

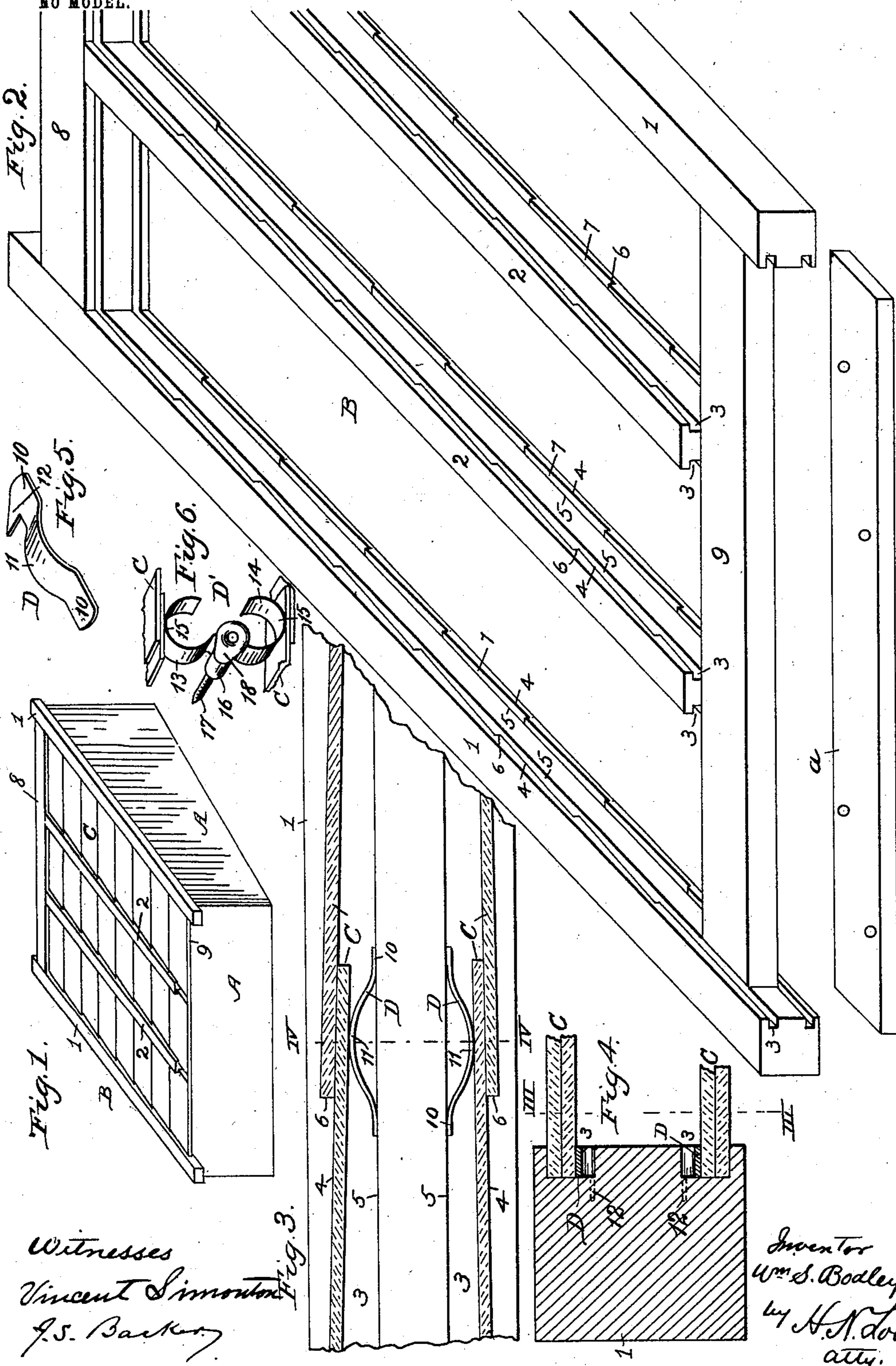
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W. S. BODLEY.  
HOTBED.

APPLICATION FILED JUNE 28, 1901.

NO MODEL.



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# UNITED STATES PATENT OFFICE.

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## HOTBED.

SPECIFICATION forming part of Letters Patent No. 720,318, dated February 10, 1903.

Application filed June 28, 1901. Serial No. 66,383. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM STEWART BODLEY, a citizen of the United States, residing at Louisville, in the county of Jefferson, State of Kentucky, have invented certain new and useful Improvements in Hotbeds; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in hotbeds and sashes therefor and for other purposes.

In the use of hotbeds as now constructed, with a covering consisting of a single layer of glass or panes thereof, it is necessary with every material change of temperature to add or remove additional protecting means, such as boards and other materials, in order to preserve the tender growing plants. This causes much labor and loss of time, loss of plants when the additional protection has not been afforded, exclusion of light, retarding the development of the plants, and breakage of glass.

My invention is directed to obviating the above-mentioned difficulties by a simple and inexpensive construction and also to providing for ready replacement of any pane of glass which may be broken, also to the securing of the glass in the sash in such manner that any breakage thereof in the ordinary handling of the sash is very unlikely to occur.

The principal feature of the invention, which is hereinafter defined in the claims, is the construction of the sash-frame in a peculiar manner for the reception of the glass panes and the securing of the latter removably in place by devices which act with constant pressure on the panes, such as springs of suitable construction and arrangement.

In order to make the invention more clearly understood, I have shown in the accompanying drawings means for carrying the same into practical effect without limiting my improvements in their useful application to the particular constructions which for the purpose of illustration I have delineated.

In said drawings, Figure 1 is a perspective view of a hotbed embodying my invention. Fig. 2 is a similar view showing a portion of the sash-frame. Fig. 3 is a longitudinal sec-

tion of a portion of the same on the line III, Fig. 4. Fig. 4 is a sectional view of a portion of the same on line IV, Fig. 3. Fig. 5 is a view of one form of spring for holding the glass. Fig. 6 is a view of another form of spring also embodying my invention.

Referring to the drawings, A indicates the vertical side walls, pieces, or frames of the hotbed, which may be constructed in any usual or preferred manner.

B is the top sash, comprising longitudinal side members 1 and intermediate longitudinal members 2. The side members 1 are formed on their inner faces and the members 2 on both faces with longitudinal grooves 3, having outer zigzag glass-receiving shoulders 4 and inner or opposing plain shoulders or walls 5. The shoulders 4 comprise short vertical portions or stops 6, against which the edges of the glass panes rest, so as to be held from longitudinal movement in one direction, and inclined portions 7 to receive the faces of the panes along their edges. It is more or less difficult to make by machinery a sash-frame the shoulders 6 of which are exactly straight or exactly up and down. By the described vertical shoulders 6, therefore, I intend any projection or stop sufficient to keep the panes from lengthwise movement. The frame B further comprises end bars 8 and 9, which connect the longitudinal members. The bar 8, which will be at the higher end of the sash in its usual inclined position, may be of the same thickness as the longitudinal members, but the bar 9 is of a thickness equal to the space between the grooves 3. The glass panes C are fitted in the grooves 3, as shown, the lower end of each pane overlapping the upper end of the pane next below, the shoulders 6 holding the panes from slipping downward out of place. These shoulders 6 are of a length substantially equal to the thickness of the glass. In putting the panes in place they may be introduced into the grooves 3 at the lower end of the sash above and below the end bar 9. When in place, the panes may be secured by various devices which allow of their ready individual removability. I have illustrated two forms of such devices, both of which are springs bearing constantly against the panes with sufficient force to keep them in place, but allowing of their re-

moval, as already described. These springs, moreover, hold the panes with a yielding pressure in such manner that the liability of the glass to become broken by any jar or shock received by the sash is greatly lessened. The spring D (illustrated in Fig. 5 and also in Figs. 3 and 4) is of a flattened U form arranged to bear at its ends 10 against the shoulders or walls 5 and at its bend 11 against the inner face of the upper end of the pane. Such a spring is provided at each side of each pane. Further holding devices for the springs are not necessary; but I prefer to form at the edge of the spring, at one or both ends, pointed projections 12, which may be driven into the inner vertical walls of the groove 3. These projections constitute means for regulating the tension of the springs by driving the projection into the frame-bar nearer to or farther from the pane. Another form of spring-holder is indicated in Fig. 6, in which a single spring is arranged to hold in place a pane of the upper layer and also the pane of the lower layer immediately below. This spring D' is more or less circular or oblong, attached at its middle to the longitudinal member (1 and 2) and having a limb 13 extending upward against the outer layer of glass and a limb 14 extending downward against the inner layer of glass, which layers are engaged by suitable bends 15 of said limbs. In this form of securing device I have provided for regulating the tension of the spring. A convenient means for this purpose comprises a bend or loop 16, formed at the middle of the spring, through which passes a screw 17. The latter has a more or less tapering head or eye 18. By serewing the device 17 in more deeply the loop 16 is expanded and the bends 15 pressed more strongly against the glass, or, vice versa, such pressure may be relieved by screwing the device 17 outward a little.

It will be understood that the sash herein described may be usefully employed otherwise than as a covering for hotbeds.

The arrangement of the bar 9 is such as to leave a space below it through which air could pass into or out of the hot-bed. When this is not desirable, such space may be closed by a bar *a*, Fig. 2, which is adapted to be fitted into said space over or against the lower edge of the last row of glass panes on or between the frame-pieces 1.

What I claim is—

1. A sash for hotbeds consisting of a frame having upper and lower grooves in its opposing inner faces to receive upper and lower panes of glass with an air-space between said layers, each groove having stops 6 to hold said panes from edgewise movement, the projecting corners of said stops 6 being spaced from the opposite side of the groove to allow the longitudinal insertion of the panes, and means for holding the panes in place against the side of the groove, substantially as set forth.

2. In a hotbed, the combination, with suitable side portions, of a top frame having upper and lower grooves, an outer layer of glass consisting of lapped panes secured in said upper grooves and an inner layer of glass consisting of lapped panes secured in said lower grooves, said layers of glass having between them an air-space, and springs in said grooves holding said glass in place.

3. In a hotbed, the combination, with suitable side frames or boards, of a top frame, a layer of glass consisting of lapped panes fitted in said frame and springs interposed between said panes at the points of lapping and a portion of said top frame and holding the panes in position, the panes being removable along said springs and by the yielding of the same.

4. The combination with suitable side pieces, of a top frame having upper and lower shoulders, upper and lower layers of glass fitted against said shoulders and springs interposed between said layers and pressing the latter apart and against said shoulders.

5. In a hotbed, the combination with suitable side pieces, of a top frame having upper and lower zigzag shoulders, an outer series of panes of glass fitted against said upper shoulders, an inner series of panes of glass fitted against said lower shoulders and springs interposed between the upper and lower panes and pressing the latter against their shoulders, said panes being individually removable.

6. A sash for hotbeds or other purposes consisting of the combination of a frame formed with upper and lower grooves, each groove being formed with zigzag shoulders adapted to receive individually-removable panes of glass to constitute inner and outer layers as described, the corners of said zigzag shoulders being spaced from the opposite side of the groove to allow the longitudinal insertion of the panes, and means for holding said panes of one layer away from the panes of the other layer, and all of said panes against the frame, substantially as set forth.

7. A sash for hotbeds and other purposes consisting of a frame having upper and lower grooves, the outer portion of each groove being formed with zigzag shoulders opposed by the inner wall of each groove, a series of panes of glass fitted against said zigzag shoulders, individually removable and constituting inner and outer layers as described, and springs interposed between said panes and the inner groove-walls to hold the panes removably in position, substantially as set forth.

8. In a sash for hotbeds and other purposes, the combination of a suitable frame, glass consisting of lapped panes therein and removable therefrom longitudinally of the glass, a spring for holding said glass in place and adapted to yield and allow the removal of the glass lengthwise of the frame along said spring, and means for holding said spring against the glass.

9. In a hotbed, the combination, with suit-

able side frames or boards, of a top frame formed with inclined and vertical glass-receiving shoulders, panes of glass fitted in said frame against the shoulders and springs holding said panes in position, the panes being free to be removed from said shoulders longitudinally of said panes by the yielding of the springs, substantially as set forth.

10. In a sash for hotbeds and other purposes the combination of a frame having supporting-shoulders, panes of glass on said shoulders and overlapping each other, stops holding the panes from movement in one direction, the panes being movable in the opposite direction, and springs bearing on the surface of the panes.

11. A sash for hotbeds and other purposes, consisting of a frame having interior grooves, springs arranged to oppose the sides of said grooves, and glass panes independent of and movable relative to the springs and longitudinally insertible in said grooves between the springs and sides of the grooves and held

in place by the pressure of said springs, substantially as set forth.

12. A sash for hotbeds and other purposes consisting of a grooved frame, glass panes fitted therein and springs pressing said panes against the sides of the grooves and provided with attaching projections 12 at one end and free at the other end, substantially as set forth.

13. In a sash for hotbeds the combination of frame-bars having grooves on their inner opposing sides, panes in said grooves, springs in said grooves independent of and pressing against said panes, and adjusting means for causing the expansion of said springs.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM STEWART BODLEY.

Witnesses:

TEMPLE BODLEY,  
EMMET NOONAN.