

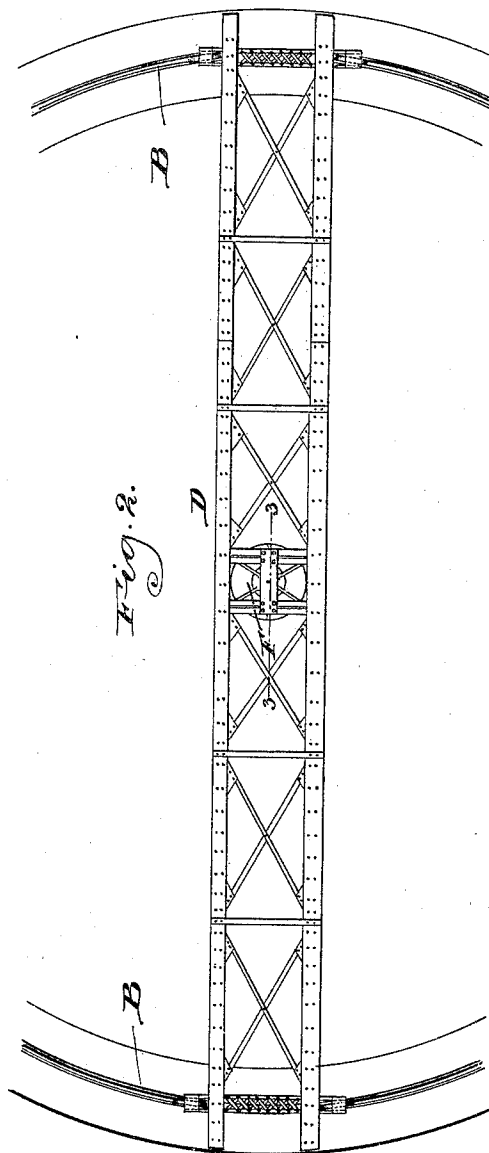
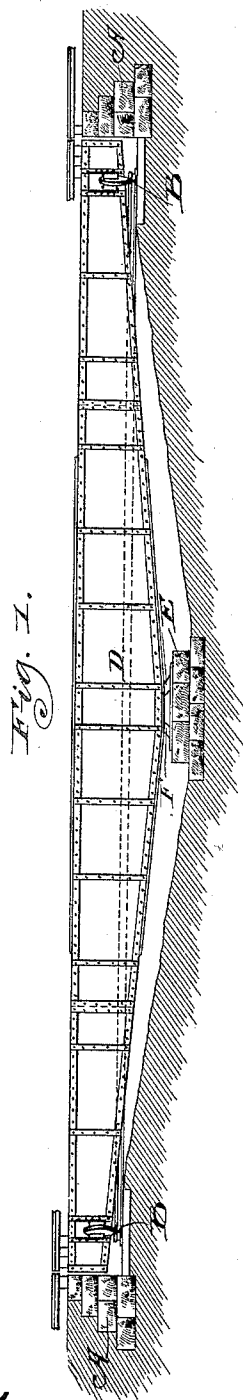
(No Model.)

4 Sheets—Sheet 1.

C. WEATHERSON & P. K. RICHTER.
LOCOMOTIVE TURN TABLE.

No. 465,009.

Patented Dec. 15, 1891.



Witnesses,
S. J. Mann,
Frederick Goodrum

Inventors:
Christopher Matheson
Paul Richter
By: Offield, Fowler & Luthman
Attys.

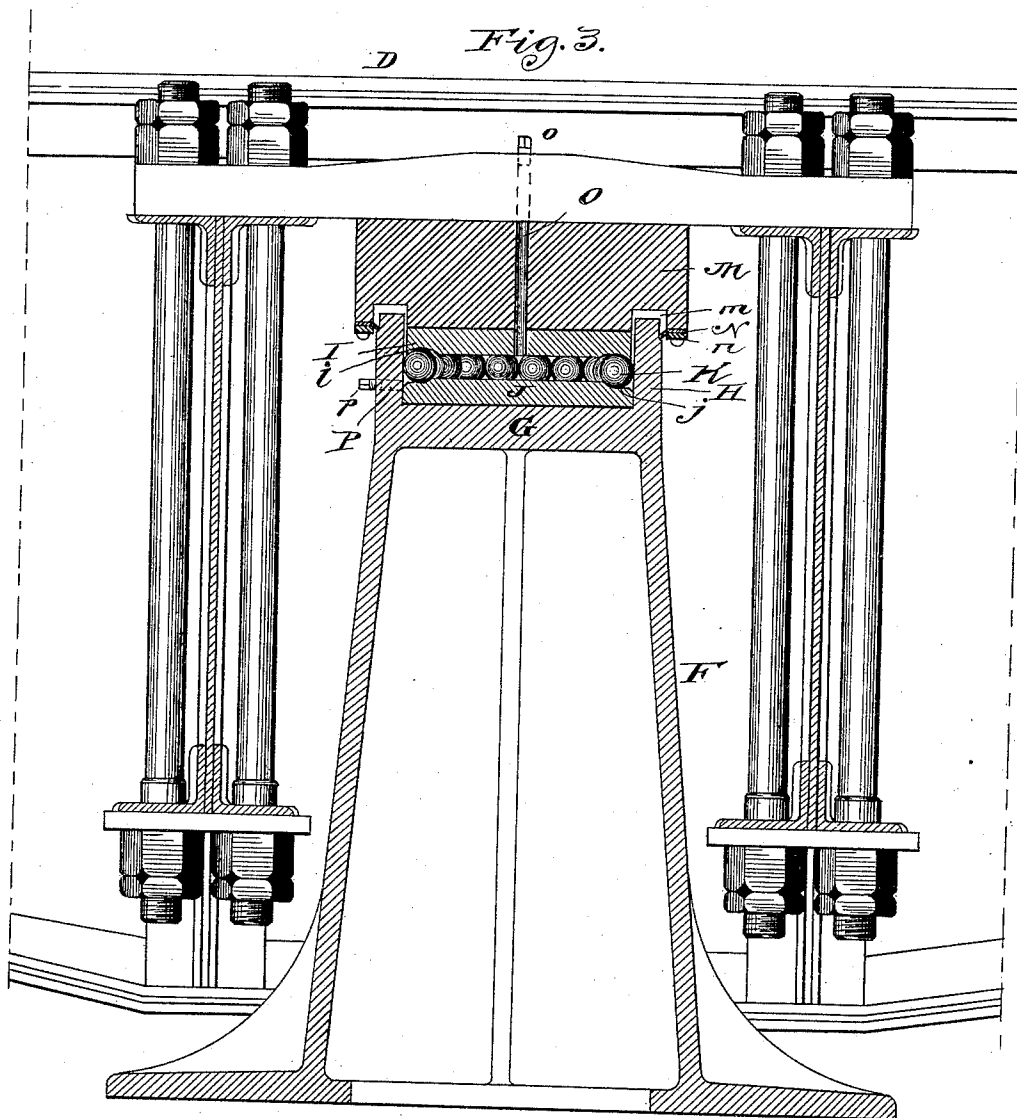
(No Model.)

4 Sheets—Sheet 2.

C. WEATHERSON & P. K. RICHTER.
LOCOMOTIVE TURN TABLE.

No. 465,009.

Patented Dec. 15, 1891.



Witnesses,

J. Mann,

Frederick Goodwin

Inventors,

Christopher Weatherston

Paul Richter,

By, Offield Fowler & Luthien

Attys.

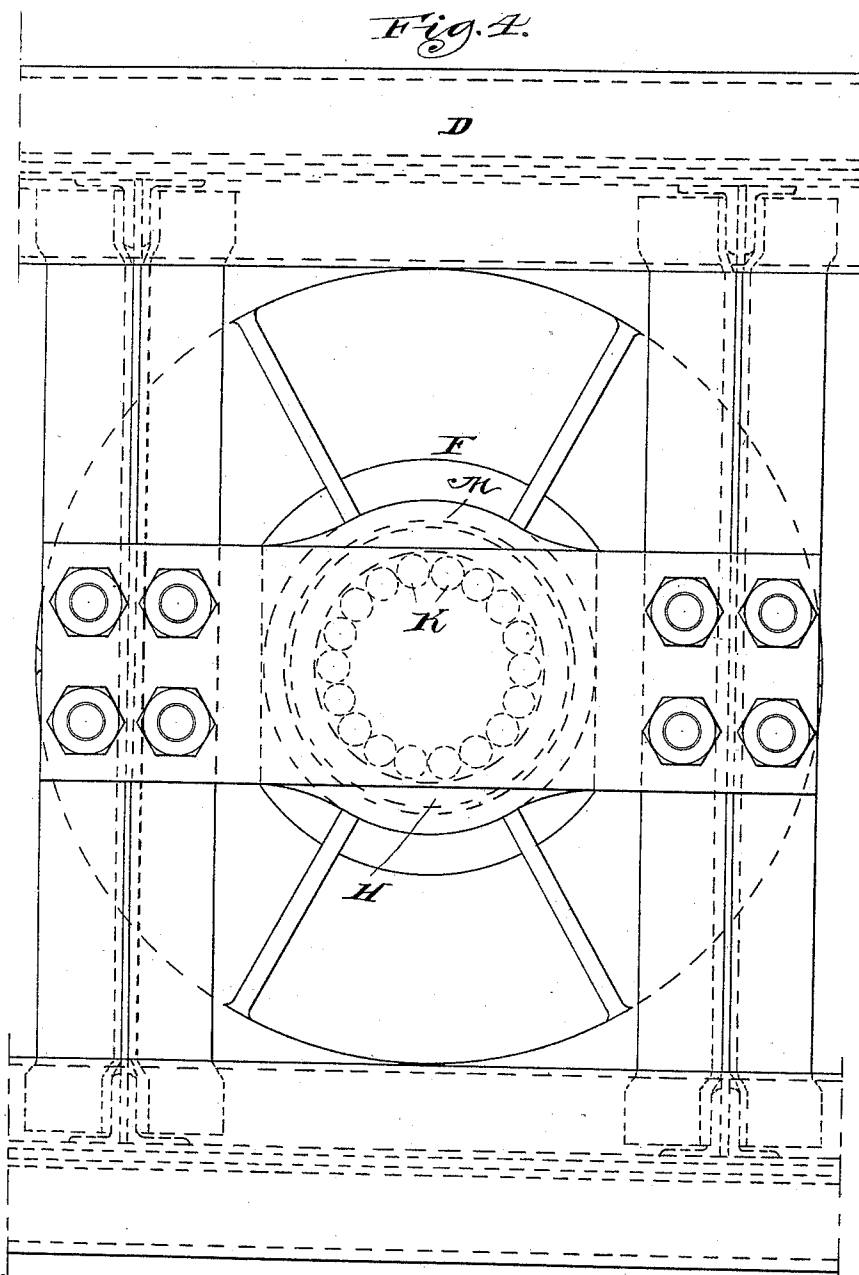
(No Model.)

4 Sheets—Sheet 3.

C. WEATHERSON & P. K. RICHTER.
LOCOMOTIVE TURN TABLE.

No. 465,009.

Patented Dec. 15, 1891.



Witnesses,

J. J. Mann,
Frederick Goodrum

Inventors:

Christopher Weatherston
Paul K. Richter,

By, Offield, Fowler & Luthman
Attys;

(No Model.)

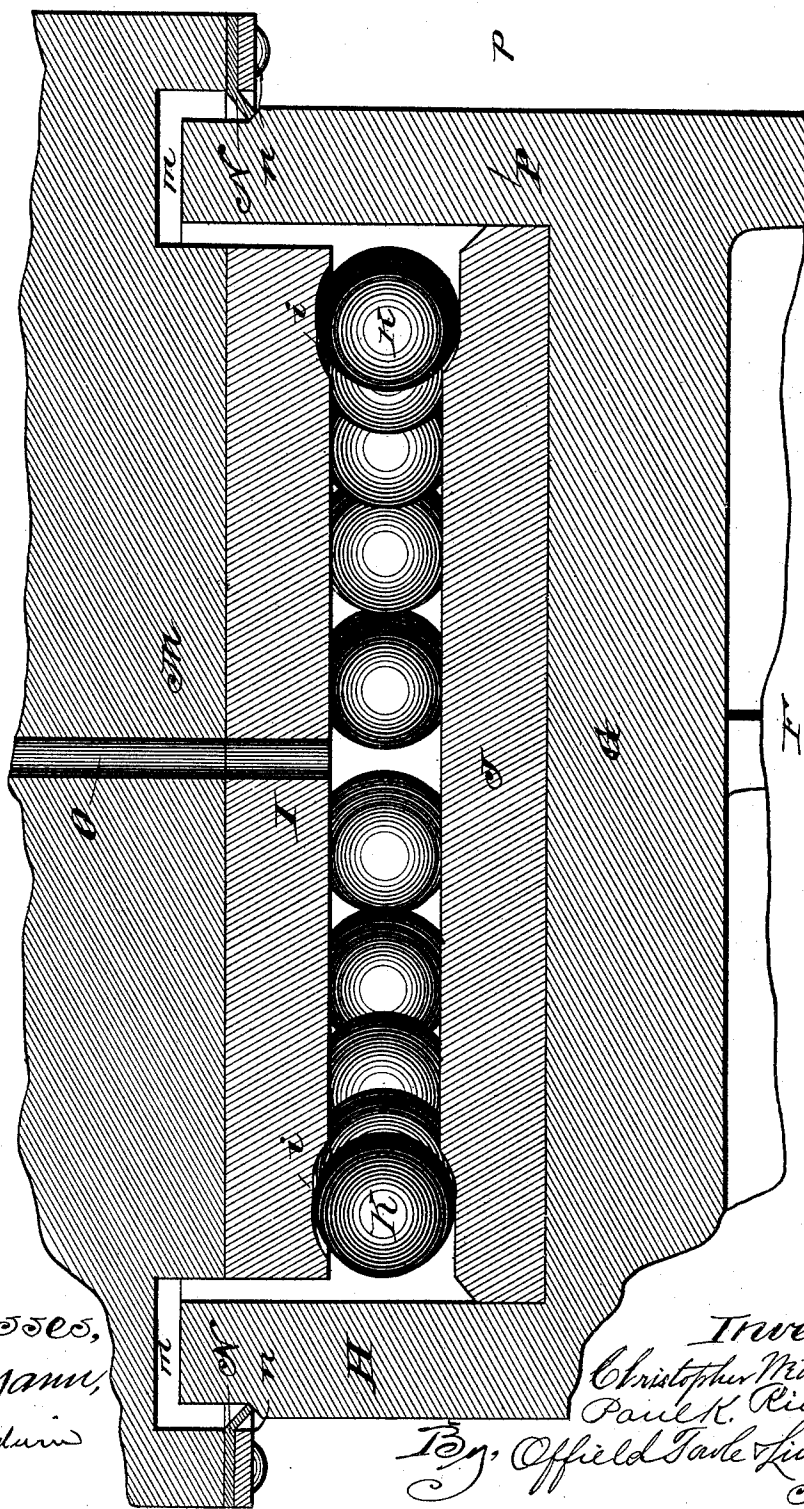
4 Sheets—Sheet 4.

C. WEATHERSON & P. K. RICHTER.
LOCOMOTIVE TURN TABLE.

No. 465,009.

Patented Dec. 15, 1891.

Fig. 5.



Witnesses,
J. E. Mann,
J. B. Goodwin

Inventors,
Christopher Matheson
Paul K. Richter
By, Offield Tade Luthicum
Attys.

UNITED STATES PATENT OFFICE.

CHRISTOPHER WEATHERSON AND PAUL K. RICHTER, OF CHICAGO, ILLINOIS.

LOCOMOTIVE TURN-TABLE.

SPECIFICATION forming part of Letters Patent No. 465,009, dated December 15, 1891.

Application filed March 14, 1891. Serial No. 385,039. (No model.)

To all whom it may concern:

Be it known that we, CHRISTOPHER WEATHERSON, a citizen of the United States, and PAUL K. RICHTER, a subject of the Czar of Russia, both residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locomotive Turn-Tables, of which the following is a specification.

Our invention relates to certain improvements in locomotive turn-tables, and more particularly to the provision of certain improvements in the center bearing of the turn-table. Owing to the great weight of locomotives difficulty is experienced in turning them, caused by the friction developed at the center bearing of the table. We have devised a form of bearing which reduces this friction to a minimum and permits the easy turning of the table with the heaviest locomotives with small force. To this end we provide a ball-bearing center arrangement consisting of the usual top and bottom center step and an upper and lower hardened-steel disk, each having in its surface a circular raceway, wherein are placed balls. These raceways are preferably formed in the surface of the disks at their peripheries. They are ground perfectly smooth and are of a peculiar conformation. At the point of contact with the balls the raceways are made level; but from this point toward the periphery the raceway in the upper disk is grooved out to a radius one-sixteenth of an inch larger than the radius of the ball and the lower disk is cut in a similar way, but toward the center from the point of contact. Toward the periphery the lower disk is faced out level and at the edge cut on a bevel, permitting particles of dust which might get into the bearing to escape. This form of the raceway prevents a lateral motion of the balls; but a clearance is provided between the sides of the lower center step and the balls, which prevents any friction from that source, and by making the upper disk slightly smaller than the pocket of the lower center step we permit the necessary motion up and down of the table when the locomotive is driven onto the table. To prevent dust from getting into the ball-bearing the upper step has on its lower side a groove, which receives the circular wall of the

lower step, and on the lower edge of the upper step is bolted a flexible gasket, the free edge of which is turned in against the walls of the lower step, against which it bears. An oil-duct is provided through the upper disk and step, such duct being closed by a plug at its upper end, and the circular wall of the lower step has a cleaning-aperture also closed by a plug.

In the accompanying drawings, Figure 1 is a side elevation of the turn-table, showing the pit-walls and rail in section. Fig. 2 is a plan view. Fig. 3 is a central elevation through the step and bearing on the line 3 3 of Fig. 2; and Fig. 4 is a plan view of the table at the center, and showing the step and the balls by dotted lines. Fig. 5 is an enlarged sectional detail through the center step, bearing-disks, and ways.

In the drawings, A represents the pit-walls; B, the circular track adjacent thereto, and D a turn-table, which is supported at its center by the pier E, on which is seated the center step F, the latter having toward its top a transverse supporting-bridge G, and rising above said bridge the circular wall H, forming a seat and casing for the upper and lower disks I J, the latter being fitted closely to this circular wall and having on its upper face the groove *j*, which is formed in a circle whose radius is slightly greater than that of the balls K, placed therein. On the outer side of the groove *j* the substance of the disk is cut away, preferably on a straight line, and the outer margin of the disk is beveled, so as to permit the escape of dust from beneath the balls.

I represents the upper bearing-disk, which has a groove *i* therein, of similar configuration to that in the lower disk. These disks are of cast-steel, preferably, and their faces are hardened and ground.

M represents the upper step, having the circular groove *m* formed on its lower side, which receives the upper edge of the circular wall H of the center step, and a flexible gasket N of suitable material is confined to the bottom of the outer flange of the upper step by the clamping-ring *n*, secured by screws. The free margins of this gasket are in contact with the exterior of the circular wall of the casing and form a tight joint to exclude the dust. The

gasket has its free margin turned down, thus giving it a spring tendency and causing it to hug closely the walls of the casing at all times.

An oil-duct O, having a plug o, permits the introduction of a suitable lubricant to the bearing, and a cleaning-aperture P, closed by a plug p, permits the cleansing of the bearing when desired. A bearing of this kind permits the operation of the turn-table with so little friction that it may be moved with the heaviest loads with the application of small force, and the peculiar construction of the raceway permits a slight lateral movement, but so restrains it that the upper disk is not permitted to touch the side walls of the casing.

Without limiting our invention to the precise details, we claim—

1. In a locomotive turn-table, the combination of the upper and lower center steps thereof, the lower step having a circular flange and the upper a corresponding groove to receive said flange, a ball-bearing located within said circular wall, and a dust-guard applied to the lower edge of the upper step, substantially as described.

2. In a locomotive turn-table, the combination of the upper and lower center steps there-

of, the lower forming a case for a ball-bearing and adapted to contain a lubricant, and a duct or port for the introduction of said lubricant to the case, substantially as described.

3. In a locomotive turn-table, the combination, with the upper and lower center steps thereof, of a ball-bearing consisting of two circular disks having ways formed in their opposing surfaces and the lower of said disks having its margins beveled outwardly from said ways, whereby to permit the escape of dust therefrom, substantially as described.

4. In a locomotive turn-table, the combination of the upper and lower center steps thereof, the latter having a chamber formed in its upper end to receive a ball-bearing, and adapted also to provide a lubricant-chamber, a duct to introduce a lubricant to said chamber, and a cleaning-aperture in the wall thereof provided with a plug, substantially as described.

CHRISTOPHER WEATHERSON.
PAUL K. RICHTER.

Witnesses:

C. C. LINTHICUM,
FREDERICK C. GOODWIN.