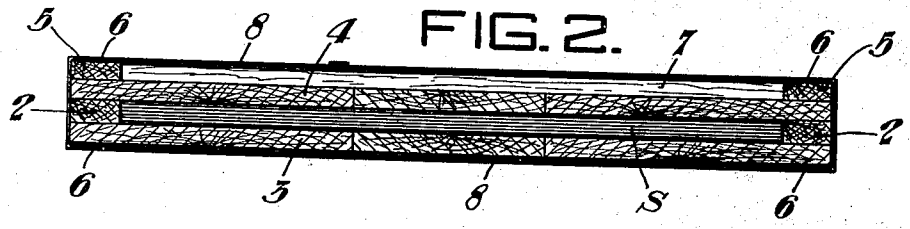
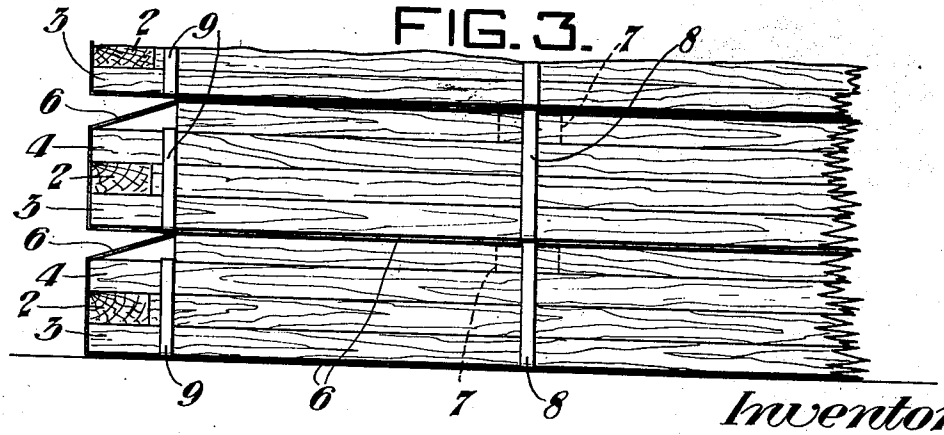


FIG. 3.



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MEANS FOR PACKAGING SHEET MATERIAL AND THE LIKE

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9 Claims. (Cl. 206—60)

This invention relates to a means for packaging sheet material and, particularly, to an improved means for packaging metallic sheet material and the like for shipment.

Various means and packages have been suggested and used for packaging sheet material, such as tin plate, stainless steel, and the like. Most of these packaging means have been unsatisfactory, either in that they were too expensive and cumbersome, or that they did not satisfactorily protect the packaged material from damage during shipment and the necessary handling relative thereto. Oftentimes such boxes or packages are piled one on top of the other, and in packing means heretofore used, the top sheets of the lowermost bundles or packages would become scratched, dented, or otherwise damaged due to the extreme weight of the uppermost bundles or packages, which, of course, was unsatisfactory. Also, it is customary to handle such bundles or packages by means of an overhead crane with the package being supported at each end thereof. If such packages or bundles are not rigid, it will be seen that they will tend to deflect or sag in the middle thereby resulting in damage to the sheets and providing a hazard to workmen in the vicinity of the package being moved. Furthermore, when such packages are piled one on top of the other, it is difficult to find a suitable place to attach the lifting cables of the crane when it is desired to remove the uppermost bundles or packages from the pile.

In the present invention there is provided a packaging means for sheet material wherein all of the above named disadvantages have been eliminated, and a packing means which is practical and satisfactory in every aspect.

Accordingly, it is one of the objects of the present invention to provide an improved means for packaging sheet material and the like which is simple and inexpensive in its construction and, at the same time, efficient and effective in its use.

It is another object of the invention to provide an improved means for packaging sheet material and the like which is strong and rugged in its construction, and a packaging means which will not detrimentally sag or deflect, thereby providing a packaging means in which the sheet material will not be damaged and, at the same time, one which is safe in its use.

It is a further object of this invention to provide an improved means for packaging sheet material and the like whereby the packages may be conveniently piled one on top of the other so as to permit quick and easy piling as well as the removal of the packages from the pile in a minimum amount of time.

It is still another object of the present invention to provide an improved means or box for packaging sheet material and the like in which the opposed edge portions of the box have a greater thickness than that of the bundle of material adapted to be disposed therein whereby substantially all of the stresses to which the box is adapted to be subjected are transmitted to the edge portions of the box so as to protect the packaged material from damage.

Various other objects and advantages of this invention will become more apparent during the course of the following specification and will be particularly pointed out in the appended claims.

In the accompanying drawing there is shown, for the purpose of illustration, one embodiment which my invention may assume in practice.

In the drawing:

Figure 1 is a perspective view of the improved packaging means or bundle of my invention;

Figure 2 is a section taken on line II—II of Figure 1; and

Figure 3 is a side elevation showing one end of a plurality of bundles of my invention, with the bundles being piled one on top of the other, the position they would assume during storage and shipment.

Referring more particularly to the drawing, the improved packaging means of my invention comprises a body member in the form of a rectangular-shaped box, preferably consisting of a rectangular-shaped frame-like member 2 made preferably from a plurality of wooden members nailed together at their ends. There is arranged, on the bottom side of the frame-like member 2, a planer member 3, and there is positioned on the top side of the frame-like member a similar planer member 4. Each of the planer members 3 and 4 consists preferably of a plurality of wooden members or planks laid side by side and extending throughout the length of the frame-like member. The material or sheets S to be packaged are adapted to be disposed in the opening in the frame-like member between the lower and upper planer members as shown in Figure 2 of the drawing.

There is disposed, preferably on the outer side of the top planer member 4, a pair of longitudinally extending strengthening members or runners 5 with one arranged along each of the longitudinally extending edges of the planer member. The strengthening members 5 are pref-

erably made of wood with the ends thereof terminating a short distance from the ends of the planer member so as to provide an offset portion at each end of the box or unit as shown in Figures 1 and 3 of the drawing. There is disposed around the frame-like member 2, both of the planer members 3 and 4, and each of the strengthening members 5 at each side of the bundle, a binding means preferably in the form of a flat metallic binding member or band 6 which is adapted to securely bind all of these members together.

There is mounted, on the upper planer member 4 between the strengthening members 5, a plurality of spaced apart laterally extending wooden members 7 which preferably have a thickness less than that of the strengthening members 5 for a purpose hereinafter to be described. The laterally extending members 7 preferably are spaced about two feet apart throughout the length of the planer member 4. There is disposed around the frame-like member 2, both of the planer members 3 and 4, the strengthening members 5, together with the metallic bands 6 arranged therearound, and at each of the laterally extending members 7, a similar binding means preferably in the form of a flat metallic binding member or band 8 which extends laterally around the members so as to firmly bind the same together into a unit. At each end of the unit adjacent the ends of the strengthening members 5 there is positioned preferably another flat metallic binding member or band 9 which is disposed around only the frame-like member and both of the planer members.

It is the purpose of the laterally extending members 7 to provide the unit with additional lateral support so as to prevent buckling of the members and the unit when the binding or banding means is placed around the same. It will be understood that the laterally extending members 7 are slightly thinner than the strengthening members or runners 5 so that the clip or securing means on the binding member or bands 8 will not be forced into the surface of the members 7 or into the surface of the bottom planer members 3 and, in turn, into the surface of the bottommost sheets of the material in a box when placed on top of the same in a manner as shown in Figure 3 of the drawing. It will be seen that by providing such a structure, the clip or securing means will be depressed below the top plane of the upper surfaces of the strengthening members or runners 5 so that the boxes or packages can be conveniently piled one on top of the other without the danger of damaging the sheets.

It will be seen further that when the bundles or boxes are piled one on top of the other, as shown in Figure 3 of the drawing, there is provided a space between the boxes at each end thereof due to the offset portions arranged on each end of the boxes. By providing such a construction, it will be seen that a cable or sling can be conveniently placed under each of the boxes at each end thereof whereby the boxes may be conveniently lifted from the top of the pile. As a result, it will be seen that it is not necessary to place wooden separators between the boxes when piled on top of each other in order to facilitate the handling thereof, as has been the practice heretofore.

It will be seen also that when the boxes are piled one on top of the other, the weight above each individual box is supported primarily by the strengthening members or runners 5 and the frame 2 of the box, thereby eliminating any load being transmitted to the sheet material within the box. That is, by providing such a construction, the edges of the box and unit are materially increased in thickness and have a thickness greater than the central or body portion of the box and where the sheet material is disposed, whereby substantially all of the stresses to which the box or unit might be subjected are transmitted to the strengthening members, the outer edges of the planer members, and the frame member, thereby protecting the sheets and eliminating any stresses being transmitted to the same. The strengthening members 5, in addition, reenforce the box thereby permitting the packing of more sheet material in any one box.

As a result of my invention, it will be seen that there is provided a packaging means which is relatively inexpensive in its construction and, at the same time, a packaging means which protects the sheet material from damage during the handling and shipping thereof. Furthermore, it will be seen that there is provided a package or box which can be conveniently and safely handled and transported from one point to another in a minimum amount of time.

While I have shown and described one specific embodiment of my invention, it will be understood that this embodiment is merely for the purpose of illustration and description and that various other forms may be devised within the scope of my invention, as defined in the appended claims.

I claim:

1. A package for shipping sheet material and the like comprising a rectangular shaped body member for housing the material, at least a pair of longitudinally extending strengthening members arranged on one side of said body member with one arranged along each of the longitudinally extending edges thereof, said strengthening members terminating a short distance from the extreme end of said body member, strengthening means arranged on said body member and extending between said strengthening members, and binding means arranged around the body member and said strengthening members and means both longitudinally and laterally thereof so as to securely bind said members and means together.

2. A package for shipping sheet material and the like comprising a rectangular shaped body member for housing the material, at least a pair of longitudinally extending strengthening members arranged on one side of said body member with one arranged along each of the longitudinally extending edges thereof, said strengthening members terminating a short distance from the extreme end of said body member, binding means arranged around the body member and said strengthening members longitudinally thereof so as to securely bind said members together, a plurality of spaced apart laterally extending members arranged on said body member between said longitudinally extending strengthening members throughout the length thereof, and binding means arranged around the body members, the strengthening members and each of said laterally extending members so as to firmly bind all of said members together.

3. A package for shipping sheet material and the like as defined in claim 2 wherein the laterally extending members have a thickness less than that of the longitudinally extending strengthening members.

4. Means for packaging sheet material and the like comprising a horizontally disposed rectangular shaped frame-like member with the material to be packaged adapted to be disposed therewithin, a planer member arranged on the bottom side of said frame-like member for closing the bottom side thereof, a similar planer member arranged on the top side of said frame-like member for closing the top side thereof, at least a pair of a longitudinally extending strengthening member arranged on the outer side of at least one of said planer members with one arranged along each of the longitudinally extending edges thereof, said strengthening members terminating a short distance from the extreme end of said planer member, strengthening means arranged on said planer member and extending between said strengthening members, and binding means arranged around the frame-like member, the planer members and each of said strengthening members and means both longitudinally and laterally thereof so as to securely bind all of said members and means together.

5. Means for packaging sheet material and the like comprising a horizontally disposed rectangular shaped frame-like member with the material to be packaged adapted to be disposed therewithin, a planer member arranged on the bottom side of said frame-like member for closing the bottom side thereof, a similar planer member arranged on the top side of said frame-like member for closing the top side thereof, at least a pair of a longitudinally extending strengthening member arranged on the outer side of at least one of said planer members with one arranged along each of the longitudinally extending edges thereof, said strengthening members terminating a short distance from the extreme end of said planer member, binding means arranged around the frame-like member, the planer members, and each of the said strengthening members longitudinally thereof so as to securely bind all of said members together, a plurality of spaced apart laterally extending members arranged on the planer member between said longitudinally extending strengthening members throughout the length thereof, and a binding means arranged around the frame-like member, both of the planer members, the strengthening members and each of said laterally extending members so as to firmly bind all of said members together.

6. Means for packaging sheet material and the like as defined in claim 5 wherein the laterally extending members have a thickness less than that of the longitudinally extending strengthening members.

7. Means for packaging sheet material and the like comprising a horizontally disposed wooden frame-like member with the material to be packaged adapted to be disposed therewithin, a wooden planer member arranged on the bottom side of said frame-like member for closing the bottom side thereof, a similar wooden plane member arranged on the top side of said frame-like member for closing the top side thereof, at least a pair of longitudinally extending wooden strengthening members arranged on the outer side of one of said planer members with one arranged along each of the longitudinally extending edges thereof, said strengthening members terminating a short distance from the extreme end of said planer member, strengthening means arranged on said planer member and extending between said strengthening members, a metallic binding member arranged around the frame-like member, the planer members together with each of the strengthening members and means both longitudinally and laterally thereof for firmly binding all of said members and means together.

8. Means for packaging sheet material and the like comprising a horizontally disposed wooden frame-like member with the material to be packaged adapted to be disposed therewithin, a wooden planer member arranged on the bottom side of said frame-like member for closing the bottom side thereof, a similar wooden planer member arranged on the top side of said frame-like member for closing the top side thereof, at least a pair of longitudinally extending wooden strengthening members arranged on the outer side of one of said planer members with one arranged along each of the longitudinally extending edges thereof, said strengthening members terminating a short distance from the extreme end of said planer member, a metallic binding member arranged around the frame-like member, the planer members together with each of the strengthening members longitudinally thereof for firmly binding all of said members together, a plurality of spaced apart laterally extending wooden members arranged on the planer member between said longitudinally extending strengthening members throughout the length thereof, and a similar metallic binding member arranged around the frame-like member, both of the planer members, both of the strengthening members, and each of said laterally extending members so as to firmly bind all of said members together.

9. Means for packaging sheet material and the like as defined in claim 8 wherein the laterally extending wooden members have a thickness less than that of the longitudinally extending wooden strengthening members.

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