Oct. 1, 1935. R. S. THOMPSON 2,015,768

RAFTER PAINTER

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Fig. 1.

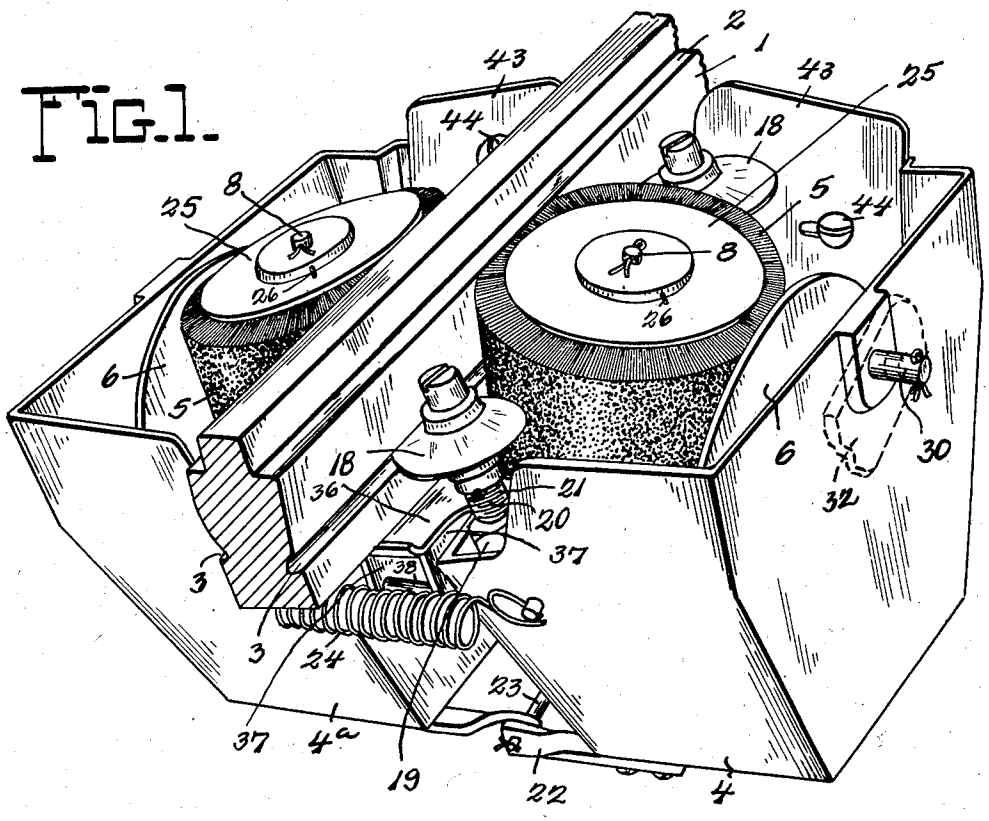
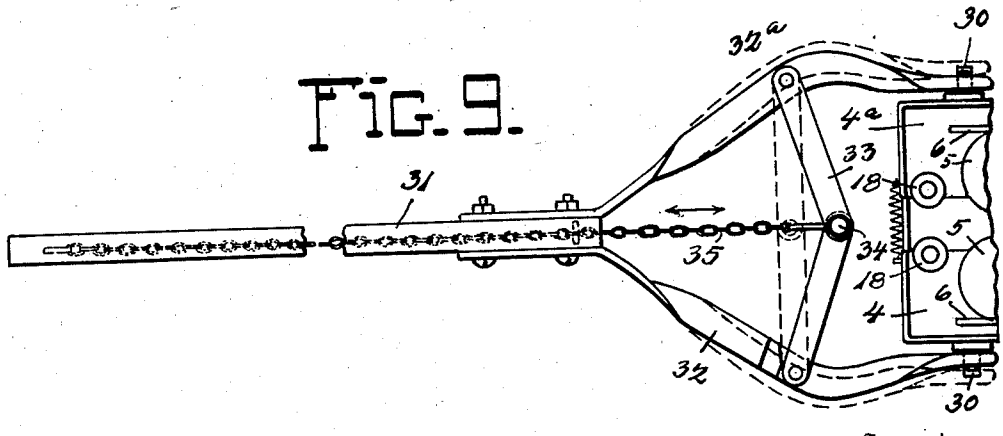


Fig. 9.



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By Robert Cook

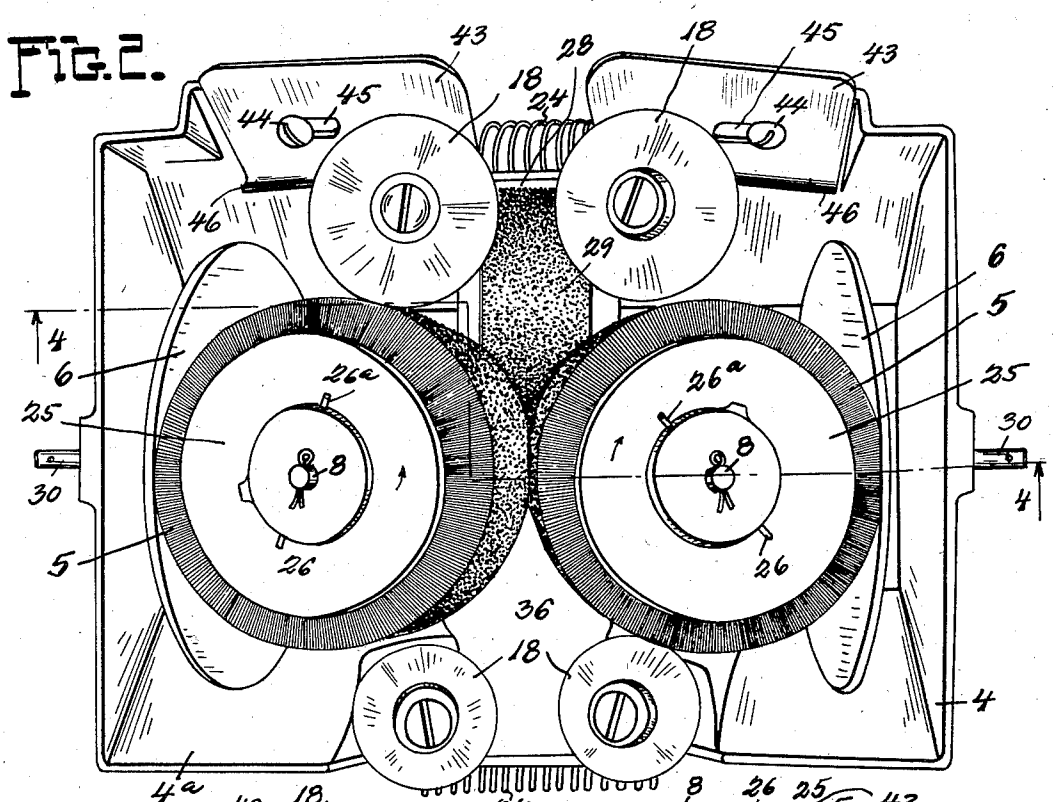
Attorneys

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FIG. 2.



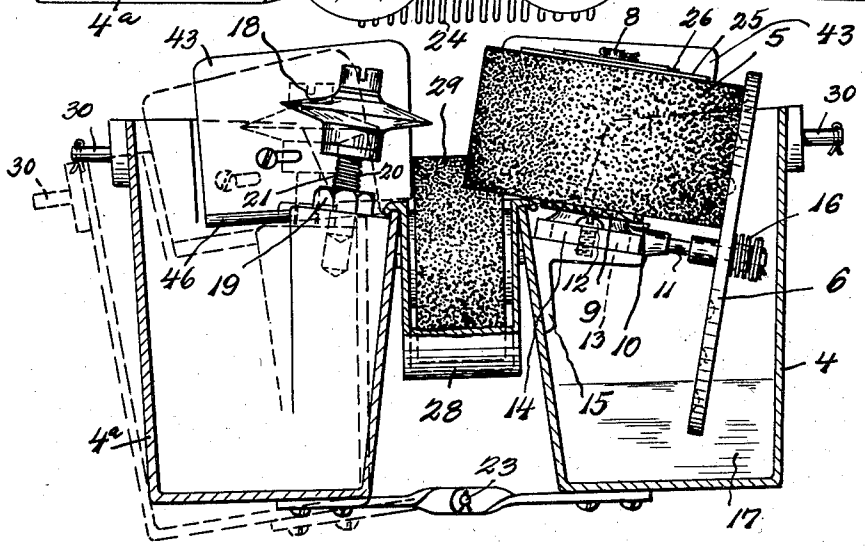


FIG. 4.

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Fig. 3.

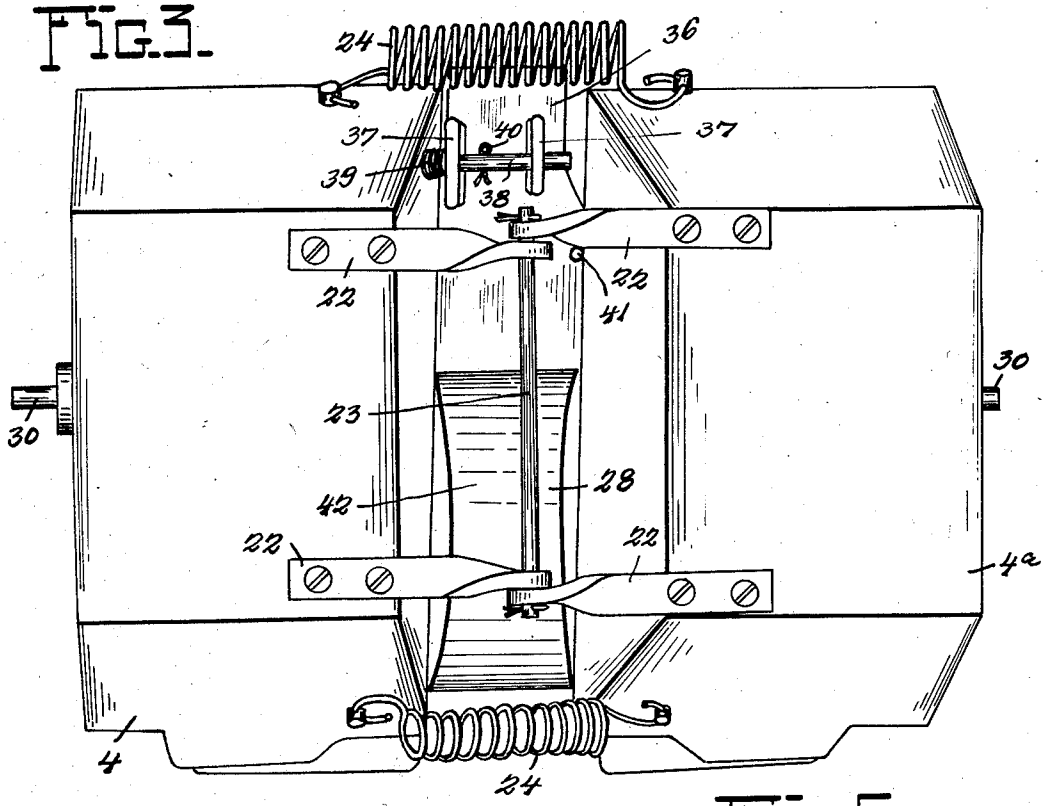


Fig. 6.

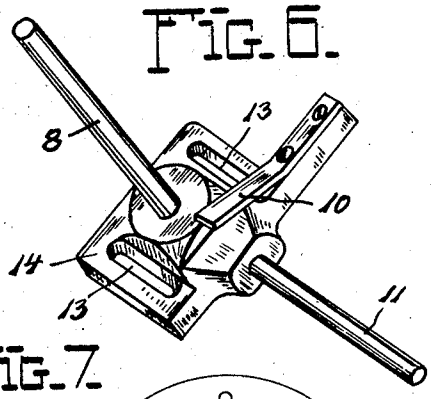


Fig. 5.

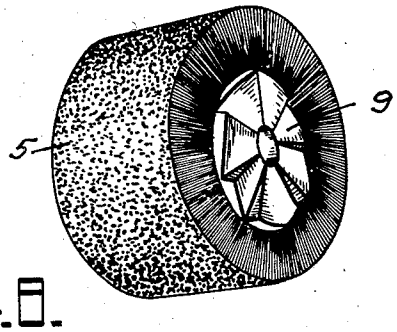


Fig. 7.

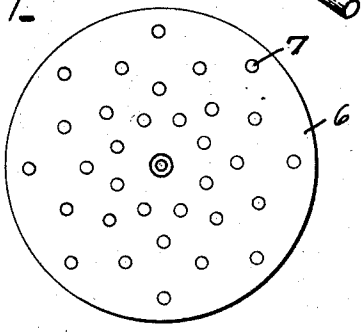
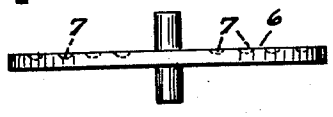


Fig. 8.



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Fig. 10.

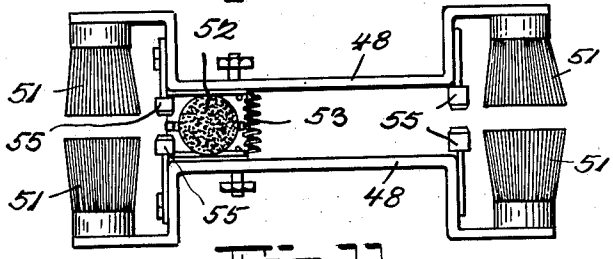


Fig. 12.

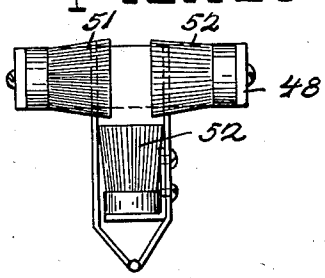


Fig. 11.

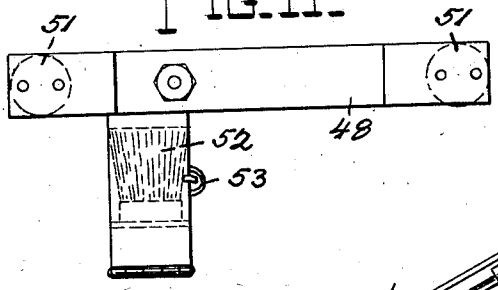


Fig. 13.

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UNITED STATES PATENT OFFICE

2,015,768

RAFTER PAINTER

Roy S. Thompson, Bay Village, Ohio

Application July 29, 1932, Serial No. 625,706

9 Claims. (Cl. 91—40)

This invention provides a painting machine which is very simple in construction and which is especially adapted for painting rafters, particularly rafters which are employed in greenhouse construction, although it is not necessarily limited to such use.

It will be appreciated that the task of painting such rafters, when carried out by hand, is difficult. Because of the location of the rafters, comparatively long ladders must be used when painting is to be done by hand, in order to render the rafters accessible. The necessity of moving such ladders from place to place as the painting progresses, is awkward and inconvenient. Furthermore, in the application of the paint, the likelihood of the paint dropping from the brush or rafter is always present, resulting in disagreeable consequences and even damage to the objects upon which the paint drops. Also, where the painting operation is carried out on the interior of structures such as greenhouses, it is virtually impossible to prevent application of the paint on the glass of the greenhouse, as it is not feasible to avoid overlapping the adjoining surfaces of rafter and glass with the brush.

The machine of the present invention avoids these disadvantages and objections, and assures an even application of the paint on the rafter without likelihood of spillage of the paint, the operation being carried out by an individual standing upon the floor of the structure, the use of the awkward ladder being thereby obviated.

The invention further contemplates the provision of an appliance which will apply paint to all surfaces of the rafter, so that no portion of the rafter surface will remain unpainted.

Generally stated, the invention embraces the construction of a machine which will uniformly apply the paint to the rafters, over both the sides and bottom thereof, in such a manner that wastage of the point is avoided, and at the same time a smooth and even surface is obtained. The machine of this invention contains its own supply of paint in sufficient quantity to render removal infrequent, and it is adjustable to any thickness of rafter. The invention also contemplates the provision of a brushing appliance which is adapted to pass along the rafter unimpeded by supporting members of the rafter, and thus spread applied paint over surfaces not accessible to the first mentioned machine.

The construction of the machines embraced in this invention will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the top of the paint applying device, illustrating the device operated upon a rafter such as is customarily employed in greenhouse construction.

Figure 2 is another perspective view of the top of the machine illustrated in Figure 1, taken at a somewhat different angle, the view showing details of the construction of the machine.

Figure 3 is a bottom view of the machine illustrating the construction whereby the device is rendered adjustable to any thickness of rafter.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a perspective view of one of the brushes employed in the device.

Figure 6 is a perspective view of the devices for supporting the brush and the paint supplying means.

Figure 7 is an elevation of one of the paint supplying devices employed in the machine.

Figure 8 is an edge view of the device of Figure 7.

Figure 9 is a fragmentary view showing a portion of the top of the machine with the handle mounted thereon, and illustrating the manner in which the machine is applied to the rafter.

Figure 10 is a top view of the finishing devices employed for spreading paint over areas not accessible to the device of Figures 1 to 9 inclusive.

Figure 11 is a front view of the device of Figure 10.

Figure 12 is an end view of the device of Figure 10.

Figure 13 is a view illustrating the manner of use of the two devices.

Referring more particularly to the drawings and to the device illustrated in Figures 1 to 9, inclusive, it will be seen that the device is adapted to supply paint to a rafter 1 of the type usually employed in greenhouse construction, which has the glass supporting surface 2, and a groove 3 extending along each side of the rafter parallel to and adjacent the bottom of the rafter. The rafters employed in greenhouse construction are preponderatingly supplied with this groove.

The device itself is composed of two sections of like construction, each of which is enclosed in a housing 4 or 4a, these housings forming compartments or reservoirs into which a quantity of paint is to be introduced. In each reservoir there is positioned a brush 5, each of which engages the opposite sides of the rafter 1 for applying paint thereto, paint being supplied to the brushes from the supply of paint contained in the reservoirs 4 and 4a by means of the paint supplying discs 6.

These discs enter the supply of paint in the respective compartments, and being provided with depressions 7 on the surface of the discs engaging the brush, supply paint to the brushes as the brushes and discs rotate. The discs 6 are rotated through frictional engagement with the brushes 5.

These brushes 5 are rotatably mounted on rods 8, and are provided at their lower ends with a ratchet wheel 9 engaged by spring pawl 10, whereby the brushes are permitted to rotate in one direction, but not in the other. The brushes rotate of course as the device is moved along the rafter in one direction because of the frictional engagement between the brushes and the rafter. The paint supplying discs 6 are mounted on the shafts 11. The engagement of the brushes 5 against the rafter 1 may be adjusted by means of manipulation of the screws 12 operating in the slots 13 in the base member 14 of the brush carrying rod 8. This member 14 is mounted on the bracket 15 secured to one side of the respective paint compartment.

The discs 6 are forced against the brushes 5 by the action of the springs 16, there being effected thereby a continuous close engagement between the discs 6 and the brushes 5, and since the discs extend into a supply of paint indicated at 17, as these discs rotate they will carry paint up to the brushes 5, which brushes take the paint from the discs 6 and apply it to the rafters 1.

It will be observed that arranged to engage each side of the rafter are the rotatable interlocking wheels 18 which are adapted to engage the groove 3 and run along this groove, the engagement between the wheels and groove supporting the device on the rafter. In view of the fact that this groove is not located in an identical position on each rafter, these discs are adjustable by turning a nut 19 along the threads 20 of the screws 21 upon which the wheels 18 are mounted the position of the wheels being determined by engagement of the nut 19 with each wheel, each nut being threaded on its screw.

The reservoir sections 4 and 4a are hingedly mounted by means of the brackets 22 which are turnable relatively to a pintle 23 passed through the said brackets. Springs 24 keep the sections together and prevent them from unduly spreading by turning on the pintle 23.

To prevent the application of paint to the glass laid on the rafter 1, a washer 25 is applied to the top of the brushes, this washer being held in place by pins 26 and 26a. This washer 25 keeps the bristles of the brush depressed so as to prevent them from coming in contact with the glass laid on the surface 2. The washers 25 are formed of suitable material, a thin resilient metal being found satisfactory.

Between the reservoirs 4 and 4a, there is positioned a reservoir 28 also adapted to contain paint and in which operates a brush 29. It will be observed that this brush 29 acts in a plane at right angles to that in which the brushes 5 move, and the brush 29 applies the paint to the bottom of the rafter.

It will be observed that the compartments 4 and 4a are provided with trunnions 30 upon which trunnions is mounted a handle 31. This handle 31 has secured to it the resilient arms 32 and 32a connected by the toggle lever 33, to the fulcrum 34 to which is connected a chain 35. When the chain 35 is pulled, the lever 33 is straightened, causing an expansion of the arms 32 and 32a which in turn causes the spreading of the reservoirs 4 and 4a which permits the device to be applied to the rafter. This spreading action is illustrated in dotted lines in Figure 9.

It will be observed that the housing of the reservoir 28 is provided with an extension 36 having the depending lugs 37 which are mounted on the pintle 38 carried by the reservoir 4a. When the reservoirs 4 and 4a are separated by actuation of the lever 33 and the spreading of the arms 32 and 32a, the spring 39 pushes against one of the lugs 37 to move the housing of the compartment 28 along the pintle 38, thereby keeping the brush 29 relatively centered between the brushes 5. This movement is restricted however, by the cotterpin 40 which prevents the spring 39 from pushing the lugs 37 off of the pintle 38. A pin 41 projecting from the extension 36 of the housing of the reservoir 28, which housing is designated as 42, is engaged by the reservoir 4a when the reservoirs are returned by the action of spring 24 to bring the brushes in engagement with the rafter.

To prevent the rotation of the brushes from spattering paint back of the machine, guards 43 are provided, which are adjustable on the screws 44 operating in the slots 45, which guards catch any paint thrown back of the device by the brushes and return the paint into the respective reservoir by means of the guides 46, which act as troughs for collecting paint thrown out by the brushes through the action of centrifugal force and return the paint into the respective compartments.

In operating this device, a suitable quantity of paint is placed in the reservoirs 4, 4a, and 28 and the device opened by operation of the chain 35 and placed around the rafter as shown in Figure 1, the various parts having been adjusted so that the brushes 5 relatively closely engage the sides of the rafter 1 and the wheels 18 engage the grooves 3 in the rafter, by means of which engagement the device is carried by the rafter. The operator therefore is not required to sustain the weight of the device, and all that is required is to push upon the handle 31 so as to propel the device along the rafter. As the device moves along the rafter, brushes 5 and 29 apply the paint to the sides and bottom thereof, the rotation of the brushes 5 as the device is moved along the rafter producing a rotation of the discs 6 with attendant supplying of paint to the brushes. The paint is thus evenly applied to the surfaces of the rafter, and since the brushes 5 rotate only when the device is moved in one direction, reversal of movement of the device will cause the brushes to evenly spread the applied paint so that all surfaces are uniformly covered. The washers 25 prevent the bristles of the brushes 5 from engaging the glass laid on the surface 2 of the rafter, and the guards 43 return to the reservoirs 4 and 4a any paint projected by the rotation of the brushes.

Obviously, the rafters must be suitably supported, such supports being formed of members extending crossways beneath the rafters, one of such supporting members being indicated at 47. Very obviously the device thus described, and designated at A in Figure 13, will engage these supporting members while the brushes 5 are of substantial distance away from the supports. This results in a substantial area of surface of the rafters 1 remaining unpainted. To cover these untouched areas, the device illustrated in Figures 10, 11, 12 and 13, and indicated generally at B in Figure 13, has been devised, this device comprising the members 48 carried by the handle

49 and separable upon actuation of the handle arms 50 in a manner entirely similar to that previously described. The members 48 carry the brushes 51 for engaging each side of the rafter 1, and the brush 52 for engaging the bottom of the rafter. Separation of the members 48 is opposed by the spring 53.

In a manner similar to that described above, actuation of the chain 54 separates the members 48 so that the device may be applied to the rafters. As the device is moved along the rafter, the brushes act to spread the paint already applied by appliance A over the unpainted surfaces of the rafter. Since the members 48 can ride along the rafter, the handle 49 will not contact with the cross pieces 47 until after the brushes 51 have passed along the rafter beneath these cross supports. This assures that all unpainted areas of the rafter will be covered by the paint. It will be observed that this appliance does not apply additional paint but merely spreads the paint previously applied. It will be understood that the handle construction is the same as that described in connection with device A, and operates in a similar manner.

The brush carrying members 48 are provided with the projections 55, which act in the same manner as the discs 18, previously described, forming means for suspending the device from the rafter 1 by engaging with the groove 3 in the rafter.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is—

1. A device for applying coating material to surfaces to be treated, which comprises a pair of reservoirs for the material to be applied, the said reservoirs being hingedly secured together, means within the reservoirs for applying the material to the surfaces, devices for operating the said reservoirs for separating movement about their hinged connection, thereby adjusting the reservoirs to the surfaces to be coated, and instrumentalities in the reservoirs for applying the material to the said surfaces, the said instrumentalities being operative to apply the said material when moved in one direction and to spread the material when moved in the opposite direction.

2. A device of the character described, comprising a pair of paint containing receptacles, means interconnecting the said receptacles, a brush in each receptacle adapted to apply paint therefrom to each side of a rafter to be painted, a third receptacle intermediate the other two receptacles, a brush in the said third receptacle adapted to apply paint to the bottom of the rafter as the device moves therealong, means for adjusting the position of the said two receptacles, and instrumentalities for maintaining the intermediate receptacle substantially centered between the other two responsive to adjustment thereof.

3. A device of the character described, comprising a pair of yieldably inter-connected reservoirs for containing a liquid to be applied, and means for separating the said reservoirs, the said means comprising a handle member, a pair of resilient arms interconnecting the handle member and receptacles, toggle means for effecting a separation of the said resilient arms, thereby separating the said receptacles, instrumentalities for actuating the toggle means, and liquid applying instrumentalities in each reservoir operative to apply liquid therefrom to an object upon movement of the device in one direction, and to spread the applied liquid when the device is moved in the opposite direction.

4. A device for applying coating material to surfaces to be treated, which comprises reservoirs for the material to be applied, a rotatable brush in each reservoir for applying coating material contained therein to an object to be coated, means for enabling the brushes to rotate upon moving the device in one direction along the object being coated to apply coating material to the said object, and instrumentalities for restraining the said rotation of the brushes upon moving the device in the opposite direction to thereby uniformly spread the material thus applied.

5. A device for applying coating material to surfaces to be treated, which comprises reservoirs for the material to be applied, a rotatable brush in each reservoir for applying coating material contained therein to an object to be coated, means for adjusting the said reservoirs to an object to be coated, means for enabling the brushes to rotate upon moving the device in one direction along the object being coated to apply coating material to the said object, instrumentalities for restraining the said rotation of the brushes, upon moving the device in the opposite direction to thereby uniformly spread the said material thus applied, and means for interlocking the device with the object during application and spreading of the coating material.

6. A device for applying paint to a rafter or the like, comprising a pair of reservoirs for containing paint, instrumentalities for hingedly interconnecting the said reservoirs, a brush mounted in each of the said reservoirs for applying paint to opposite sides of the rafter, mounting means enabling the brushes to rotate upon movement of the device in one direction, pawl and ratchet mechanism for securing the brushes against rotation upon movement of the device in the opposite direction, and instrumentalities for operating the reservoirs about their hinged connection to adjust the relative position thereof to enable application of the device to a given rafter.

7. A device for applying paint to a rafter or the like, comprising a pair of reservoirs for containing paint, instrumentalities for hingedly interconnecting the said reservoirs, a brush mounted in each of the said reservoirs for applying paint from the reservoirs to opposite sides of the rafter, mounting means enabling the brushes to rotate upon movement of the device in one direction, pawl and ratchet mechanism for securing the brushes against rotation upon movement of the device in the opposite direction, toggle instrumentalities for operating the reservoirs about their hinged connection to adjust the relative position thereof to enable application of the device to a given rafter, and wheels on the device adapted to engage the said rafter for interlocking the device therewith, whereby the rafter carries the device during operation of the latter.

8. A device for applying paint to rafters and the like, which comprises a sectional housing defining reservoirs for holding the paint to be applied, instrumentalities for hingedly interconnecting the said reservoirs to enable them to be moved relative to each other, a brush mounted in each of the said reservoirs for applying paint from the reservoirs to opposite sides of the rafter, an additional reservoir intermediate the aforesaid reservoirs for containing paint to be applied to the bottom of the said rafter, a brush mounted within the said reservoir, means for maintaining the said last mentioned reservoir substantially

centered between the other reservoirs, and instrumentalities for adjusting the said reservoirs and brushes to the rafter to be painted.

9. A device for applying coating material to surfaces to be treated, which comprises a frame including oppositely disposed sections, means carried by the frame for spreading the coating material when applied, the said means being arranged to act upon oppositely disposed surfaces of the object to which the material is applied, devices yieldably interconnecting the said sections together, and instrumentalities on the said sections for yieldably interengaging with opposite sides of the object being treated and suspendingly securing the device to the said object while in service, said yieldable interengagement being effected responsively to the action of the yieldable interconnection for the sections aforesaid.

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