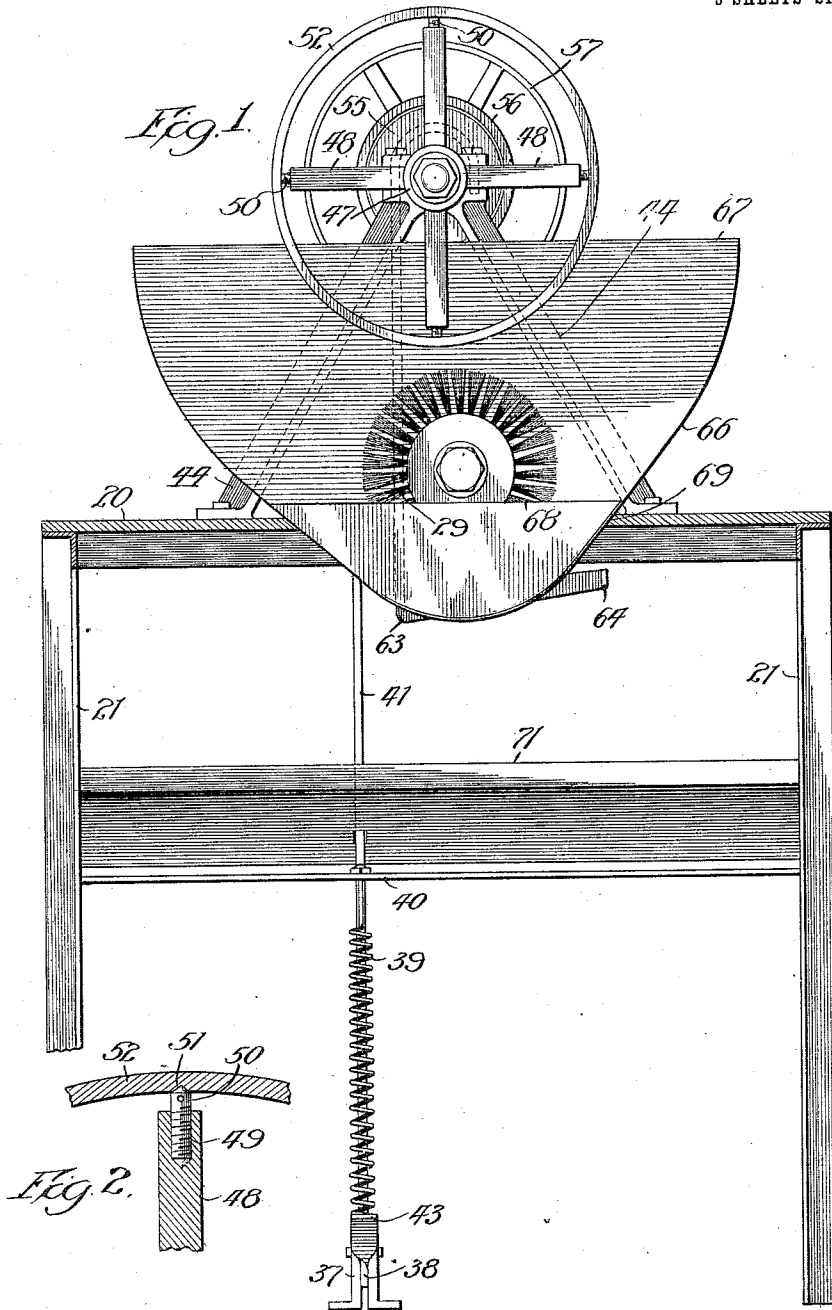


R. D. KINYON.
PAINTING APPLIANCE.
APPLICATION FILED FEB. 2, 1910.

973,356.

Patented Oct. 18, 1910.

3 SHEETS—SHEET 1.



Witnesses
Ed. C. Kinyon.
Maurice Goldberger.

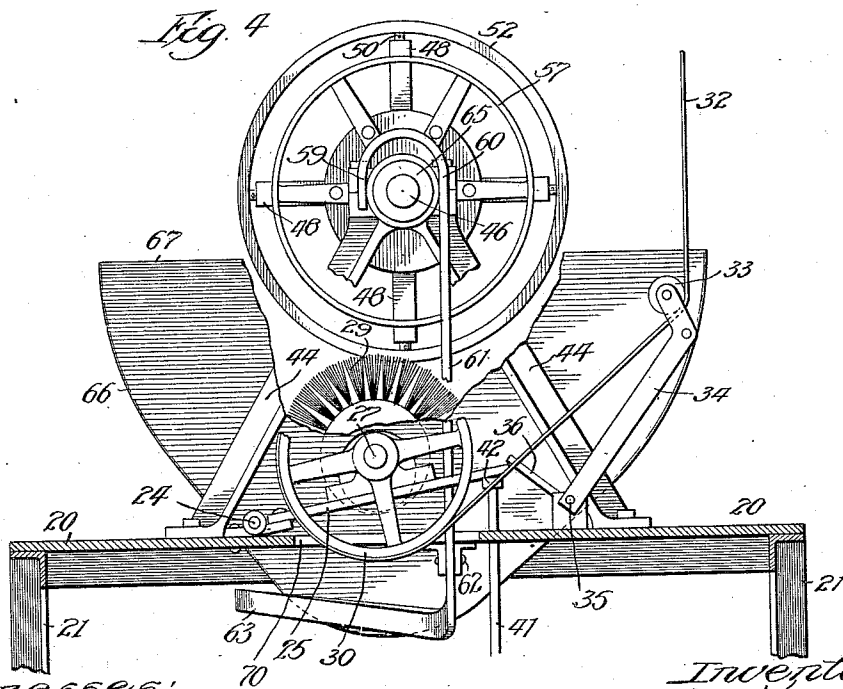
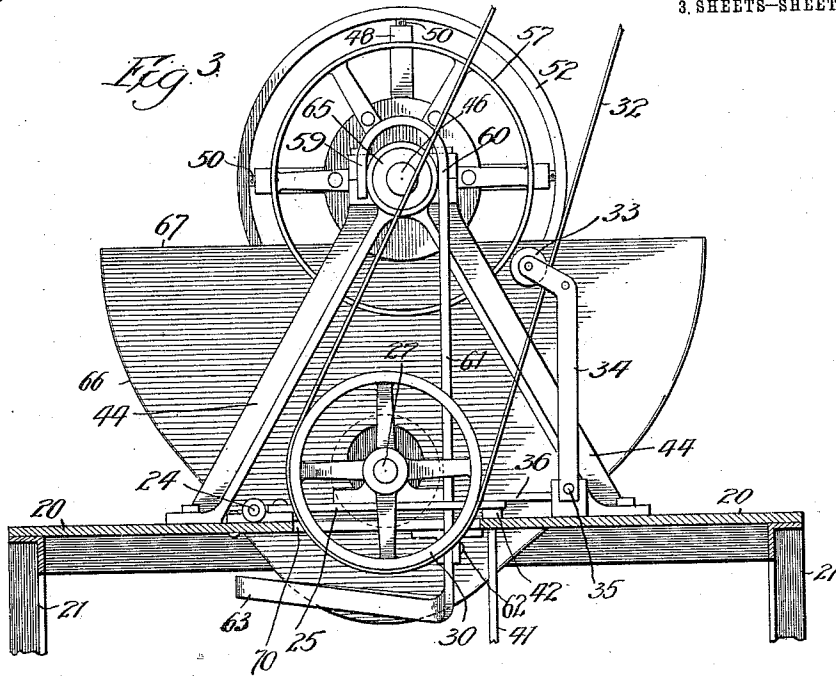
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3. SHEETS—SHEET 2.



Witnesses:

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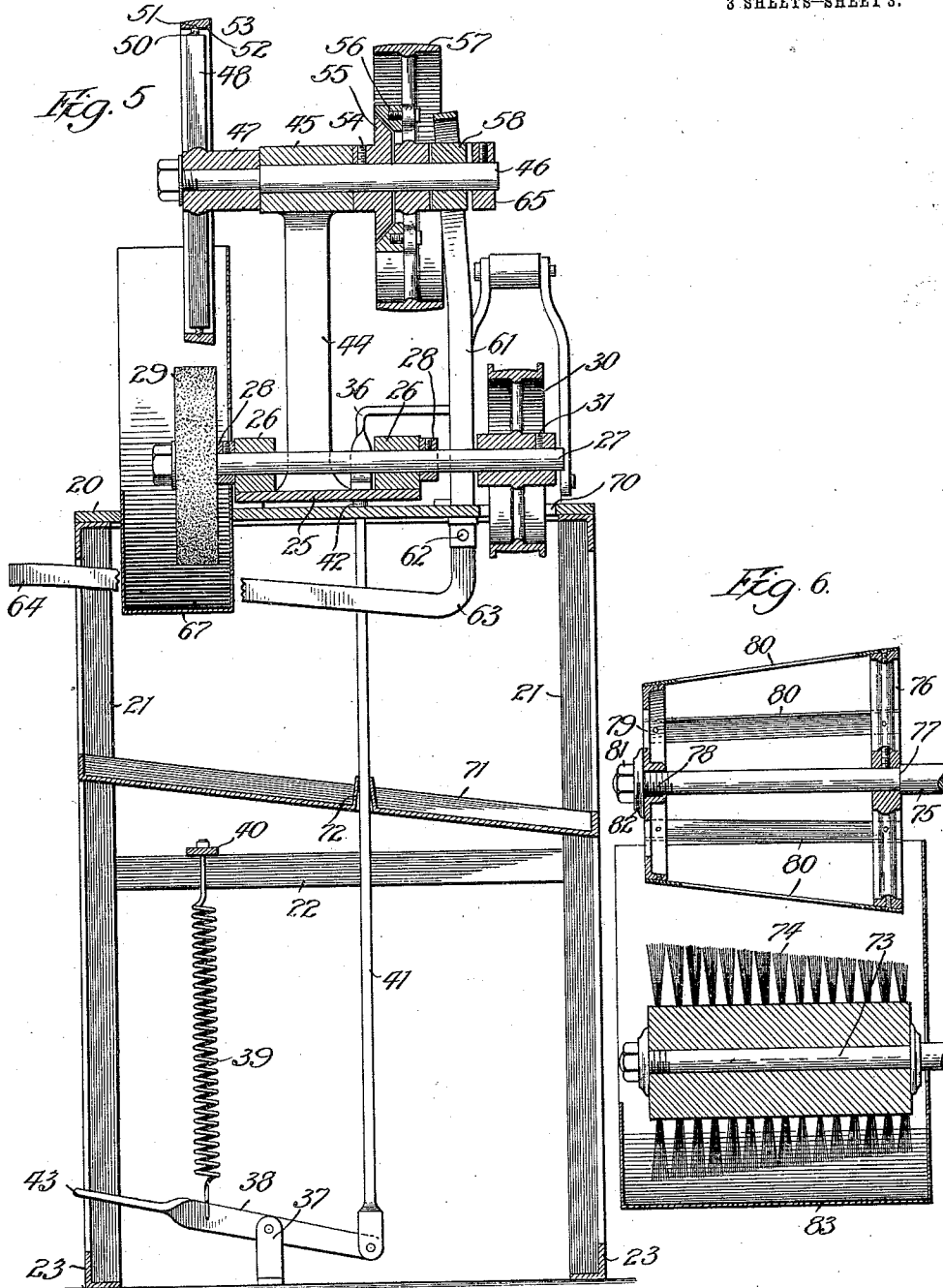
Robert D. Kinyon
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ROBERT D. KINYON, OF CHICAGO, ILLINOIS.

PAINTING APPLIANCE.

973,356.

Specification of Letters Patent.

Patented Oct. 18, 1910.

Application filed February 2, 1910. Serial No. 541,567.

To all whom it may concern:

Be it known that I, ROBERT D. KINYON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Painting Appliances, of which the following is a specification.

My invention relates generally to devices or appliances for the application of paint, but concerns more particularly the painting or coating of round containers, such as pails, casks or the like, and relates particularly to the painting of the exterior surfaces of the hoops of pails, barrels and similar structures. It has been customary and usual heretofore to dip such hoops, usually metallic, into the paint or other coating liquid, so that the latter is applied to both the inner and the outer surfaces thereof. The objection to this method is that it uses an unnecessary amount of paint, and when such hoops are applied to the pails or barrels, the paint on their inner surfaces is rubbed off more or less, occasioning a smearing or disfigurement of the article to which the hoop is applied. My invention relates to a simple and compact appliance which will apply the paint to the exterior surface only of such hoops, or to the outer surface only of a pail or the like. Consequently, the objections noted above are overcome.

In order that a full and complete understanding may be had of this invention, I have illustrated preferred embodiments thereof in the accompanying drawings forming a part of this specification, and throughout the various views in these drawings, like reference characters refer to the same parts.

In the drawings,—Figure 1 is a front elevation of one embodiment of the invention, a small portion of the machine being broken away; Fig. 2 illustrates the manner of attaching the rim to the expansible supporting spider of the wheel or rotary support adapted to carry the hoop to be coated; Fig. 3 is a rear elevation of the top portion of the machine, the frame being shown partly in section; Fig. 4 is a similar view, with parts broken away, illustrating the position of the various elements when the painting brush is applying paint to the hoop; Fig. 5 is a substantially central, vertical cross-section through the machine; and Fig. 6 is a cross-section through a modified construction, in-

dicating how the invention may be employed for the application of the paint to a pail.

An apertured horizontal plate 20 is supported on a suitable framework having upright legs or posts 21, intermediate horizontal post-connecting members 22, and similar bottom connecting bars 23, 23. Pivoted or hinged at 24 on the top of this table, I employ a plate 25 having mounted thereon a pair of bearings 26, 26, rotatable in which is a brush shaft 27 held in proper position by two collars 28 on opposite sides of the bearings 26, such shaft carrying at its forward end a cylindrical paint-applying brush 29, and being provided at its rear end with a driving pulley 30 fixed thereto in any approved manner, as by a screw 31. Pulley 30, shaft 27 and brush 29 are adapted to be rotated by means of a belt 32 encircling such pulley, and cooperating with the inner surface of such belt I employ a tightening roller 33 mounted between a pair of arms 34 fixed to a suitably supported rock shaft or rod 35 having rigidly attached thereto an arm 36 normally overlying or overlapping the portion of the bearing supporting plate 25 remote from its hinged connection 24 with the table top.

In order to rock the hinged plate 25 so as to elevate shaft 27 to carry the paint brush into contact with the hoop-support described hereinafter, I employ the following instrumentalities: In a suitable bracket 37 on the floor, I fulcrum a foot lever 38, the front end of which is normally pulled upwardly by a coiled contractile spring 39, one end of which is attached to the lever, the other end thereof being secured to a cross bar 40 mounted on the connecting bars 22. The other or inner end of this foot lever has pivoted thereto a rod 41 slidable through a hole in the table top 20 and having at its top end an enlarged head 42 disposed beneath that portion of the plate 25 away from its hinge 24. It will therefore be apparent that when the operator presses downwardly on the foot piece 43 of lever 38, rod 41 will be pushed upwardly, and such movement thereof will occasion the rocking of plate 25 on its hinge and a rocking of the arms 34 on their shaft 35, due to the overlapping of the parts 25 and 36. This movement of the elements, as will be readily understood, elevates the brush, and at the same time maintains the belt 32 taut, the movement of the roller

33 compensating for the elevation of pulley 30.

A standard 44 is secured to the top of the table or frame, and is supplied at its upper end with a bearing 45 accommodating a rotatable shaft 46, the front end of which has applied thereto a hub 47 supplied with four radiating arms 48, the outer end of each of which has a threaded aperture 49 for the reception of an expansion screw 50, the outer end of each of which has a conical point-taking into a correspondingly shaped recess 51 on the inner face of a rim 52, the outer surface 53 of which is somewhat tapered or beveled, as shown in Fig. 5, for the ready application of a metallic hoop thereto, it being understood that this rim is adapted to support and rotate the hoop to be painted, although no such hoop is indicated in the drawings. When hoops of different sizes are to be coated in this appliance, the rim 52 is removed by turning the screws 50, and another rim of lesser or greater diameter applied, the screws 50 being suitably turned, as will be readily understood, so as to securely hold the rim concentric to the axis of shaft 46. In other words, the hoop-supporting rims are detachably mounted on the spider.

On the other side of bearing 45, shaft 46 has fixed thereto, by means of a screw 54, one beveled element 55 of a friction clutch, the cooperating element 56 thereof being secured to the interior of a belt pulley 57 mounted to loosely turn on the shaft, and being adapted to be slid longitudinally thereon so as to render the friction clutch operative by means of a sliding sleeve or collar 58 having outstanding pins cooperating with the portions 59 and 60 of a lever 61, the top end of which is curved, as is shown in Figs. 3 and 4, so as to partially encircle such collar, the lever being fulcrumed at 62, and having below such fulcrum a bend 63, the forward end of the lever 64 constituting a handle and protruding from the front of the machine beneath the table. In order to limit the travel of collar 58 on shaft 46, another collar 65 is fixed to the end of the shaft in any approved or desired manner.

A flaring casing 66 is mounted on the table and has a back 67 extended to the top thereof, the front wall 68 being of much less depth and being provided so as to form a pocket or compartment in the lower portion of the casing for the accommodation and reception of the paint, the casing being so located that the brush 29 dips into the paint. The lower portion of this casing is received in an aperture or hole 69 provided in the table top, all as is clearly illustrated in the drawing, it being noticed that the table is also apertured at 70 for the reception of the lower part of pulley 30.

The operation of this mechanism takes place in practically the following man-

ner: The operator presses one of the metallic hoops to be painted onto the beveled face 53 of rim 52, the latter at this time being stationary, owing to the fact that the clutch 55, 56 is not operative. Assuming that the casing has the proper charge of paint and that the brush 29 is dipping into such paint and is being rotated by means of the belt 32 and pulley 30, the operator with his hand presses down the protruding portion 64 of the lever 61, thereby shifting the pulley 57 so as to render the clutch operative, and bringing about the rotation of shaft 46, rim 52 and the hoop applied thereto, pulley 57 being rotated by a belt not shown. At the same time the operator steps upon the lever 38, which causes the upward travel of the rod 41, the headed top end of which, by bearing against the under surface of the plate 53, rocks the latter and the brush carried thereby on the hinge 24 upwardly into contact with the exterior face of the hoop, and at the same time that the plate 25 is raised, the arms 34 are swung outwardly so that the roller 33 carried thereby maintains the proper tension on belt 32, the two extreme positions of the parts being clearly indicated in Figs. 3 and 4. When the hoop has had the proper amount of paint brushed thereupon, the operator releases the handle 64 and the foot piece 63, the rotation of shaft 46 ceases, the brush descends into the paint to receive a new charge, and the painted hoop is removed and replaced with one to be coated.

In order that any drippings may not fall upon the floor, the device, if desired, may be supplied with an inclined basin or receptacle 71 suitably supported on the framework beneath the table top and having a flanged aperture 72 for the passage of rod 41.

An appliance of this kind may, with slight modification, be readily adapted for the painting of pails and the like, and in Fig. 6, I have shown such an appliance. In this case the brush shaft 73 has a conical or tapered brush 74 mounted thereon, the outer surface of which conforms substantially to that of the pail or cask to be painted. On the upper shaft 75, corresponding to the shaft 46 of the device described above, I mount a spoked wheel 76 bearing against the shoulder 77 of the shaft, the end of the shaft being threaded at 78 and having slidably mounted thereon another spoked wheel 79 of lesser diameter, the outer surfaces of the two wheels being connected by a plurality of flat springs 80 attached thereto. These springs are adapted to be bowed outwardly by the turning of a nut 81 on the threaded end 78 of the shaft, such nut, through a washer or collar 82, bearing against the outer face of the smaller wheel 79. It should therefore be apparent that as this nut is turned so as to force the wheel

79 inwardly toward the wheel 76, the springs 80 will be bowed outwardly so as to receive thereon pails or similar receptacles of different internal diameters. The operation of this modification is otherwise substantially like that indicated above, and apparently needs no further consideration, it being merely noted that a casing 83 is provided for the reception of the brush, such casing, of course, being of different dimensions from those of the form of casing 66 shown in Figs. 1, 3, 4 and 5 of the drawings, since the brush in this instance is considerably larger than that used with hoops.

I have herein set forth two embodiments of this invention, but do not wish to have it inferred that the invention is limited or restricted in any way to the precise and exact structural features herein shown and described, because the invention is susceptible of a considerable variety of embodiments and the details of the construction herein noted may be varied within wide limits without sacrificing any of the advantages of the invention and without departing from the substance thereof.

I claim:

1. In a painting appliance of the character described, the combination of a rotary support for the article to be painted having means to hold the article concentrically with the support, means to rotate said support, a rotary paint brush, a pulley to rotate said paint brush, said brush and pulley being bodily movable toward the article to be painted on said support, a belt cooperating with said pulley to rotate said brush, a swinging arm, an idler pulley on said arm cooperating with said belt, and means to simultaneously shift said brush to bring it against the article to be painted on said support and to rock said swinging arm whereby to move said idler to maintain the belt taut, substantially as described.

2. In a painting appliance of the character described, the combination with a frame, of a paint receptacle supported thereon, a horizontal shaft upon the frame provided with a drive pulley and a brush, the latter working in the paint receptacle, a horizontal shaft above the drive shaft and provided with a drive pulley and a circular radially expansible work holder working in cooperative relation with the rotary brush, a clutch for the pulley on the upper shaft, a rocking bearing for the brush shaft, a belt tightener for the pulley of the brush shaft, means to rock the bearing to move the brush bodily toward and away from the work holder, and an operative connection between said means and the belt tightener, substantially as described.

3. In a painting appliance of the character described, the combination of a rotary work holder, a brush shaft having a brush and a pulley, a belt to drive the pulley, a belt tightener, a shiftable bearing for the brush shaft to permit the brush to be moved toward and away from the work holder, means for shifting the bearing, and an operative connection between the bearing and the belt tightener, substantially as described.

4. In a painting appliance of the character described, the combination with a table having an opening in the top thereof, a plate extending across the opening and hinged to the table, a brush shaft mounted upon the plate and provided with a brush, a pulley upon the brush shaft, a rotary work holder, a belt for the pulley, a swinging belt tightener having a trip projection in the path of the swinging plate, and means to elevate the plate, substantially as described.

ROBERT D. KINYON.

Witnesses:

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L. J. POTTER.