

Aug. 3, 1943.

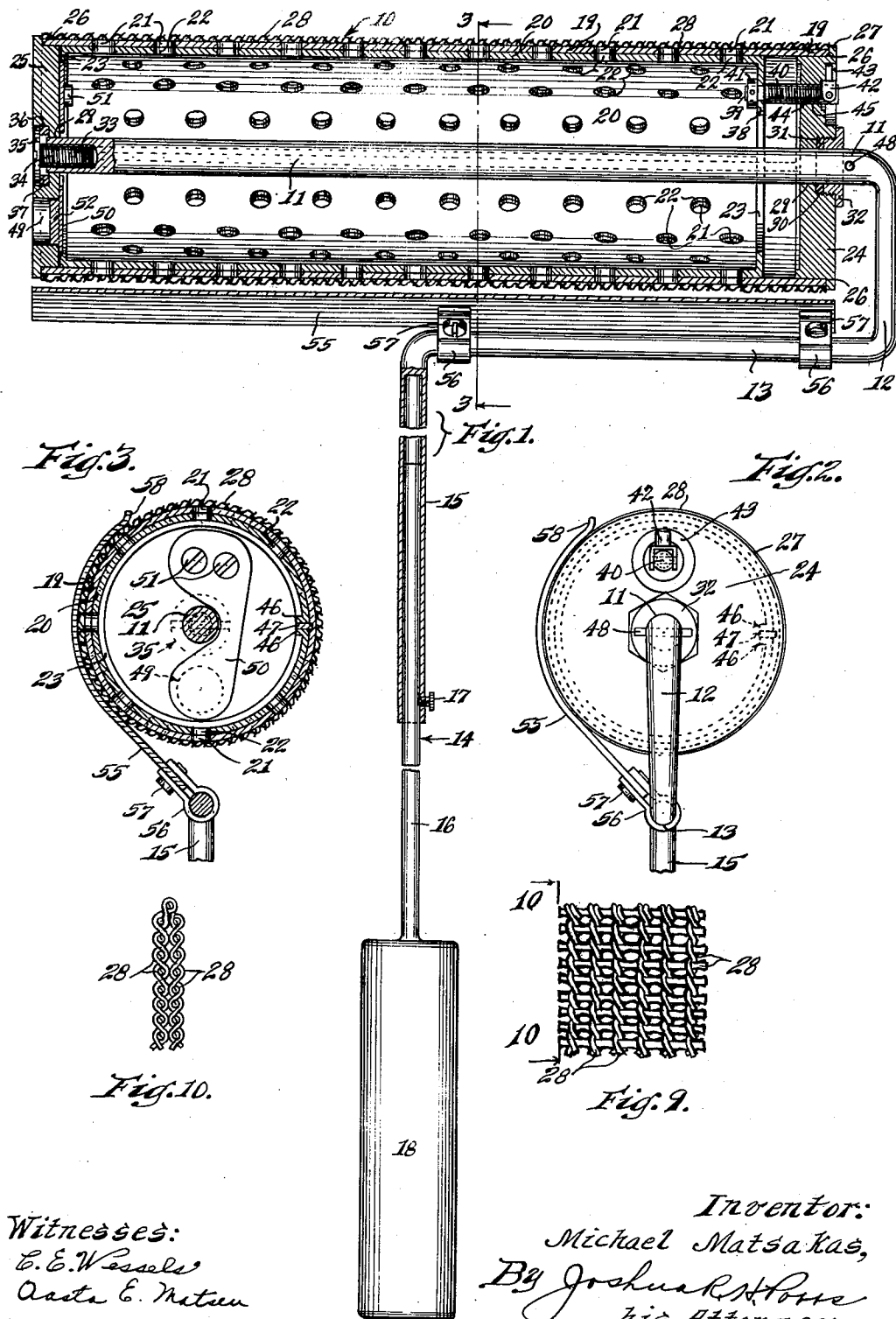
M. MATSAKAS

2,325,867

PAINTING DEVICE

Filed June 21, 1941

2 Sheets-Sheet 1



Witnesses:
 C. E. Vessels
 Oscar E. Matien

Inventor:
 Michael Matsakas,
 By Joshua R. Horne
 his Attorney.

Aug. 3, 1943.

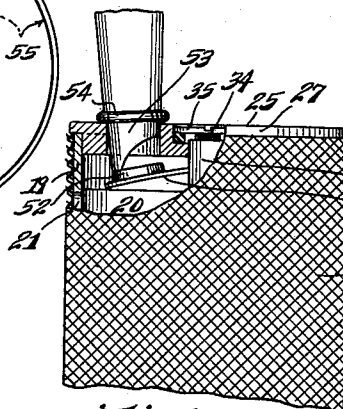
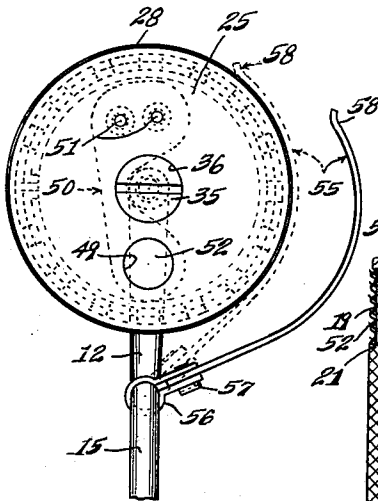
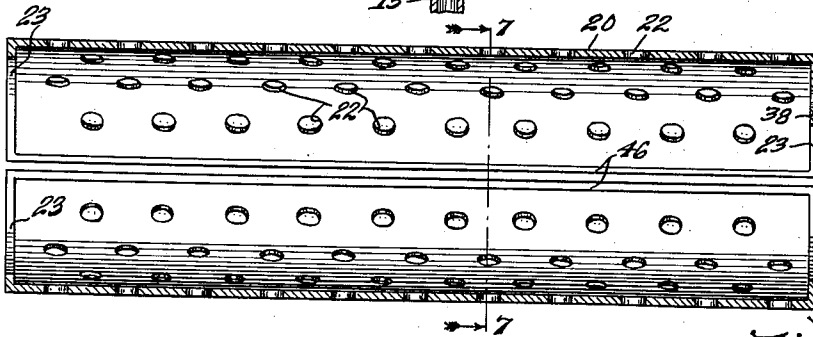
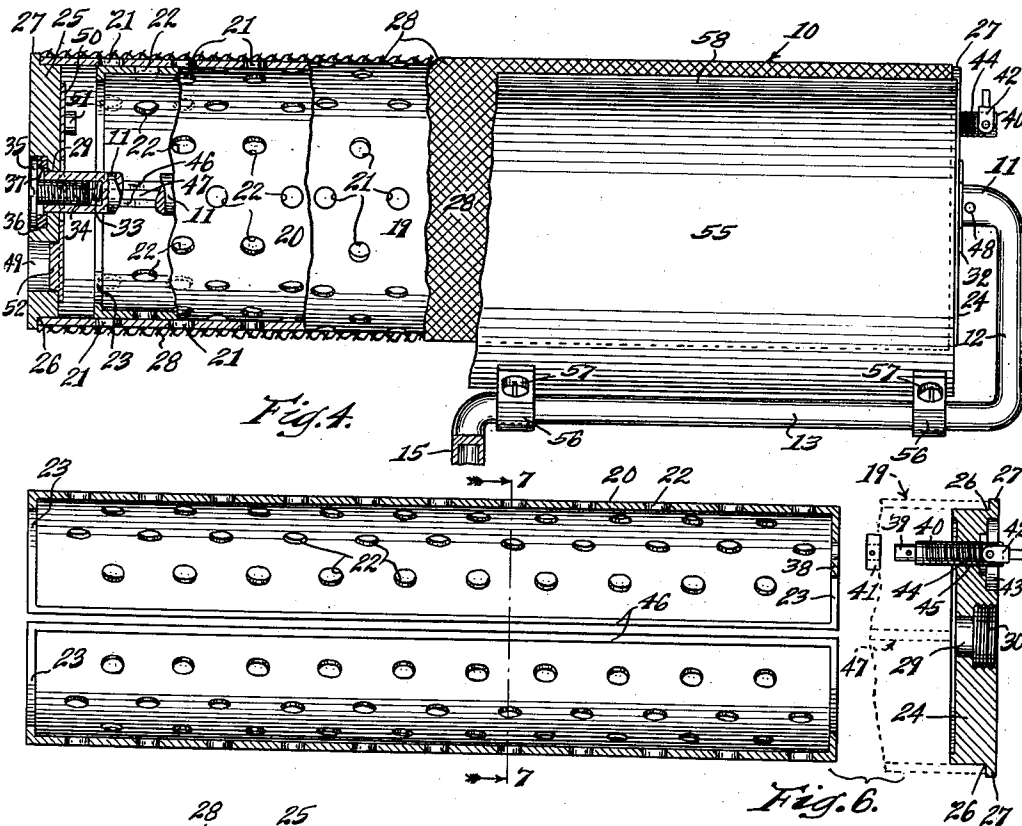
M. MATSAKAS

2,325,867

PAINTING DEVICE

Filed June 21, 1941

2 Sheets-Sheet 2



Witnesses:
C. E. Wessels.
A. E. Matson

Inventor:
Michael Matsakas,
By Joshua R. H. P. H.
his Attorney.

UNITED STATES PATENT OFFICE

2,325,867

PAINTING DEVICE

Michael Matsakas, Chicago, Ill.

Application June 21, 1941, Serial No. 399,130

15 Claims. (Cl. 15—124)

This invention relates to painting devices and more specially to a fountain paint roller and the object thereof is to provide an efficient device for painting to replace brushes with advantages in quickness of use and application and better execution and workmanship and finish together with even application or decorative results.

Another object of the invention is to provide a painting device which will replace ordinary paint brushes as well as replacing bristles which are both scarce and expensive, thereby providing a more economical painting device which will last indefinitely and not cake, become matted or form a coagulated mass of hardened paint or the like as on the bristles of an ordinary brush head, because cleaning is easy.

Another object of the invention is to provide a painting device or roller having a novel form of paint applying surface, covering or transfer means preferably in the form of a soft woven or knitted material, textile or cloth of a permeable, foraminous or open work character which is somewhat porous and forms an efficient paint carrier and applying means so that the paint may be uniformly spread over a surface or employed for giving various decorative effects according to the weave of said covering or material to produce a smooth, stippled, nebulous, rough or frescoed appearance or a peaned or pimpled finish.

Another object of the invention is to provide a painting device which will permit the device to get into corners and apply paint, varnish or the like to a corner line or other line of demarcation as between two surfaces or colors.

Another object of the invention is to provide for accurately regulating the quantity of paint passing to the applying surface and to cause even distribution thereof.

Another object of the invention is to provide for conveniently filling the painting device or roller and means whereby the length of the device or instrument may be extended to reach high and out of the way places, such as behind radiators or other objects.

Another object of the invention is to provide a novel covering and means for feeding the paint thereto which will cause a uniform saturation of the distributing cover along its whole length and a uniform application of the paint to the surface.

Further objects and advantages will appear and be brought out more fully in the following specification, reference being had to the accompanying drawings, in which:

Fig. 1 is a sectional elevation of a painting de-

vice or roller in accordance with the invention with the feed openings in full registration;

Fig. 2 is an end elevation of the right hand end of the device;

Fig. 3 is a cross section taken on the line 3—3 of Fig. 1;

Fig. 4 is a sectional elevation showing the composite structure with the openings out of registration, or closed;

Fig. 5 is a view similar to Fig. 2, looking at the opposite or left hand end;

Fig. 6 is an exploded view of the inner cylinder and adjusting means thereof;

Fig. 7 is a sectional view of the inner cylinder taken on the line 7—7 of Fig. 6, and with the outer cylinder indicated in dotted lines;

Fig. 8 is a sectional elevation showing the manner of filling or pouring paint into the roller;

Fig. 9 is an enlarged elevation of the fabric covering; and

Fig. 10 is a sectional view taken on the line 10—10 of Fig. 9.

Referring to the drawings 10 designates a roller forming part of the device rotatably mounted at its center axis on a shaft 11. This shaft is preferably formed with an arm 12 at one end disposed at right angles thereto and then bent again at right angles to form a longitudinal supporting portion 13 which terminates centrally between the ends of the shaft portion 11 and the roller 10 and has an outwardly directed shank or stem 14 disposed at right angles thereto. This shank has a tubular portion 15 receiving a solid section 16 which telescopes therein so that it may be extended or shortened and in this way provide the necessary length for reaching high or out of the way places. A set screw 17 engages through the tubular portion 15 and with the periphery of the solid portion or section 16 to hold these parts in adjacent relation and a handle 18 is provided on the portion 16 by which the device may be grasped for applying pressure or revolving the roller over the surface being painted or varnished.

The rollers 10 comprises an outer cylinder 19 of aluminum or other sheet metal, Bakelite or other plastic material molded or pressed to the proper thickness or gauge desired. The inner cylinder 20 fits snugly within the outer cylinder 19 so as to frictionally maintain its position when adjusted longitudinally thereof and as shown, is shorter than the outer cylinder. Both cylinders are provided with rows of holes, the holes in the outer cylinder being designated 21 and those in the inner cylinder being designated 22 and the holes of each cylinder being similarly

related and disposed so that the holes of adjacent rows are alternately disposed in staggered relation thus providing means through which the paint may pass evenly and uniformly throughout the surface of the roller while at the same time reducing the number of holes required to cover the entire area. The ends of the inner cylinder are provided with inturned annular flanges 23. Disks or heads 24 and 25 close the ends of the outer cylinder to turn with the roller and for this purpose are preferably provided with miters or rabbets 26 to receive the ends of the outer cylinder and have end flanges 27 projecting outwardly of the periphery to form a stop or shoulder to retain a tubular knitted or woven cloth covering 28 therebetween and against axial movement. This covering may be of tubular weave or form or a sheet with its ends or abutting edges woven together and is preferably of some textile or cloth material which is a good paint carrier and applying surface or transfer means. For this purpose, it is preferably of cotton or cotton and wool, permeable and porous, the warp and weft threads thereof forming a series of openings or perforations in open work formation and arranged diagonally or in rows normal to each other as desired or according to the surface finish to be produced. The disks forming the heads or ends 24 and 25 are provided with central bearing holes 29 to receive and turn on the shaft or axle 11. The disk 24 is provided with a threaded bore 30 sealed around the shaft by a packing 31 and a nut or gland 32 engaging the bore 30 so as to prevent the escape or leakage of paint at this point around the shaft. The extremity of the shaft 11 is provided with a threaded counter-bore 33 which takes a screw 34 having a flat head 35 fitting in a counter-bore or recess 36 in the disk 25 with an interposed packing 37. Thus the leakage of paint around the shaft and between the same and the disks is prevented at both ends of the roller.

The inner cylinder is provided with an apertured boss or lug 38 on the flange 23 at one end and means is provided between the ends of the cylinders or between one disk and the adjacent end of the inner cylinder for shifting the inner cylinder axially so as to bring the holes thereof in partial or full registration or entirely out of registration so as to close the holes and prevent the passage of paint therethrough. For this purpose a reduced portion 39 of a screw 40 extends through the aperture of the lug 38 so as to freely turn therein and is thereby swiveled to the inner cylinder and held by a collar 41 pinned or otherwise keyed thereto. A wing 42 is pivoted to the opposite end of the screw so as to be turned into a recess 43 in the disk at that end and has threads 44 engaged in the threads of a hole 45 in said disk. By this means, turning of the screw will serve to adjust the inner cylinder longitudinally of the outer cylinder and roller so as to vary the degree of registration or size of the openings and thereby permit regulation of the amount of paint passing to the covering or paint applying surface. Of course, it is to be understood that any other suitable means may be provided for shifting the inner cylinder or either one of the cylinders such means being engageable through one end wall or a head and with the adjacent end wall or head of the other cylinder to shift one cylinder with respect to the other. In other words, this arrangement may be reversed or the adjusting

screw or shank may slide in the outer cylinder. In either event, the recess 43 accommodates the wing or pivot key head 42 which serves as a finger piece for turning the screw in obtaining the desired adjustment.

Means is provided for causing the inner cylinder to move axially or to prevent relative rotation of the cylinders and for this purpose the inner cylinder may be formed of a single rolled sheet instead of a solid tube of which the outer cylinder is also preferably made and is provided with spaced longitudinal flanges 46 forming a slot slidably receiving a key or rib 47 extending inwardly from the outer cylinder. By having these flanges and the groove or guideway formed thereby as well as the rib extending longitudinally, the movement of the cylinders relatively is longitudinally or axially of the roller and the inner cylinder, which in the preferred form is shifted relative to the outer cylinder, will be guided straight so that the holes will accurately maintain their arrangement relatively. Also, by having the inner cylinder formed of a split tube or spring sheet whether of metal or plastic and tending to normally expand, the inner cylinder will be frictionally held in adjusted position within the outer cylinder irrespective of the adjusting or operating means such as the adjusting screw 40. A stop or cotter pin 48 is disposed through a diametrical aperture in the shaft 11 adjacent the disk 25 to prevent longitudinal shifting or translation of the roller on the shaft or the shaft relative to the roller and particularly the outer cylinder thereof.

In order to provide means for filling the cylinder with paint, the disk or head at one end, preferably the disk 25, is provided with a filling opening 49 which is closed on the inside by a spring valve including a plate 50 of spring metal suitably attached to the inner surface of the disk as by screws 51 and carrying at its free end and on its outer surface a disk 52 which enters the opening 49 and normally closes the same. By this means, a tapered spout represents at 53 of a dispensing can with a funnel spout, may be passed into the opening 49 to unseat the valve as shown in Fig. 8 of the drawings so as to fill the roller with paint. This spout may have a shoulder or stop 54 to limit the displacement thereof within the opening and the degree of unseating of the valve so that the spring metal thereof will not be bent excessively. A guard 55 is also provided to prevent the paint spattering, dropping or being thrown from the roller in use. It preferably consists of a plate which may be curved as shown to lie closely adjacent or in proximity to the applying and transfer surface of the roller to help smooth out the same and insure a uniform distribution and a smooth application of the paint to the surface. However, the absorbent covering will normally be uniformly saturated so as to evenly distribute the paint in applying the same and therefore the guard plate may be swung away from the roller or in any desired spaced relation relative thereto and hold by mounting clamps 56 by which one longitudinal edge of the plate is attached to the supporting portion 13 of the handle as previously described. The clamps are held by screws 57 so that the guard or plate may be retained in any desired adjusted position relative to the roller. In order to prevent the free edge of the guard from catching in the woven or knitted material of the covering, the free edge thereof is preferably turned or flared outwardly

as indicated at 58 but this is only necessary when the plate is in contact with or in close proximity to the roller covering instead of being swung outwardly in considerable spaced relation relative thereto. In any event it will be seen that the covering will be uniformly saturated with the paint which will be evenly distributed not only along the entire length of the covering but also will be uniformly applied to the surface being treated. By varying the mesh or weave of the covering, any desired ornamental effect or finish may be produced in addition to a smooth finish, such as a rough or stippled finish. This may also be varied by manipulation of the device. In addition, by having the handle bent around one end of the roller, the other end will be free to pass up to a given line or to get into corners inasmuch as the end of the roller or the edge of the outer cylinder may enter the extreme point of the angle into which the device is disposed in painting or decorating the same. Also, it is to be understood that the device is not limited in its use to paint, but may be applied to other similar materials.

It should be noted that the heads or disks 24 and 25 closing the ends of the roller are flush with said ends instead of being spaced from said ends or seated within the roller or outer cylinder and of course, the flanges 27 may be omitted so that the covering 28 will extend to the outer faces of said heads. Also, it should be noted that the textile covering 28 may be of single or multiple ply as shown in Figs. 1, 3 and 4. An enlarged detail of this covering is shown in Figs. 9 and 10 in which the covering is of double ply being formed of a tubular material folded on itself so that the interstices or spaces between the cords or threads of the woven material form substantially circular, oval or other shaped openings which may determine the nature of the finish produced upon a surface. If the guard plate 55 is in contact with the covering as shown in Figs. 2 and 3, the paint will be smoothed out and this will tend to so effect the application thereof to the surface in addition to causing more uniform distribution in connection with the particular arrangement of holes or perforations in the cylinders as previously described. However, under normal circumstances the holes will cause even distribution and uniform application and so the guard plate may be moved outwardly in spaced relation to the roller and covering thereof and frictionally held by the clamping means 55 upon the supporting portion 13 of the frame or handle thus preventing the paint from spattering, dripping or being thrown upon the user or extraneous objects. Obviously this guard plate may be flat, angular or of other shape than the curved formation shown.

If desired, when making up the device in small sizes especially for small surfaces or places or for use in crowded or irregular places, angles or corners, the inner cylinder of the roller may be omitted and since the size of the holes may be varied whether one or two cylinders are employed, they may be made of a size to pass just sufficient paint, varnish or other coating as needed to give the best results. Since the inner cylinder is not found necessary under such circumstances, the omission thereof and its function together with the adjustment means is considered well within the scope of the invention and in such case the screw 40 is disconnected from the inner cylinder but used to close the threaded aperture or hole 45, or a suitable plug 75

may be substituted for this purpose. Also, the covering will control the supply or transfer of the paint especially in multiple, double or two-ply form as shown and described although a single ply will be sufficient if of proper gauge or thickness and soft as described. In addition to smoothing the covering and the paint thereon and insuring uniform saturation of the distributing covering along its entire length and therefore uniform application, all surplus paint will be removed by the guard plate when against the roller. As distinguished from a brush head where the paint usually hardens around the bristles the present device can be readily cleaned with a solvent such as turpentine, and maintained in proper usable condition. Also, it is to be understood that the screw 40 may be threaded into the inner cylinder at the lug 38 and swiveled in the head 24. In the form shown the screw 40 and the fingerpiece 42 are in when the holes 21 and 22 are in alignment as shown in Fig. 1 and it is only when the holes are closed or partially closed that the screw 40 and the fingerpiece or wing 42 are out and the offsetting of the portion 12 of the handle will permit the same to clear the fingerpiece. However, by having the screw swiveled in the head 24 it will not move longitudinally but its threaded connection with the inner cylinder will cause the latter to be adjusted to secure any degree of opening and passage of the paint to the covering.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A painting device comprising a roller including inner and outer cylinders, heads fixed to and closing the ends of the outer cylinder, a shaft rotatably supporting the roller through said heads and having a handle, the inner cylinder being shorter than and movable in the outer cylinder, said cylinders having perforations adapted to be moved into and out of registration and a tubular foraminous cloth covering on the roller.

2. A painting device having a roller having inner and outer cylinders with perforations adapted to be moved into and out of registration, means for moving said cylinders relatively and means coacting between the cylinders for guiding one cylinder relative to the other to prevent relative turning thereof.

3. A painting device including a perforated roller, a porous textile covering thereon, means to retain said covering against axial movement, a handle having an axle supporting the roller through one end and a guard for the roller mounted on the handle.

4. A painting device including a perforated roller, a porous textile covering thereon, means to retain said covering against axial movement, a handle having an axle supporting the roller through one end of said handle and an extensible shank, and a normally closed filling opening in one end of the cylinder.

5. A painting device including a roller comprising inner and outer cylinders having perforations adapted to be moved into and out of

registration, the ends of the outer cylinder being closed, and means engageable through one end of one cylinder and with the other adjacent end of the other cylinder to shift one cylinder relative to the other to vary the degree of registration of the perforations or move the same out of registration and hold the cylinders in relatively adjusted positions.

6. A painting device comprising a roller having perforations, a porous perforated textile covering of tubular material on the roller, an extensible handle having a portion rotatably supporting the roller and means for smoothing the roller.

7. A painting device comprising a roller having perforations, a porous perforated textile covering of tubular material on the roller, an extensible handle having a portion rotatably supporting the roller, heads at the ends of the roller substantially flush therewith, the handle having a portion bent radially and then longitudinally and a guard plate on the longitudinal portion mounted for adjustment toward and away from the roller.

8. The combination with a roller having heads closing the ends thereof and adapted to receive a covering and having means for supplying paint thereto through the roller, a handle having an axial portion on which the roller is rotatably mounted, one end having a retaining member rotatably seated in one head and having the other end anchored against movement outwardly of the adjacent head and bent outwardly and then longitudinally and formed with a hand grip portion extending radially therefrom, heads closing the ends of the roller and means rotatably mounting and anchoring one end of the axle flush with the outer face of the roller in the head thereof and against axial displacement.

9. A painting device comprising a roller including inner and outer cylinders, one cylinder having a rib and the other cylinder having a slot engaged by the rib to mount said cylinders for longitudinal movement one relative to the other while holding the same against relative rotation, heads closing the ends of the outer cylinder, a shaft rotatably supporting the roller through said heads, said cylinders having perforations adapted to be moved into and out of registration and a tubular foraminous cloth covering on the roller.

10. A painting device including a roller comprising inner and outer cylinders having perforations adapted to be moved into and out of registration, heads on the ends of the outer cylinder, a screw engageable through at least one head and engaged with the end of the inner cylinder for shifting the latter longitudinally to

move the perforations relatively and a porous textile covering on the roller.

11. A painting device including a roller comprising inner and outer cylinders having perforations adapted to be moved into and out of registration, the inner cylinder having spaced longitudinal edges, a projection on the outer cylinder engaged between said edges to permit longitudinal shifting of the cylinders relatively while holding the same against relative turning, heads closing the ends of the outer cylinder and means carried by one head for engaging the adjacent end of the inner cylinder to shift the latter longitudinally.

12. A painting device including a roller comprising inner and outer cylinders having perforations adapted to be moved into and out of registration, the inner cylinder having spaced longitudinal edges, a projection on the outer cylinder engaged between said edges to permit longitudinal shifting of the cylinders relatively while holding the same against relative turning, the heads of the outer cylinder being closed, a handle having a shaft rotatably mounted in the heads, one end being located within the outer face of one head, and means to shift the cylinders relatively.

13. A painting device including a perforated roller, a porous textile covering thereon, means to retain said covering against axial movement, a handle having an axle supporting the roller through one end of said handle and a shank, and a normally closed filling opening in one end of the cylinder including a spring-pressed plug carried by said end, closing the opening and adapted to be unseated by a spout of a dispensing can or funnel to fill the roller with paint.

14. A painting device comprising a roller having perforations, a porous perforated textile covering of tubular material on the roller, a handle having a portion rotatably supporting the roller and a curved guard plate movably mounted on the handle in conforming relation to the roller for smoothing the roller and paint thereon to insure uniform distribution and smooth application of the paint to a surface.

15. A painting device comprising a roller having perforations, a porous perforated textile covering of tubular material on the roller, a handle having a portion rotatably supporting the roller, heads at the ends of the roller substantially flush therewith, the handle having a portion bent radially and then longitudinally and a guard plate on the longitudinal portion mounted for adjustment toward and away from the roller.

MICHAEL MATSAKAS.