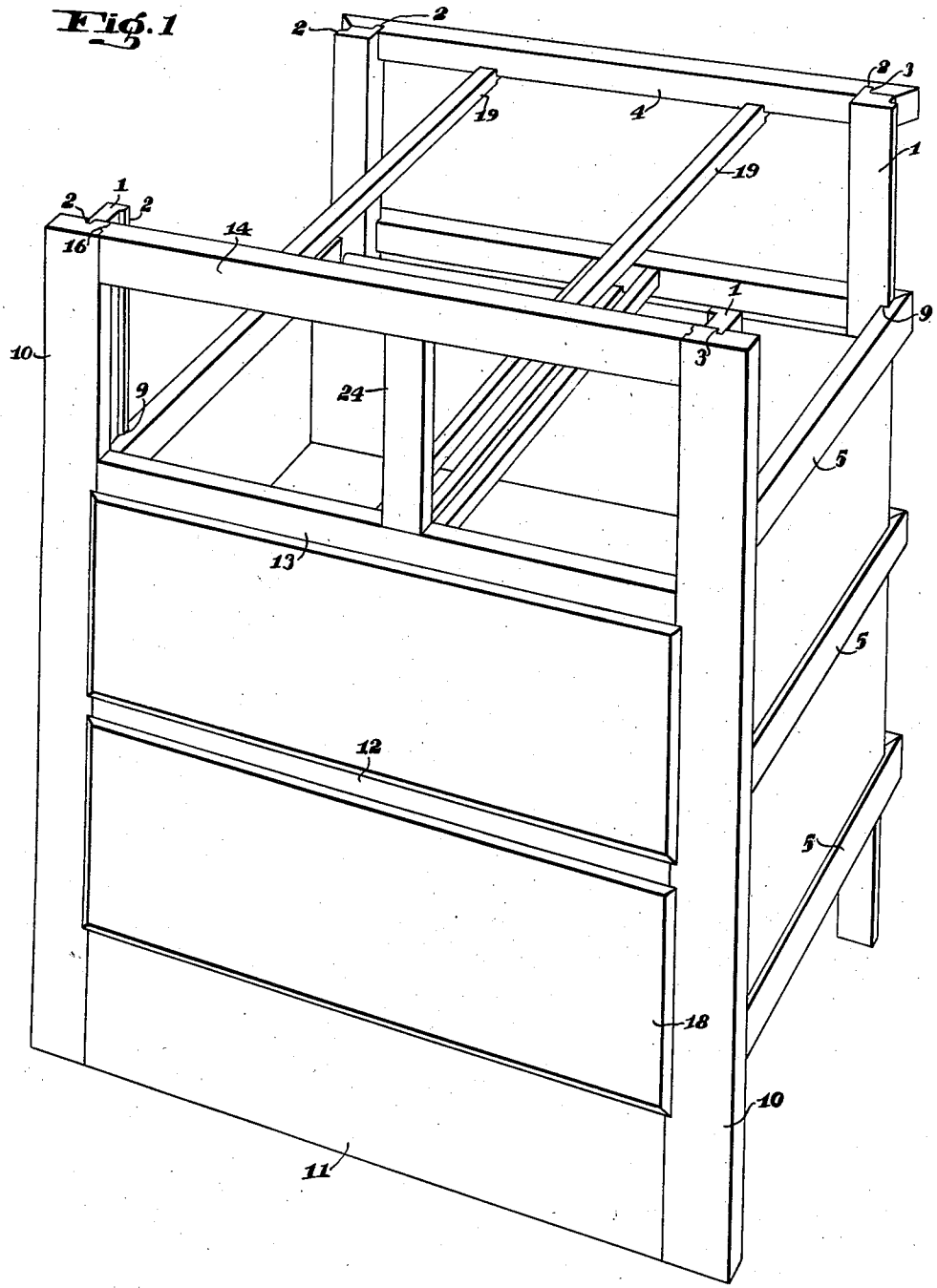
Nov. 5, 1940. H. C. BULLARD 2,220,206

DRAWER CASE AND THE LIKE

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Fig. 1



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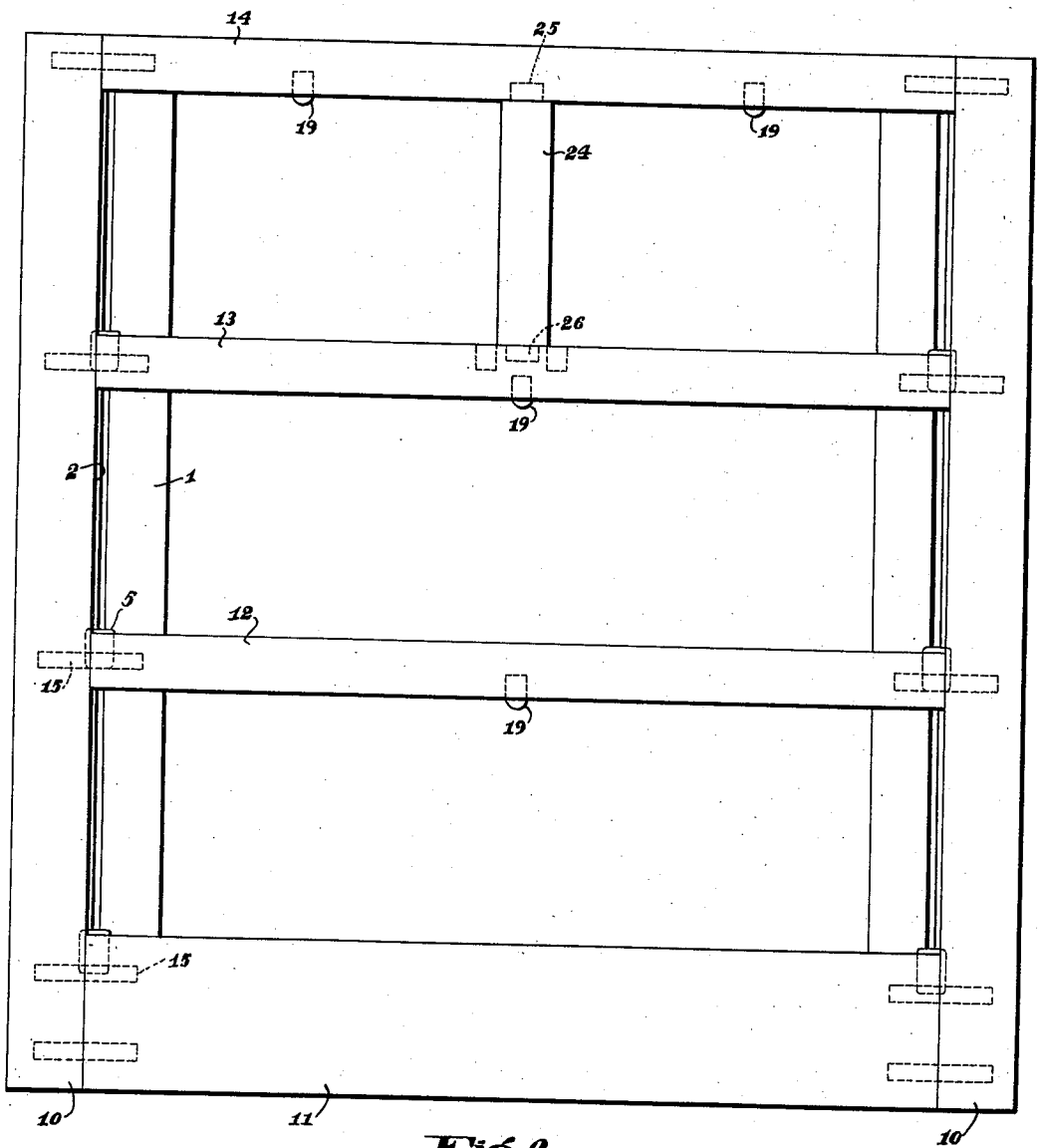


Fig. 2

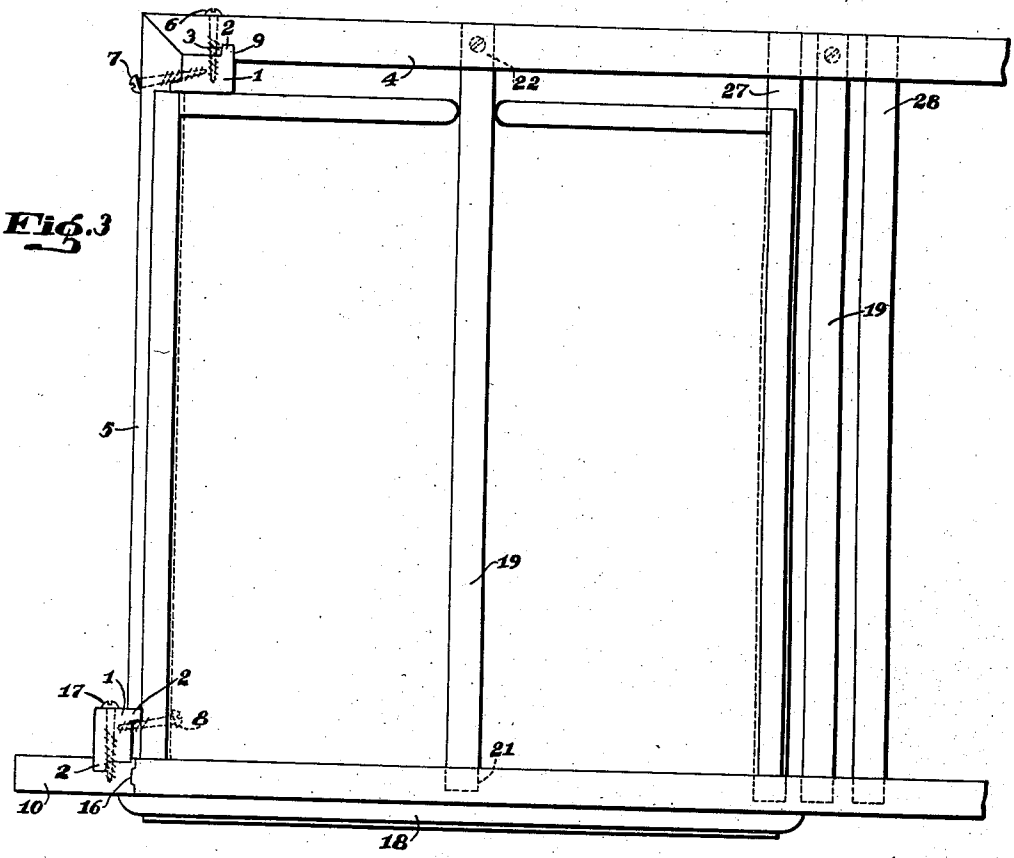
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Fig. 3



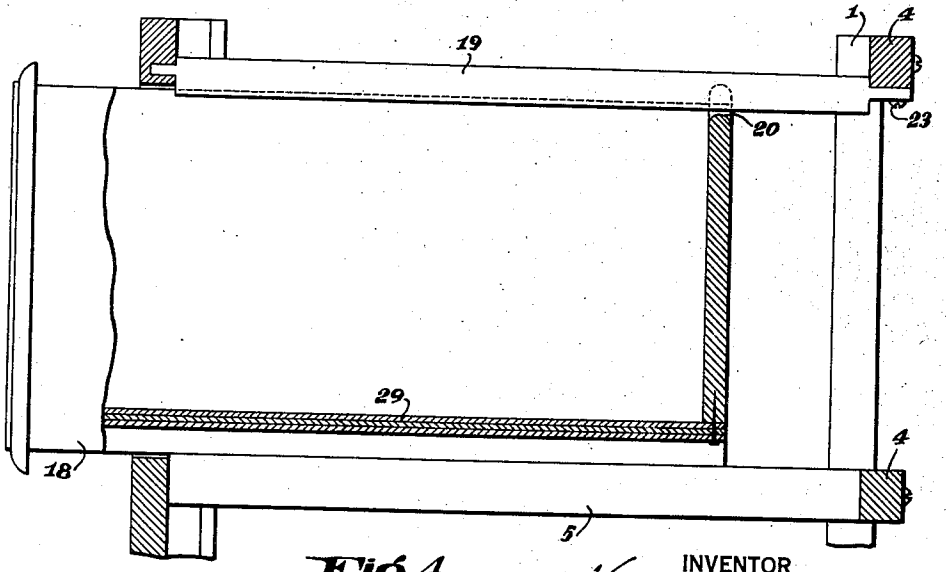


Fig. 4

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Patented Nov. 5, 1940 2,220,206

UNITED STATES PATENT OFFICE

2,220,206

DRAWER CASE AND THE LIKE

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Application June 17, 1939, Serial No. 279,723

7 Claims. (Cl. 45—5)

This invention relates to wooden drawer cases and similar articles of furniture.

In such constructions it is desirable to use a minimum number of structural pieces, to employ as light a type of stock as possible, and to provide for the pieces being quickly and simply assembled. Difficulty is experienced in securing adequate strength and rigidity in a frame construction having these characteristics, and this is more especially so when the frame is required to be of a collapsible or knocked-down nature. In addition, drawer cases present specific difficulties in that they are subject to expansion or warping which may interfere with drawer action and/or fail to provide the desired support for the drawers.

It is a chief object of this invention to provide an improved drawer case which requires a small number of frame pieces, and which is characterized by great strength and rigidity, plus ease and simplicity of assembly. The invention is especially concerned with the accomplishment of these objects in a drawer case adapted for shipment in a knocked-down or collapsed state.

The nature of the invention will be readily understood when read in connection with the accompanying drawings, and the novel features will be particularly pointed out in the appended claims.

In the drawings,

Figure 1 is a perspective view illustrating my improved frame construction embodied in a drawer case, and indicating drawers received therein;

Fig. 2 is a view in front elevation illustrating the case;

Fig. 3 is a fragmentary plan view of case with a small drawer member inserted therein; and

Fig. 4 is a view in side elevation and partial cross-section illustrating the case and a drawer member inserted part way therein.

According to a preferred embodiment of my invention, I provide my frame construction incorporated in a kitchen drawer case as shown assembled in Fig. 1. The frame is formed with novel upright members 1 preferably composed of a hard wood. The uprights are four-sided members, being formed on two opposite corners with tenons or tongues 2 which extend throughout the length of the uprights and which occur at right angles with respect to one another.

A feature of my invention is to provide rail members with grooves for engaging with the tenons 2 and effecting a locked joint. Numerals 4 and 5 denote respectively back rail members and side rails or drawer runners formed with grooves 9 as may be more clearly observed in Figs. 1 and 3. It will be noted that the grooves 9 occur at points spaced slightly from the ends of the rails and runners. This results in the rails always being in contact with the uprights 1 between the extremities of these members and the tenons 2 so that the rails will always engage against the uprights in the event of the tenons becoming broken. In addition those portions of the rails which bear on the uprights beyond the point of tenoning, are held securely against the flat faces of the uprights where they tend strongly to square up the frame. To further make the frame square the ends of the runners and rails are mitered or cut at a 45° angle so that they may abut one against another to form a square corner.

The tenons or tongues 2 preferably are shaped with one beveled side 3 and the openings 9 are correspondingly angled on one side. This allows the tenons 2 to be wedged in the grooves 9. When additional securing together of the rails, runners and uprights is effected, by some suitable fastening as round headed screws 6 and 7, the beveled sides 3 are forced into grooves 9 to present a very snug joint which is not necessarily a permanent one. If desired, one of the screws 7 may be angularly disposed to facilitate multiple drilling operations. Also screws at the front of the case as screw 8, Fig. 3, may be angularly disposed to permit use of a screw driver in limited drawer space. Those screws employed to secure the back rails and runners to the uprights 1 draw the mitered faces of these horizontal frame members together and this tends to further increase the strength of the frame. Other fastening means as gluing may be employed if desired.

An advantage of the upright members may be observed in connection with the adaptability of the tenons 2 to being associated with several different structural pieces. For example, the two rear uprights of the frame present tenons 2 engaging with back rails 4; also tenons are available to engage with side drawer runners 5 at the outer opposite sides of the uprights. This is effected by having one of the rear uprights turned end for end with respect to the other.

The front uprights present tenons for engaging the side drawer runners 5 at the sides of the uprights. Also tenons on the front of the upright engage with stiles 10. This is effected by locating each front upright diagonally opposite respective rear uprights.

It will be noted that this arrangement locates the side drawer runners in their required position at the outside of the rear uprights and at the inside of the front uprights to thereby provide a support for a drawer. It will also be observed that these uprights at all four corners are alike and may be simply sections cut from the same piece of stock.

Similarly the side runners 5 are all of the same shape and grooving and may be used at either side of the case by turning into a suitable position.

It is intended that the entire back framework be composed of hardwood for making possible the use of smaller cross section stock with retention of strength and rigidity. The front of the frame, however, will preferably be composed of softwood, and comprises stiles 10, bottom rail 11, center rails 12 and 13, and top rail 14 secured together by conventional dowels 15 and stub tenons 16. The front of the frame thus assembled is secured to a front upright 1 occurring diagonally of a rear upright as above described. The front upright takes a position at a side of the drawer runners 5 opposite to the side at which rear uprights are secured to member 5. Stiles 10 are grooved to receive tenons 2 and the upright is further secured by means of screws 17. Preferably the runners 5 will take a position slightly above the level of the rails 11, 12 and 13 so as to provide a bearing surface for the bottom of the drawer 18. Also, the edge of a tenon 2 may be allowed to project inwardly slightly beyond the inner edge of stile 10 thereby effecting a side bearing of hardwood for guiding drawers, as may be better seen in Fig. 2.

Due to the use of softwood in the frame front and the possibility of this wood swelling, it may be desirable to have a loosely fitting drawer. When such is the case a guide member may be used to improve opening and closing of drawers. I have provided hardwood strips 19 which have under surfaces rounded to engage in similarly shaped openings 20 in the back of the drawers. The strips may be supported in any desired manner, as for instance, they may have tenons 21 and 22 which may be received in openings in the backs of the front rails and may be secured at the under side of the back rails 4 by means of fastening 23 as illustrated in Fig. 4.

It may be found desirable to provide two small drawers at the top of the case. This is effected by providing a partition 24 provided with tenons 25 and 26 adapted to be received in openings formed in the front rails 14 and 13. Also I provide additional side drawer runners 27 and 28 which are provided with tenons at the ends thereof adapted to be mortised in the front cross rails and back cross rails in Fig. 3.

Drawers 18 have their back portions extending above the sides, as shown in Fig. 4, which prevents the drawers from being completely pulled out of the case. They may be lifted slightly at the front to disengage the back of the drawer from contact with the front cross rail, when desired. The bottom of the drawer comprises a plywood section 29 which may be slid into grooves formed in the drawer sides and drawer front, and nailed to the drawer back as has been illustrated in Fig. 4. Preferably the fronts of the drawers will be formed with lips which are adapted to engage the front frame evenly at all points and tightly seal the same.

The construction now shown and described, in addition to presenting strength and rigidity, combined with lightness, is also particularly adapted to being knocked down and quickly reassembled, and is further particularly adapted to comprising an extremely compact package when in a knocked-down form.

In shipping, the front frame comprising the two stiles 10, center rails 12 and 13, bottom rail 11 and top rail 14, is completely assembled and laid face down. The front uprights are located on the back of this assembled frame, fastened thereto. The back uprights are then placed along the outside of the fastened uprights. The drawer fronts are placed on the front frame in what would be their finished position with backs facing frame. Drawer sides and plywood drawer bottoms are laid on drawer fronts and runners and back rails are disposed between the drawer parts. A package or container for receiving this knock-down unit comprises only one-sixth of the space required by the drawer case in a fully assembled position.

It will be seen that I have provided a frame construction in which uprights and rails are detachably jointed together in a novel manner to present great strength. A desirable type of upright member has been provided which may be used in varying positions by turning or reversing same. The side drawer runners cooperate with the back rails and uprights to form either a permanent or temporary lock joint, and are of a shape such as to be interchangeably used at either side of the case. This jointed construction, together with the selection of hardwood for the rear part of the frame, makes possible the use of a softwood for the front frame with maintenance of strength and rigidity. Reduction in the number of parts required for a drawer case has been effected, improved drawer action is assured, and greatly increased ease of assembly and simplicity of packing are attained. The parts are so shaped and assembled that by tightening up the screws, the frame is drawn into a square condition.

While I have shown a preferred embodiment of my invention, it is understood that various applications of the frame construction and changes therein may be resorted to in keeping with the spirit of my invention.

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

1. A drawer case comprising corner uprights each having flat side faces at right angles to each other, two horizontal rails secured to each upright with the ends of said rails abutting one against the other, each of said uprights having substantially right angled tongues extending lengthwise thereof and said rails having grooves into which the tongues of the uprights secured thereto fit snugly, and means independently of the tongues and grooves securing said rails against the flat faces of their respective upright at points immediately beside said abutting ends.

2. A drawer case comprising corner uprights each having flat side faces at right angles to each other, two horizontal rails secured to each upright with the ends of said rails abutting one against the other, screws securing said rails firmly against the flat faces of the uprights, each of said uprights having substantially right angled tongues extending lengthwise thereof and fitting snugly into vertical grooves in the rails to which they are secured by said screws.

3. A drawer case comprising corner uprights each having flat side faces at right angles to each other, two horizontal frame pieces secured to

each upright with the ends of said pieces abutting one against the other, each of said uprights having vertical tongues fitting snugly into grooves in said frame pieces, screws securing said frame pieces firmly against the flat faces of said uprights and holding said tongues in said grooves, certain of said screws being inclined with reference to the faces of the uprights which they pass through.

4. A drawer case comprising corner uprights each having flat side faces at right angles to each other, two horizontal frame pieces secured to each upright, the ends of said pieces being mitered and abutting one against the other, each of said uprights having vertical substantially right angled tongues at the outer edges thereof and said horizontal pieces having vertical grooves at the inner sides thereof into which said tongues fit with the ends of said pieces meeting at the outer edge of said upright, and screws securing said horizontal pieces firmly against the flat faces of said uprights and holding said tongues in said grooves.

5. A drawer case comprising four corner uprights, two at the front and two at the rear thereof, all of said uprights being alike and each having tongues extending therefrom in directions at approximately right angles to each other, side and back rails secured to said uprights, said rails having vertical grooves to receive said tongues and the ends of the side rails abutting against the ends of the back rails at the rear uprights, and metallic fasteners releasably securing said side rails to said front and rear uprights.

6. A drawer case comprising a frame including four corner uprights, two at the front and two at the rear of said frame, each of said uprights having tongues extending longitudinally thereof, a plurality of pairs of side rails secured, respectively, to the front and rear uprights at the opposite sides thereof where they form runners for the drawers, back rails secured to said rear uprights, each of said rails being grooved vertically to interlock with the tongued portions of the uprights which it engages, screws securing said rails to said uprights and also holding said tongues in said groove, and a front assembly secured to said front uprights.

7. A drawer case frame according to preceding claim 6, in which said side rails are interchangeable, whereby the frame may be shipped in a knocked-down condition.

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