

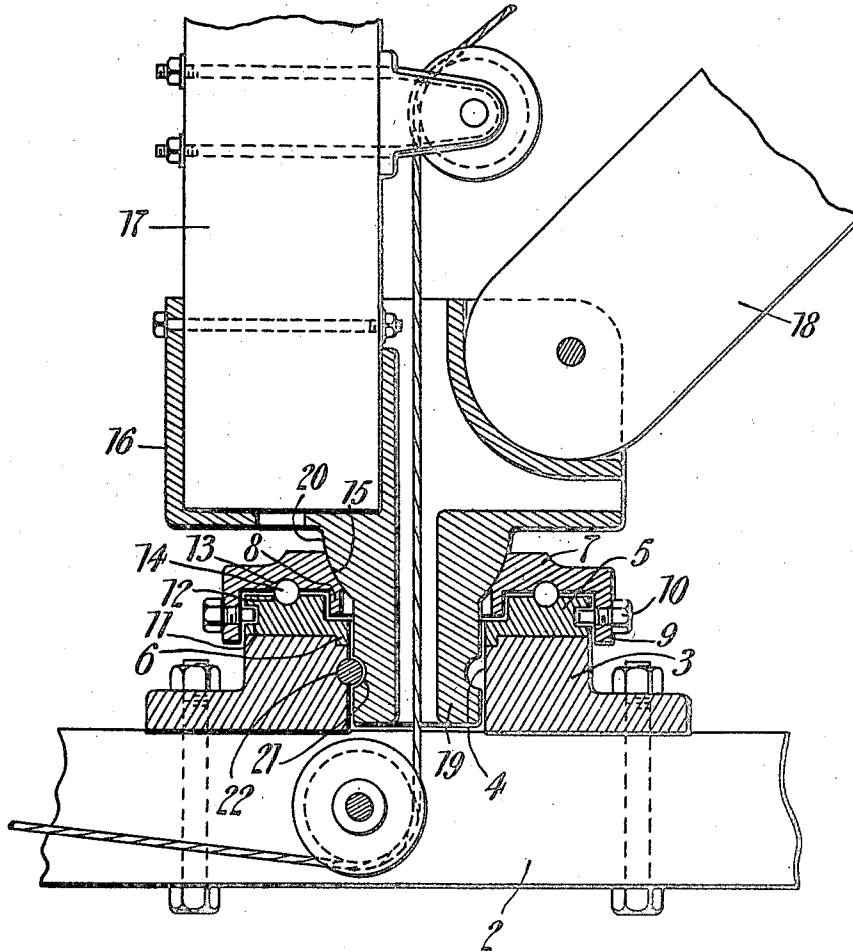
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J. T. HORTON

DERRICK BASE

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Inventor,

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UNITED STATES PATENT OFFICE.

JOHN T. HORTON, OF BROOKLYN, NEW YORK.

DERRICK BASE.

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To all whom it may concern:

Be it known that I, JOHN T. HORTON, a citizen of the United States, and a resident of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Derrick Bases, of which the following is a specification.

This invention relates to derrick bases and particularly to devices of that class which are adapted for use in connection with the common type of derrick comprising a vertically rotatable mast provided with a hinged boom. The object of my improvements is to provide a derrick base having a non-friction bearing for the rotation of the mast and also affording yieldability in the relation between said bearing and the foot or socket supporting the mast, so that limited variation of the mast from its normal vertical position when in operation will not militate against the action of said bearing. Other features of novelty will appear later herein.

My improvements are illustrated in their preferred embodiment in the drawing accompanying this specification wherein the figure is a side elevation, showing my improved base in section, secured to a support, and so much of the foot of a derrick as will serve to illustrate my improvements.

Referring now to the drawing, support 2 has resting thereon and secured thereto base plate 3 provided with central vertical opening 4 therethrough. Resting on the upper surface of base plate 3 is base plate cap 5 having a central vertical opening therethrough in alinement with said opening 4 of plate 3. Cap 5 is provided with downwardly projecting annular rib 6 in engagement with a corresponding groove in plate 3 for maintaining said cap and plate in concentric relation, while permitting free vertical separation of said members when desired. Above said base plate cap and in concentric relation therewith is upper plate 7 having a central vertical opening therethrough and provided with an inner downreaching flange 8 therearound projecting into a corresponding recess in cap 5. Said upper plate also has an outer downreaching flange 9 projecting over the outer edge of said cap 5 and provided with screw bolts 10 in threaded engagement therewith, projecting therethrough and freely engaging annular groove 11 in the outer edge of said cap for retaining said cap and said upper plate

in coacting relation and for enabling the members of the non-friction bearing to be handled as a unit. In the upper face of base plate cap 5 and concentric therewith is annular ball race 12, and in the lower face of upper plate 7 is corresponding ball race 13, said two ball races having a row of balls 14 seated therein and therebetween. Said flanges 8 and 9 are efficient to keep dust and dirt out of said non-friction bearing.

The upper portion of said plate 7 is provided with a spherical bearing 15 concentric with the opening therethrough. Above said plate is foot piece 16 having a seat therein for mast 17 and a pivotal support for boom 18. Downreaching from foot 16 is hollow stem 19 provided about its upper portion with spherical bearing 20 adapted for engagement with spherical bearing 15 of cap 7. The lower portion of stem 19 projects downwardly into opening 4 of base plate 3 and is provided thereabout with annular groove 21, said base plate being provided with pin 22 projecting into said opening 4 and into engagement with said annular groove for retaining bearing 20 of member 16 in its seat and the several members of the device in assembled condition. The diameter of stem 19 is smaller than that of opening 4 and groove 21 fits loosely about pin 22, whereby a limited amount of movement of said stem on its spherical bearing is permitted.

The operation of my improved device will be readily understood from the foregoing description. It will thus be seen that I have provided a device which will readily adapt itself to a limited amount of variation in the angular relation between the vertical position of the mast and the horizontal plane of the non-friction bearing when in operation. This greatly facilitates the setting up of the derrick as, with my improved device, it is no longer necessary to true up the vertical position of the mast nor the horizontal plane of the non-friction bearing with the care otherwise required. Said device also adapts itself to such angular variations incident to the derrick when in use.

I claim:

1. A derrick base including in combination a base plate having a central vertical opening therethrough and a horizontally arranged ball race about and concentric with said opening, an upper plate having a ball race therein and a vertical central opening

therethrough, a row of balls between and seated in said ball races, a spherical bearing in the upper portion of said upper ball race plate concentric with the opening there-
 5 through, a foot piece having a seat therein for a mast, a stem downwardly reaching from said foot piece, and a spherical bearing about said stem adapted for engagement with the spherical bearing of said upper ball
 10 race plate, said stem projecting downwardly into the opening in said base plate and being of smaller diameter than said base plate opening whereby limited movement of said stem on its spherical bearing is permitted.

15 2. A derrick base including in combination a base plate having a central vertical opening therethrough, a base plate cap having a central vertical opening therethrough and a ball race in its upper face, coacting
 20 means on said base plate and cap for maintaining said members in concentric relation while permitting free vertical separation of said members, an upper plate having a ball
 25 race therein and a vertical central opening therethrough, an inner flange and an outer flange on said upper plate downreaching over the inner and outer edges respectively
 30 of said base plate cap, a row of balls between and seated in said ball races, means carried by said upper plate and in engagement with means on said base plate cap for
 35 retaining said upper plate and cap in coacting relation with each other and with said balls, a spherical bearing in the upper portion of said upper ball race plate concentric
 40 with the opening therethrough, a foot piece having a seat therein for a mast, a stem downwardly reaching from said foot piece, and a spherical bearing about said stem
 45 adapted for engagement with the spherical bearing of said upper ball race plate, said stem projecting downwardly into the opening in said base plate and being of smaller
 50 diameter than said base plate opening whereby limited movement of said stem on its spherical bearing is permitted.

3. A derrick base including in combination a base plate having a central vertical
 55 opening therethrough and a horizontally arranged ball race about and concentric with said opening, an upper plate having a ball race therein and a vertical central opening
 60 therethrough, a row of balls between and seated in said ball races, a spherical bearing in the upper portion of said upper ball race plate concentric with the opening there-
 65 through, a foot piece having a seat therein for a mast, a stem downwardly reaching from said foot piece, a spherical bearing about said stem adapted for engagement
 70 with the spherical bearing of said upper ball

race plate, said stem projecting downwardly into the opening in said base plate, an
 75 annular groove about said stem within said base plate, and means projecting from said base plate into said annular groove for retaining said stem in said base plate, said
 80 stem being of smaller diameter than said base plate opening whereby limited movement of said stem on its spherical bearing is
 85 permitted.

4. A derrick base including in combination a base plate having a central vertical
 90 opening therethrough, a base plate cap having a central vertical opening therethrough and a ball race in its upper face, coacting means on said base plate and cap for main-
 95 taining said members in concentric relation while permitting free vertical separation of said members, an upper plate having a ball
 100 race therein and a vertical central opening therethrough and an inner flange and an outer flange downreaching over the inner and outer edges respectively of said base
 105 plate cap, a row of balls between and seated in said ball races, means carried by said upper plate and in engagement with means on said base plate cap for retaining said upper
 110 plate and cap in coacting relation with each other and with said balls, a spherical bearing in the upper portion of said upper ball
 115 race plate concentric with the opening therethrough, a foot piece having a seat therein for a mast, a hollow stem downwardly reaching from said foot piece, a spherical
 120 bearing about said stem adapted for engagement with the spherical bearing of said upper ball race plate, said stem projecting downwardly into the opening in said base
 125 plate, an annular groove about said stem within said base plate, and means projecting from said base plate into said annular groove for retaining said stem in said base
 130 plate, said stem being of smaller diameter than said base plate opening whereby limited movement of said stem on its spherical bearing is permitted.

5. A derrick base including in combination a base plate, a horizontally rotatable
 135 upper plate above said base plate, a non-friction bearing between said base plate and said upper plate, a foot piece having a seat therein for a vertically disposed mast, and
 140 a spherical self adjusting seat between said foot piece and said upper plate whereby the device is adapted to universal variable angular relation between the axis of said mast
 145 and the plane of said non-friction bearing.

In witness whereof, I hereby affix my signature, this 29th day of July, 1922.

JOHN T. HORTON.