July 31, 1923.

1,463,362

C. L. HOOPER ET AL

COATING MACHINE

Filed May 28, 1921

5 Sheets-Sheet 1

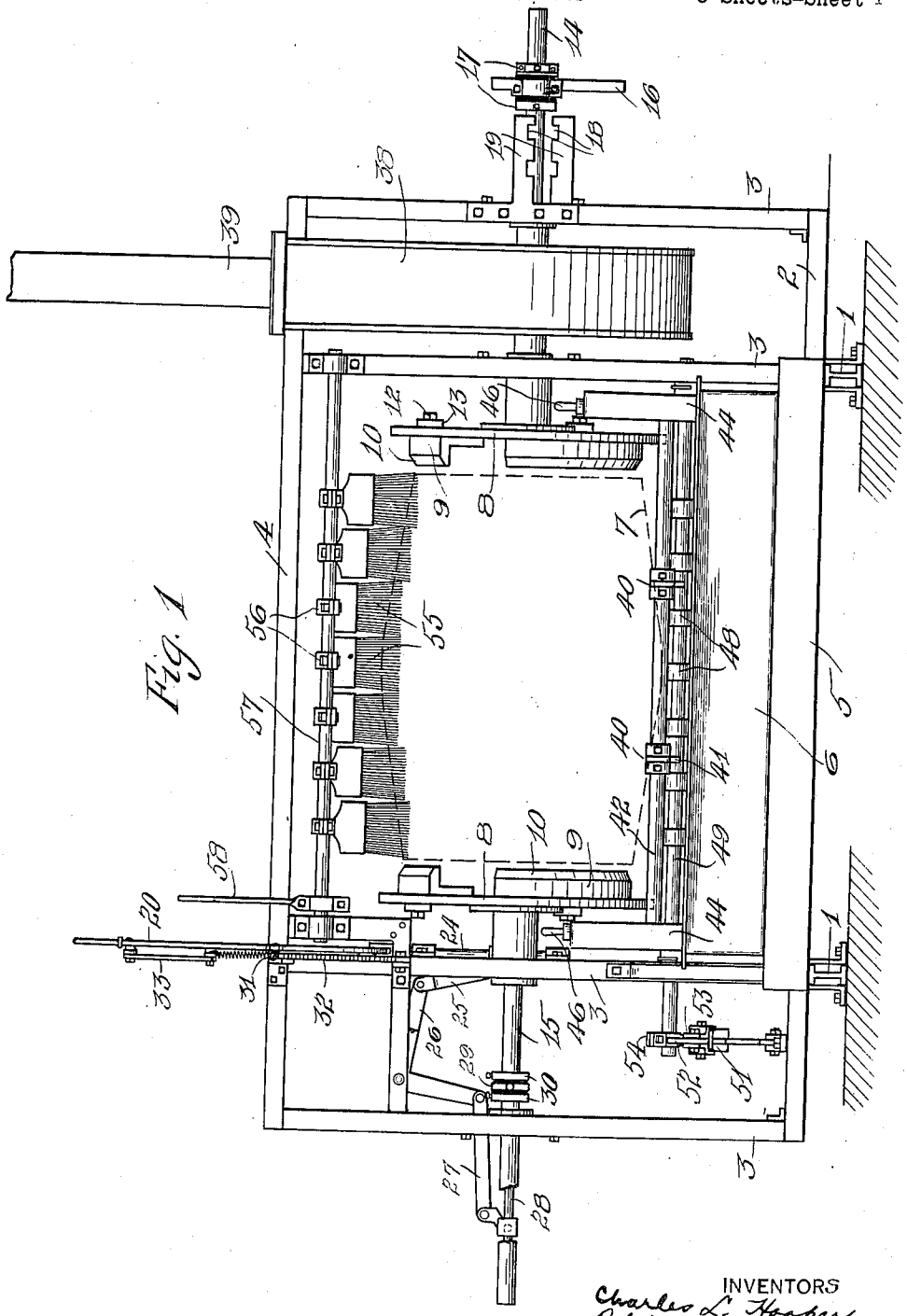


Fig. 1

INVENTORS

Charles L. Hooper
Robert F. Sutherland
Albert W. Warkhouse

by Davis & Simmons
their ATTORNEYS

July 31, 1923.

1,463,362

C. L. HOOPER ET AL

COATING MACHINE

Filed May 28, 1921

5 Sheets-Sheet 2

Fig. 2

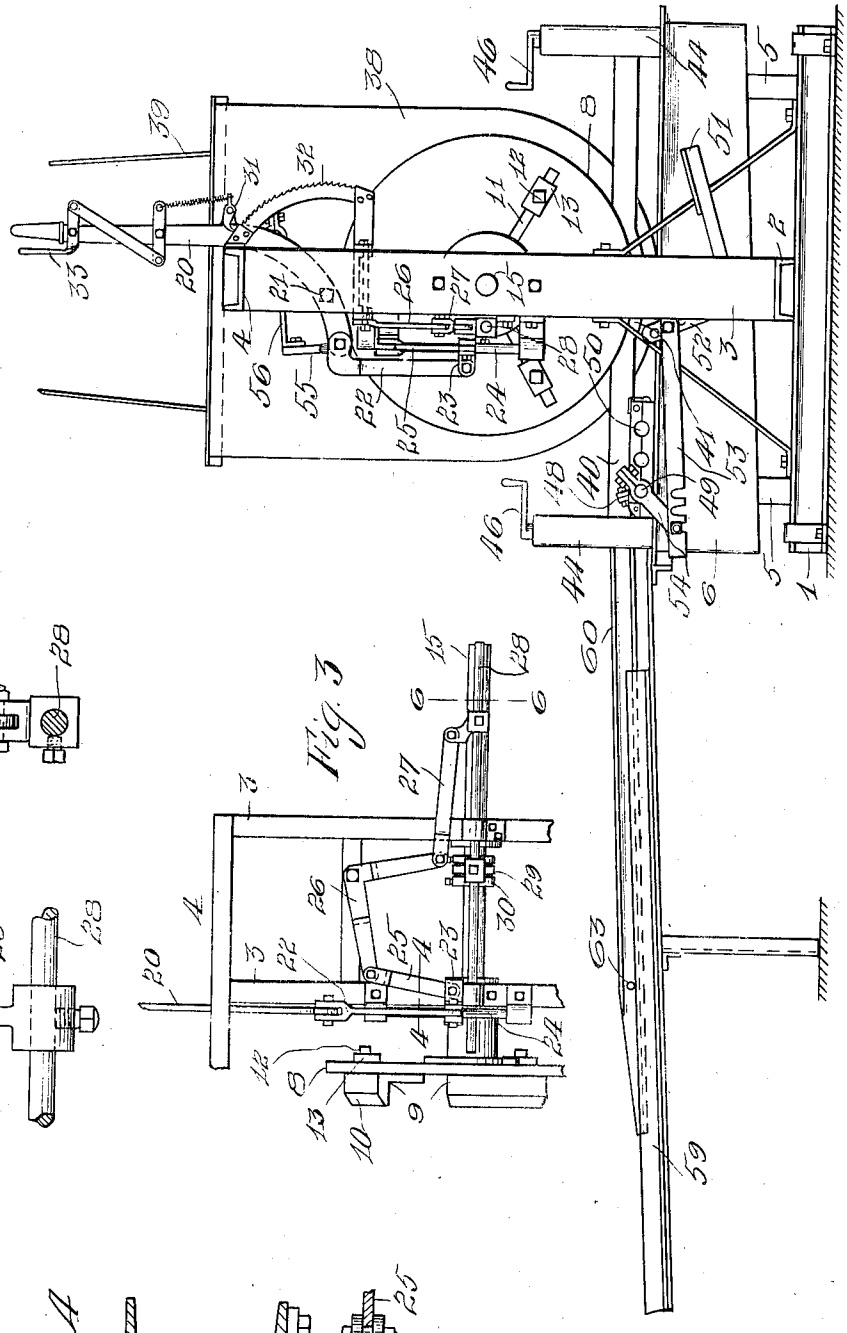


Fig. 6

Fig. 3

Fig. 5

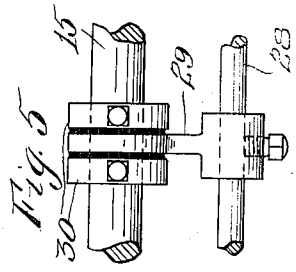
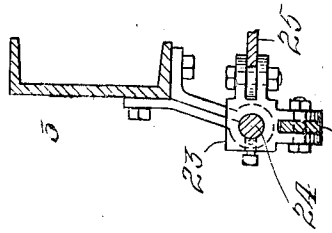


Fig. 4



INVENTORS

Charles L. Hooper

Robert F. Sutherland,

Albert W. Parkhouse,

by Davis & Simmons

their ATTORNEYS

July 31, 1923.

1,463,362

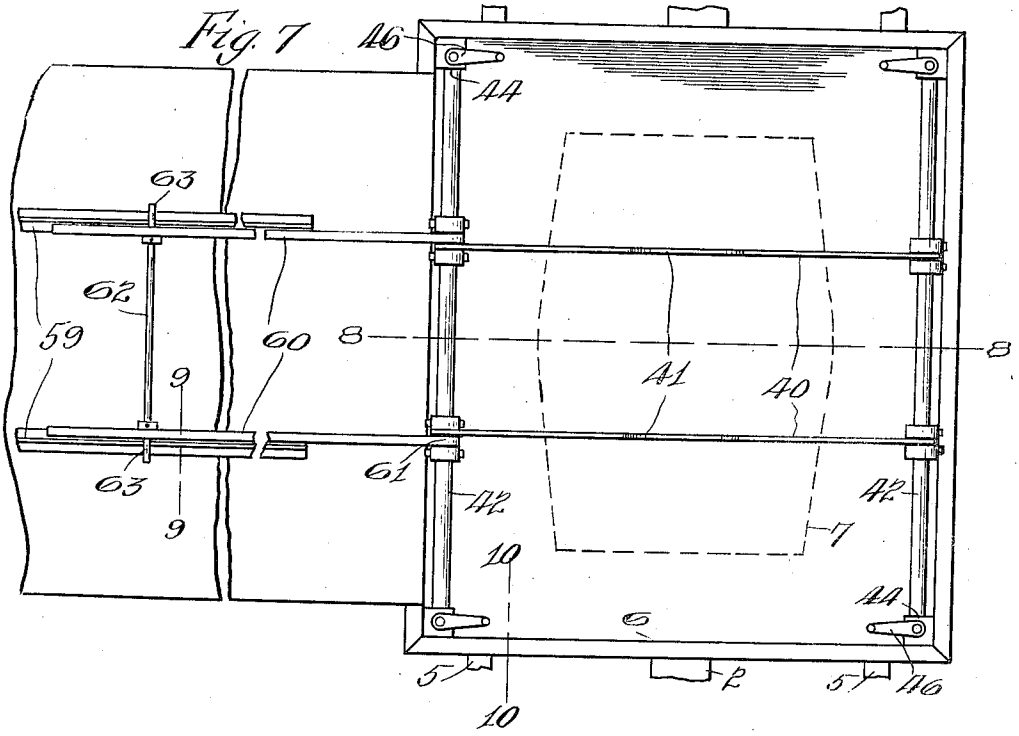
C. L. HOOPER ET AL

COATING MACHINE

Filed May 28, 1921

5 Sheets-Sheet 3

Fig. 7



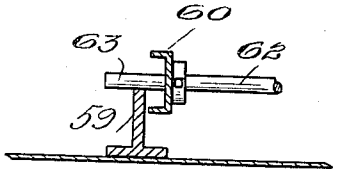


Fig. 9

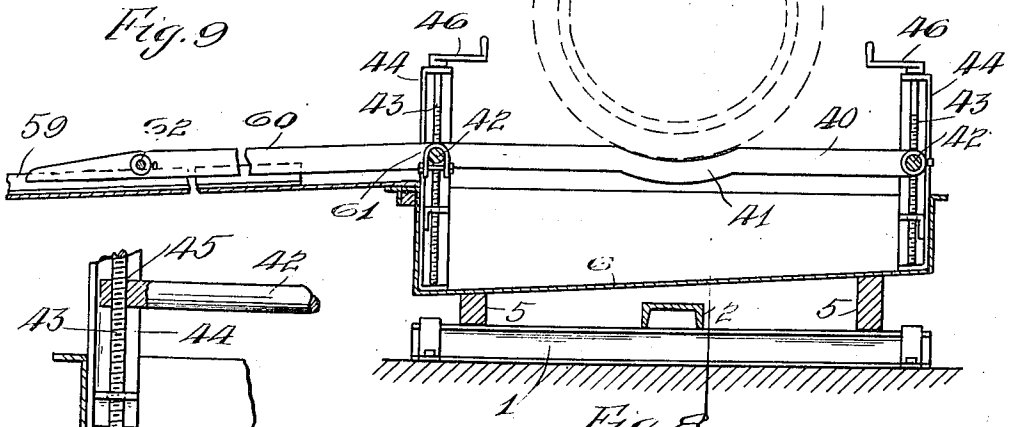


Fig. 8

Fig. 10

INVENTORS
Charles L. Hooper
Robert F. Sutherland
Albert M. Carkhuff
by Davis & Simms
ATTORNEYS

July 31, 1923. 1,463,362

C. L. HOOPER ET AL

COATING MACHINE

Filed May 28, 1921 5 Sheets-Sheet 4

Fig. 11

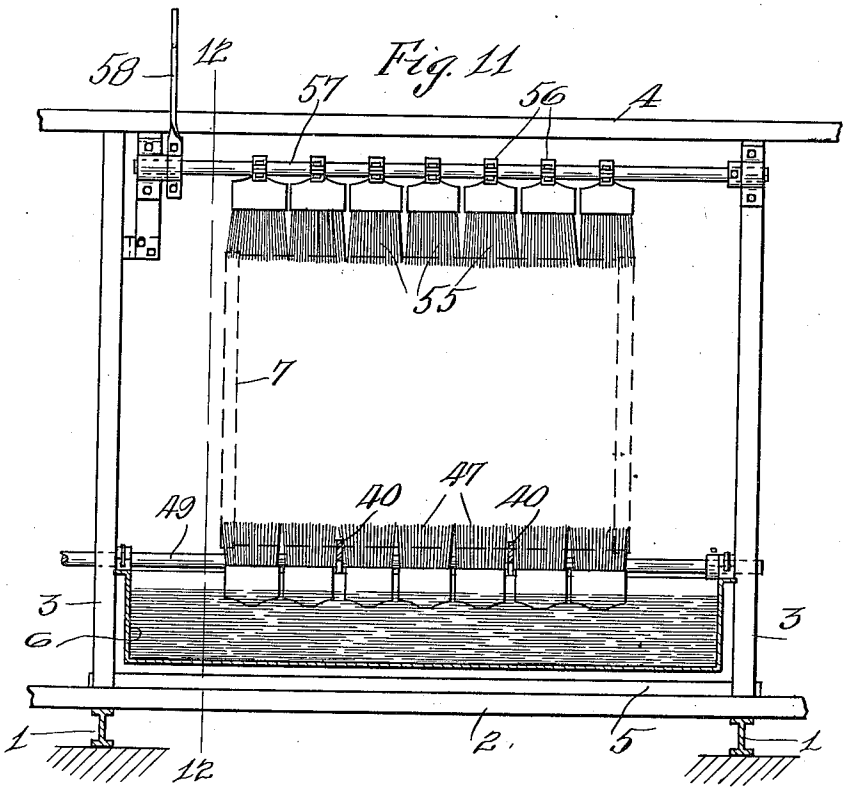


Fig. 12

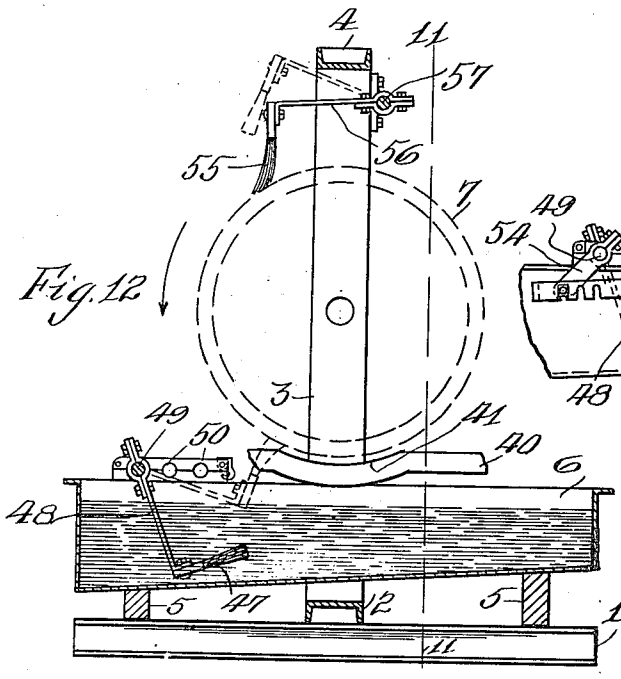
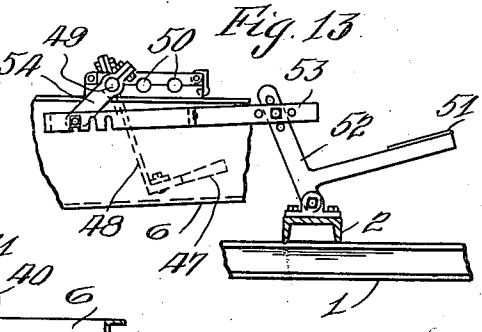


Fig. 13



INVENTORS
Charles L. Hooper
Robert F. Sutherland
Albert W. Parkhouse
by Davis & Simmons
their ATTORNEYS

July 31, 1923.

1,463,362

C. L. HOOPER ET AL

COATING MACHINE

Filed May 28, 1921

5 Sheets-Sheet 5

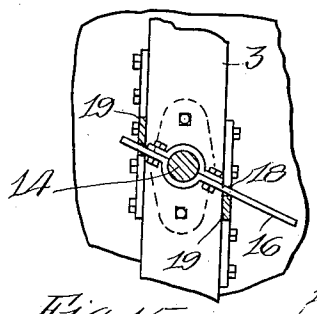


Fig. 15

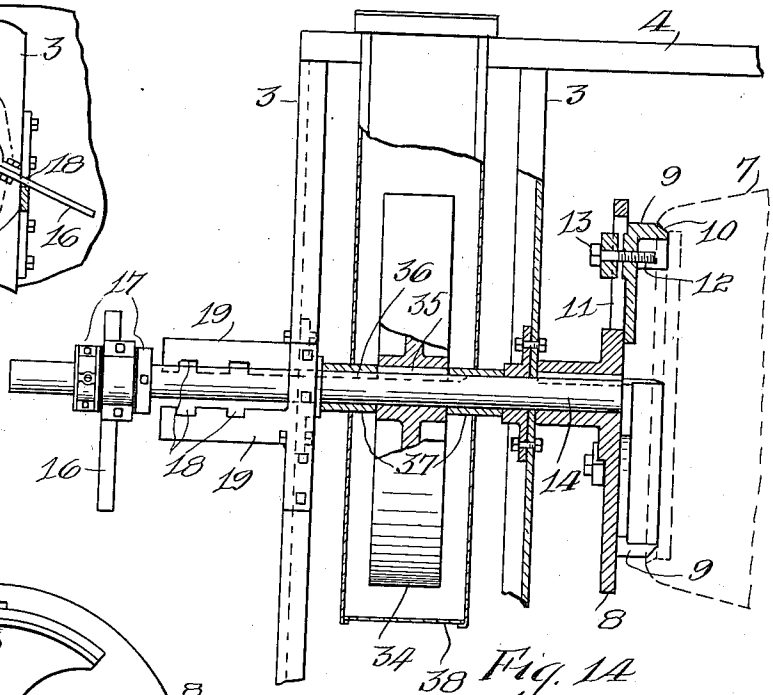


Fig. 14

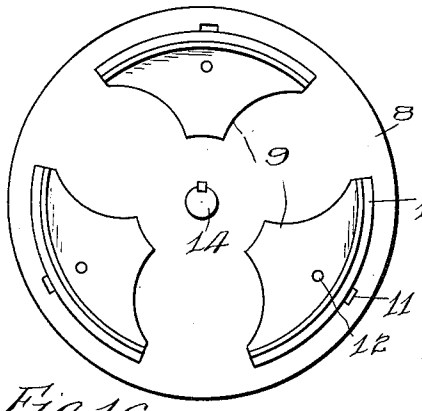


Fig. 16

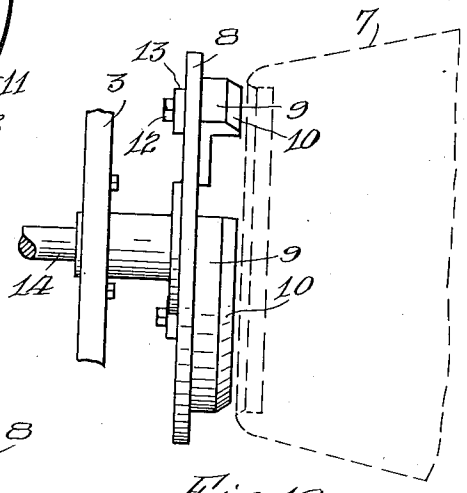


Fig. 18

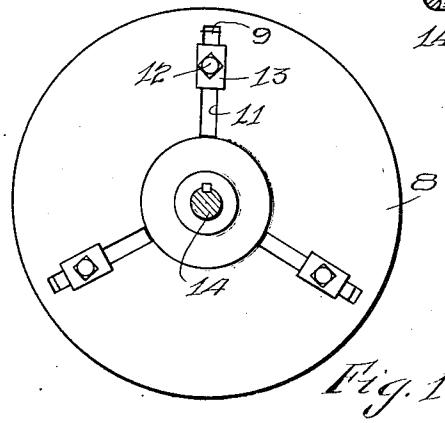


Fig. 17

Charles L. Hooper
Robert F. Sutherland and
Albert W. Clarkson
INVENTORS
by Davis & Simmons
their
ATTORNEYS

Patented July 31, 1923. 1,463,362

UNITED STATES PATENT OFFICE.

CHARLES L. HOOPER, ROBERT F. SUTHERLAND, AND ALBERT W. PARKHOUSE, OF ROCHESTER, NEW YORK, ASSIGNORS TO VACUUM OIL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

COATING MACHINE.

Application filed May 28, 1921. Serial No. 473,268.

To all whom it may concern:

Be it known that we, CHARLES L. HOOPER, ROBERT F. SUTHERLAND, and ALBERT W. PARKHOUSE, citizens of the United States, and residents of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Coating Machines, of which the following is a specification.

The present invention relates to coating machines and an object thereof is to provide a machine which will effectively hold and turn an object during the coating thereof. Another object thereof is to provide means for supporting an object such as a barrel in such a position that it may be effectively engaged by the holding and turning means while upon the support and removed from the support so that no interference with the support occurs during the turning. Still another object of the invention is to provide a coating machine in which the object is supported and turned during the coating with adjustments adapted to accommodate objects of different lengths and diameters. Another and further object of the invention is to provide a supporting means which will sustain a barrel in a position over a coating receptacle where it may be engaged by a holding and turning means to be removed from such supporting means by the holding and turning means, the latter returning the barrel to the support.

To these and other ends the invention consists of certain parts and combinations of parts, all of which will be hereinafter described, the novel features being pointed out in the appended claims.

In the drawings:

Fig. 1 is a view of the intake side of the machine;

Fig. 2 is an end view of the machine;

Fig. 3 is a detail view of the mechanism for effecting the movement of one of the turning heads;

Fig. 4 is an enlarged section on the line 4—4, Fig. 3;

Fig. 5 is a fragmentary view showing the connection between one of the head shafts and the operating mechanism;

Fig. 6 is an enlarged section on the line 6—6, Fig. 3;

Fig. 7 is a plan view of the coating receptacle showing the manner in which the barrels are centered on the turning heads;

Fig. 8 is a section on the line 8—8, Fig. 7;

Fig. 9 is a section on the line 9—9, Fig. 7;

Fig. 10 is a section on the line 10—10, Fig. 7;

Fig. 11 is a section on the line 11—11, Fig. 12;

Fig. 12 is a section on the line 12—12, Fig. 11;

Fig. 13 is a detail view showing the manner in which the distributor brushes are operated;

Fig. 14 is a fragmentary sectional view showing the manner in which one of the turning heads is mounted;

Fig. 15 shows in section the manner in which the turning head illustrated in Fig. 14 is adjustable;

Fig. 16 is a face view of one of the turning heads;

Fig. 17 is a rear view of one of the turning heads; and

Fig. 18 shows one of the turning heads in side elevation.

In the embodiment of the invention herein illustrated, there is provided a frame which, in this instance, comprises two base pieces 1 on which a cross piece 2 is supported, this cross piece having standards 3 rising therefrom, four of such standards being provided, two at each side of the frame, and these standards in turn being connected by a top piece 4. Also supported on the base pieces are cross pieces 5 which form supports for a tank or receptacle 6 in which the paint or coating material is contained.

The barrel 7 or other object to be coated is supported above the coating tank or receptacle 6 by a suitable turning means comprising in this instance two relatively adjustable turning heads, each of which, comprises preferably a disk 8 and a plurality of barrel chime engaging members 9 which have chamfered faces 10 for engaging such chimes and which are removably secured to the disk 8, the disk in this instance, be-

ing provided with radial slots 11 in which bolts 12 operate, said bolts engaging clamping plates 13 on the rear faces of said disk. It is apparent that the chime engaging members each may be removed and other chime engaging members having chamfered faces 10 or different arcs substituted and positioned at different distances from the center of the disk. The turning heads are each provided with a shaft, this shaft being indicated at 14 for one head and 15 for the other head, both being journaled in the upright 3.

The shaft 14, in addition to being mounted to turn, is adjustable longitudinally and to this end it has an abutment piece 16 fitted about the same so that the shaft turns therein and it projects from opposite sides of the shaft, such abutment piece being arranged between two collars 17 fixed to the shaft and the two projecting arms being adapted to engaged within notches 18 formed in two projections 19 on one of the uprights 3, as shown in Figs. 14 and 15. This adjustment is provided to accommodate barrels of different heights. It is apparent that, when the abutment piece 16 is free from the projections 19, as shown in Fig. 14, a barrel of greatest height may be held between the two heads, whereas, when this abutment piece is secured in notches 18, nearer to the uprights 3, barrels of less height may be held between the heads.

Movement of the other head may be effected through a lever 20 pivoted at 21 to one the uprights 3 and connected by a link 22 with a slide 23 moving on a way 24. This slide 23 connects by a link 25 with one end of a bell crank lever 26, the other end of said lever being connected by a link 27 with a slide rod 28. The slide rod 28 is through an arm 29 connected with the shaft 15, said shaft having two fixed collars 30 thereon between which the collar on the arm 29 lies about the shaft 15. It is apparent that the swinging of the lever 20 will effect the sliding of the shaft 15 and thereby the movement of the head carried by such shaft. A pawl 31 on the lever 20 cooperates with a segmental rack 32 on one of the posts 3, this pawl being controlled by a lever mechanism 33 and serving to lock the shaft 15 in its adjusted position.

The turning of the barrel may be effected through a pulley 34 which has a key connection 35 with the shaft 14, said shaft having a longitudinally extending groove 36 in which the key may travel when the shaft is moved longitudinally. The pulley is supported between two of the uprights 3 and sleeves 37 lie between the pulley and the uprights to maintain the pulley in a central position, notwithstanding the longitudinal movement of the shaft 14. A housing 38 surrounds the pulley and is open at the top of the frame for the passage of the belt 39.

For centering the barrel with refernce to the turning heads, there is provided a centering means in the form of a support which positions the barrel so that its center is slightly below the center of rotation of the heads in order that, when the relative movement between the heads takes place, the chamfered chime engaging portions will cooperate with the chimes of the barrel, lift the latter off the centering means, and position such barrel properly in centered position on the heads free of the centering means, permitting the barrel to turn without interference with the centering means. This centering and supporting means, in this instance, comprises two bars 40 arranged substantially in parallel relation and formed with depressed portions 41 situated directly below the axis of turning of the turning heads. These supporting bars are preferably vertically adjustable and to this end may be secured together at opposite ends by cross bars 42, each cross bar having an adjusting means at opposite ends thereof. This adjusting means, in this instance, embodies a vertically arranged screw 43 mounted to turn in an upright piece 44 and having the screw threaded portion thereof engaging nuts 45 formed in the ends of the cross pieces 42. At the upper end of each screw a handle 46 is provided which, when turned, will effect the elevation of that end of the cross piece 42 with which the screw engages. It is apparent that by this arrangement the bars 40 may be positioned at a height corresponding to the diameter of the barrel to be coated so that proper cooperation between the barrel and the turning heads may be established.

The coating of the barrel may be effected in any suitable manner. In this instance, there is provided a plurality of brushes 47 secured in angular relation to arms 48 adjustably secured to a rock shaft 49. This arrangement permits the brushes to be arranged out of line with each other so as to cooperate with a barrel which tapers toward its end. The shaft 49 may be positioned in any one of the bearings 50 so as to be brought different distances from the axis of rotation of the barrel in order to operate on barrels of different diameter. Movement of the shaft 49 may be effected through a treadle 51 which has an arm 52 adjustably connected to a link 53 which is in turn adjustably connected to an arm 54 on the shaft 49. The brushes 47 operate in the coating receptacle and serve to apply or distribute the paint on the barrel. Also cooperating with the barrel are spreading brushes 55 which are carried by arms 56 adjustably connected to a rock shaft 57 so that the brushes may be positioned on the shaft to correspond to the shape of the barrel. The shaft 57 may be operated by hand by a

lever arm 58 to move into and out of engagement with the barrel, these brushes serving to spread the paint which is distributed on the barrel by the brushes 47.

After the barrel has been painted, the heads are separated and the barrel falls on the bars 40 from which it is displaced by any suitable means onto a runway 59. To the end of facilitating the movement of the barrel from the rods to the runway 59 notwithstanding the adjustment of the bars 40 to correspond with barrels of different diameters, two runner bars 60 are provided which are pivotally connected to one of the cross pieces 42 at 61. These runner bars are in turn connected at their free ends by a cross bar 62 which projects at 63 beyond the runner bars 60 to rest upon the runner bars 59.

The operation of the invention will be understood from the foregoing description, but it may be summarized as follows:

The machine is first adjusted to correspond to the diameter of the barrel to be operated upon. A barrel is brought to the supporting bars 40 by hand or otherwise, so that it is centered in the depressions 41. The lever 20 is then shifted to cause the barrel to be engaged by both of the heads. This engagement lifts the barrel off of the bars 40 and causes it to become centered with reference to the heads. The brushes are then brought into contact with the barrel, first the distributing brushes to apply a proper amount of paint, and then the spreading brushes to spread the paint evenly over the barrel. After the barrel is properly painted, the rotation thereof is discontinued and the lever 20 is operated to separate the heads. The barrel falls onto the bars 40 and is pushed off by hand or otherwise onto the runner bars 60 from which it travels to the runway 59 to any desired destination.

What we claim as our invention and desire to secure by Letters Patent is:

1. A coating machine comprising a pair of rotary heads embodying a disk and a plurality of removable chime engaging members each formed with a curved chamfered face, and means for applying a coating to a barrel turned by said heads.

2. A coating machine for barrels or the like comprising a pair of rotary heads, shafts secured to each head, one of said shafts having an abutment member in which the shaft turns, held against longitudinal movement on the shaft and adjustable to different positions on the frame of the machine, and means for applying a coating to an object held by the heads.

3. A coating machine comprising a receptacle for the coating material, means for rotating an object above said receptacle, distributing brushes movable to and from the coating receptacle to distribute the coating on the rotating object, and spreading brushes for cooperating with the rotating object.

4. The combination with supporting means having a depression in which an object may be positioned, of a pair of rotary heads mounted above the supporting means and having portions which will engage with opposite ends of a barrel and lift the barrel from the supporting means without any relative movement of the supporting means and the heads relatively toward and from each other.

5. The combination with a pair of relatively movable rotary heads, each provided with chamfered faces for engaging the chimes of a barrel, of supporting means for sustaining the barrel so that the chimes may be engaged by the chamfered faces when the relative movement between the heads takes place.

6. A coating machine comprising a coating receptacle, a pair of rotary heads arranged above the receptacle, and supporting bars arranged above the receptacle for supporting an object in a position to be engaged by the heads.

7. The combination with a coating receptacle and a pair of rotary heads arranged above the receptacle relatively adjustable to support an object between them, of supporting bars arranged above the receptacle for sustaining an object in the position where it may be engaged by the heads, said supporting bars being adjustable toward and from the axis of the heads to accommodate objects of different diameters.

8. A coating machine comprising a coating receptacle, a pair of rotary heads supported above the receptacle, and relatively adjustable supporting bars arranged above the receptacle and formed with depressions in which an object is adapted to be positioned to be engaged by the heads.

9. A coating machine comprising a coating receptacle, a pair of rotary heads supported above the receptacle, relatively adjustable supporting bars arranged above the receptacle and formed with depressions in which an object is adapted to be positioned to be engaged by the heads, connecting bars between said supporting bars, and screws connected to said connecting bars for effecting the adjustment of the supporting bars toward and from the axis of the rotary heads.

10. The combination with a pair of rotary heads adjustable toward and from each other, a supporting frame on which the object to be coated is arranged to be engaged by the heads upon the relative movement between them, means for adjusting the supporting frame toward and from the axis of the heads, and a runway pivotally connected to the supporting frame.

11. A coating machine comprising a pair of rotary and relatively adjustable heads, a coating receptacle arranged below said heads, bars arranged above said receptacle and formed with depressions in which an object is adapted to be received for engagement by the rotary heads upon the relative movement of the latter, connecting bars between said supporting bars, means for adjusting the connecting bars with the supporting bars toward and from the axis of rotation of the heads, and runner bars pivotally connected to the supporting bars.

CHARLES L. HOOPER.
ROBERT F. SUTHERLAND.
ALBERT W. PARKHOUSE.