Dec. 11, 1934. P. J. MORRISROE 1,983,868

WATERPROOF SHIPPING PACKAGE

Filed May 20, 1931 2 Sheets-Sheet 1

Fig. 1.

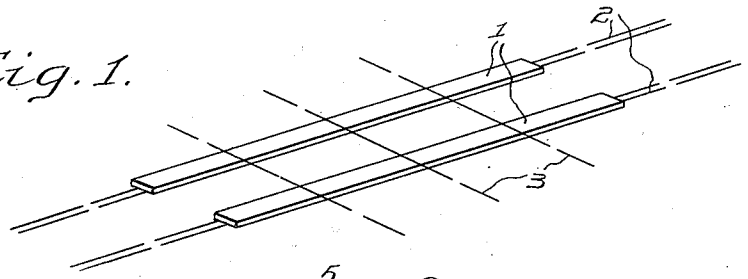


Fig. 2.

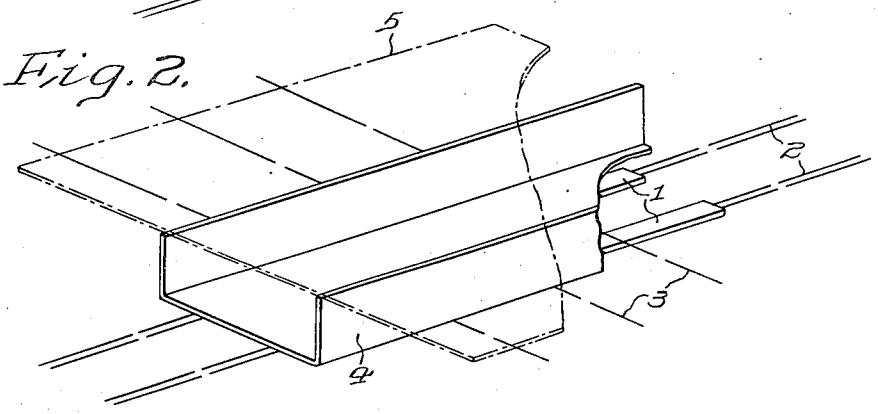


Fig. 3.

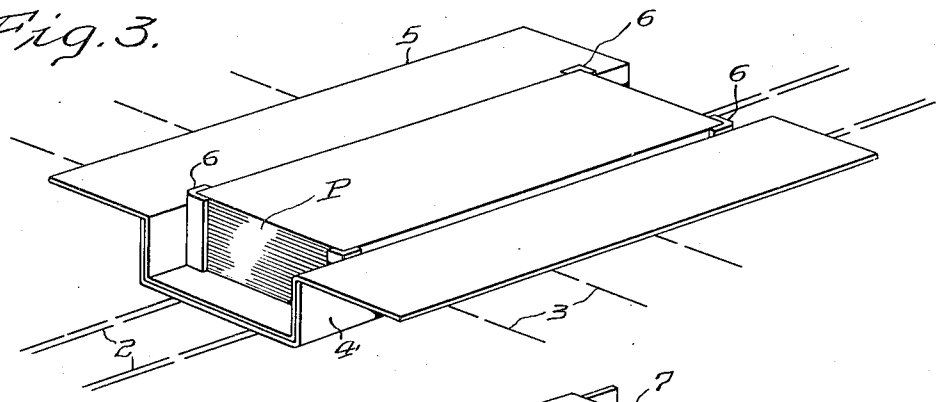
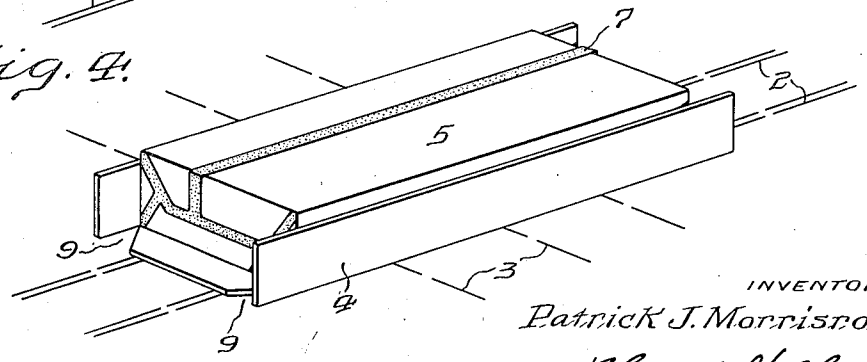


Fig. 4.



INVENTOR

Patrick J. Morrisroe.

BY Blount & Walker

ATTORNEYS

WITNESS

F. J. Hartman.

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Fig. 5.

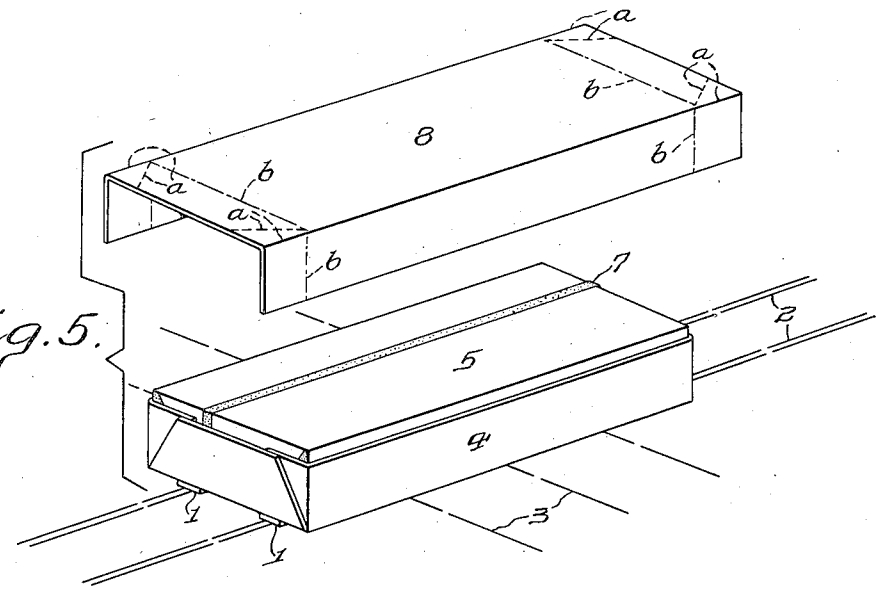


Fig. 6.

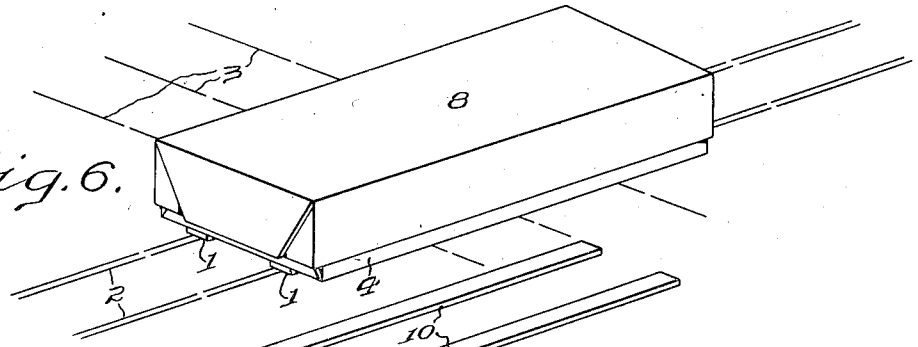


Fig. 7.

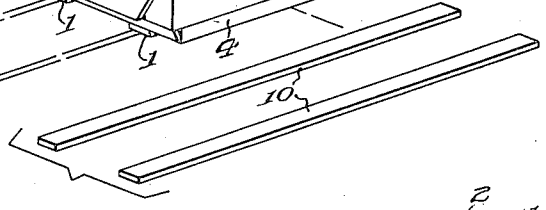


Fig. 8.

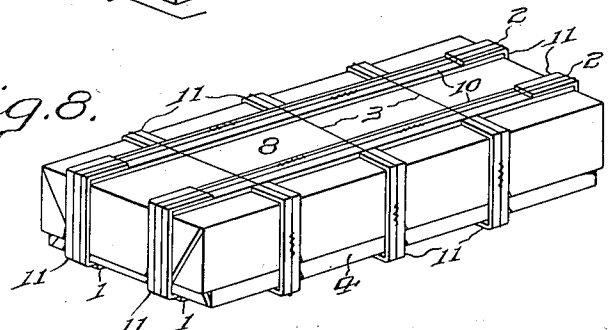
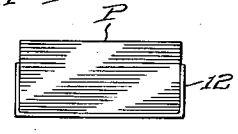


Fig. 9.



INVENTOR
Patrick J. Morrisroe.
BY Blount & Stebbins
ATTORNEYS

WITNESS
F. J. Hartman.

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UNITED STATES PATENT OFFICE

1,983,868

WATERPROOF SHIPPING PACKAGE

Patrick J. Morrisroe, Youngstown, Ohio

Application May 20, 1931, Serial No. 538,639

3 Claims. (Cl. 206—60)

The present invention is directed to the provision of an improved waterproof package adapted to protect sheets, plates and the like from damage during shipment caused by contact with water or atmospheric dampness and also to afford protection against bending or abrasion during the handling of the packages.

Metal sheets and plates, more particularly those classes of sheets known to the trade as "full finished" sheets, galvanized sheets and the like, are ordinarily shipped in packs or bundles which have heretofore usually been wrapped in heavy waterproofed paper for the purpose of protecting the sheets from moisture, and each paper wrapped package has sometimes been wrapped in a metal covering sheet, the latter being folded at the ends in a manner similar to that employed for wrapping ordinary packages in paper. The folding of the covering sheet, however, is a difficult operation and usually results in the sheet becoming wrinkled; in such cases it has been customary to flatten the wrinkles by hammering with a wooden mallet or similar tool, but it often happens that this tears the waterproof paper underneath the covering sheet, so that the sheets or other articles within the package are thenceforth not fully protected against moisture during subsequent shipment or other exposure of the package, and rusting of the sheets, or "white rusting" of the galvanized coating thereof, ensues.

So far as I am aware, no satisfactory package for sheets of this class has heretofore been devised which is capable of affording full protection to the sheets against moisture encountered during transit, and it has therefore been the usual practice to ship the packages of sheets from the mill in closed box cars either direct to their ultimate destination or to a designated port when a shipment by boat is required, in order to protect the sheets from exposure to the weather. On arrival at the port, it is then necessary to manually unload the packages from the box car before they can be picked up by the cranes usually employed for loading ships at a dock, so that it is readily apparent that a substantial portion of the shipping costs of sheets and the like results from the necessity of avoiding exposure of the packages to the weather.

A principal object of my invention, therefore, is to provide a package which is impermeable to moisture, thus permitting the packaged sheets to be loaded in open freight cars at the mill and transferred directly from the open cars into the hold of a ship when run alongside thereof at the dock, as when they are to form part of a water borne cargo, or to be safely shipped in such cars to the consignee when transfer to a boat is not required to reach their ultimate destination.

A further object of my invention is to provide a weatherproof package in which the corners of the sheets are protected from bending under the influence of blows received during handling or shipment whereby the damage to the sheets which commonly results from such sources is substantially eliminated.

A further object of my invention is to provide a package for sheets and the like which is completely sealed whereby the rusting of uncoated sheets or the white rusting of coated or galvanized sheets due to contact of water or moisture with the sheets is prevented.

A still further object of my invention is to provide a package in which the wrapping material is so arranged that any water or moisture deposited upon the top of the package will tend to run off rather than into the package; which may be cheaply and rapidly constructed; which provides a convenient receptacle for the sheets after it is opened and through the use of which the receipt of the sheets in perfect condition by the customer is substantially assured.

Other purposes, objects and advantages of my invention are herafter pointed out or will be understood from the following description of a preferred embodiment thereof, in which reference will be had to the accompanying drawings.

It will be understood that my improved package is progressively built up to its ultimate form, and the said drawings are designed to show, somewhat diagrammatically, the succession of steps incident to the construction of a preferred embodiment of the invention which comprises, essentially, a wrapping of waterproof paper about the pack of sheets, a metallic covering therefor formed of upper and lower complementary sections, means, generally in the form of wires, for maintaining the parts in assembled relation, and, preferably, a pair of supporting skids. Thus, in the drawings, the first eight figures of which are in perspective, Fig. 1 shows the skids with binding wires associated therewith in position to receive the lower section of the metallic covering; Fig. 2 shows the said section disposed on the skids with the sheet of waterproof wrapping paper (indicated in dot and dash lines) in position to receive the pack of sheets, portions of the paper and cover sec-

tion being broken away for the sake of clearness; Fig. 3 shows the sheets lowered into the cover section upon the paper; Fig. 4 shows the paper sealed about the sheets and the ends of the lower cover section cut preparatory to folding; Fig. 5 shows the same parts after the ends of the cover section have been completely folded, as well as the upper cover section just prior to its being lowered into place; Fig. 6 shows the upper cover section in position over the lower cover section with its ends cut and folded into place; Fig. 7 shows the strips which are preferably disposed on the upper surface of the upper cover section preparatory to the parts being bound together, and Fig. 8 shows the completed package. Fig. 9 is a transverse section through a pack of sheets preparatory to their being enclosed in the package and showing associated therewith an edge protector which, under some conditions, may desirably be employed. Like characters of reference are used to designate the same parts throughout the drawings, and it will be understood that in the latter the relative thickness of the sheet metal parts, paper and the like has necessarily been exaggerated.

More particularly in the formation of my improved package, I first provide a pair of skids 1 which may be wooden strips of sufficient width and thickness to afford the desired strength and of substantially the same length as the pack of sheets. To the under sides of the skids longitudinal tie wires 2 or any other convenient binding means, such as metal straps, are next secured, as by staples or the like, while on top of the skids at suitably spaced intervals are placed lateral tie wires 3 extending transversely of the skids which are disposed parallel to each other on a floor or other suitable support (Fig. 1). Next, the lower cover section 4 of sheet metal of channel section is placed symmetrically on the skids, the cover section 4 being several inches longer and wider than the pack of sheets to be wrapped, so that when in position on the skids it projects somewhat beyond the ends and sides thereof, its sides thus extending upward substantially at right angles to its bottom (Fig. 2). A sheet of waterproof paper 5 is now placed on the upper edges of the cover section 4 and a pack of sheets P lowered into it between its bent-up sides and substantially centrally thereof, thus carrying the adjacent portion of the paper 5 downwardly (Fig. 3), and an angular corner protector 6 of metal or other suitable material is desirably placed adjacent each of the corners of the pack to protect the sheets against damage at these points. The lateral margins of the paper 5 are next folded over the top of the pack and the ends of the paper inwardly against the ends of the pack with the outer folds pointing downwardly, after which all seams may be sealed by application of tar 7, or any other suitable sealing material, so as to completely seal the interior of the package against the admission of moisture (Fig. 4). It will be understood that a completely waterproof package has now been provided, but as the waterproofing is obtained from use of the waterproof paper which is readily torn in transit if not protected, the lower cover section 4 and similar complementary upper cover section 8 formed of sheet metal of suitable thickness are arranged outside this package for the protection of the paper as well as of the sheets enclosed therein.

After the sealing of the paper package has been completed, the ends of the lower cover section 4 are cut out as indicated at 9 and the remaining portions thereof folded inwardly (Fig. 5), after which the upper cover section 8, which is of substantially the same size and shape as the lower section, is lowered into place over the package and its ends cut along the lines *a* and folded inwardly and downwardly along the lines *b* (Fig. 6), thus providing a complete metal encased waterproof package, the relatively heavy outer metal covering of which is devoid of wrinkles and fully effective to prevent the tearing of the inner waterproof paper covering and/or damage to the sheets from impact during handling or transit. Under certain circumstances it may be more convenient to cut the ends of either or both cover sections before they are disposed about the sheets.

The package is now in condition for tying, and to prevent the wrinkling of the cover or damage to the ends of the pack of sheets from the pressure thereagainst of the tie wires, as well as to afford additional rigidity to the package, I preferably provide longitudinal strips 10 of wood of substantially the same length as the upper cover section and place them on top of the latter in alignment with the longitudinal tie wires 2, while metallic or other suitable corner protectors 11 may be disposed at the corner edges of the package for engagement therewith under the several tie wires to prevent the latter from cutting said edges. Both the lateral and the longitudinal tie wires are thereafter respectively brought together over the package and tied or twisted together in the usual way or otherwise united by any means suitable to insure their tightly holding the several parts of the package in proper relation. The package, as shown in Fig. 8, is then ready for shipment.

As will be apparent from an inspection of the drawings, all folds or other seams in my improved package, insofar as is possible, are lapped downwardly, so that any water falling on top of the package will tend to run down the outside thereof rather than penetrate it.

The edge protector which I have shown in association with a pack of sheets in Fig. 9 comprises merely a sheet of metal 12 suitably bent up at right angles adjacent its lateral edges to form a trough within which the pack of sheets is received before being lowered into the outer covering 4 and paper 5 as hereinabove described with reference to Fig. 3; it may desirably be employed when the package is likely to be subjected to exceptionally rough handling or when there is a possibility that crowbars or other levers may be inserted beneath its lower lateral corners to assist in moving it about.

I have found that my improved package is fully effective to prevent damage to the sheets from rusting or other deterioration due to moisture, even when the packages are shipped in open freight cars during wet weather, and also when transported by sea where the atmospheric moisture quickly attacks substantially all base metals not properly protected thereagainst. Additionally, my improved package is adapted to prevent injury to the edges and corners of the sheets from impact resulting from rough handling or the like while the rigidity of the outer metal covering supplemented by the skids 1 and the strips 10 is sufficient to prevent bending of the sheets and the latter are thus received, after

transit, in substantially the same condition in which they were originally packed.

When the package reaches the consumer it can be readily opened by cutting the tie wires, raising the upper cover section and tearing away the waterproof paper, thus exposing the topmost sheet of the pack. Under conditions in which but a few sheets are removed at a time, the unused remainder of the pack may desirably be left in the bottom of the package and the upper cover section replaced until such time as further sheets are required. This feature is one which has a considerable appeal to users of sheets since it facilitates keeping unused sheets in good condition after the package has been opened as well as providing a convenient and suitable receptacle for containing them.

While I have herein described a preferred embodiment of my invention with considerable particularity, it will be understood that I do not desire or intend to limit myself specifically thereto as, if desired, numerous changes and modifications may be made therein, such, for example, as the substitution of metal binding strips for the tie wires, or the use of metal instead of wooden skids for the support of the package or omission of the edge and corner protectors or variation in their form and arrangement and the like and, further, that the order of performing the various operations incident to the formation of the package may be varied from that to which I have referred, without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, I claim and desire to protect by Letters Patent of the United States:

1. A package enclosing a pack of sheets and comprising a waterproof paper wrapping surrounding the pack, corner protectors disposed at the corners of the pack within said wrapping, means adapted to seal the seams of said wrapping, a relatively rigid metallic outer cover comprising a pair of telescopic sections and completely enclosing said wrapping, and rigid stiffening means secured underneath the outer cover adapted to support the package.

2. A package enclosing a pack of sheets and comprising a waterproof paper wrapping surrounding the pack, corner protectors disposed at the corners of the pack within said wrapping, means adapted to seal the seams of said wrapping, a relatively rigid metallic outer cover comprising a pair of telescopic sections and completely enclosing said wrapping, skids secured underneath the outer cover adapted to support the package, and binding means extending both longitudinally and transversely about the cover operative to hold the sections thereof in assembled relation.

3. A weatherproof shipping package for a pack of sheets comprising a wrapping of waterproof paper folded about and wholly enclosing the pack and having its seams sealed against the entrance of moisture, corner protectors disposed adjacent the corners of the sheets, a cover wholly enclosing said wrapping and protectors and comprising a pair of complementary telescopic upper and lower sections formed of sheet metal and having their ends cut and folded inwardly, the marginal edges of the upper section extending downwardly over the corresponding edges of the lower section, skids disposed in spaced parallel relation beneath the lower section and extending longitudinally thereof, strips disposed in parallel relation on the upper surface of the upper section and extending longitudinally thereof, binding wires extending longitudinally about both sections along said skids and strips, and other binding wires extending transversely about both sections whereby the latter are maintained in assembled relation.

PATRICK J. MORRISROE.