Nov. 14, 1939. W. M. COPELAND 2,179,843

COLLAPSIBLE CASE

Filed Dec. 24, 1938

Fig. 1.

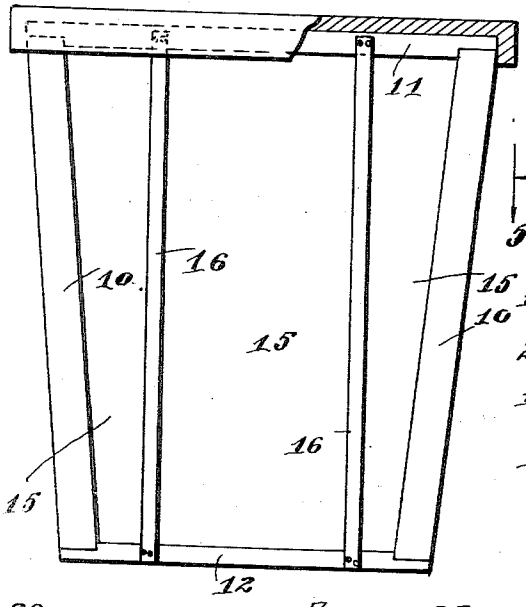
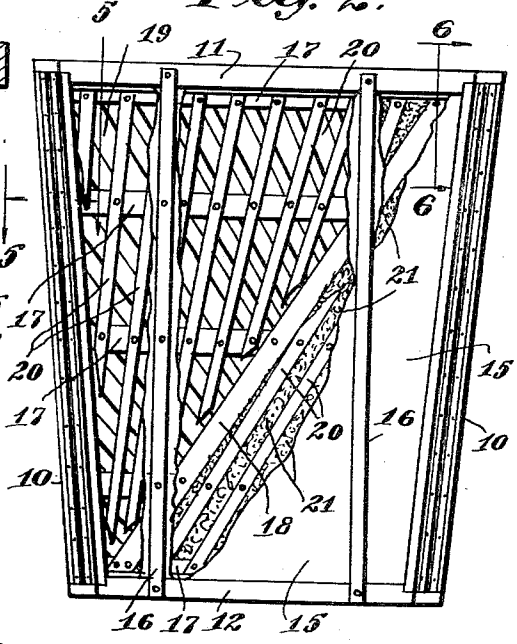


Fig. 2.



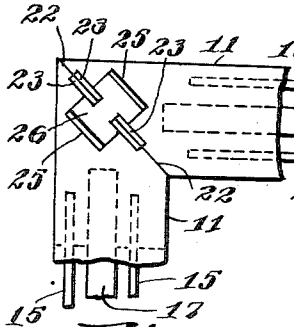


Fig. 3.

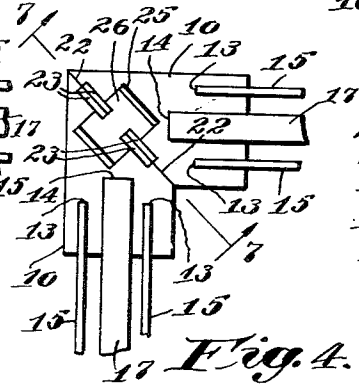


Fig. 4.

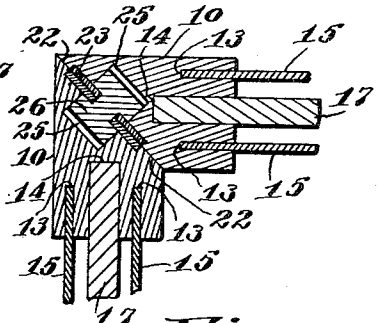


Fig. 5.

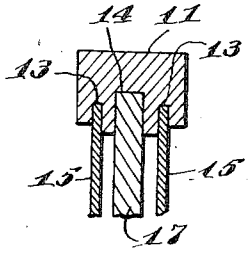
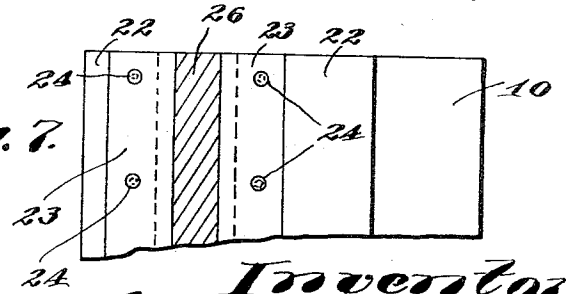


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE

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COLLAPSIBLE CASE

Walter M. Copeland, Lexington, Mass.

Application December 24, 1938, Serial No. 247,555

5 Claims. (Cl. 6—1)

My present invention relates to collapsible cases, and more particularly to a collapsible case adapted to protect the hives of honey bees from cold winds, snow or other elements during the winter months, and while my invention is specifically designed for the above purpose it is well adapted for other similar purposes, as the protection of plants, etc.

It will be apparent that in an article of this class, and particularly where a plurality of cases may be needed, a simple demountable case is quite desirable because of the problem of storing such cases during the summer months when they are not in use, and in addition to the above another very important feature is compactibility for shipping purposes.

My improved collapsible case provides for all of these features in a very novel manner as will be disclosed.

Therefore, the principal object of my invention is an improved collapsible case;

Another object is an improved collapsible case which comprises a plurality of duplicate sides easily assembled or disassembled without the use of tools;

Still another object is a special locking arrangement adapted to lock the corners of the sides of the case together and at the same time effectively eliminate draft at the contacting corners, and

Other objects and novel features comprising the construction and operation of my invention will be apparent as the description of the same progresses.

Referring more in detail to the drawing:

Fig. 1 is a side elevation of an assembled case, the cover being partially broken away;

Fig. 2 is an inside elevation of one of the collapsible sides, portions of which have been broken away to better show the internal construction of same;

Fig. 3 is a fragmentary view showing the top of one of the corners with the cover removed;

Fig. 4 is a fragmentary view showing the top of one of the corners with the top horizontal portion of the frame removed;

Fig. 5 is a fragmentary cross-section taken on the line 5—5 of Fig. 2;

Fig. 6 is another fragmentary cross-section taken on the line 6—6 of Fig. 2 and particularly showing the cross-section of the top horizontal frame member, and

Fig. 7 is a full size fragmentary cross-section taken on the line 7—7 of Fig. 4 being taken through the locking key member shown in cross-section in Fig. 5 and in end elevation in Figs. 3 and 4.

The novelty disclosed in my invention lies in the construction of the individual sides, as shown in Fig. 2, and in the novel manner of locking these sides together to form a four sided case having tapered sides shown in the drawing therefore a description of one of the sides, as shown in Figs. 1 and 2 together with the details disclosed in the fragmentary views will suffice.

The side shown in Figs. 1 and 2 discloses the construction of the sides, Fig. 1 showing the outside and Fig. 2 showing the inside and internal construction.

Briefly, the sides are constructed from two corner post members 10 of uniform and identical shape securely nailed or otherwise affixed to a top horizontal member 11 and a bottom horizontal member 12. The horizontal members 11 and 12 may be identical with each other excepting for length where tapered sides are desired in the case. The corner posts 10 and top and bottom horizontal members 11 and 12 are each provided with three grooves 13 and 14. The outer sides of the units, as shown in Figs. 1 and 2 comprise a thin sheet of material indicated at 15. This sheet material as applied to the outside of the case should preferably be made from weather resisting material such as roofing paper. The inside sheet material may be made of the same material if desired or from heavy cardboard. The edges of this sheet material 15 are adapted to engage in the grooves 13 when the side is assembled after which vertical strips 16 are added for stiffening purposes. Inside of the sheet material 15, I have provided a plurality of horizontally disposed laths, the ends of which are fixed in the groovs 14 of the corner posts 10. The top lath and the bottom lath is preferably allowed to extend above and below the extremities of the corner posts 10 and project into the grooves 14 in the top and bottom horizontal members 11 and 12. On the inner and outer sides of the unit, shown in Fig. 2, I have located oppositely opposed lath brace members 18 and 19. A plurality of angularly disposed filler and brace strips 20 are nailed to the horizontal laths 17. In between the laths 17 and 18, and the strips 20, I have provided a fibrous insulating packing 21. When the unit is finished ready for the sheet material 15, the inner and outer surfaces are smooth, the space between the sheet material 15 being completely filled and compact.

The corner posts 10 are beveled off at forty-five degrees on the line 22. This surface indicated at 22 is then slightly recessed to receive thin metal strips 23 being fixed to the post members 10 by means of short nails or the like 24. When the metal strips are in place the outer surface of the metal strips lie in the same plane as the surface 22 on the posts 10. Separating the opposed edges of the strips 23 is a large groove 25, the same groove being formed in the opposing corner post, as shown in the drawing. A key strip 26 of the same length as the corner posts 10 is provided with side grooves adapted to engage over the extended edges of the metal strips 23 when the case is assembled being pushed down from the top securely locking the two corner posts of two side pieces together and at the same time making an effective block against draft. The four corners of the case are assembled in a like manner very quickly and securely and very easily disassembled when the case is collapsed for shipment and packing or for storage in warm weather.

Having thus described my invention what I claim as new is:

1. An improved collapsible case for winterizing bee hives comprising demountable side members and removable top, the said sides comprising an outer key-stone shaped frame having mitered corner posts, the top of said frame being at the larger end of said case, means for internally locking the corners of said side members.

2. An improved winter shelter for bee hives comprising collapsible sides and a removable top, the said sides being key-stone shaped and having mitered corner posts, the top of said sides being at the larger end of said shelter, an internal key member adapted to lock said corner posts together.

3. An improved winter shelter for bee hives comprising a plurality of duplicate key-stone shaped sides, corner posts located on said sides having internal grooves and a key member adapted to lock said corner posts together, the top of the said key-stone shaped sides being at the larger end of said shelter.

4. An improved winter shelter for bee hives comprising a plurality of demountable key-stone shaped sides and a removable top, the top of said sides being at the larger end of said shelter, mitered corner posts located on said sides, grooves longitudinaly disposed in the mitered faces of said corner posts, strips partially closing said slots located flush in the said mitered faces of said corner posts, an H shaped key member adapted to engage in said slots and lock said strips together.

5. In an improved winter shelter for bee hives, demountable side members adapted to be locked together at their corners, an exterior frame comprising the outer edges of said side having a plurality of grooves located on the inner edges, horizontal brace members engaged in said grooves, diagonal brace members attached to said horizontal members, thin panel members engaged in said grooves on each side of said brace members, insulating material filling the space between said panel members.

WALTER M. COPELAND.