H. H. CUMMER.

COLLAPSIBLE BOX.

APPLICATION FILED NOV. 22, 1915.

1,214,012.

Patented Jan. 30, 1917

2 SHEETS—SHEET 1.

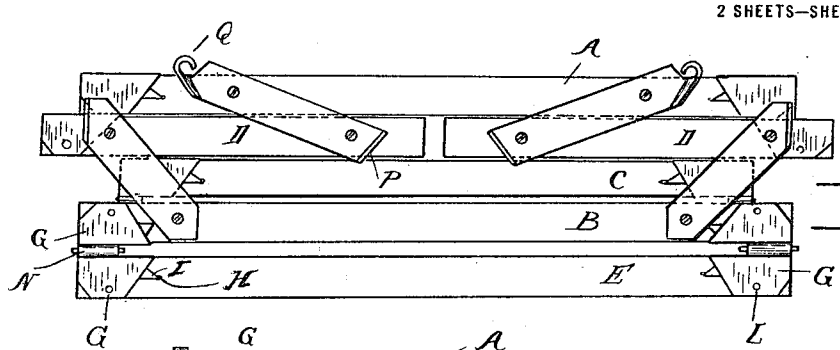


Fig. 1.

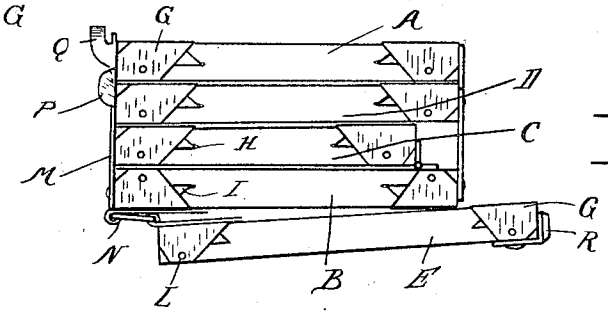
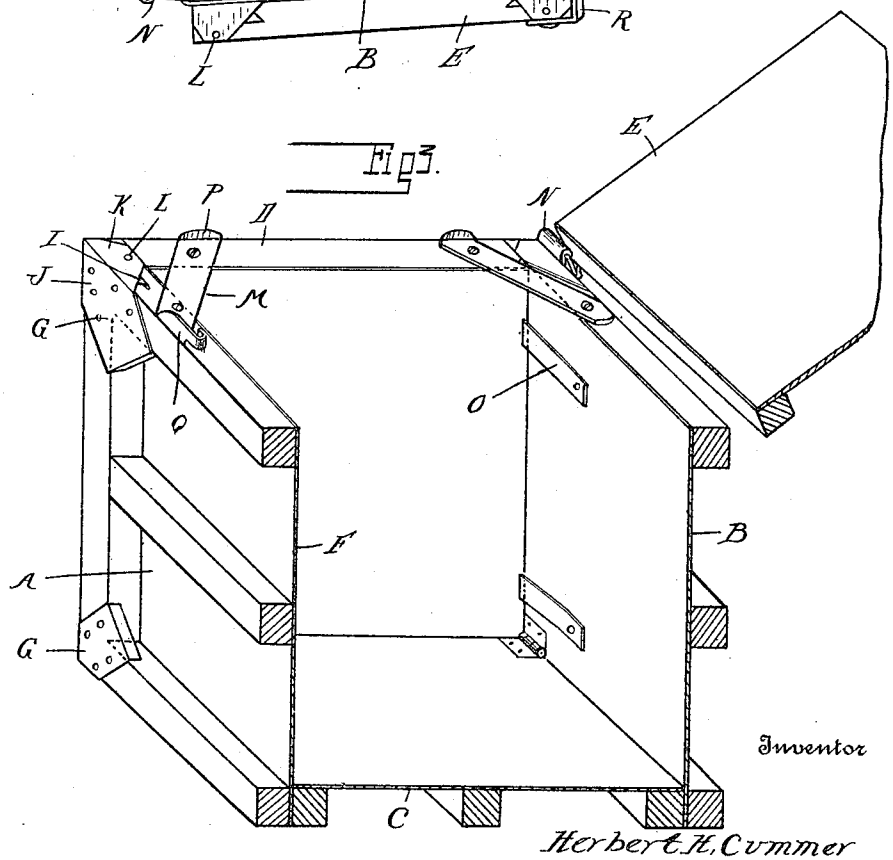


Fig. 2.

Fig. 3.



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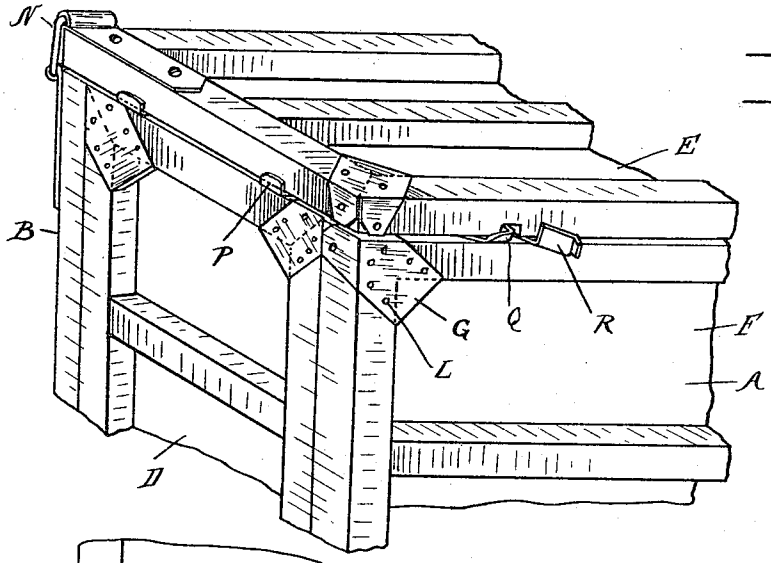


Fig. 4.

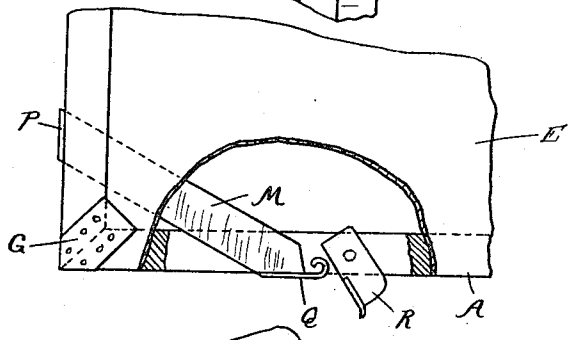


Fig. 5.

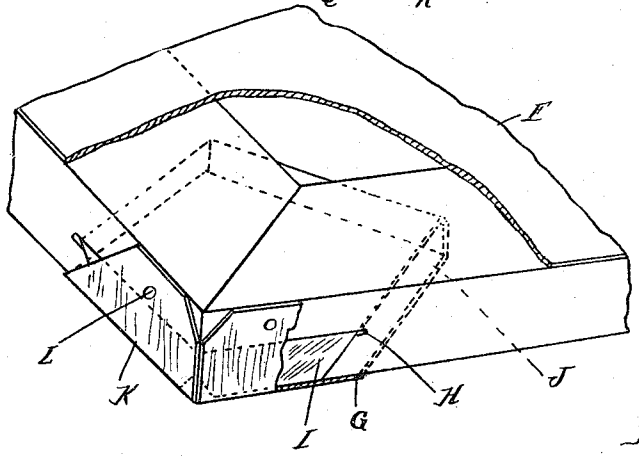


Fig. 6.

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UNITED STATES PATENT OFFICE.

HERBERT H. CUMMER, OF CADILLAC, MICHIGAN.

COLLAPSIBLE BOX.

1,214,012. Specification of Letters Patent. Patented Jan. 30, 1917.

Application filed November 22, 1915. Serial No. 62,739.

To all whom it may concern:

Be it known that I, HERBERT H. CUMMER, a citizen of the United States of America, residing at Cadillac, in the county of Wexford and State of Michigan, have invented certain new and useful Improvements in Collapsible Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to collapsible boxes, and is more particularly designed for use as a shipping box for bread. It is the object of the invention to obtain a simple, light and moisture-proof construction, which when not in use may be collapsed into a small symmetrical package.

In the drawings: Figure 1 is a side elevation of the box in collapsed position; Fig. 2 is an end elevation thereof; Fig. 3 is a sectional perspective view showing the box expanded and ready for use; Fig. 4 is a similar view with the cover closed; Fig. 5 is a plan view showing the locking mechanism for the cover; and Fig. 6 is a perspective view showing one of the side sections and the manner of bracing the corner thereof.

My improved box is of rectangular form and comprises front and rear sections A and B, bottom section C, end sections D and a cover section E. Each of these sections is preferably formed of a frame, to the inner side of which is attached a facing F, preferably of sheet metal. The frames are also preferably composed of wooden strips having mitered corners secured to each other by metallic reinforcements G. These reinforcements are sheet metal strips which engage grooves or saw kerfs H in the ends of the wooden strips, forming a coupling therebetween, the outer end of the metal strip being bent upward at I, and the inner end being bent upward and then forward at J and downward at K, to embrace and secure the wooden strips. Nails or other securing devices L are also employed for attaching the metal strip to the wood.

To form a collapsible construction the sides and ends of the box are attached to each other by pivotal links M which in extended position form diagonal braces at the corners. The proportioning of these links is such as to permit of the folding of the ends in between and in parallelism with the front and rear sides, as indicated in Fig. 1. The bottom C is hinged to one of the sides and is so proportioned as to fold from a plane perpendicular to the sides into parallelism therewith, as also indicated in Figs. 1 and 2. The top E is hinged, preferably to the same side, with a link hinge N, which permits folding from a position for closing the top to a position in parallelism with the side to which it is hinged and upon the opposite face thereof from the folded bottom section.

To collapse the box the bottom C is first folded into parallelism with the side B and then the top is folded into parallelism with said side B opposite the bottom C. The remainder of the box is collapsed by folding ends D into parallelism with sides A and B, the ends of ends D abutting the side A being swung inward and the ends of ends D abutting the side B being swung outward.

The box is held in extended position by catches O, which spring inward and abut against the ends to prevent the folding thereof. To hold the top in position and in registration with the ends and sides, stops P are provided, and these are preferably formed integral with the braces M. The ends of these braces which are adjacent to the ends of the box have upwardly-extending stops which hold the cover from endwise movement, while the front braces have upwardly-extending flanges Q which are cut-away to engage with the pivotal catch R on the lower face of the cover. The arrangement is such that when the cover is in place and the catches R are fastened it is held from displacement in any direction, endwise movement being prevented by the stops P and sidewise movement by the stops Q and the hinges N. The body of the box is also held rigidly in rectangular form by the brace links M, together with the bottom section C which fits within the sides and ends, and the catches O. As the lining of the box is formed of sheet metal it will be substantially moisture-proof, which is a desirable feature where used for the shipment of bread and similar articles.

What I claim as my invention is:—

1. In a shipping box, a section comprising a wooden frame having mitered side rails with registering saw-kerfs transversely of the ends thereof, a metallic strip extending through said registering kerfs and bent over one side of said rails to form a corner reinforcement, and a metal facing plate upon the opposite sides of said rails closing the space within said frame.

2. In a collapsible shipping box, side and end sections, pivotal links connecting said sections to form diagonal corner braces and adapted to permit the folding of the ends between and into parallelism with the sides, and a bottom section hinged to one of said sides extending between and abutting against said sides and ends and foldable into parallelism with the sides.

3. In a collapsible shipping box, side and end sections, pivotal links connecting said sections, forming diagonal corner braces and permitting of the folding of the ends between and into parallelism with said sides, and a bottom section hinged to one of said sides extending between and abutting against the sides and ends, and supported by said diagonal corner braces, being foldable into parallelism with the sides.

4. In a collapsible shipping box, side and end sections, pivotal links connecting said sections and forming diagonal corner braces at the bottom and top thereof, a bottom section hinged to one of said sides, extending between and abutting against said sides and ends and supported by the bottom diagonal corner braces, and a top hinged to a side fitting over said top diagonal braces and guided thereby.

5. In a collapsible shipping box, side and end sections, pivotal links connecting said sections, forming diagonal corner braces at the bottom and top thereof and permitting the folding of the ends between and into parallelism with said sides, a bottom section fitting between the sides and ends and supported on said bottom corner braces, a top section, and lugs projecting from said corner braces forming guide stops for said top.

6. In a collapsible shipping box, side and end sections, pivotal links connecting said side and end sections, forming diagonal corner braces and permitting of the folding of the ends in between and into parallelism with said sides, a top section hinged to one of said sides, lugs projecting from said links forming guides and stops for positioning said top section, and a catch on said top section having a locking engagement with one of said lugs.

7. In a collapsible shipping box, side and end sections, pivotal links connecting said sections at bottom and top thereof, forming diagonal corner braces and permitting of the folding of the ends in between and in parallelism with said sides, a bottom section hinged to the inner face of one of said sides and foldable into parallelism therewith, and a top section hinged to the outer face of said side and foldable into parallelism therewith.

8. In a collapsible shipping box, side and end sections, pivotal links connecting said sections, forming diagonal corner braces and permitting of the folding of the end sections in between and in parallelism with said sides, and catches between said sides and ends for preventing the folding thereof.

9. In a collapsible shipping box, side and end sections, pivotal links connecting said sections at bottom and top thereof, forming diagonal corner braces and permitting of the folding of said sections in between and into parallelism with said sides, a bottom section supported on the bottom corner braces, a top section hinged to one of the sides, lugs projecting upward from the ends of the top pivotal links forming guides and stops for positioning said top section, and a catch pivoted at the front of said top section movable into locking engagement with the guide lug.

10. In a collapsible shipping box, side and end sections, means connecting abutting side and end sections and adapted to permit the folding of the end sections between and into substantial parallelism with the side sections, and a bottom section extending between and abutting against said side and end sections foldable into parallelism with the side sections.

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

HERBERT H. CUMMER.

Witnesses:

GEO. G. BROWN,

JAY J. VELDMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."