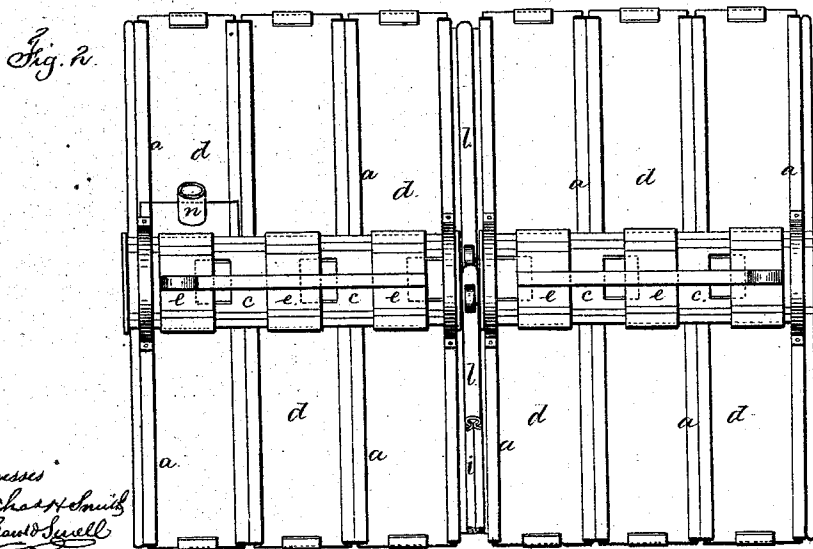
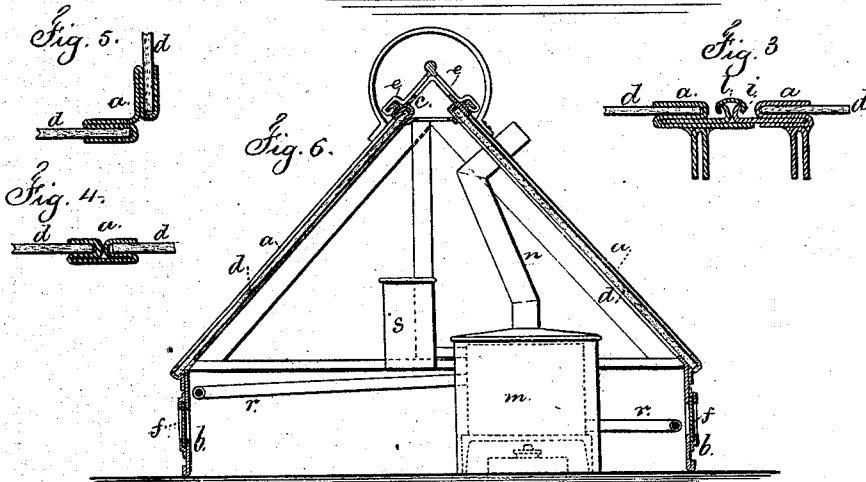
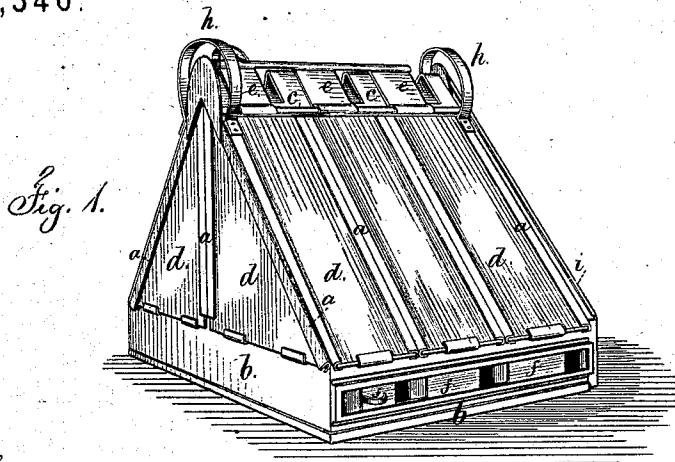


W. MUSGROVE.
Portable Cover for Plants.

No. 159,346.

Patented Feb. 2, 1875.



Witnesses
Charles Schmidt
Edward Sevell

Inventor
Wm Musgrove
per L. M. Sevell atty

UNITED STATES PATENT OFFICE.

WILLIAM MUSGROVE, OF NEW YORK, N. Y.

IMPROVEMENT IN PORTABLE COVERS FOR PLANTS.

Specification forming part of Letters Patent No. **159,346**, dated February 2, 1875; application filed September 1, 1874.

To all whom it may concern:

Be it known that I, WILLIAM MUSGROVE, of the city and State of New York, have invented an Improvement in Portable Covers for Plants, of which the following is a specification:

This cover is adapted to use as a hand-glass for covering separate plants, as a window green-house, as a cold-frame, hot-frame, green-frame, or propagating-frame. The single hand-frames are combined together when forming larger frames, and an arrangement is made for ventilating.

My invention consists in a portable cover for plants, provided with a ventilator-plate having openings, and sliding longitudinally upon the ridge-plate to open and close the apertures therein, in combination with the C-shaped bars, forming frames for the glass of the cover. The metal frames are also provided with returned strips at the edges to receive dovetail strips for uniting separate frames together to form a larger frame adapted to use as a propagating-frame, or with a hot-bed.

In the drawing, Figure 1 is a perspective view of a single hand-frame. Fig. 2 is a plan, partially in section, of two hand-frames combined together and containing a heating apparatus; and Fig. 3 is a cross-section of said frame with the heater in place.

The bars *a*, receiving the glasses, are made, by preference, of sheet metal, bent up into a double-trough shape, as shown in Fig. 4. This double-trough sash-bar is flat when the glasses stand in the same plane, but at right angles, as in Fig. 5, when the bars are used at the angles. The bars *a* extend at an inclination each way from the base *b*, and unite with the ridge-plate *c*, and at the ends are vertical bars and glasses. The bottom ends of the inclined bars *a* are fastened upon the base *b*, so as to allow for the introduction of the glasses *d*, and these glasses pass up beneath the edges of the ridge-plate *c*. In this ridge-plate *c* there are openings that serve for ventilation, and upon the ridge-plate there is a ventilator-plate, *e*,

that can be moved endwise to open or close the ventilator-openings, and in the base *b* there are also ventilator-openings covered with a sliding register-plate, *f*. At the inclined angles of the frame the metal of the sash-bar is turned back at an inclination, as at *i*, as in Figs. 2 and 3, so that when two of the covers are placed together, and a dovetailed strip, *l*, slipped over these inclined ribs *i*, the two covers are held together so as to form a larger cover, the glasses at the adjacent ends being slipped out.

In this way, two or more frames can be set together for covering a hot or cold bed, or for propagating, or for a window green-house.

The loops *h* serve as handles to move the covers, and also to protect the registers.

In many places a small amount of heat, especially during cold nights, is of great advantage. I provide for this by employing a lamp or gas-jet beneath a small boiler, *m*, that is incased by a jacket to which an escape-tube, *n*, is connected, so that any noxious gases pass outside the frame, and to this boiler *m* circulating-pipes *r* are connected and pass around the frame near the base. The vessel *s* supplies the boiler *m* and allows for expansion.

I do not claim metal frames for containing glass; but

I claim as my invention—

1. The ventilator-plate *e*, made with openings and sliding longitudinally upon the ridge-plate *c*, to open or close the apertures therein, in combination with the C-shaped bars containing glass and forming a portable cover for plants, substantially as set forth.

2. The portable covers for plants, made with metal frames containing glass, and with the returned strips *i* at the edges receiving the dovetailed strips *l*, for uniting the separate frames together, as set forth.

Signed by me this 28th day of August, A. D. 1874.

WM. MUSGROVE.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.