Oct. 1, 1946. R. C. HART 2,408,555

GREENHOUSE ROOF BAR CLEANING BRUSH

Filed July 21, 1944 2 Sheets-Sheet 1

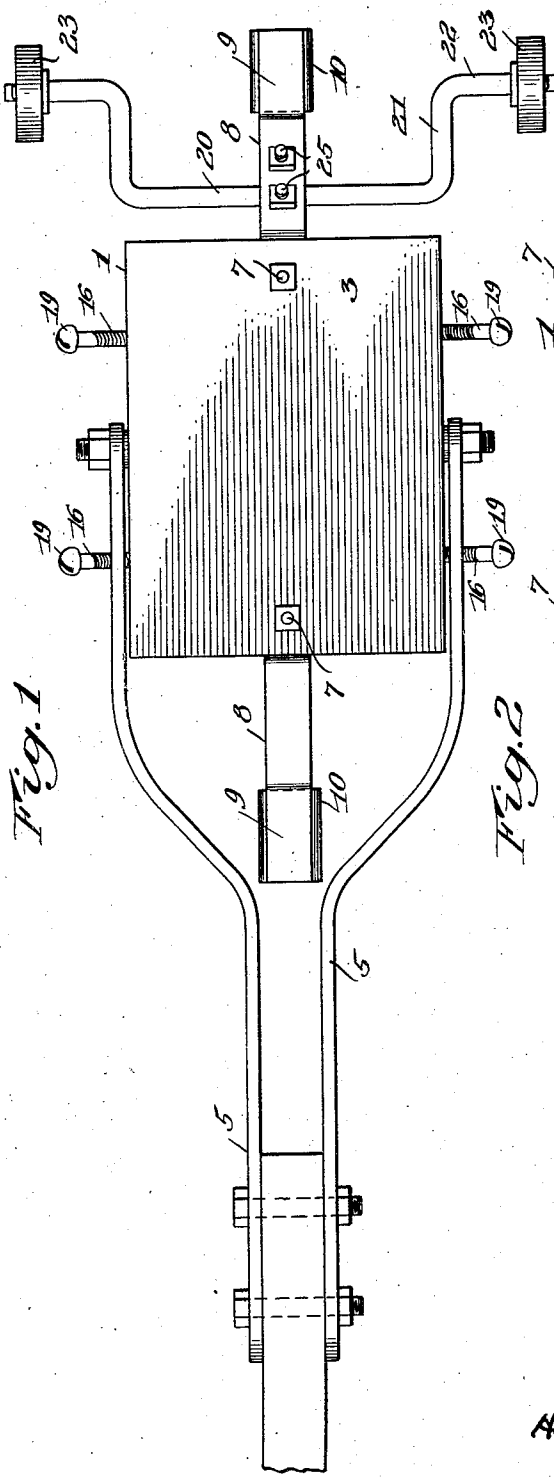


Fig. 1

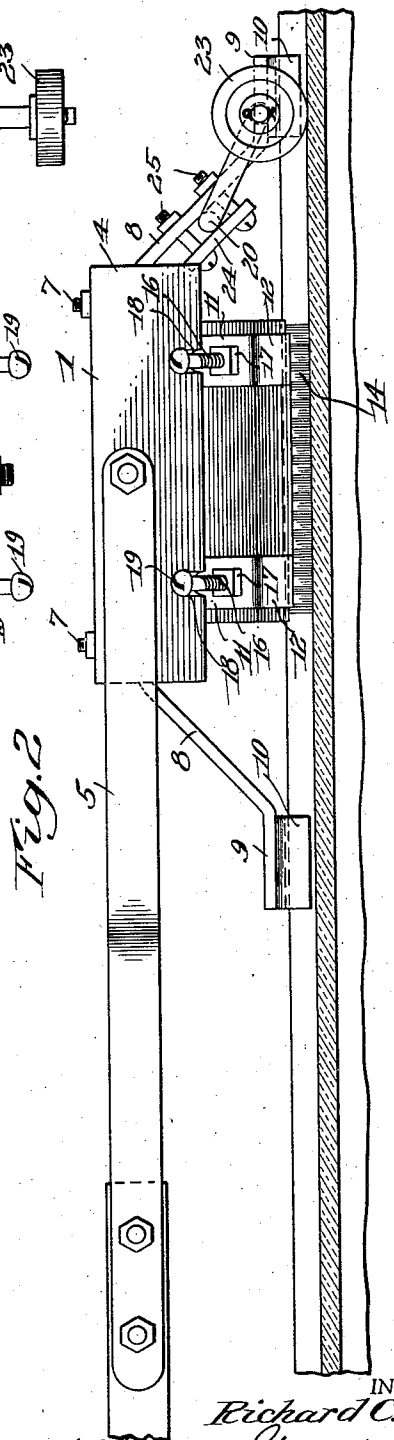


Fig. 2

INVENTOR.
Richard C. Hart
BY Harold E. Stonebraker,
his Attorney

Oct. 1, 1946. R. C. HART 2,408,555

GREENHOUSE ROOF BAR CLEANING BRUSH

Filed July 21, 1944 2 Sheets-Sheet 2

Fig. 3

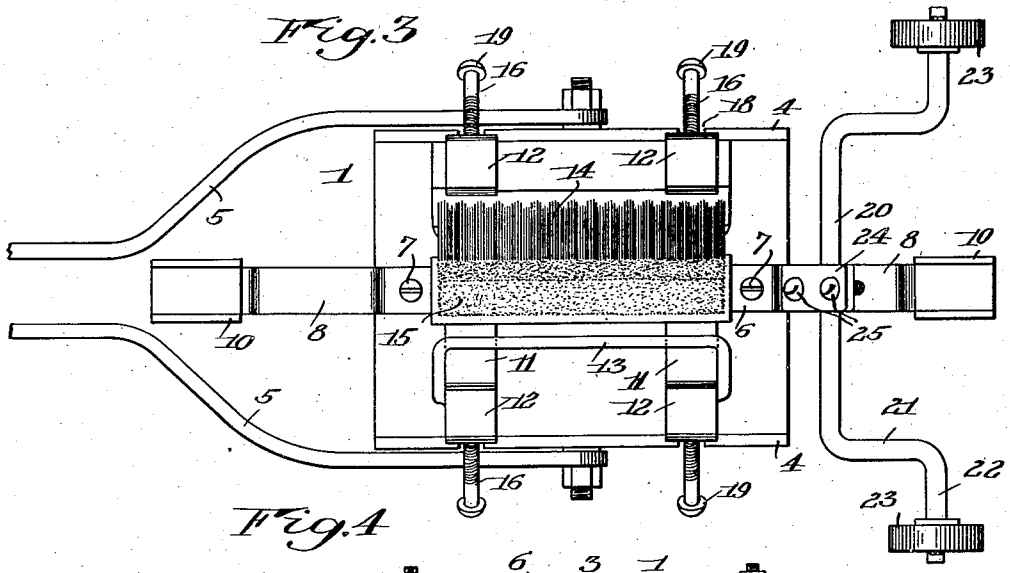


Fig. 4

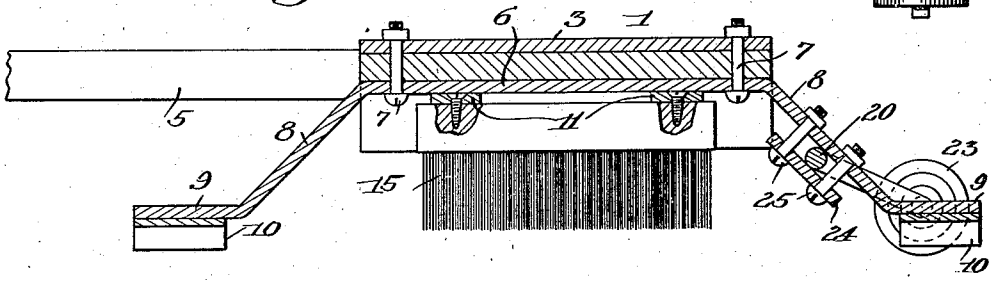
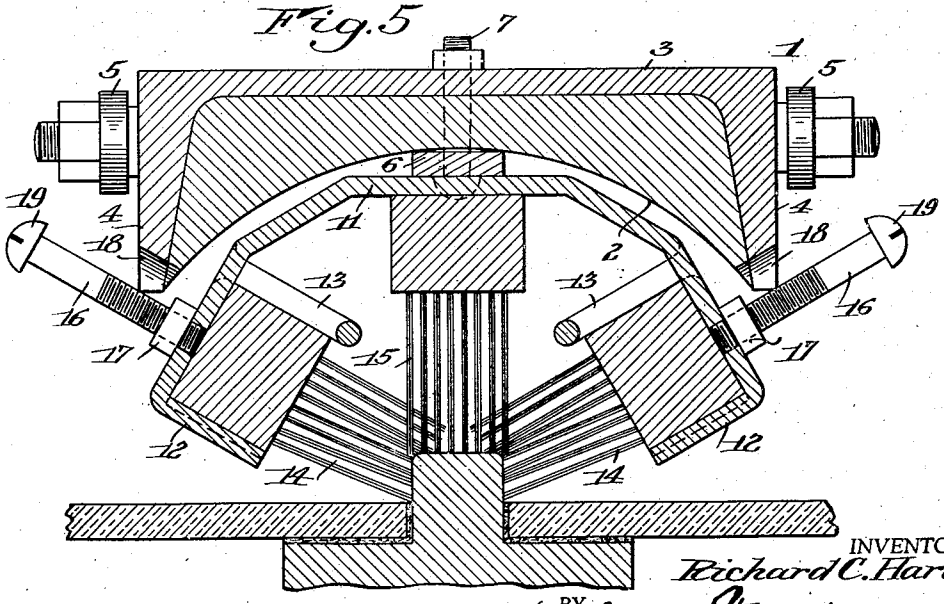


Fig. 5



INVENTOR.
Richard C. Hart
BY
Harold E. Stonebraker,
his Attorney

Patented Oct. 1, 1946

2,408,555

UNITED STATES PATENT OFFICE

2,408,555

GREENHOUSE ROOF BAR CLEANING BRUSH

Richard C. Hart, Fairport, N. Y., assignor to Geo. B. Hart, Inc., Rochester, N. Y., a corporation of New York

Application July 21, 1944, Serial No. 546,005

4 Claims. (Cl. 15—160)

1

This invention relates to a brush mechanism for cleaning greenhouse roof bars, and has for its purpose to afford a simple, economical, and efficient structure than can be manipulated readily without necessitating the workman getting on the roof.

In cleaning the bars of greenhouse roofs preparatory to painting them, considerable time is required for a workman to do this while on a roof, and it is desirable to provide brush mechanism that can be operated from one side of the roof while standing on the ground and moving the brush mechanism back and forth along a bar to be cleaned, the present structure being designed to afford a practical and successful means for carrying on such work quickly and efficiently without the workman having to walk or crawl over the roof itself.

A further purpose of the invention is to afford a structure that can be produced at a minimum cost, and which can be easily manipulated with little effort across the expanse of a greenhouse roof.

Still another object of the invention is to afford an arrangement permitting the brushes to be readily adjusted in order to contact effectively the top and side exposed surfaces of the bar for cleaning it thoroughly to remove all dirt or loose material and prepare the surfaces for painting.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear clearly from the following description when read in conjunction with the accompanying drawings, the novel features being pointed out in the claims following the specification.

In the drawings:

Fig. 1 is a plan view showing a preferred embodiment of the invention in operating position;

Fig. 2 is a side elevation of the construction;

Fig. 3 is a bottom plan view;

Fig. 4 is a longitudinal sectional view taken centrally, and

Fig. 5 is an end elevation partly in section.

Referring more particularly to the drawings in which like reference numerals refer to the same parts throughout the several views, 1 designates the weighted support which may be of cast iron or otherwise suitably constructed, and sufficiently heavy to impose the necessary pressure for holding the brushes down upon a bar and in close contact therewith when the mechanism is moved therealong, the support 1 being provided with a transversely concave bottom surface 2 upon which the brushes are mounted in a manner that

2

will appear presently. 3 designates the top surface of the weighted support 1, and 4 designate its side walls to which are pivotally connected the links 5 which may constitute handle-attaching means for pivotally supporting a suitable elongated handle to be held and manipulated back and forth by the operator.

In order to guide the brush mechanism properly along a bar, guiding shoes are provided for engagement with the bar, preferably at both ends of the brushes and support, and to accomplish this there is provided a rod 6 which extends longitudinally along the bottom of the support 1 at its central portion and is fixedly attached thereto in any desirable manner as by means of attaching bolts 7. The rod 6 is provided at the opposite ends of the support 1 with downward and outward extensions 8 which terminate in horizontal portions 9 upon which are mounted or provided the bar-engaging guiding shoes 10.

The guiding shoes 10 are preferably of U-shaped cross-section to fit over and engage a bar while it is being cleaned, and they are welded or otherwise formed on the horizontal portions 9 at the ends of the rod 6, being located in such relation to the brushes as to engage the bar when the brushes are in proper contact therewith, and to maintain the brush mechanism in correct relation to the bar as the operator moves the device back and forth along a bar. The brushes are attached to the under concave surface of the support 1 in any suitable way positioned for engagement with the upper and side exposed surfaces of a bar, and are preferably arranged adjustably in a manner that will now be described.

Rigidly attached to the concave under side of the support 1 are transversely extending curved cross frames 11, one preferably located at each end of the support, and attached by welding to the longitudinal rod 6 or in any other suitable fashion. Each of the cross frames 11 includes an upwardly extending flange 12 at its outer end and flanges or walls 13 spaced from the end flanges 12 and affording pockets within which are located the outer longitudinally extending brushes 14 that are frictionally held in said pockets and adjustable away from the support 1 in a manner that will appear presently. 15 designates a central brush extending longitudinally of the support 1 over the rod 6 and permanently attached thereto and to the support while the brushes 14 extend parallel to the central brush 15 and are angularly disposed, as shown in Fig.

5, so that while the central brush 15 engages the top surface of a bar being cleaned, the outer brushes 14 engage the corners and side surfaces of the bar and effectively contact every exposed portion of the latter.

The outer brushes 14 are preferably adjustable away from the support to enable moving them into effective cooperative relationship with the bar, and this is accomplished by adjusting screws 16 which engage threaded openings in the cross frames 11, while 17 designate nuts threaded on the screws 16 and located between the support 1 and the frames 11 to enable securing the adjusting screws in any position. The lower end of each screw 16 engages the upper side of a brush 14 while the screw projects through a recess 18 in the support 1 to a point at one side of the support where the head 19 of the adjusting screw is accessible to enable turning the latter and thereby moving the brush relatively to the support to any desired position.

Each outer brush 14 is frictionally held in the cross frames which it occupies, and is held down when in operation against the lower end of the adjusting screw 16 which limits upward movement of the brush in its pocket on the cross frame. The two outer brushes 14 extend between the two cross frames 11 and are thus manually adjustable to contact the bar uniformly on opposite sides, the brushes being of conventional structure and provided with metal wires or other suitable cleaning instrumentalities.

By means of the guiding shoes 10 already described, the brushes are held in proper longitudinal relationship to a bar, and it is also desirable to maintain the support and brushes in a substantially uniform horizontal relationship. This is accomplished by means of a wheeled frame, the wheels of which engage the surface of the glass or other roof adjacent to the bar being cleaned. To this end there is provided a wheeled frame including a transverse rod 20 attached in any suitable fashion and including downwardly extending portions 21 terminating in the horizontal extremities 22 on which are mounted the roof-engaging wheels 23 located below the guiding shoes 10 and brushes and adapted to engage the surface of the glass roof on opposite sides of a bar and thus to maintain the cleaning brushes in proper horizontal relationship. The rod 20 of the wheeled frame may be attached to one of the downwardly extending portions 8 of the longitudinal rod 6 and secured thereto by a clamping plate 24 held in place by attaching bolts 25.

With the structure described, the brushes are held against a bar by the weight of the support and engage the top and side exposed surfaces of the bar uniformly, owing to the engagement of wheels 23 with the surface of the roof, and as the operator by means of a connected handle moves the brush mechanism back and forth, the guiding shoes 10 engage and travel along the bar at points beyond both ends of the brushes, so that correct movement of the brush mechanism longitudinally of the bar is insured.

While the invention has been described with reference to the particular arrangement shown, it is not restricted to the details herein disclosed, and this application is intended to cover such modifications and departures as may come within the purposes of the invention and the scope of the following claims.

I claim:

1. Brush mechanism for cleaning greenhouse roof bars comprising a horizontal weighted support having a transversely concave bottom surface, a plurality of brushes secured to the concave bottom surface of the support at the center and on opposite sides of the center at different points transversely of said concave bottom surface, a rod extending longitudinally of the bottom of the support and attached thereto, said rod being located between the support and the brushes which are mounted on said rod, the rod terminating in bar-engaging guiding shoes, a handle, and handle-attaching means secured to said support.

2. Brush mechanism for cleaning bars of greenhouse roofs comprising a weighted support having a transversely concave bottom surface, a rod extending longitudinally of the bottom of the support and attached thereto, said rod terminating in bar-engaging guiding shoes located beyond the ends of the brushes, curved brush-supporting cross frames extending transversely of the support beneath said rod and attached to said rod, a central brush fixedly attached to the support, flanges extending downwardly from said cross-frames affording pockets at the ends of the cross frames, outer brushes positioned in said pockets and disposed angularly to the central brush, adjusting means cooperating with said cross frames and engageable with said outer brushes, said adjusting means extending laterally beyond the support and accessible from the sides thereof, a wheel-supporting frame attached to said rod between the ends of the brushes and the adjacent guiding shoe, roof-engaging wheels mounted on said frame, a handle, and handle-attaching means secured to the support.

3. Brush mechanism for cleaning bars of greenhouse roofs comprising a horizontal weighted support having a transversely concave bottom surface, curved brush-supporting cross frames extending transversely of said concave bottom surface and secured thereto, a central brush fixedly attached to said frames, flanges extending downwardly from said cross frames affording pockets at the ends of the cross frames, outer brushes positioned in said pockets and disposed angularly to the central brush, adjusting means cooperating with said frames and engageable with the outer brushes, said adjusting means extending laterally beyond the support and accessible from the sides thereof, a handle, and handle-attaching means secured to the support.

4. Brush mechanism for cleaning bars of greenhouse roofs comprising a horizontal weighted support having a transversely concave bottom surface, a rod extending longitudinally of said concave bottom surface at its center and attached thereto, said rod terminating in bar-engaging guiding shoes located beyond the ends of the brushes, curved brush-supporting cross frames extending transversely of said concave bottom surface of the support beneath said rod and attached to said rod, a central brush fixedly attached to the support, flanges extending downwardly from said cross frames affording pockets at the ends of the cross frames, outer brushes positioned in said pockets and disposed angularly to the central brush, adjusting means cooperating with said cross frames and engageable with said outer brushes, said adjusting means extending laterally beyond the support and accessible from the sides thereof, a handle, and handle-attaching means secured to the support.

RICHARD C. HART.