G. F. BEHRINGER.

METAL PACKING BOX.

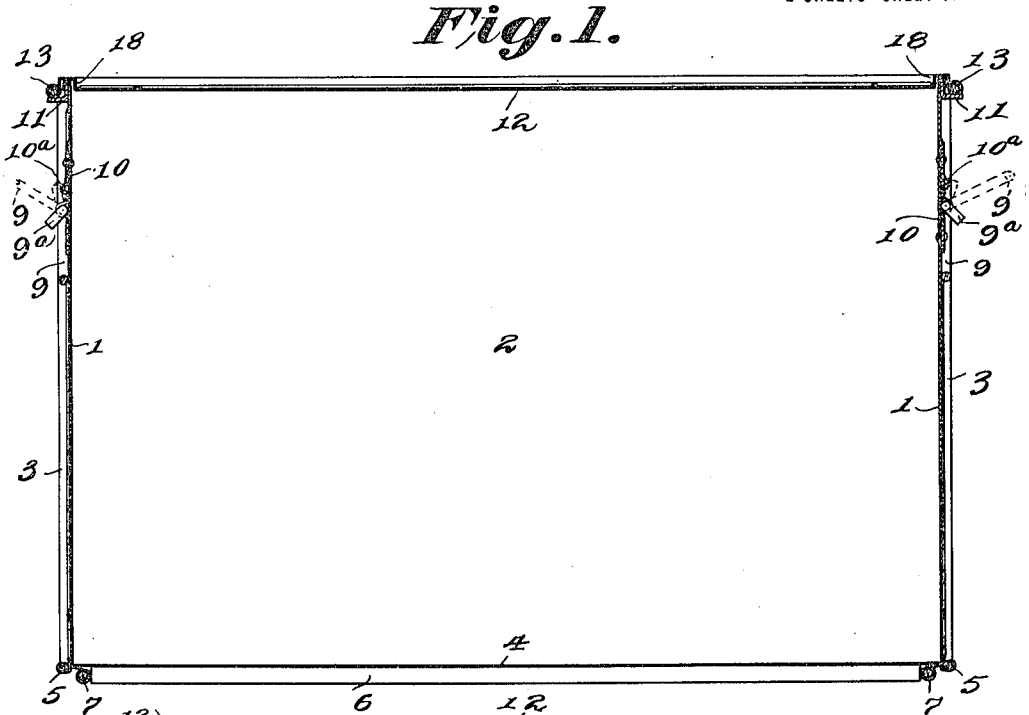
APPLICATION FILED JUNE 24, 1914.

1,291,693.

Patented Jan. 14, 1919.

2 SHEETS—SHEET 1.

Fig. 1.



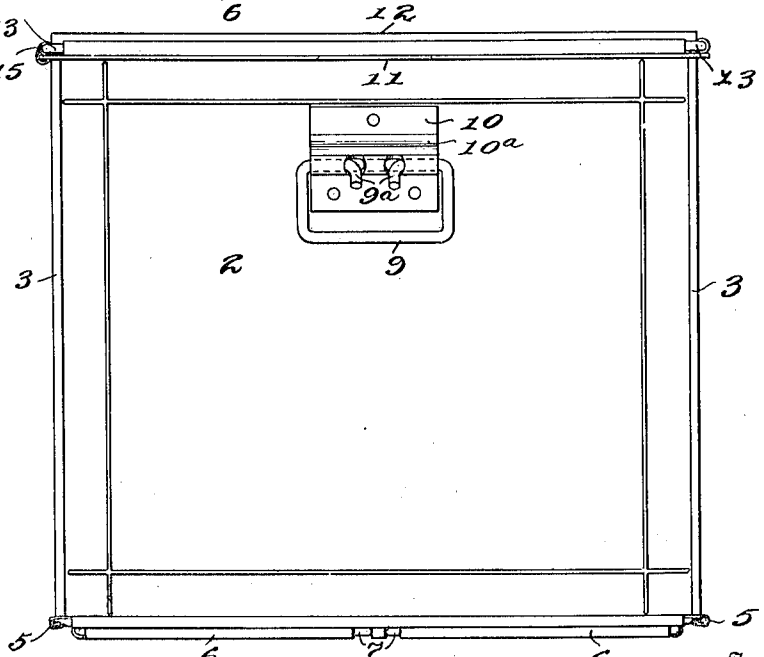


Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

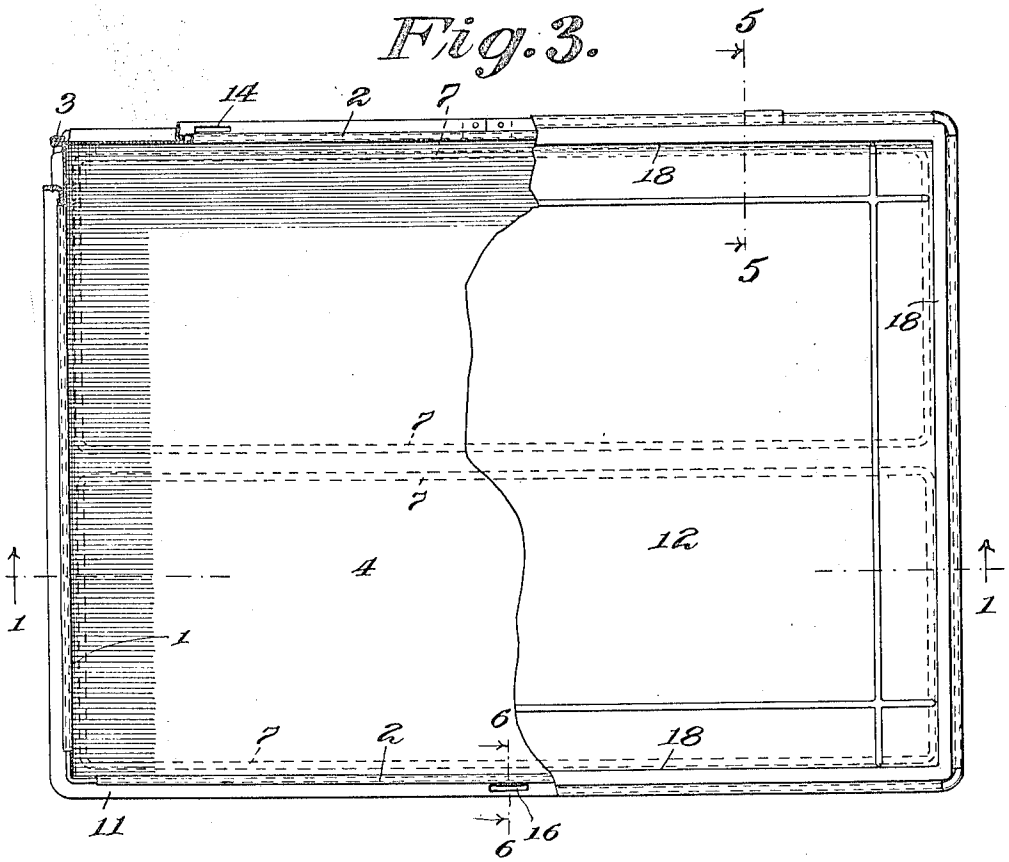


Fig. 4.

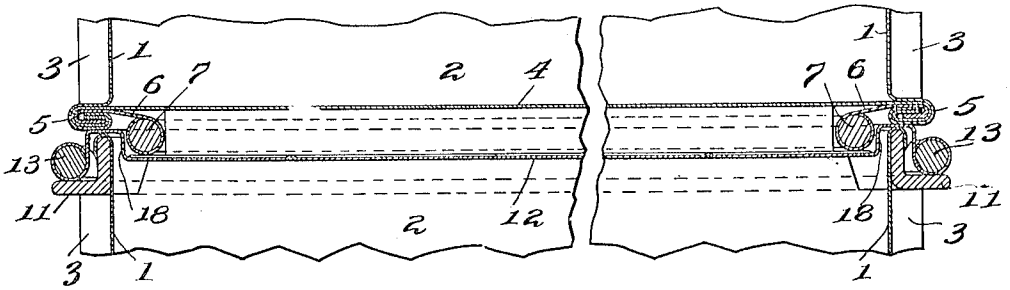
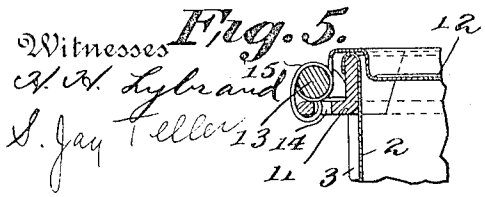
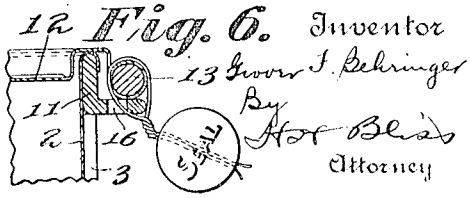


Fig. 5.



Witnesses
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Fig. 6.



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UNITED STATES PATENT OFFICE.

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METAL PACKING-BOX.

1,291,693. Specification of Letters Patent. Patented Jan. 14, 1919.

Application filed June 24, 1914. Serial No. 847,038.

To all whom it may concern:

Be it known that I, GROVER F. BEHRINGER, a citizen of the United States, residing at Defiance, in the county of Defiance and State of Ohio, have invented certain new and useful Improvements in Metal Packing-Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates especially to sheet metal boxes of the sort used for storing and packing for shipment small articles such as cartons or bottles containing solid materials or liquids of various sorts. Boxes of this sort are usually made rectangular in shape and are frequently, though for some purposes not necessarily, provided with covers. This invention relates especially to covered boxes. It has been usual to construct boxes of this sort with a reinforcing or stiffening flange around the interior near the top. Such an inward projecting reinforcing flange or ledge is sometimes objectionable, especially when the box is to be used for the packing of cartons such as are used for sugar and similar commodities. One of the objects of this invention is to provide a box which is very stiff and rigid and which at the same time has the inner surfaces of its walls entirely free from inward projections from top to bottom so as to permit the ready insertion or removal of articles.

A further object of the invention is to provide an improved cover construction. It has been customary heretofore to construct covered boxes of this sort with the cover arranged to lie between the upper edge parts of the side and end walls. This construction, while admirable for some purposes, is objectionable for others. When articles such as sugar cartons are to be packed it is essential that they be kept dry and this has been impossible with a cover positioned between the walls. By my invention I provide a cover which extends over the tops of the walls, thus entirely closing the top of the box and preventing the access of water to the interior.

A still further object of the invention is to provide improved means whereby a number of the boxes may be "stacked" in a vertical column. The bottom of the box is provided with a downward projecting stacking flange and a part of the cover is depressed so as to receive this flange and prevent the movement of an upper box horizontally with respect to a lower box.

Other objects will be apparent from the following specification and claims.

Of the accompanying drawings, which, for the sake of illustration, show one embodiment of the invention,

Figure 1 is a vertical sectional view taken along the line 1—1 of Fig. 3;

Fig. 2 is an end view;

Fig. 3 is a plan view with a part of the cover broken away;

Fig. 4 is an enlarged fragmentary sectional view taken along the line 1—1 of Fig. 3, and showing the stacking of one box upon another;

Fig. 5 is an enlarged detail sectional view taken along the line 5—5 of Fig. 3;

Fig. 6 is an enlarged detail sectional view taken along the line 6—6 of Fig. 3.

Referring to the drawings, 1, 1 and 2, 2 represent, respectively, the vertical end and side walls of the box. These walls are crimped together at the corners to form seams 3, 3. 4 represents the bottom of the box which is preferably (but not necessarily) formed of a single sheet of metal as indicated. The sheet metal bottom is crimped with the side and end walls to form supporting flanges 5, 5 about the edges of the box. Crimped with the metal of the bottom and of the side and end walls are supplemental strips 6, 6, which at their inner edges are beaded to inclose a stacking wire 7. Preferably, as indicated by dotted lines in Fig. 3, the stacking wire 7 is formed in two rectangular sections, the two adjacent parts of the rectangles which extend across the center of the box serving as a supplemental means of support for the bottom. It will be observed that when the box is resting upon a smooth floor it will be supported by the stacking flange which comprises the wire or wires 7 and the strips 6 which hold them in place.

For convenience in handling the box I provide handles at the ends. Each handle comprises the wire grip member 9 and the sheet metal pivot plate 10. The plate 10 is provided with a corrugation to receive the inner side of the rectangular grip member 9, and the corrugation has two apertures through which project the bent ends 9^a of the grip member. Above the pivot corrugation the plate 10 is formed with a corruga-

tion 10^a, which serves as a stop for the parts 9^a of the grip member, thus limiting the upward movement of the grip member to the position shown by dotted lines at the left-hand side of Fig. 1. It will be understood that as to the details of the handle, there can be considerable variation.

For reinforcing the upper edge parts of the box I provide a flange which projects outward from the walls so as to leave their inner surfaces entirely free. Preferably this flange is in the form of an angle iron 11 which is bent into rectangular form and has its ends joined in any suitable way. The angle iron 11 is arranged with its vertical leg at the inside and with its horizontal leg at the bottom. The angle iron is fitted around the top of the box and rests at the corners thereof upon the tops of the corner crimps 3, 3. The top edge parts of the side and end walls are bent outward and downward over the top edge of the angle iron and serve to hold it in place. This angle iron 11 serves to greatly stiffen the upper edge parts of the box without, however, in any way obstructing the interior.

12 is a sheet metal cover which extends over the entire box. It is turned downward at its edges and is beaded around a reinforcing wire 13. The arrangement is such that the beading at 13 will rest upon the top surface of the horizontal leg of the angle iron 11. It will be noted that the cover entirely closes the top of the box and thus effectually prevents any moisture reaching the interior.

The cover 12 is suitably hinged to the angle iron 11. As shown, the angle iron 11 is provided along one side with two slots 14, and the sheet metal of the cover is cut away at corresponding points to expose the reinforcing wire 13. Loop members 15 extend around the wire 13 at the exposed points and around the metal of the angle iron outside of the slots, thus providing a pivotal connection between the edge of the cover and the angle iron.

In order to provide a convenient means for locking and sealing the box, the angle iron 11 is provided at the opposite side with a slot 16 and the cover has a hole 17 at the corresponding place. A seal wire can be inserted through the hole 17 and through the slot 16 to seal the box.

Preferably, in order to permit several of the boxes to be stacked in a vertical column, the main body part of the cover 12 is depressed to permit the stacking flange 7 to drop below the top of the box and to permit the supporting flanges 5, 5 to come into contact with the edge parts of the cover. At the sides and ends of the depressed part of the cover there are formed vertical walls 18, 18, which serve to engage the stacking flange 7 and to prevent the horizontal movement of the upper box with respect to the lower.

It will be seen that the parts designated 6 and 7 constitute an inset supporting and stacking element located below the bottom of the box and within the confines of the space that would be bounded by the walls thereof should they be extended downward as far as such stacking element. The central depressed portion of the cover of the box when in place is in the horizontal plane of the strengthening strip 11 around the upper edge of the box and is of a size to receive and fit the said inset supporting and stacking element of another box that may be placed thereon, so that the boxes, when stacked one upon another, furnish firm bracing for each other and prevent any lateral movement of one relative to the other. When the boxes are thus stacked, the interlocking element, 6, 7, at the bottom of one box lies close to the top reinforcing strip of the box on which it sits, and the crimped lower supporting flanges 5 of the upper box rest upon the bracing angle strip 11 of the box below, the cover of the lower box closing it, and in nowise interfering with the stacking of the boxes. By the arrangement described, the stresses incident to the tendency of one box to shift laterally relative to the other is taken by the strengthening rib or strip 11, and not by the cover alone or by the unstrengthening vertical walls of the box.

In the drawings I have illustrated my invention as embodied in a box intended primarily for the packing of cartons and similar rectangular articles, but it will be understood that the box can be readily adapted for the packing of bottles by providing partition cells of the usual sort.

The outward extending horizontal supporting flange which I provide is to be distinguished from a mere outward bending of the sheet metal of the side and end walls whether or not stiffened by a reinforcing wire or bar. The construction shown in my earlier Patent No. 825,133 is typical of those earlier constructions to which I refer.

What I claim is:

A sheet metal packing box having vertical walls, an angular reinforcing brace bar secured to the outer surfaces of the walls at their upper edges, a bottom with an inset supporting and stacking element extending below the lower edges of the walls of the box, and formed with a rectangular bracing bead, and a beaded cover for the box overlying the reinforced top edges thereof, and having a central depressed portion that lies within the said reinforced top edge, the size of the depressed portion of the cover being such that the inset supporting and stacking element at the bottom of a similar box will

fit closely therein and be held from lateral movements thereby, the said coöperating stacking and movement-preventing elements being inside the confines of the walls of the boxes and the bead on the cover and the bead on the stacking element both being in substantially the horizontal plane of said reinforcing angle bar whereby the latter takes the strains due to the tendency of a superposed box to shift relative to the one below.

In testimony whereof I affix my signature in presence of two witnesses.

GROVER F. BEHRINGER.

Witnesses:

FRANK P. SCHNEIDER,

DEY AYERS.