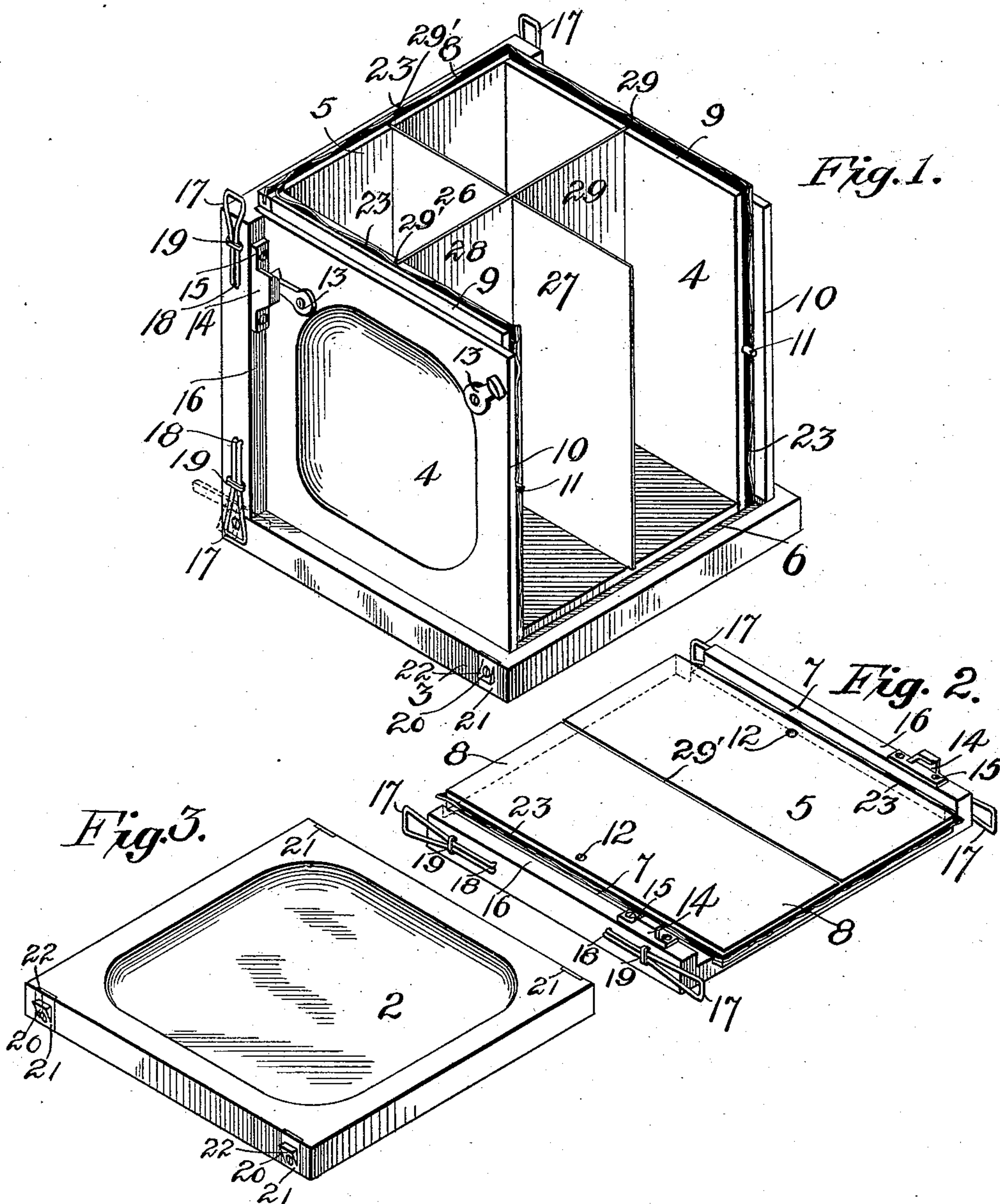


2 Sheets—Sheet 1.

No. 486,819.

Patented Nov. 22, 1892.



Witnesses,
C. E. Van Dorn.
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Inventor,
George S. Carter.
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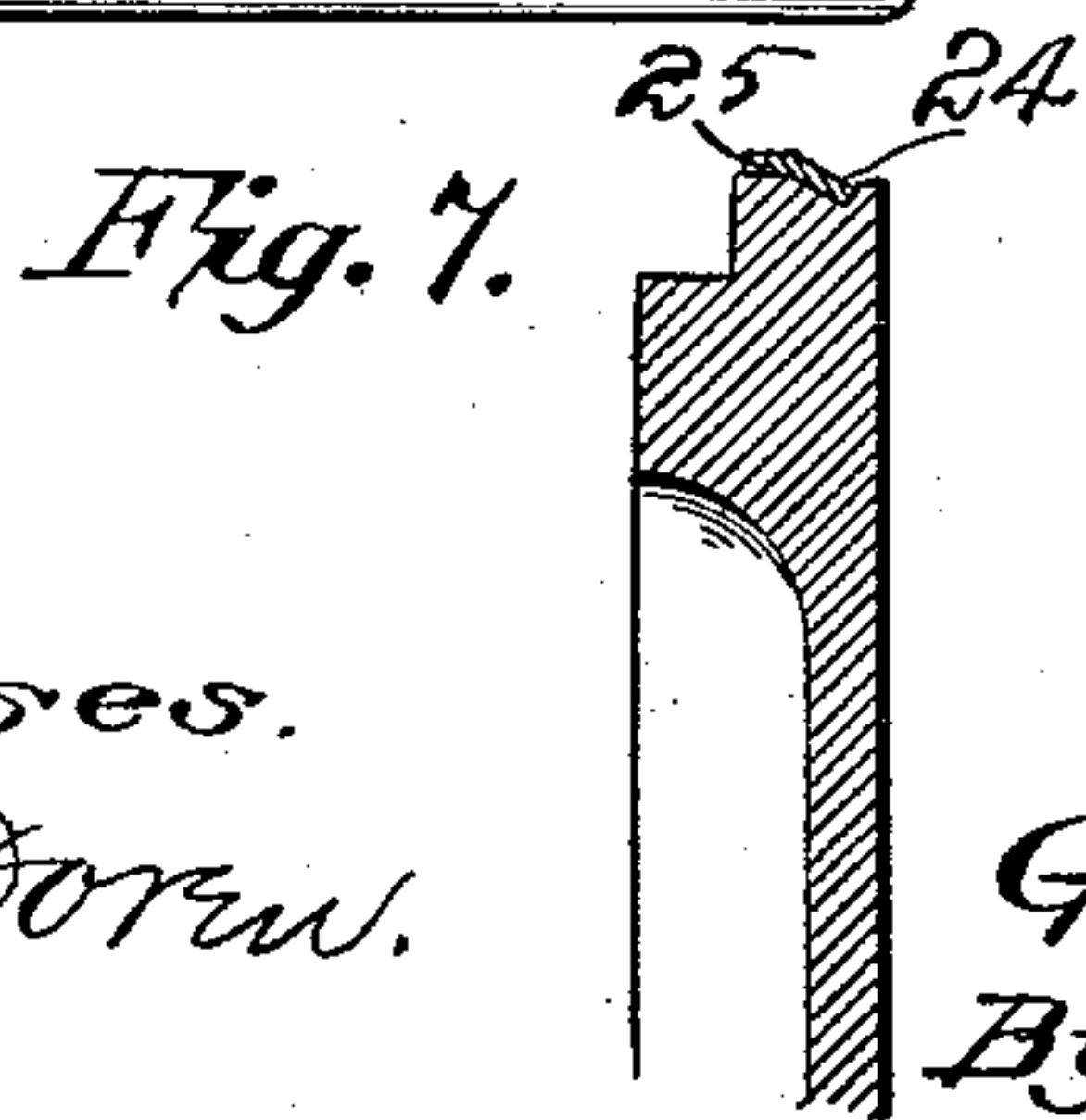
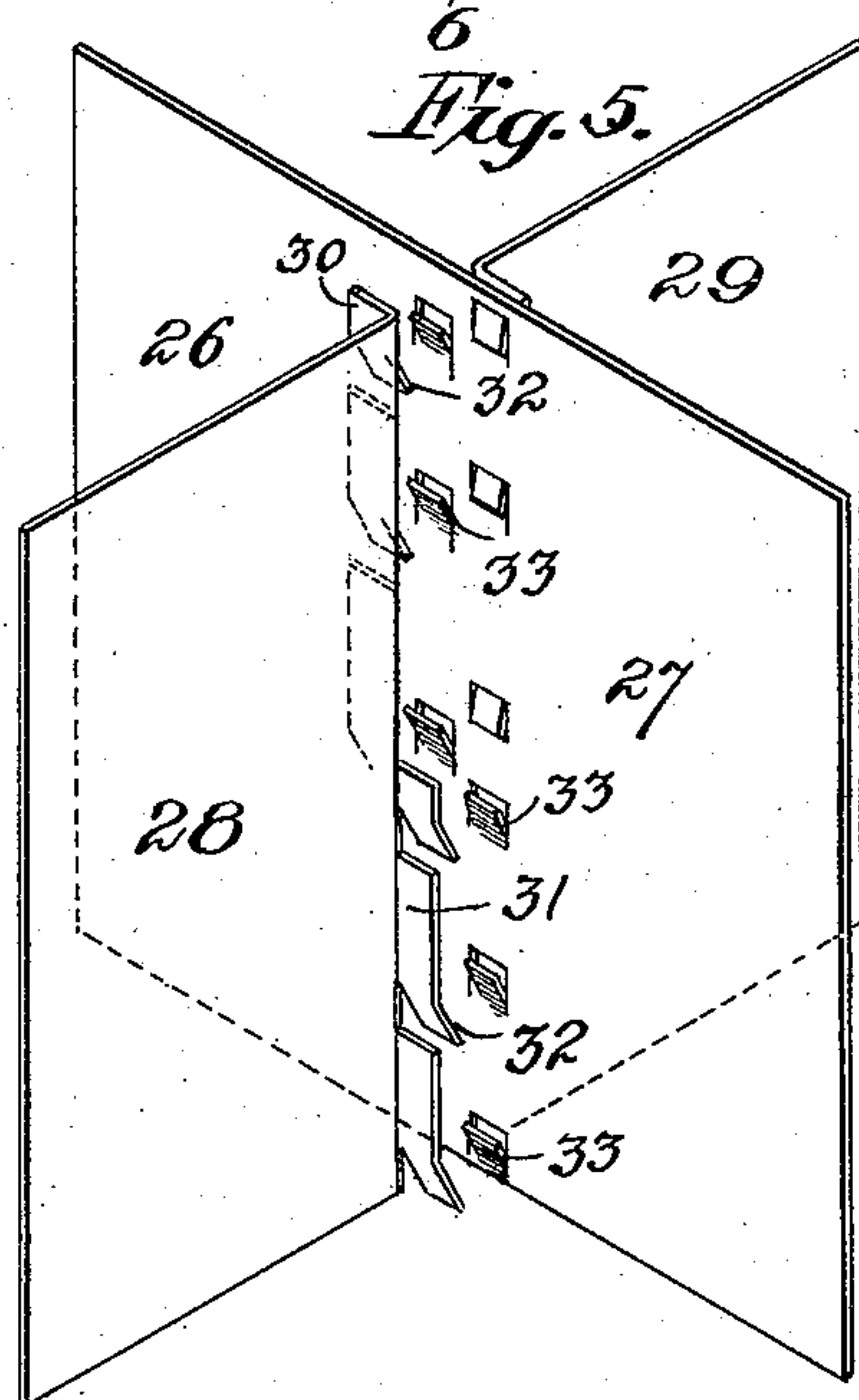
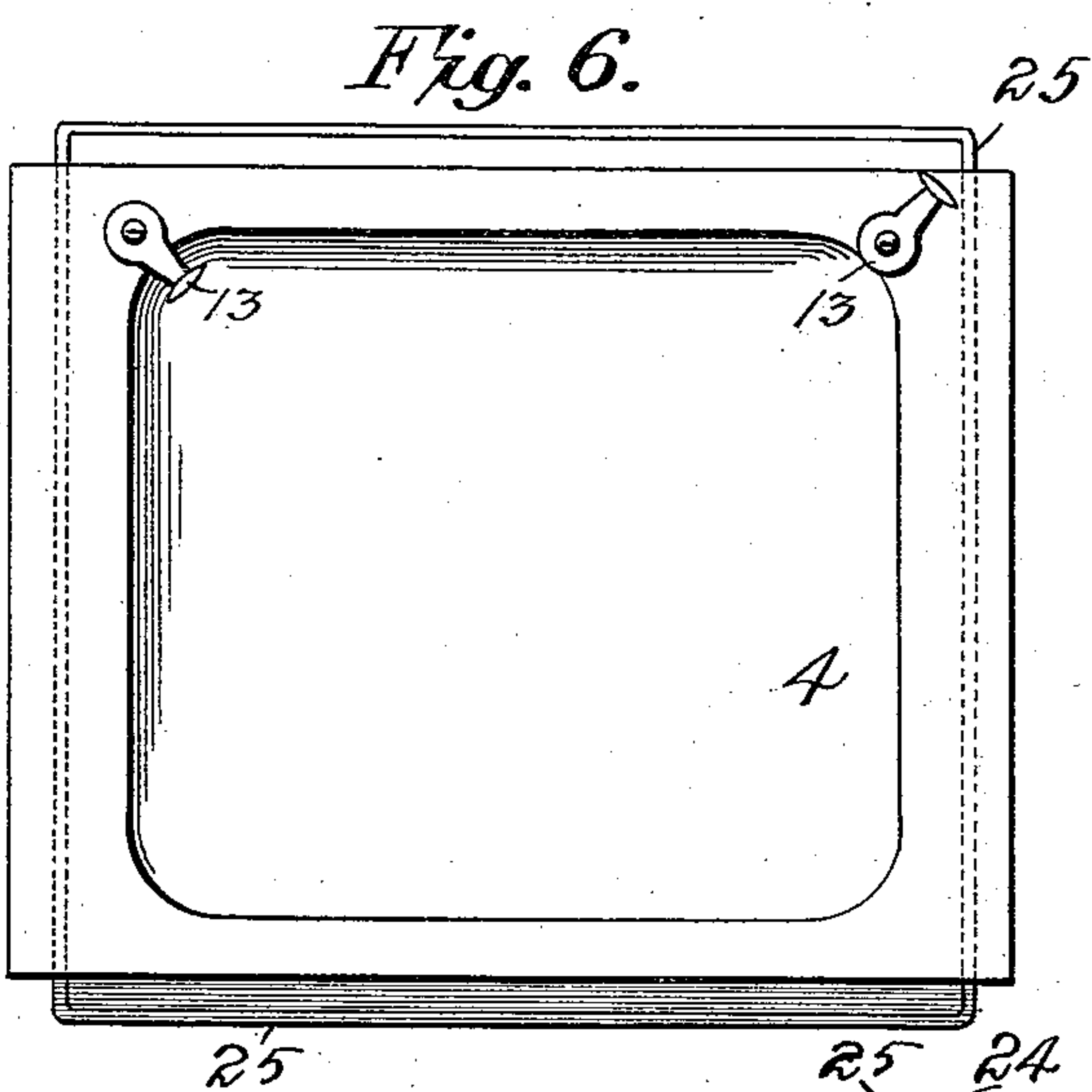
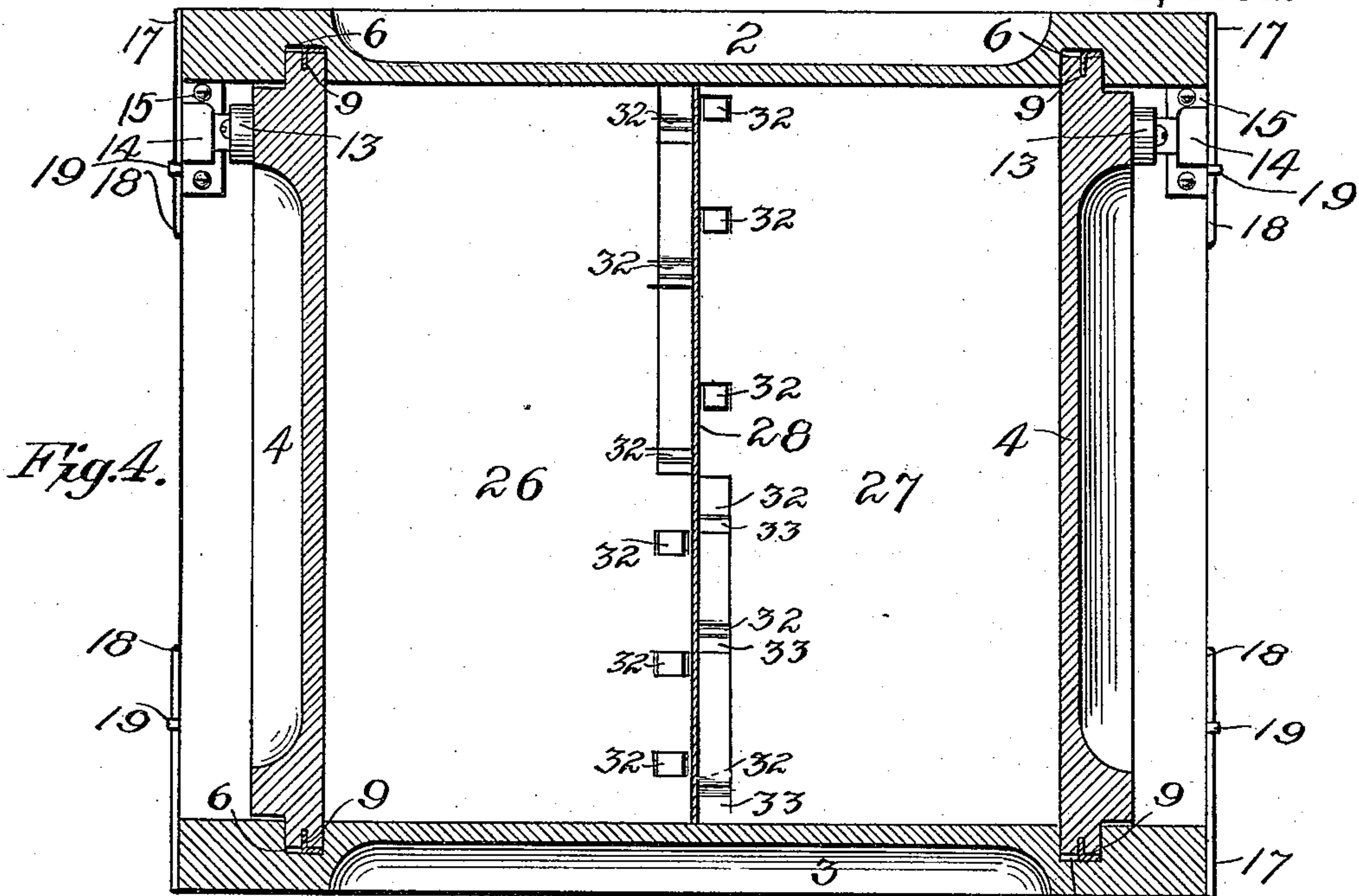
(No Model.)

2 Sheets—Sheet 2.

G. S. CARTER.
KNOCKDOWN BOX.

No. 486,819.

Patented Nov. 22, 1892.



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UNITED STATES PATENT OFFICE.

GEORGE S. CARTER, OF MINNEAPOLIS, MINNESOTA.

KNOCKDOWN BOX.

SPECIFICATION forming part of Letters Patent No. 486,819, dated November 22, 1892.

Application filed December 26, 1891. Serial No. 416,157. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. CARTER, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a certain Improved Knockdown Box, of which the following is a specification.

My invention relates to cheap, strong, and convenient knockdown boxes, and especially to a box adapted for packing and shipping butter; and the object of the invention is to provide a box of a lighter, stronger, and more convenient construction than has heretofore been devised.

To this end my invention consists, in general, in the constructions and combinations hereinafter described, and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is an isometric view showing a box embodying my invention, the cover and one side thereof being removed. Fig. 2 is a view of the side board, showing the grooves and tenons thereof. Fig. 3 shows the cover as it appears removed from the box. Fig. 4 is an enlarged sectional view of the packing-box. Fig. 5 is an enlarged detail showing the construction of the dividing-partitions. Fig. 6 is a view of one of the ends, showing a rubber band arranged about the same. Fig. 7 is a sectional detail showing position of band on edge of the board.

As shown in the drawings, my box is composed of six boards jointed and locked together. Each of the boards is made up, preferably, of a single piece, and for convenience in reference I will allude to the boards 2 and 3 as the "top" and "bottom" of the box, respectively, the boards 4 4 as the "ends" thereof, and those numbered 5 5 as the "sides" of the box. In each board 2 3, on the inner surface thereof, I provide a rectangular groove or recess 6, and in the inner surfaces of the sideboards 5, I provide the vertical grooves or channels 7. The upper and lower edges of the side and the end boards are all rabbeted to make the tongues or tenons 8 on the side boards and those 9 on the end boards. These tongues are adapted to fit snugly in the grooves 6 in the top and bottom boards, as shown plainly in Figs. 1 and 4. The vertical edges of the

end boards are rabbeted in the opposite direction, so as to leave the tongues 10 on the outside and adapted to project into the channels, of the side boards. In the end pieces I provide one or more dowel-pins 11 and in the side boards I arrange the holes 12 to receive the same.

In setting up the box the side and end pieces are arranged one after another on the bottom and all locked together by means of the pivoted buttons or hooks 13, pivoted on the end panels and adapted to be secured in the small boxes or sockets 14 of the plates 15, secured on the projecting end surfaces 16 of the side boards. The ends or hooked portions of the buttons are beveled and as they are pushed down into the sockets wedge the end and side pieces tightly together. On the ends of the side pieces I arrange the spring hasp or loop 17, preferably made of a loop of wire having its ends 18 driven into the edges of the board and its middle portion fastened down by a staple 19. The loops project above and below the upper and lower edges of the side boards and are adapted to engage the lugs 20, provided on the inset plates 21, arranged in the edges of the top and bottom boards. The surfaces 22 of these lugs are beveled inwardly, as shown, so that when the top or bottom board is put on the spring-loops are forced out to allow the lugs to pass by freely, after which the loops snap over the lugs, thereby locking all the parts firmly together. The box thus provided is of a tight and neat structure, and in it butter or like substance may be kept safely for a considerable time and in a form convenient for transportation.

In order to render this box practically airtight, I insert into the edges of the side and end boards thin flexible rubber strips 23, which when the box is put together and the parts firmly wedged and locked completely fill all cracks and openings between the several parts of the box. In place of using simple straight rubber strips *a*, I may employ a more convenient arrangement, as shown in Figs. 6 and 7, and as there illustrated the edges of the rabbeted portion of the end boards, and the same is true of the side boards, are provided with the continuous V-groove 24, and a simple elastic rubber snap or band 25 is stretched and placed in this groove 24 on

each board, thereby constituting a continuous stop, which may be readily removed or renewed with ease.

It is obvious that any number of the hooked catches may be employed at the different points on the box, and I prefer to arrange the same in the corners thereof, as shown in Fig. 4, where it will be seen that the plates 15 are so close to the top board as to render the detachment of the hooks impossible so long as the top board remains in position. To render the box as light as possible, the outer surface of each board is recessed, so as to leave the middle portion of the board very thin and light, while at the same time of sufficient strength, owing to the solidity of the outer portions of the board. This paneling of the box not only renders it light, thereby reducing the transportation rates, but in addition gives the packing-box a neat and finished appearance.

In large packages it is often desirable to divide the interior into several compartments. This may be done by means of the light metal partitions 26, 27, 28, and 29, or duplications thereof, if the box be of one of the larger sizes. The construction of these partitions to render the same collapsible is plainly set out in Fig. 5. The portion 26 and 27 may be made of one sheet of metal of a proper width to extend across the box and fit into the grooves 29', arranged in the sides thereof. The sections perpendicular to this part are each provided with two flanges 30 and 31, each flange being provided with one or more lugs 32, adapted to engage lugs 33, pressed out of the main plate by a suitable die. The construction preferred is illustrated as consisting of a simple straight angular lug; but it is obvious that the same may be modified to a considerable extent without departing from the spirit of this portion of my invention. Similar grooves 29' are arranged in the end pieces. Ordinarily it is the practice to fill the box with butter and then before putting on the cover to push the previously-connected partitions down into the same, the grooves 29' acting as guides for the edges of the plates.

I thus provide a knockdown packing-box which when not in use may be stored in an exceedingly-small space, in which there are no projections from the outside of the box which

would be liable to catch upon or damage either the clothing of the person handling the box or articles laid upon the same, and, further, in which the side and end boards are locked firmly in place by the top and bottom boards without other assistance, and, lastly, a box which, owing to its air-tight features and cubical construction, is especially adapted for export use.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, in a knockdown box, of rectangularly-grooved top and bottom boards, rabbeted and grooved side and end boards to fit the same and one another, and spring-hasps arranged on the same to engage lugs provided on the adjoining part or parts, substantially as described.

2. The combination, in a packing-box, of the top and bottom boards each having a rectangular groove, rabbeted side and end pieces to fit into said grooves, locks for fastening the side and end pieces together, and spring-loops arranged on the side pieces to engage lugs provided on the top and bottom boards, substantially as described.

3. The combination, in a packing-box, with the grooved top and bottom boards, of end boards 4, having tongues to enter said grooves, side boards 5, having tongues 8 to enter said grooves and grooves 7, tongues 10, arranged on said end boards to enter the grooves of the side boards, pivoted buttons arranged on said ends, latches or sockets therefor on the side pieces, lugs arranged on the top and bottom boards, and spring-loops provided on the side pieces to engage the same, substantially as described.

4. The combination, with the top and bottom 2 and 3, grooved as described, of the end pieces 4 4 and the side pieces 5 5, grooved and rabbeted to fit one another and said top and bottom pieces, and partitions 26, 27, 28, and 29, arranged in the box, said partitions having lugs to engage one another and being collapsible, substantially as described.

In testimony whereof I have hereunto set my hand this 22d day of December, 1891.

GEORGE S. CARTER.

In presence of—

C. G. HAWLEY,

F. S. LYON.