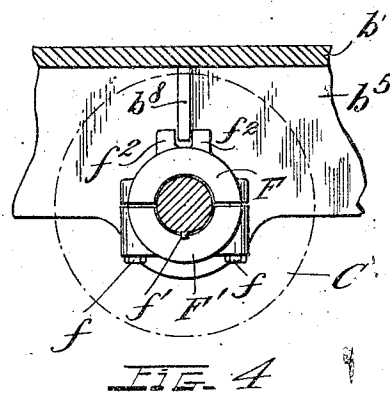
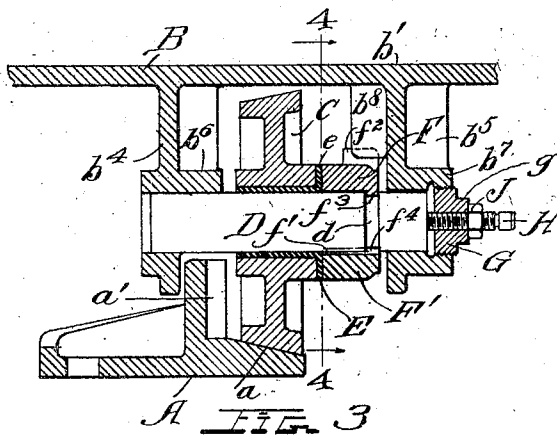
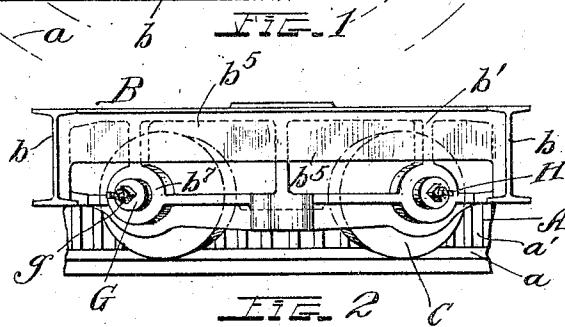
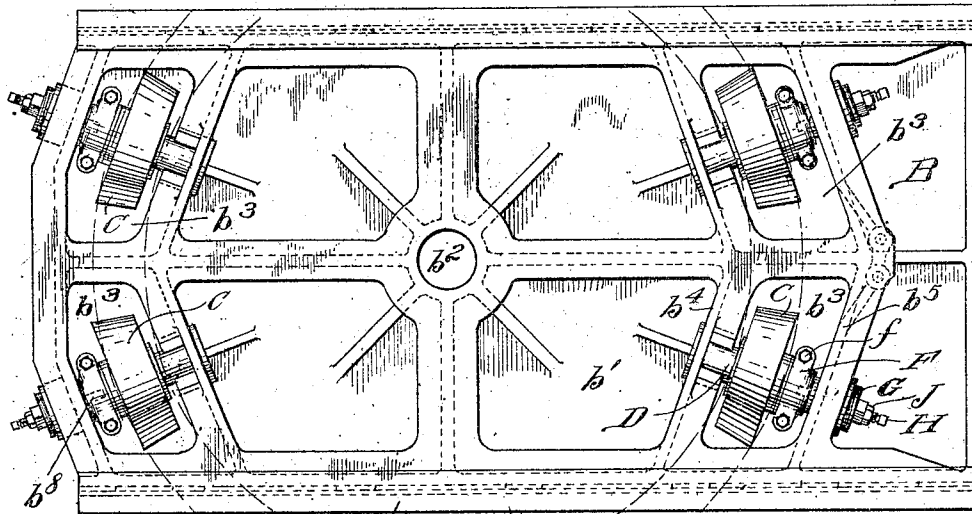


H. H. HARRIS.
 ROLLER BEARING FOR TURN TABLES.
 APPLICATION FILED JAN. 31, 1911.

1,043,826.

Patented Nov. 12, 1912.



Witnesses.

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UNITED STATES PATENT OFFICE.

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ROLLER-BEARING FOR TURN-TABLES.

1,043,826.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed January 31, 1911. Serial No. 605,814.

To all whom it may concern:

Be it known that I, HOLLIS H. HARRIS, a citizen of the United States, residing at Lorain, in the county of Lorain and State of Ohio, have invented a certain new and useful Improvement in Roller-Bearings for Turn-Tables, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to turn tables of the type adapted to support comparatively heavy mechanism and swing about a vertical center. As an illustration of such use may be cited a steam shovel or similar machine, wherein the digging and hoisting mechanism is mounted on a platform swiveled on a truck.

My invention is concerned particularly with the arrangement of the turn-table wheels and their support and the circular or curved track on which the wheels travel.

The objects of the invention are to provide such cooperating parts in a form which shall be very efficient, readily adjustable for wear, and, furthermore, in which a broken wheel may be replaced with as little inconvenience and loss of time as possible.

My invention comprises the means I have employed to this end, as more fully herein-after explained and set out in the claims.

In the drawings, Figure 1 is a bottom plan of my turn-table, illustrating, in broken lines, the curved trackway which stands beneath it; Fig. 2 is an end view of the turn-table; Fig. 3 is a vertical section through the journal of one of the wheels; Fig. 4 is a transverse section on the line 4-4 of Fig. 3 looking toward the right but showing in broken lines the wheel at the left of the section plane.

Referring to the parts shown by reference letters, A represents the track, which is shown as curved about a center and has a beveled tread portion *a*. The trackway is shown also as made with an integral upright stationary external gear *a'*, which is provided for engagement by a pinion, not shown, on a suitable superstructure mounted on the turn-table.

"B" represents the frame of the turn-table proper, which is shown as consisting of a pair of parallel I-beams *b* and a suitable intermediate casting secured thereto, and having a top plate *b'* and various depending stiffening webs. This casting is shown as

provided with a central opening *b²*, and with its webs arranged to make several pockets *b³* opening downwardly and positioned on chords about such center. In these pockets are carried supporting wheels C, which cooperate with the track *a*.

There are four wheels C shown in the drawings in the four pockets *b³*, respectively, each wheel being mounted on a radial axis and having a beveled periphery corresponding to the bevel of the track *a*. Each wheel C is journaled on a stationary pin D which is carried by the walls of the pocket *b³*. These walls, as shown, consist of the webs *b⁴* and *b⁵* and the bosses *b⁶* and *b⁷* carried thereby. In the interest of compactness the under faces of the bosses *b⁶* are cut away so that the journal pins D may stand close above the top of the gear *a'*.

The wheel C is shown as provided with a suitable bushing E of bronze, or other material, surrounding the journal pin and having a flanged end *e* on the outer side of the wheel. Abutting this flanged end is a collar surrounding the journal pin and composed of two members F and F', bolted together by bolts *f*. The member F' of this collar carries a feather *f'* engaging a longitudinal groove in the journal pin, while the other member F has a pair of wings *f²* straddling a radial fin *b⁸* in the inner face of the wall *b⁵*. Each of the two members of the collar have inwardly projecting semicircular flanges *f³* and *f⁴* occupying an annular groove *d* in the journal pin D. Accordingly, the collar, when in place, is held to the journal pin, against independent movement, either longitudinally or rotatably.

Screwing into the outer portion of the bore of the boss *b⁷* is a plug G which carries a set screw H bearing against the outer end of the journal pin D. The plug G is provided with an angular exterior head *g* by which it may be turned into place or removed. This set screw has a usual angular head by which it may be turned and is provided with a jam nut J for locking it.

With the parts as described the collar F, F' holds the journal pin against rotation so that the wheel (with the bronze bushing) turns on it as the table is turned. The outward thrust on the wheel C, due to the beveled engagement of its periphery and the track, is taken by the flange *e* of the bushing against the collar and transmitted

through the collar to the journal pin and thence to the set screw H. To adjust any wheel so that it carries its proper proportion of the load, and to readjust it from time to time, according to wear, it is only necessary to loosen the jam nut J and turn the set screw H.

As heretofore stated, one of the principal features of value of my turn-table is that a broken wheel may be easily replaced. In accomplishing this it is only necessary to take out the bolts *f*, whereby the half collar F' drops away from the journal pin and the half collar F may be lifted to free its arcual rib *f*³ from the groove *d* (there being sufficient space between the top of this half collar and the bottom of the fin *b*⁸ to allow this), and the journal pin, thus freed, is then shoved radially inward through the open inner end of the boss *b*⁶ whereupon the wheel drops downwardly through the open space between the outer edge of the track *a* and the bottom of the wall *b*⁶. This radial shoving of the journal pin may be facilitated by taking out the plug G and using a suitable implement against either end of the journal pin.

It will be seen that the removal of a broken wheel and the corresponding replacement of a new wheel may be accomplished without disturbing the turn-table or its superstructure. This avoids the necessity for jacking up the turn-table, as has been heretofore customary. The replacement of a broken wheel may be accomplished with great rapidity, no other tool being necessary than the usual monkey wrench. This rapidity of replacement is of great value in saving the time of the various men employed either in operating the machine or in duties dependent on the operation of the machine.

Having thus described my invention, what I claim is:—

1. In a turn-table, the combination, with a turn-table frame and trackway, of wheels, journal pins for said wheels mounted in the frame, and separable collars on the journal pins, said collars locking the pins against longitudinal movement, whereby the removal of the collar allows such movement of the pin to release the wheel.

2. In a turn-table, the combination, with a frame, of a journal pin carried thereby, a wheel on the journal pin, a split collar on the journal pin forming an abutment for the wheel, and a holding member carried by said frame with which such collar engages to prevent its rotation.

3. In a turn-table, the combination of a frame, a journal pin, a wheel thereon, a collar composed of separable portions peripherally embracing the journal pin, a shoulder on the collar cooperating with a stop on the frame, and bolts for holding the collar portions together.

4. In a mechanism of the character described, the combination of a wheel, a journal pin therefor, a collar on the journal pin made of two parts, bolts for holding such parts together, such collar being provided with an inward flange engaging a circumferential groove in the pin, and a shoulder on the collar engaging a stop on the frame.

5. In a mechanism of the character described, the combination, with a frame having two bearings, of a journal pin carried thereby, a bevel wheel slidably mounted on the journal pin, a separable collar on the journal pin on the outer side of the wheel and between it and one of the bearings on the frame, coacting shoulders on the collar and journal pin for conveying the thrust of the wheel against the collar to the journal pin, and adjustable means for receiving the thrust on the journal pin.

6. In a mechanism of the character described, the combination of a beveled wheel, a journal pin carrying the same, a two-part collar surrounding the journal pin and provided with an inward flange engaging a circumferential groove in the pin, said collar also having an outward shoulder, a stop engaging said shoulder, and an adjustable abutment bearing against the end of the journal pin.

7. In a mechanism of the character described, the combination, with a frame, of a journal pin carried thereby, a beveled wheel rotatably and slidably mounted on the journal pin, a split collar on the journal pin on the outer side of the wheel, there being means for preventing the collar rotating and means for preventing the journal pin rotating and means for conveying the thrust of the wheel against the collar to the journal pin, a plug screwing into a bore at the end of the journal pin, and a set screw carried by said plug and bearing against the end of the journal pin.

8. In a turn-table, the combination, with a frame, of a pair of bearings carried thereby, a journal pin in said bearings, a plug screwing into one of the bearings at the end of the journal pin, a set screw screwing through the plug and bearing against the end of the journal pin, a separable collar surrounding the journal pin, projections and grooves on the collar and journal pin preventing independent rotation and longitudinal shifting of them, means on the frame engaging the collar to prevent rotation while allowing longitudinal shifting, and a beveled wheel rotatably mounted on the journal pin and taking its thrust against the collar.

9. In a turn table, the combination, with a track, of a frame for the turn table proper having a pair of bearings, a journal pin mounted in said bearings, a wheel slidably mounted on the journal pin, a separable collar surrounding the journal pin at one side

of the wheel, said collar coöperating with the wheel to hold it in place, and having a shouldered engagement with the journal pin to carry the thrust on the wheel to the journal pin, and means for receiving the end thrust of the pin.

10. The combination, with a track having a beveled face, a turn-table having downwardly facing pockets, radially mounted journal pins carried by the walls of said pockets, beveled wheels on the journal pins engaging the trackway, separable collars on the journal pins on the outer sides of the wheels, the upper member of such collar being provided with a shoulder engaging a stop carried by the turn table frame, and the lower member carrying a feather engaging a longitudinal groove in the journal pin.

11. The combination, with a track having a beveled face, a turn-table having downwardly facing pockets, radially mounted journal pins carried by the walls of said pockets, beveled wheels on the journal pins engaging the trackway, separable collars on the journal pins on the outer sides of the wheels, such collar being provided with a shoulder engaging a stop carried by the turn-table frame, and with a projection engaging a groove in the journal pin, a plug screwing into the frame opposite the outer end of the journal pin, and a set screw screwing through said plug and bearing against the end of the journal pin.

wardly facing pockets, radially mounted journal pins carried by the walls of said pockets, beveled wheels on the journal pins engaging the trackway, separable collars on the journal pins on the outer sides of the wheels, such collar being provided with a shoulder engaging a stop carried by the turn-table frame, and with a projection engaging a groove in the journal pin, a plug screwing into the frame opposite the outer end of the journal pin, and a set screw screwing through said plug and bearing against the end of the journal pin.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

HOLLIS H. HARRIS.

Witnesses:

ALBERT H. BATES,
BREMEN B. WEST.