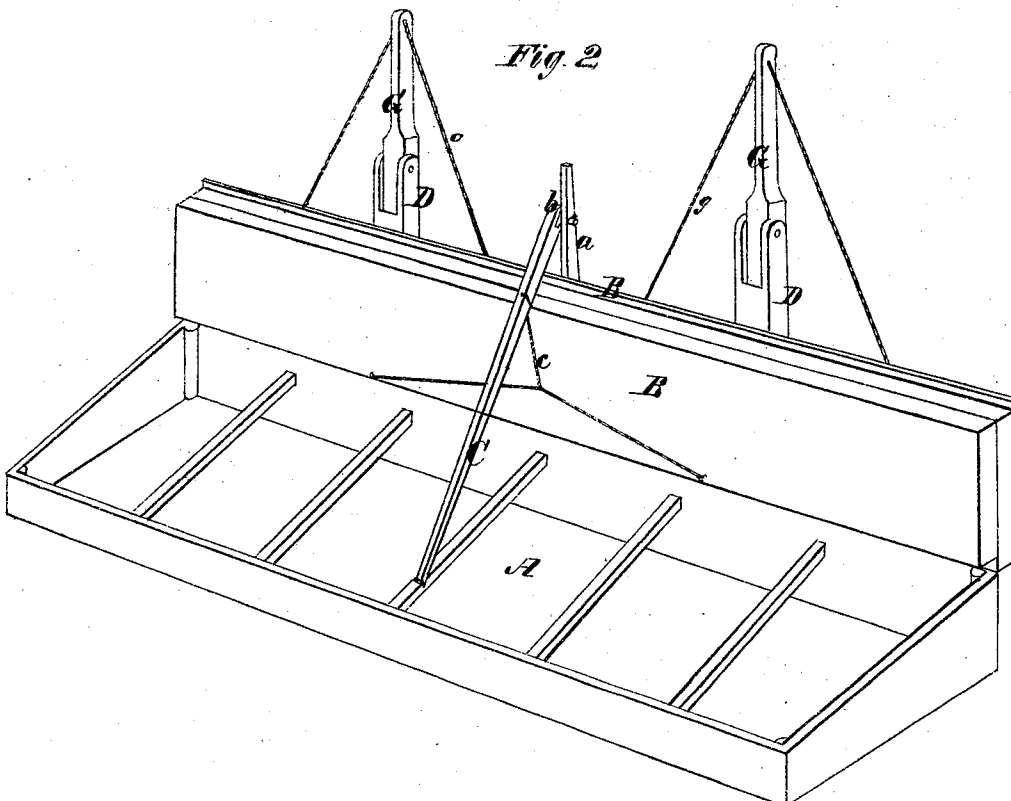
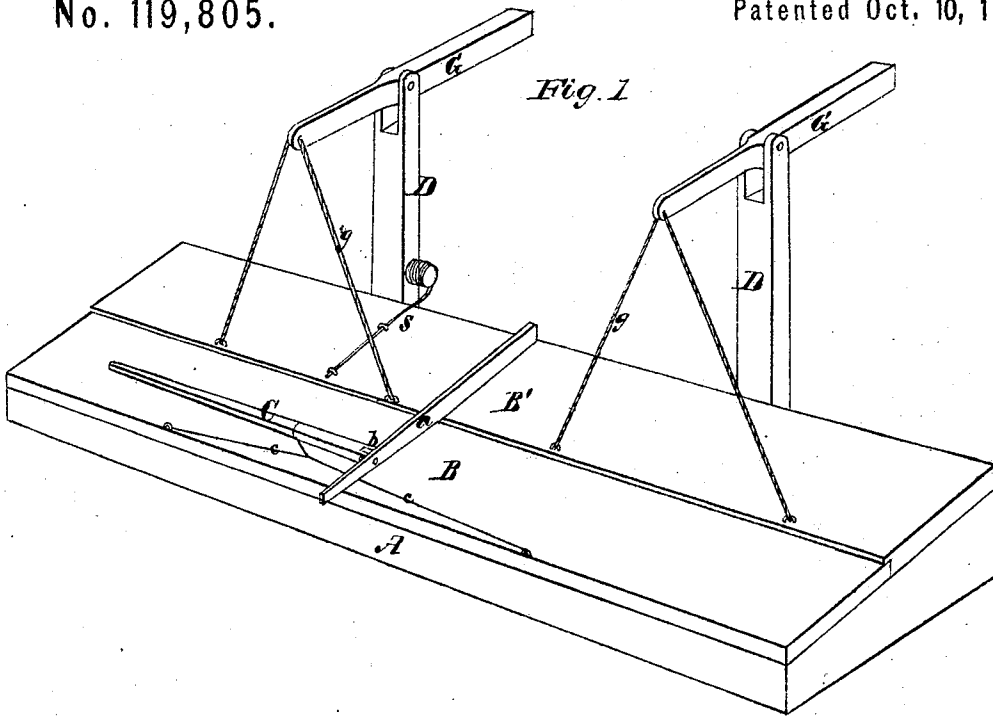


JAMES WEED.
No. 119,805.

Shutter for Hotbeds, &c.

Patented Oct. 10, 1871.



WITNESSES
W. H. Campbell,
J. H. Campbell.

INVENTOR
James Weed
by
Mason, Fenwick & Lamson.

UNITED STATES PATENT OFFICE.

JAMES WEED, OF MUSCATINE, IOWA.

IMPROVEMENT IN SHUTTERS FOR HOT-BEDS, &c.

Specification forming part of Letters Patent No. 119,805, dated October 10, 1871.

To all whom it may concern:

Be it known that I, JAMES WEED, of Muscatine, in the county of Muscatine and State of Iowa, have invented certain Improvements relating to Shutters for Green-Houses, Hot-Beds, and Cold-Frames; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view, showing the shutters closed. Fig. 2 is a perspective view, showing the shutters open.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and improved mode of constructing and operating poor-conducting covers for hot-beds, forcing-pits, cold-frames, and other receptacles for young plants, whereby such covers are much more readily opened or shut, and require less expenditure of labor to perform these operations, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing, A represents a cold-frame or hot-bed, which is adapted for the raising of plants during the cold months, and which may or may not be provided with glass covering. B B' represent two sections of wood, which form a poor-conducting cover for said frame, and which may be made solid or of double walls, with some suitable filling between the walls. These sections are hinged together, and rabbeted at their joint, and the section B' is hinged to the highest or north side of the frame A, as shown in the drawing. These poor-conducting folding sections B B' extend from end to end of frame A, and when they are shut, as shown in Fig. 1, they completely close the top of the frame.

For the purpose of readily raising or closing the shutters I employ the following contrivances: D D are two posts, which are arranged on the north side of the frame-wall, at a suitable distance apart, and which are slotted at their upper ends to receive loaded levers G G. These levers are pivoted between the bifurcated ends of the posts D D, and their front or lightest ends are connected by ropes or chains *g* to the section B', so as to bring their loaded ends into play for counterbalancing the weight of the two sections B B'. If desirable, one or more springs, *s*, may

be used instead of the loaded levers G, or in connection with these levers, or the latter may be used alone. Midway of the length of section B', and transversely across the same, is secured a handle or arm, *a*, which projects over the section B, but is not secured to it, so that a person standing in front of the frame can readily grasp this handle. To this arm *a* a prop, C, is connected by a universal or double joint, *b*, which prop is used for sustaining the shutter sections when raised, as shown in Fig. 2. This prop is connected by a cord or chain, *c*, to the front of section B, so that the latter can be readily brought into position when closing the two sections upon the frame. By connecting the prop C to the lifting-lever *a* by the double joint *b*, the prop can be adjusted upon the section B, as shown in Fig. 1, so as to be out of the way when the sections are closed.

To open the shutters-sections B B', they are lifted by their hinged ends to a folded and perpendicular position against the posts D. In this condition the sections serve to protect the plants against the north winds, and the section B serves to reflect the rays of the sun down upon the plants in the frame.

The sections may be opened or closed by one person at each end, or they may be opened or closed by one person having hold of the arm *a* at the middle of the sections.

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

1. A hot-bed frame, with a cover or shutter which is hinged to it, and is made in sections which fold upon or against one another, substantially in the manner and for the purpose described.

2. The combination of the lever G and cord *g* with the hinged folding-shutter B B' and a hot-bed frame A, substantially as and for the purpose described.

3. The combination of the arm *a*, prop C, hinged folding-shutter B B', and hot-bed frame A, substantially as described.

4. The combination of a spring or weight, or both a spring and weight, with the hinged folding-shutter B B', and the hot-bed frame A, substantially as described.

JAMES WEED.

Witnesses:

J. B. NEGLEY,
A. B. BROWN.