May 14, 1940. O. K. SLATER, JR 2,200,706

GREENHOUSE CONSTRUCTION

Filed March 9, 1939 2 Sheets-Sheet 1

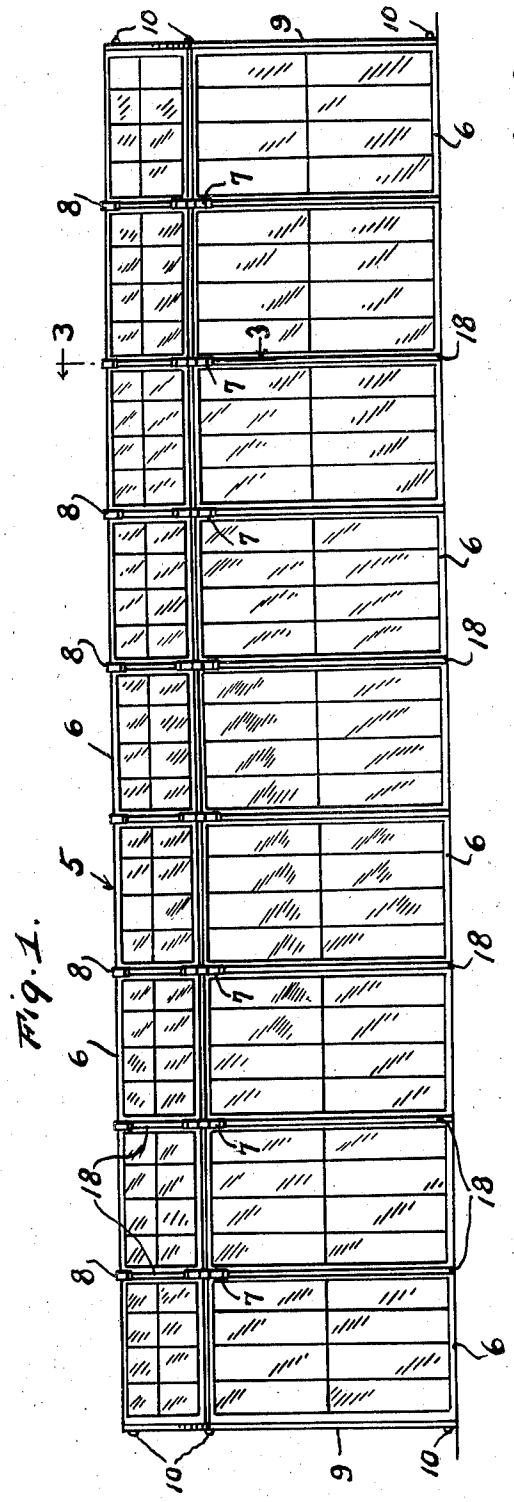


Fig. 1.

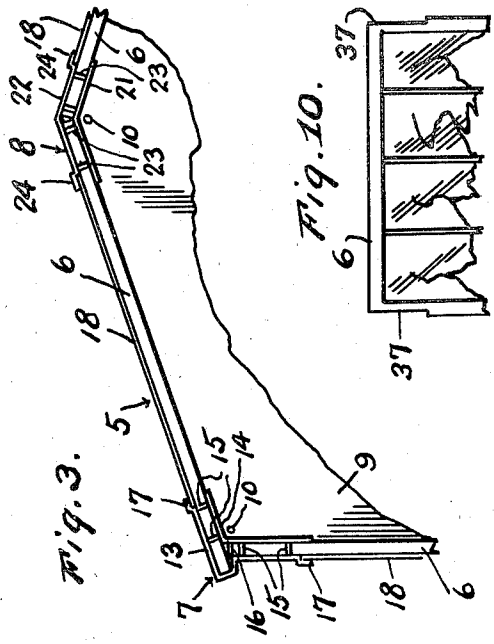


Fig. 3.

Fig. 10.

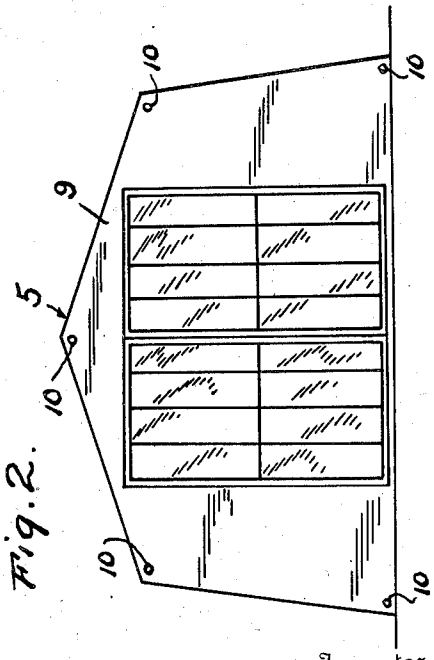


Fig. 2.

Inventor

Otto K. Slater, Jr.

By L. B. James

Attorney

May 14, 1940. O. K. SLATER, JR 2,200,706

GREENHOUSE CONSTRUCTION

Filed March 9, 1939 2 Sheets-Sheet 2

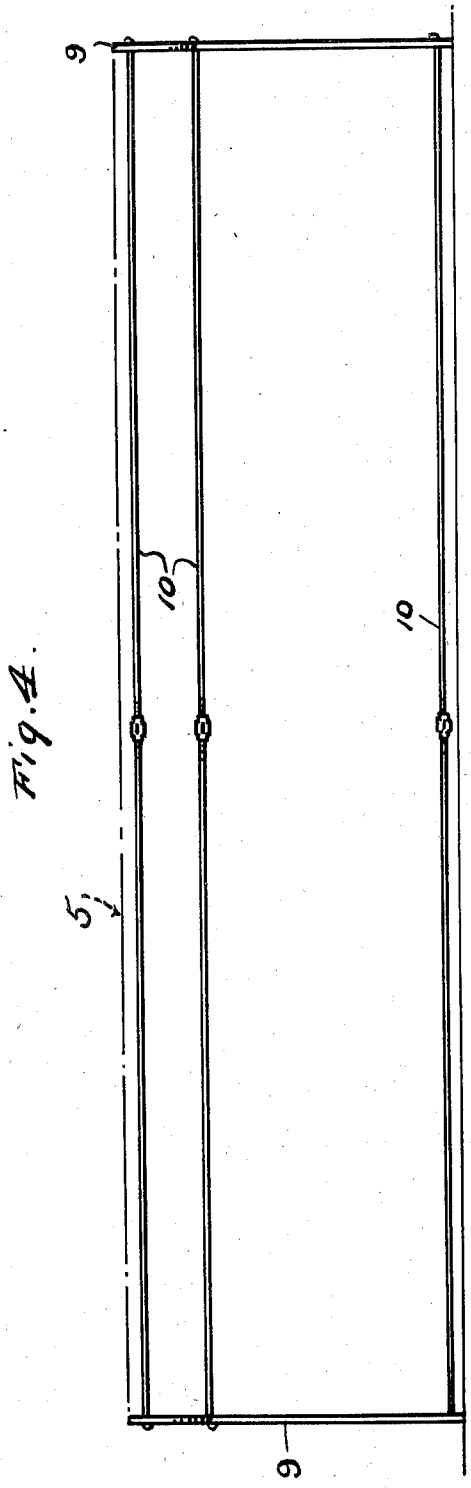


Fig. 4.

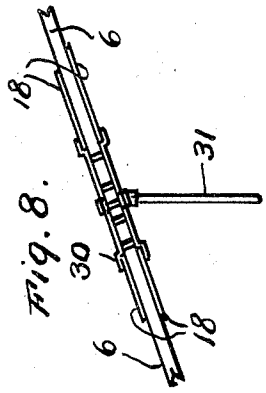


Fig. 8.

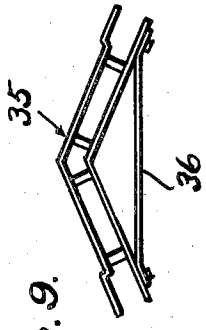


Fig. 9.

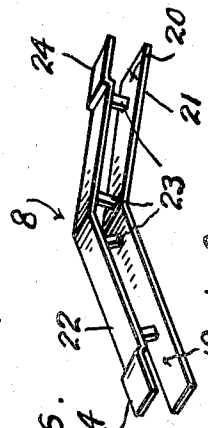


Fig. 6.

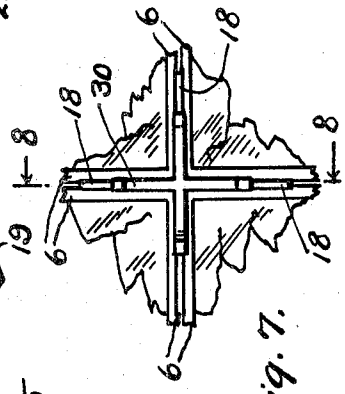


Fig. 7.

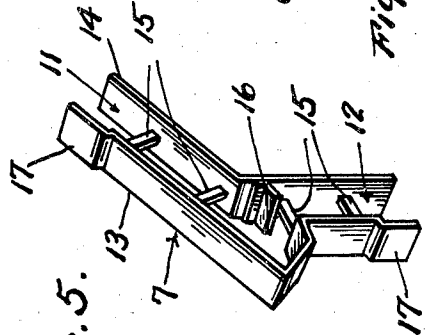


Fig. 5.

Inventor

Otto K. Slater, Jr.

By L. B. James

Attorney

Patented May 14, 1940

2,200,706

UNITED STATES PATENT OFFICE

2,200,706

GREENHOUSE CONSTRUCTION

Otto K. Slater, Jr., Medina, Ohio

Application March 9, 1939, Serial No. 260,859

3 Claims. (Cl. 189—4)

This invention relates to buildings and more particularly greenhouses.

The primary object of this invention resides in the provision of a greenhouse of the knock-down type which can be taken apart and set-up without the use of nails or other similar fastening elements.

Another object of this invention resides in the provision of a greenhouse formed of a plurality of interchangeable sections adapted to be detachably connected together.

A further object of this invention resides in the provision of a greenhouse of the knock-down type consisting of a plurality of coacting elements adapted to form a rigid structure when assembled.

A still further object of this invention resides in the provision of a greenhouse formed of particularly constructed sashes or window frames.

Aside from the aforesaid objects one of the salient features of this invention resides in the provision of the particularly constructed sash connecting elements.

With these and other objects in view this invention resides in certain novel features of construction and arrangement of elements to be hereinafter more particularly set forth in the specification, illustrated in the accompanying drawings and pointed out in the appended claims and, while this disclosure depicts my present conception of the invention, the right is reserved to resort to such changes in arrangement and construction of elements as come within the scope of the claims.

In the accompanying drawings forming a part of this application:

Figure 1 is a side view of a greenhouse constructed in accordance with this invention.

Figure 2 is an end view thereof.

Figure 3 is an enlarged sectional view taken approximately on line 3—3 of Figure 1.

Figure 4 is a side view similar to that shown by Figure 1 with the sashes removed to better illustrate the tie-rods.

Figure 5 is a perspective view of one of the eaves-clamps.

Figure 6 is a similar view of one of the ridge-clamps.

Figure 7 is a detail plan view of a portion of the roof of a greenhouse showing an intermediate-clamp.

Figure 8 is a sectional view thereof approximately on line 8—8 of Figure 7.

Figure 9 is a side view of a ridge-clamp of modified construction.

Figure 10 is a modified form of sash.

In the present illustration of this invention the numeral 5 designates, in general, a greenhouse constructed from a plurality of similar sashes 6 connected in set-up relation by eaves-clamps 7 and ridge-clamps 8 and held together by end members 9 which are secured in set-up position against the end sashes of the greenhouse by tie-rods 10 preferably of the adjustable type.

The eaves-clamps 7 are preferably formed of metal into angularly disposed pockets 11 and 12 having inner and outer walls 13 and 14 connected by lugs or webs 15; said pockets 11 extend over and outwardly of the pockets 12 so as to permit those sashes forming the top of the greenhouse to over-hang the side sashes thereof and the pockets 12 are provided with lugs 16 adapted to rest on the tops of the side sashes to support the weight of the top sashes. The free ends of the outer walls 13 of the eaves-clamps are offset as indicated by the numeral 17 to permit insertion of strips 18 therebeneath and over the cracks between the sashes to prevent escapage of the heat in the greenhouse.

Each ridge-clamp 8 is also formed of metal having angularly disposed pockets 19 and 20 therein between inner and outer walls 21 and 22 connected by lugs or webs 23, the free ends of the outer walls 22 are offset similarly to those of the eaves-clamps as indicated by the numeral 24 to also receive the ends of strips 18.

In building a greenhouse from the aforesaid elements the eaves-clamps are disposed on the upper edges of the side sashes and receive the lower ends of the top sashes, the upper ends of the top sashes being connected by the ridge-clamps whereupon the end members are secured against the opposite ends of a plurality of assembled sashes by the rods, thus it is apparent a rigid knock-down structure is provided.

In constructing greenhouses having roofs formed from two or more sash units on opposite sides of its ridge, intermediate-clamps 30 are used in connecting the sashes at their abutting corners as shown in Figure 7 and, in order to support the weight of the roof between the eaves and ridge thereof, standards 31 are suitably connected to certain of the intermediate-clamps, the same being shown in Figure 8 of the drawings.

The intermediate-clamps 30 are formed of metal having right angularly disposed pockets adapted to receive the abutting corners of four sashes and, like the eaves-clamps they are pro-

vided with offset ends to receive crack covering strips.

In Figure 9 is shown a ridge-clamp **35** similar to those heretofore set forth with the exception of being provided with a brace **36** which may be either permanently or detachably secured thereto, it being understood applying such brace to the eaves clamps if necessary is within the purview of this invention.

Due to the eaves-clamps and other sash connecting clamps heretofore mentioned being provided with lugs or webs, the sash, when disposed in the pockets thereof, will lie in spaced relation having cracks therebetween, this necessitating the use of the strips **18** to cover the same, however, in order to permit the sides of the sashes to abut one another, the same may be cut out as indicated by the numeral **37** in Figure 10 of the drawings.

With this invention fully set forth it is manifest that a knock-down greenhouse is provided and through the use of simple elements, the same can be cheaply manufactured and sold.

Having thus described my invention what I claim and desire to protect by Letters Patent is:

1. In a greenhouse having end walls, side walls formed of a plurality of sashes in side-by-side relation to each other, and a roof having sloping sections each consisting of a plurality of sashes in side-by-side relation to each other with their lower ends resting upon upper ends of the side walls and their upper ends intersecting to form a ridge; ridge clamps detachably connecting the intersecting upper ends of the roof-forming sashes and holding the sashes thereof in contacting engagement with each other, and eaves-clamps connecting lower ends of the roof sashes with upper ends of the side wall sashes and holding the sashes in engagement with each other, said eaves-clamps each comprising inner and outer strips having vertical lower portions and diagonally extending upper portions for receiving portions of roof and wall sashes therebetween, the outer strip having a portion between its upper and lower portions bent to form an abutment shoulder for engagement by the lower end of a roof sash, a web projecting from the upper end of the lower portion of the inner strip towards the shoulder of the outer strip, and lugs extending between the inner and outer strips for engaging between side edges of adjoining sashes.

2. In a greenhouse having side walls formed of a plurality of sashes in side-by-side relation to each other, and a roof having sloping sections each consisting of a plurality of sashes in side-by-side relation to each other with their lower ends resting upon the side wall sashes and their upper ends intersecting to form a ridge; eaves-clamps for connecting lower ends of the roof-sashes with upper ends of the side-wall-sashes, and ridge clamps for connecting intersecting upper ends of the roof-sashes, said ridge clamps each comprising inner and outer strips bent to form sash-engaging portions diverging downwardly, and lugs extending between the inner and outer strips for engaging between side edges of adjoining sashes.

3. In a greenhouse having side walls formed of a plurality of sashes in side-by-side relation to each other, and a roof having sloping sections each consisting of a plurality of sashes in side-by-side relation to each other with their lower ends resting upon the side wall sashes and their upper ends intersecting to form a ridge; eaves-clamps for connecting lower ends of the roof-sashes with upper ends of the side-wall-sashes, and ridge clamps for connecting intersecting upper ends of the roof-sashes, each clamp comprising inner and outer strips bent to form end portions constituting sash engaging jaws, outer ends of the outer jaws being offset outwardly, and lugs extending between companion jaws of the inner and outer strips for engaging between side edges of adjoining sashes.

OTTO K. SLATER, JR.