

Dec. 31, 1940.

H. B. SABIN

2,226,634

PAINTING DEVICE

Filed July 15, 1939

2 Sheets-Sheet 1

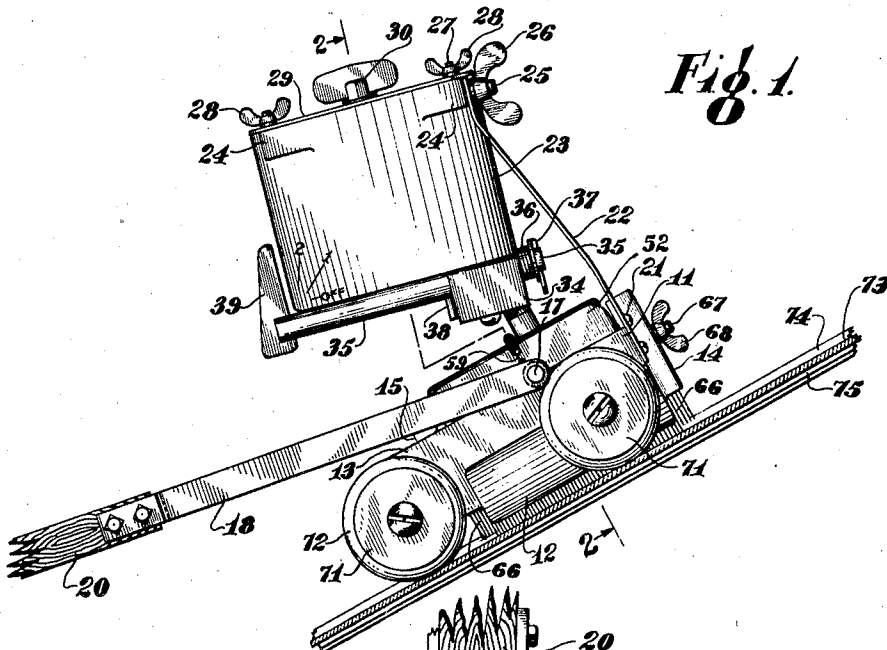
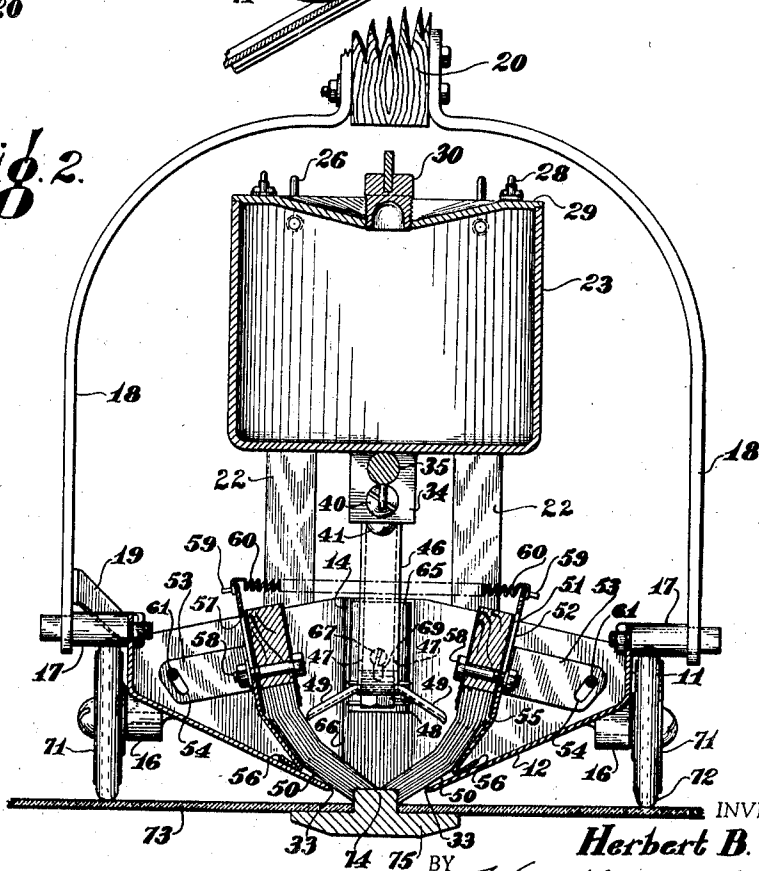


Fig. 1.

Fig. 2.



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2 Sheets-Sheet 2

Fig. 3.

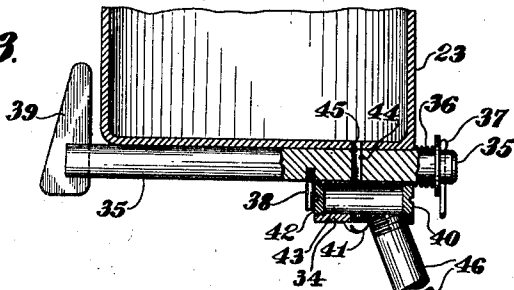


Fig. 4.

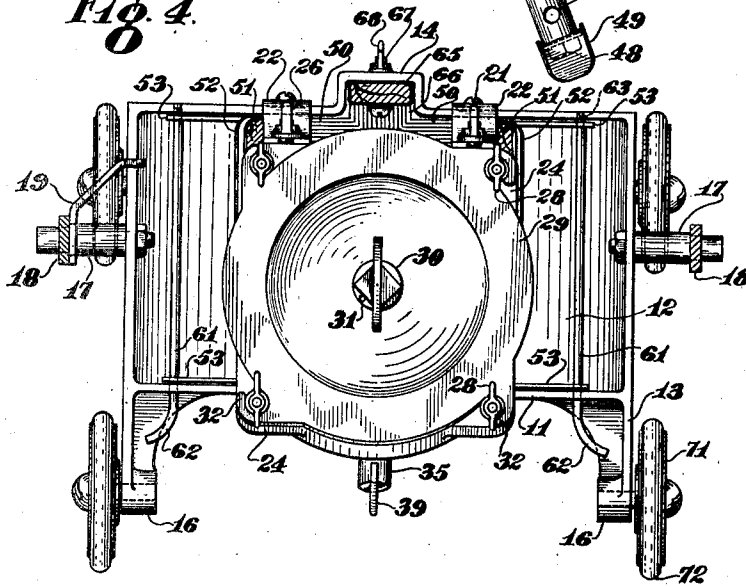


Fig. 6.

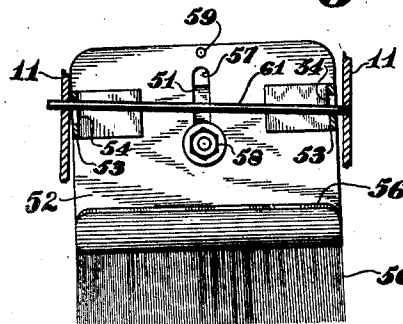
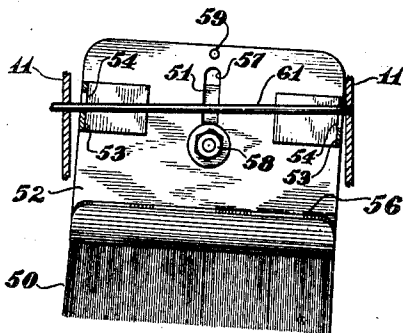


Fig. 5.

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2,226,634

PAINTING DEVICE

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Application July 15, 1939, Serial No. 284,698

14 Claims. (Cl. 91—39)

My invention relates to painting or brushing devices for painting or brushing greenhouse bars and the like.

5 An object of my invention is to provide an improved device for applying paint to the bars or rafters of greenhouses.

Another object is to provide a device for spreading paint upon greenhouse bars and the like at a distance from the bar being painted.

10 Another object is to provide a device for applying paint to a greenhouse bar and spreading it evenly upon the portion of the bar extending above the glass.

15 Another object is to provide a device for applying paint to a greenhouse bar, which is simple to manipulate and efficient in operation.

20 Another object is to provide a greenhouse bar painter which applies the proper amount of paint to the bar, and which properly spreads the paint upon the portion of the bar being painted.

Another object is to provide a greenhouse bar painter which does not smear or spread the paint upon other portions of the greenhouse.

25 Another object is to provide a greenhouse bar painter having only the brush contacting the bar being painted.

Another object is to provide a brush for a greenhouse bar painter which is adjustable to different conditions of operation.

30 Another object is to provide a greenhouse bar painter adapted to ride upon a greenhouse in co-operative relationship to the bar being painted without contacting the portion of the bar being painted and adapted to hold the brushes in proper painting engagement with the bar.

35 Another object is to provide a greenhouse bar painter having self adjustable brushes.

40 Another object is to provide a device for holding a paint brush in proper painting position relative to the object to be painted.

Another object is to provide a greenhouse bar painter adapted to maintain paint applying brushes at the proper angular position relative to the bar being painted.

45 Another object is to provide a greenhouse bar painter adapted to maintain the brushes in proper painting engagement with the bar.

50 Another object is to provide a greenhouse bar painter adapted to permit tilting of the brushes as the painter is moved in its painting operation.

Another object is to provide a greenhouse bar painter adapted to maintain the brushes in proper extension toward the bar to insure proper painting engagement.

55 Another object is to provide a brush carrying

member adapted to permit compound movement of a brush relative to a movable carriage.

Another object is the provision of a greenhouse bar painter having angularly disposed brushes adapted to apply paint to the bar and having other brushes for brushing the applied paint. 5

Another object is the provision of a greenhouse bar painter having paint applying brushes and apparatus for supplying paint to said brushes.

10 Another object is the provision of a greenhouse bar painter which automatically adjusts itself to properly paint said bar.

15 Another object is the provision of a greenhouse bar painter which retains the paint against dripping during transfer of the painter from one bar to another.

20 Another object is the provision of a greenhouse bar painter having spaced wheels positioned at the outside edges of the painter carriage and extended below the top of the bar to support the painter against tipping sideways.

Another object is the provision of a properly balanced bar painter.

25 Another object is the provision of a handle arrangement for properly maintaining the painter in position.

Another object is the provision of a painting device of improved construction and operation.

30 A still further object is the provision of a new painting device rendering a novel and useful result.

35 Other objects and a fuller understanding of my invention may be had by referring to the following description and claims, taken in combination with the accompanying drawings in which, like reference characters designate like parts of my invention, and in which:

Figure 1 is a side view of my greenhouse bar painter shown in operating position on a greenhouse.

40 Figure 2 is a cross-sectional view of my device taken through the line 2—2 of Figure 1.

Figure 3 is a detailed view, with portions cut away, of a part of the paint container and the feeding conduit of my device.

45 Figure 4 is a plan view looking down upon my device.

Figure 5 is a view of one of the side brushes of my device in one tilted position, and

50 Figure 6 is a view of one of the side brushes of my device in a tilted position opposite from that shown in Figure 5.

In the maintenance of greenhouses, it is necessary that the exposed portion of the glass supporting bars on the top of the greenhouse be 55

kept painted to prevent deterioration of the same. Inasmuch as the glass roofs of the greenhouses cover a relatively large expanse there is presented a difficult problem of applying the paint to the greenhouse bar upon the top of the greenhouse. The glass and supporting bars are relatively fragile and cannot readily support the weight of a man. It has usually been necessary to build a scaffolding above the top of the greenhouse for supporting a person reaching down and painting the greenhouse bars by hand. This procedure is exceedingly laborious and slow. Furthermore, the painting of the narrow strip exposed on the top of the greenhouse bar is rather difficult to do by hand without also smearing paint upon the glass panes of the greenhouse.

In the use of the prior devices for applying the paint to the greenhouse bar wherein the paint applying brushes were carried along in painting position by a carriage certain difficulties and problems have arisen. When the painting device was moved along on top of the bar so that the weight of the carriage was carried by the bar the wheels or glides supporting the carriage smeared and defaced the paint applied by the brushes. Furthermore, the bar painting devices were top heavy and tended to tip sideways upon a pane of glass. In the devices wherein the support was by glides or wheels riding on the bar or closely adjacent thereto, considerable manual force and dexterity was required to prevent the carriage from falling over sideways as the carriage was moved up and down the greenhouse during the painting operation. The mechanical painting devices moreover lacked a flexibility in permitting movement of the brushes as the carriage was moved upon the greenhouse. It is well known that in obtaining the best results in hand painting the operator holds the paint brush at a tilt or incline to the longitudinal direction in which the paint is being applied. It is also known that in proper application of paint the operator using a paint brush by hand allows or permits a certain "give" to permit the paint brush to move toward and away from the object being painted as he moves the paint brush along the object being painted. Obstructions and irregularities in the surface of the bar or strip of material being painted require a yielding and adaptability characteristic usually considered possible only by manual painting in the conventional manner. My invention incorporates the desirable characteristics of hand painting together with mechanical exactness by fixed limitations of the yielding movement. My device therefore has utilized all the advantages of hand painting together with the accuracy of a mechanical device and the added accommodation of a movable painter operable from a distance. These advantages and improvements together with others will be discernable in the device herein described and shown.

Referring to the several views of the drawings and particularly to Figures 1 and 2 there is shown a carriage 11 adapted to be moved along the top of the greenhouse. The carriage 11 has inclined or sloping wall portions 12 which extend longitudinally of the carriage 11. The sloping side walls 12 are inclined at an angle to each other and extend from the outer edges of the carriage 11 down to the elongated open space 33 at the bottom of the carriage 11. These inclined sides 12 therefore form a trough adapted to be disposed longitudinally of the bar.

The glass panes 73 are supported upon the

bottom portion 75 of the bar 74 as is more readily seen in Figure 2. The elongated open space 33 is arranged to expose the bar 74 extended above the glass pane 73 and it is this portion of the bar to which the paint is applied.

The longitudinal end walls of the carriage 11 are provided with grooved portions 14 and 15, respectively, disposed vertically of the carriage. The grooved end portions 14 and 15 are arranged to accommodate the relatively narrow end brushes 65, one end brush 65 being positioned in each grooved portion 14 and 15. The end brushes 65 have bristles 66 extending downwardly therefrom to brush upon the top of the bar 74. The bristles 66 are positioned to extend down slightly beyond the top of the bar 74 so that the bristles 66 will flex as the carriage is moved longitudinally of the bar and thus assure a good painting engagement of the bristles 66 with the bar 74. To adjustably mount the brushes 65 at their respective ends of the carriage slots 69 are provided in the solid portion of each brush and extended in a vertical manner. Bolts 67 and wing nuts 68 bolt the brushes 65 to the end portions 14 and 15, respectively. The slot 69 permits the brushes 65 to be raised and lowered into proper position and the tightening of the wing nuts 68 secure the brushes 65 at said proper position.

The carriage 11 has rear extending portions 13 extending from the rear end thereof, that is, toward the left in Figure 1. Wheel supporting studs 16 integrally formed with or connected to the carriage 11 provide bearing supports for the four wheels 71. The mounting of the rear wheels at the ends of the extending portions 13 provide a proper balanced support for the carriage 11 as the carriage 11 is moved up the incline of the bar 74 as illustrated in Figure 1. Rubber tires 72 of a resilient nature provide a cushioning effect for the device as it is moved upon the greenhouse. In many greenhouses the panes of glass overlap in the manner of shingles and the rubber tires 72 absorb any shock as the carriage drops from the level of one pane of glass to the next succeeding pane of glass. The wheels 71 including the tires 72 ride upon the glass of the greenhouse on opposite sides of the bar 74 extending above the panes of glass. The support for the carriage and its attachments is therefore widely spaced and positioned adjacent the side edges of the carriage 11. As seen in Figure 2 the device has a broad and stable support the wheels being positioned adjacent the outer edges of the carriage 11 and riding upon the greenhouse below the level of the top of the bar 74. The combination of the broad supporting base of the spaced wheels and the riding of the wheels upon a level lower than the top of the bar gives such a stability to the device that it does not tip sideways. No effort is required to maintain the balance of the device as is required for devices supported upon the top of the bar being painted or closely adjacent thereto.

Two handle supporting studs extend laterally of, and from the outer edges of, the carriage 11. The studs 17 are positioned in front of the center of gravity of the carriage 11 so that the major portion of the weight of the carriage 11 and the parts attached thereto is in the rear portion of the carriage, that is, to the left of the studs 17 in Figure 1. An elongated handle 20 has a bail portion 18 which is pivotally connected to the carriage 11 upon the studs 17. The handle 20, shown broken off in Figures 1 and 2, is long enough to permit a man standing at the edge of,

or in the gutter of, the greenhouse to push the carriage 11 to the peak or gable of the greenhouse roof. The pivoted connection of the bail portion 15 of the handle with the studs 17 permits the carriage to freely move longitudinally of the bar 74 as the handle 20 is pulled and pushed by the operator. A finger portion 19 extends from one side of the bail portion 18 and toward the front portion of the carriage 11. Since the greater part of the weight of the carriage and attached parts is in the rear of the pivoted connection at the studs 17, the carriage tends to tip backwards, that is, to the left in Figure 1, upon the lifting of the carriage by the handle 20 up from the bar 74. The finger portion 19 is adapted to engage upon the top edge of the carriage 11 and thus prevent the carriage from tipping too far back as the device is lifted up to transfer it from one bar to another.

A pair of side brushes 51 are mounted to the carriage 11 on opposite sides of the elongated open space 33. The brushes 51 are relatively elongated and disposed longitudinally of the carriage 11 in a manner that the bristles 50 of the brushes 51 may engage the bar 74 through the open space 33. Two brush carrying members 52 are provided for supporting the brushes 51 in position on the carriage 11. Each brush carrying member 52 is in the form of a flat plate, preferably of metal, also extended longitudinally of the carriage 11. Each brush carrying member 52 has a slight bend 55 formed therein for flexing the bristles 50 inwardly of the carriage toward the open space 33. The bottom edge of the brush carrying member is bent back upon itself to form a flange or engaging portion 56 which is adapted to slidably engage the upper surface of the inclined sides 12 of the carriage 11. Slots 57 are formed to extend vertically of the brush carrying members 52 to accommodate bolts 58 securing the brushes 51 to the brush carrying members 52. The arrangement of the slots 57 and bolts 58 permit an adjustment of the position of the brushes 51 relative to the brush carrying members 52 and thus permit the brushes 51 to be lowered as the bristles 50 may wear out in use. Adjacent opposite ends of the brush carrying members 52 there are ears or end portions 53 disposed at right angles to the brushes 51. The end portions 53 may be formed integrally with the brush carrying members 52 or may be secured thereto by welding. Each of the end portions 53 has an elongated slot 54 disposed therein. As better illustrated in Figure 2 the slots 54 of the opposing brush carrying members 52 are disposed at an angle to each other. The slots 54 in the end portions of each brush carrying member are parallel.

A rod 61 carried by the carriage 11 is accommodated in the slots 54 of each brush carrying member 52. The rods 61 are secured to an end wall of the carriage by the threaded portion 63 of the rod 61 being threaded thereto. The opposite end of the rods 61 are bent to form the bent portion 62 which permits the rods 61 to be readily inserted and threaded into position. The end portions 53 of the brush carrying members 52 are therefore slidably carried upon the rods 61, a limited movement being permitted by the rods 61 in the angularly disposed slots 54.

Small pegs 59 extend from the upper edge portion of each brush carrying member 52 and are positioned substantially half way between the ends of the brush carrying members 52. A coil spring 60 under resilient extension extends be-

tween the two brush carrying members 52 and has its ends hooked or connected to the pegs 59. The resiliency of the coil spring 60 is such that the brush carrying members 52 are yieldably urged towards each other. The central position of the pegs 59 provide a balance so that the spring 60 urges both longitudinal ends of the carrying members 52 with an equal force.

The longitudinal ends of the brush carrying members 52 are spaced from the end walls of the carriage 11 to permit the brush carrying members 52 to tilt and to move between the end walls of the carriage 11. The relationship of the brush carrying members 52 to the end walls of the carriage 11 is best illustrated in Figures 5 and 6. Since the brush carrying members 52 freely ride upon the rod 61 extended through the slots 54 a considerable amount of "play" is permitted. The brush carrying members 52 may go up on one end and down upon the other end by reason of the sliding of the slots 54 relative to the rods 61 and by reason of the spacing of the brush carrying members 52 between the end walls of the carriage 11. As the carriage is moved upon the greenhouse with the bristles 50 in engagement with the bar 74 the friction or resistance of the bristles 50 upon the surface of the bar 74 causes a longitudinal tilt of the brushes 51 and the brush carrying members 52 attached thereto. The "play" between the brush carrying members 52 and the end walls of the carriage 11 permits a limited sliding movement of the brushes 51 relative to, and longitudinally of, the carriage 11. Upon movement of the carriage in the opposite direction the engagement of the bristles 50 upon the bar 74 tends to tilt the brushes 51 and brush carrying members 52 attached thereto in the opposite tilted direction. By means of this limited "play" and tilting permitted to the brushes 51 a painting action simulating the action of proper hand painting is obtained. The arrangement of the parts for limiting the sliding and tilting of the brushes, however, insures accuracy in the application of the paint to the narrow strip or bar.

Again referring to Figure 2, it is to be noted that the engaging portions 56 of each brush carrying member 52 is adapted to change the angularity of the carried brushes 51 as the engaging portions 56 move up and down upon the inclined sides 12 of the carriage 11. The angularity of the slots 54 also tends to change the angularity or tilting of the upper part of the brush carrying members 52 as the end portions 53 move up and down relative to the rod 61. As noted in Figure 2, the angularity of the slots 54 in respect to each other is more acute than the angularity of the inclined sides 12 in respect to each other. There is therefore a "scooping" action provided by these two angularities as the brush carrying members 52 are moved toward and away from the elongated open space 33. The resilient action of the coil spring 60 tends to force the brush carrying members 52 downwardly and inwardly toward the elongated open space 33 by reason of the described angularity and movement of the brush carrying members 52 toward each other. Therefore, the brushes 51 are constantly urged downwardly and inwardly toward the bar 74 exposed through the open space 33. In this manner the bristles 50 of the brushes 51 are urged into good painting engagement with the bar 74. When the carriage 11 is lifted up from the bar 74 by the handle 20 the brush bristles 50 tend to move inwardly toward each other and to close the open space 33. Upon placing the carriage 11

down in position again over another bar 74 the bristles 50 flex to permit the bar 74 to extend up between the ends of the bristles 50 of the brushes 51. Upon longitudinal movement of the carriage 11 relative to the bar 74 the bristles 50 being partially stiff and partially flexible may push the brush members 51 lightly upwardly in opposition to the pull of the spring 60. The resilient action of the spring 60 is adjusted in opposition to the bristles pressing against the bar 74 to insure a proper pressure of the bristles 50 downwardly and inwardly toward the bar 74 and thus maintain the bristles 50 of the two brushes 51 in good painting engagement with the surface of the bar 74.

A supply of paint is provided by the paint container 23 mounted above the carriage 11 by means of the two brackets 22. The brackets 22 secured to the front end of the carriage 11 by means of the bolts 21 extend upwardly therefrom in the manner indicated in Figures 1 and 2. Four corner lugs 24 are formed upon the upper edge of the cylindrical shaped container 23. Bolts 25 extending from the front corner lugs 24 accommodate open spaces in the upper ends of the bracket supports 22. By turning the wing nuts 26 down upon the bolts 25 the container 23 is firmly secured to the brackets 22 and held in position above the carriage 11. Four bolts extend upwardly from the four corner lugs 24 of the container 23 to provide securing means for a cover 29. Hook portions 32 extending from the periphery of the cover 29 are adapted to extend around the bolts 27 and upon tightening of wing nuts 28 the cover 29 is firmly secured to the container 23. Upon loosening of the wing nuts 28 a small amount of rotation of the cover 29 disengages the hook portions 32 and permits the cover 29 to be lifted up from the container 23. A fill plug 30 is threadably secured in an opening provided in the center of the cover 29 to provide ready access to the container for filling it with paint. An air vent 31 extending through the fill plug 30 permits enough air to enter the container 23 to facilitate the flow of paint therefrom. The central portion of the cover 29 is depressed to form a sump sloping toward the opening closed by the fill plug 30. The construction provides a convenient funnel for causing paint spilled on the cover to flow downwardly into the central opening in the cover.

A valve body 34 is formed upon the bottom of the container 23 by an extension integrally formed with the container 23. An opening is bored longitudinally of the valve body 34 and a valve stem 35 extends through the opening. The valve stem 35 makes a close sliding fit with the valve body 34 to permit the valve stem 35 to be rotated within the opening provided in the valve body 34. A coil spring 36 disposed around the end of the valve stem 35 presses against a washer and cotter pin 37 secured to the end of the valve stem 35. The other end of the coil spring 36 presses against the front face of the valve body 34 and therefore the valve stem 35 is resiliently held within the valve body 34 in the position illustrated in Figure 3. A stop pin 38 engaged to a side of the valve stem 35 slidably engages against the rear face of the valve body 34 and thus prevents the valve stem 35 from moving too far forward relative to the valve body 34. In this manner the valve stem is held in proper position within the valve body 34 to provide a proper valve arrangement. The handle 39 extending from the rear end of the valve stem 35 permits the rotation

of the valve stem 35 into a desired position. Indicating marks formed upon the outside face of the container 35 show the degree of rotation to which the valve stem 35 is to be turned by the handle 39 during the steps of the painting operation.

A chamber 43 is formed within the valve body 34 immediately below the opening provided for the valve stem by boring a longitudinal bore through the valve body 34. To enclose the chamber 43 plugs 40 and 42 are threadably secured in place to close the ends thereof. Figure 3 better illustrates the form of the chamber 43 and the closing plugs inserted in place. A vertical bore is formed through the valve body 34 and up through the container 23 to provide a communication between the container 23 and the chamber 43. The lower end of this vertical bore is closed by the plug 41 which may be readily removed when it is necessary to clean the vertical bore by passing a wire or rod therethrough. An opening 44 extends through the valve stem 35 and the opening 44 is adapted to register with the opening 45 provided in the container 23 by the forming of the vertical bore. By turning the valve stem 35 to various degrees of rotation the degree of registration of the openings 44 and 45 is varied. Therefore by moving the handle 39 to various positions the flow of paint from the container 23 down through the openings 44 and 45 into the chamber 43 may be entirely shut off, may be partially shut off, or may be completely open.

A feed pipe 46 is threadably secured to the bottom of the valve body 34 and disposed at an angle thereto. The arrangement of the pipe 46 relative to the chamber 43 is such that paint flowing down into the chamber 43 flows into and through the feed pipe 46. Two openings 47 are formed in opposite sides of the feed pipe 46 near the lower end thereof to permit the paint flowing in the feed pipe 46 to escape out through the openings 47. A spreader or trough 49 is secured to the bottom of the feed pipe 46 by means of the threaded plug 48 which also closes the bottom of the feed pipe 46 to cause all of the paint therein to flow out through the openings 47. The trough or spreader 49 is bent at an incline on opposite sides of the feed pipe 46 to conduct the paint flowing out through the openings 47 over to the upper side of the brushes 51, as better illustrated in Figure 2. The side edges of the spreader 49 are turned upwardly to cause the paint to flow off from the lower ends of the spreader 49. The slight angularity of the feed pipe 46 conducts the paint to the front end, that is the right end in Figure 1, to provide paint to the brushes approximate the most forward end of the painting device as it is moved to the upper limit of the greenhouse near the peak or gable thereof. The spreading of the paint by the spreader 49 to the side of the bristles 50 keeps the bristles 50 well saturated with paint for applying the paint to the bar 74. Since the paint is not distributed from the feed pipe 46 directly upon the bar but is first distributed to the bristles 50 of the side brushes 51 the paint does not drip from the device as it is lifted from one bar to another. The disposition of the openings 47 in the opposite sides of the feed pipe 46 and the disposition of the spreader 49 is such that an equal amount of paint is distributed to each of the brushes 51.

The paint is applied by the brushes to the bars 74 by means of the engagement of the bristles 50 of the brushes 51 upon the surface of the bar 74. The bristles 66 of the end brushes

65 contacting the bar 74 further spread out the paint applied by the side brushes 51. Since the front end brush 65 is positioned at the most forward end of the carriage 11 the bar is brushed to its uppermost limit upon movement of the carriage 11 up the side of the greenhouse to the peak thereof. By moving the carriage 11 up and down the greenhouse paint is uniformly and smoothly applied and brushed upon the greenhouse bar to present a neatly and completely painted bar without smearing or waste. A minimum of effort is required and a maximum of efficiency is obtained by the use of the device having the construction herein described.

15 My invention includes the construction and utilization of a brushing device wherein paint is not applied to a bar but in which the bar is brushed by my device, such as for brushing off rust, dirt or old paint prior to the application of a coat of paint. It is understood that the references herein to a painting device are also applicable to a brushing device insofar as the painting device is not directed to the supply and application of paint.

25 Although I have described my invention with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

I claim as my invention:

35 1. A device for applying paint to the glass supporting bar of a greenhouse, comprising in combination, a carriage having an opening in a lower portion thereof, the carriage having walls disposed on an incline toward, and on opposite sides of said opening, a pair of brush members 40 disposed at an incline toward, and on opposite sides of said opening, said brush members having bristles extendable through said opening to engage said bar, a brush carrying member for mounting each of said brush members, respectively, in said carriage, each said brush carrying member having a first portion formed to slidably engage said inclined walls, respectively, and having a second portion formed to limit sliding movement of said first portion relative to said inclined walls, said limited sliding movement of the brush carrying member limiting movement of each brush member toward and away from said opening, resilient means connecting said brush carrying members for resiliently urging said brush members toward said opening to engage said bar, supply means carried by the carriage for supplying paint, distributing means carried by the carriage for distributing the supplied paint to said brush members, and means for moving the carriage along the greenhouse in juxtaposition to said bar to apply paint thereto.

65 2. In a greenhouse bar brushing device having a carriage for carrying brushes in brushing position relative to the bar to be brushed, said carriage having an opening in a lower portion thereof and walls disposed at an incline toward said opening, a pair of brush carrying members for carrying said brushes in position to extend through said opening and to engage said bar, 70 each of said carrying members having a portion slidably on said inclined walls, respectively, to move relative to said opening and relative to each other and having two spaced portions adjacent opposite ends of the carrying members 75 for guiding the movement of said opposite ends

relative to said carriage, said spaced portions having stops for limiting the movement of each of said opposite ends, and resilient means for urging said carrying members toward said opening and toward each other, the arrangement of the brush carrying members and said carriage providing for the movement of said brushes toward and away from said bar and for the longitudinal tilting of said brushes at varying angles to said carriage as the carriage is moved longitudinally of said bar.

3. In a greenhouse bar brushing device having a carriage for carrying brushes in brushing position relative to the bar to be brushed, said carriage having an open space for exposing said bar to said brushes, supporting means carried by the carriage for supporting a pair of brushes disposed at an angle to each other and toward said open space, slide means for sliding said brushes toward and away from said open space, stop means for limiting the sliding movement of said brushes, and resilient means for resiliently urging said brushes toward said open space to engage said bar.

4. In a greenhouse bar brushing device having a carriage for carrying brushes in brushing position relative to the bar to be brushed, said carriage having an elongated open space for exposing said bar to said brushes, a pair of longitudinal supporting members carried by the carriage for supporting a pair of brushes, respectively, said supporting members positioning said brushes longitudinally of said open space and at an angle to each other on opposite sides of said open space, each of said supporting members having an engaging portion slidably relative to said carriage to move said brushes relative to said open space and having stop portions adjacent the ends of said supporting members limiting movement of said ends, respectively, to provide for a limited longitudinal tilting of said brushes, and yieldable means for urging said supporting members toward said open space to engage said brushes against said bar, the arrangement of the supporting members, the carriage, and said yieldable means maintaining said brushes in brushing position along said bar as the carriage is moved longitudinally of the bar.

5. In a greenhouse bar brushing device having a carriage for carrying a brush in brushing position longitudinally of the bar to be brushed, a brush carrying member having a first portion for adjustably carrying said brush and having a second portion slidably engaging said carriage, said second portion moving said brush carrying member relative to the carriage to vary the position of said brush relative to the said bar, and having a third portion for engaging the carriage to limit the said movement of the brush carrying member, said third portion being spaced relative to the carriage for the movement of the brush carrying member toward and away from said bar and for the tilting of the brush carrying member longitudinally of the bar for varying the degree of extension and the longitudinal angularity of said brush relative to said bar.

6. In a greenhouse bar brushing device, a carriage to be moved along the greenhouse in juxtaposition to the bar to be brushed, said carriage having spaced end walls and inclined side walls connecting said end walls, said carriage having an elongated open space in a lower portion thereof toward which said side walls incline, a pair of brush carrying members positioned longitudinally of said carriage intermediate of said end 73

walls and slidably engaging said side walls, said brush carrying members having end portions disposed substantially parallel to said end walls, said end portions having elongated slots therein, the elongated slots of each brush carrying member being at an angle to the elongated slots of the other brush carrying member, stop means carried by said end walls and extending through the said slots, respectively, for limiting the sliding movement of said brush carrying member relative to said side walls, said end portions being spaced from said end walls, said brush carrying members being tiltable between said end walls, adjustable means for mounting a brush to each of said brush carrying members, the brushes being extendable through said open space to engage opposite sides of said bar, and yieldable means engaging the said brush carrying members intermediate of the said end portions thereof for yieldably urging the brush carrying members toward said open space, the arrangement of the carriage, brush carrying members, stop means, and yieldable means providing for variable extension and angularity of the brushes relative to the carriage as the carriage is moved along the greenhouse.

7. A device for carrying brushes in brushing position along a greenhouse bar, comprising a carriage member to be moved along the greenhouse on opposite sides of said bar, said carriage member having an elongated open space in a bottom portion thereof for exposing said bar to said brushes, said carriage member having inclined portions on opposite sides of, and inclined toward, said open space, a pair of brush carrying members for carrying said brushes, said brushes being extendable through said open space to engage said bar, said brush carrying members being slidably carried by said inclined portions and being movable at varying angles to the longitudinal dimension of, and relative to, said open space to change the degree of extension and angularity of said brushes toward said bar, stop means carried by the carriage member for limiting said movement of the brush carrying members, and yieldable means for urging said brushes through the open space into engagement with said bar as the carriage is moved along the greenhouse.

8. In a device for brushing a longitudinal strip of material, the combination of a carriage to be moved parallel to said strip and having a longitudinally disposed open space in a bottom portion thereof for exposing said strip, a pair of brush carrying members for carrying brushes on opposite sides of, and extended through, said open space to engage said strip, engaging means carried by said carriage for slidably engaging said brush carrying members, said engaging means being disposed for the movement of the brush carrying members toward and away from said open space at varying angles relative to the longitudinal dimension of said open space, and stop means carried by the carriage for limiting the said movement of the brush carrying members.

9. In a greenhouse bar brushing device having a carriage for moving a brush longitudinally along the bar to be brushed, said carriage having a bearing surface inclined toward, and disposed longitudinally of, said bar, and having projecting portions adjacent the longitudinal ends of the carriage, a brush carrying member having a longitudinal portion engageable with a brush disposed longitudinally of the carriage and extended toward said bar and having an engag-

ing portion slidably engageable with said bearing surface of the carriage to move relative to, and at an incline to, said bar, said brush carrying member having end portions disposed at an angle to the said longitudinal portion and movable substantially parallel to the said longitudinal ends of the carriage, said end portions having slots therein for accommodating said projecting portions of the carriage to limit movement of the brush carrying member relative to the carriage, said slots being disposed at an incline to said longitudinal portion, the brush carrying member being inclinable at varying angles in said limited movement, said end portions being spaced from said longitudinal ends of the carriage, the brush carrying member being tiltable longitudinally of the carriage to vary the longitudinal angularity of the brush extending toward said bar.

10. A device for applying paint to the glass supporting bar of a greenhouse, comprising, in combination, a carriage adapted to be moved along the greenhouse, brush means carried by the carriage and adapted to engage said bar, supply means carried by the carriage for supplying paint, and paint distributing means carried by the carriage and in communication with said supply means for distributing substantially equal quantities of paint to the brush means at a distance from, and on the opposite sides of, said bar.

11. A device for applying paint to the glass supporting bar of a greenhouse, comprising, in combination, a carriage to be moved along the greenhouse longitudinally of the bar to be painted, a pair of longitudinal brushes hingedly connected to said carriage and disposed toward each other to engage opposite sides of said bar, means carried by the carriage for swinging said longitudinal brushes into engagement with said bar, paint distributing means for distributing a flow of paint to each of said longitudinal brushes to apply paint to said bar, and a pair of end brushes adjustably mounted adjacent opposite ends, respectively, of said carriage for brushing the applied paint on said bar.

12. A device for applying paint to the glass supporting bar of a greenhouse comprising, in combination, a carriage constructed to straddle and to be moved longitudinally of the bar to be painted, said carriage having an elongated open space therein for exposing said bar, a first pair of brushes disposed to engage opposite sides of said bar, supporting means connecting said carriage and said first pair of brushes for supporting said brushes, said supporting means being yieldably movable toward and away from, and at variable angles to the longitudinal dimension of, said open space to maintain said brushes in painting engagement with said bar, supply means carried by the carriage to supply paint to each of said first pair of brushes at a distance from said open space, a second pair of brushes engageable with the top of said bar at opposite ends of said carriage, and mounting means connecting said second pair of brushes and the opposite ends, respectively, of said carriage for adjustably securing the second pair of brushes in engagement with said bar.

13. A device for applying paint to the glass supporting bar of a greenhouse, comprising, in combination, a carriage having an open space in a bottom portion thereof and extended longitudinally of the carriage for exposing said bar, said carriage having lateral portions extending

laterally of the carriage from said open space, the said carriage having supporting portions to support brush means and a paint supply container above said lateral portions in juxtaposition to said open space for applying paint to said bar, two pairs of spaced wheels journalled on opposite sides of said carriage for permitting the carriage to be moved parallel to said bar, said wheels being positioned adjacent the outer edges of said carriage at a lateral distance from said open space on said opposite sides for supporting said carriage, brush means, and paint supply container and being disposed to extend below the top of said bar to ride on said glass, the arrangement of said wheels and said carriage

permitting said carriage to straddle said bar and to be supported on the greenhouse without external restraint against tipping sideways.

14. The combination of a first pair of brushes disposed at an angle to each other to engage a greenhouse bar, paint supply means for supplying paint to a side of each of the first pair of brushes within the included angle between the brushes, the arrangement of the first pair of brushes and the paint supply means providing for the application of paint to the engaged bar, and a second pair of brushes positioned at the opposite ends of the first pair of brushes for brushing the paint applied to said bar.

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