

No. 824,632.

PATENTED JUNE 26, 1906.

C. K. ERNST.
TURN TABLE.

APPLICATION FILED APR. 30, 1906.

2 SHEETS—SHEET 1.

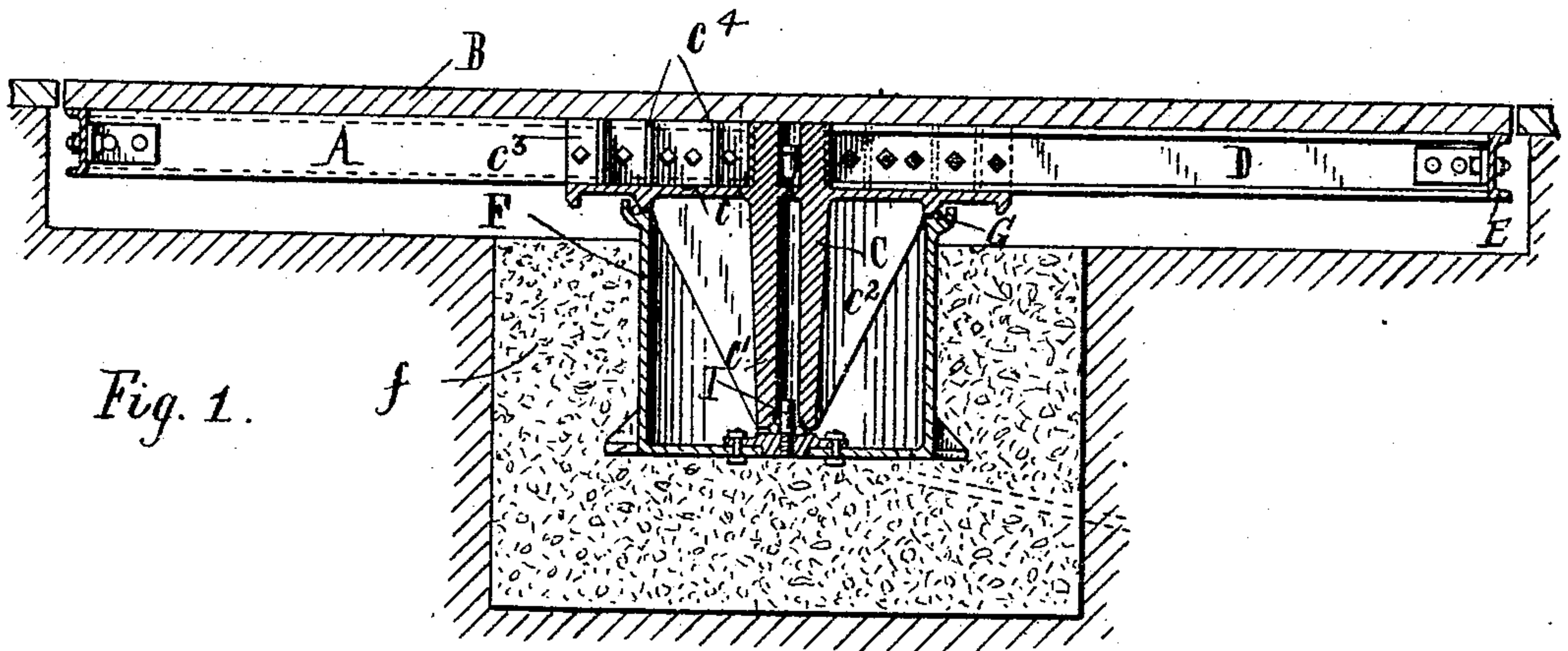


Fig. 1.

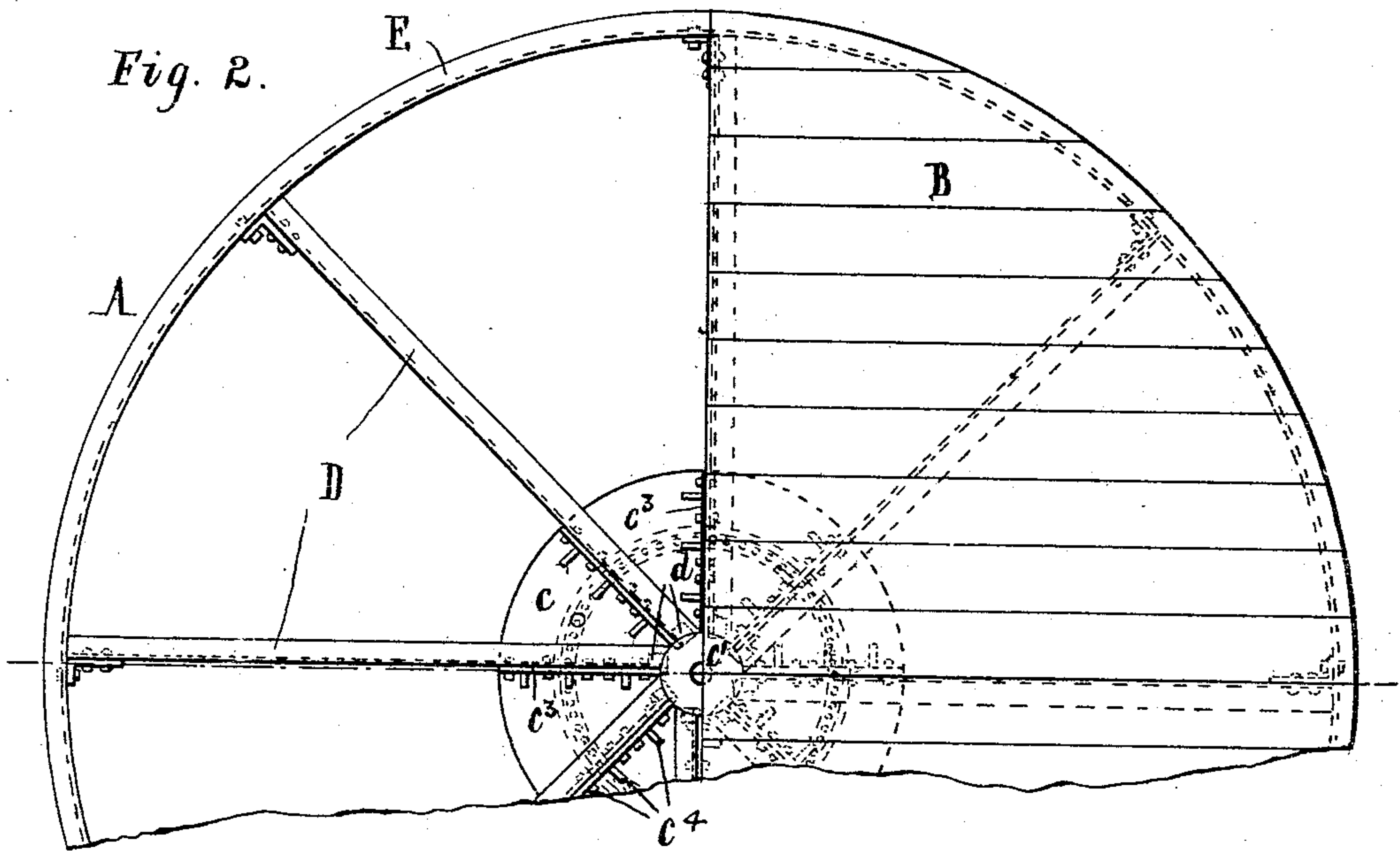


Fig. 2.

Witnesses.
H. E. Dimond.
E. A. Volk.

Inventor.
Charles K. Ernst
by
Wilhelm, Parker & Hard
Attorneys.

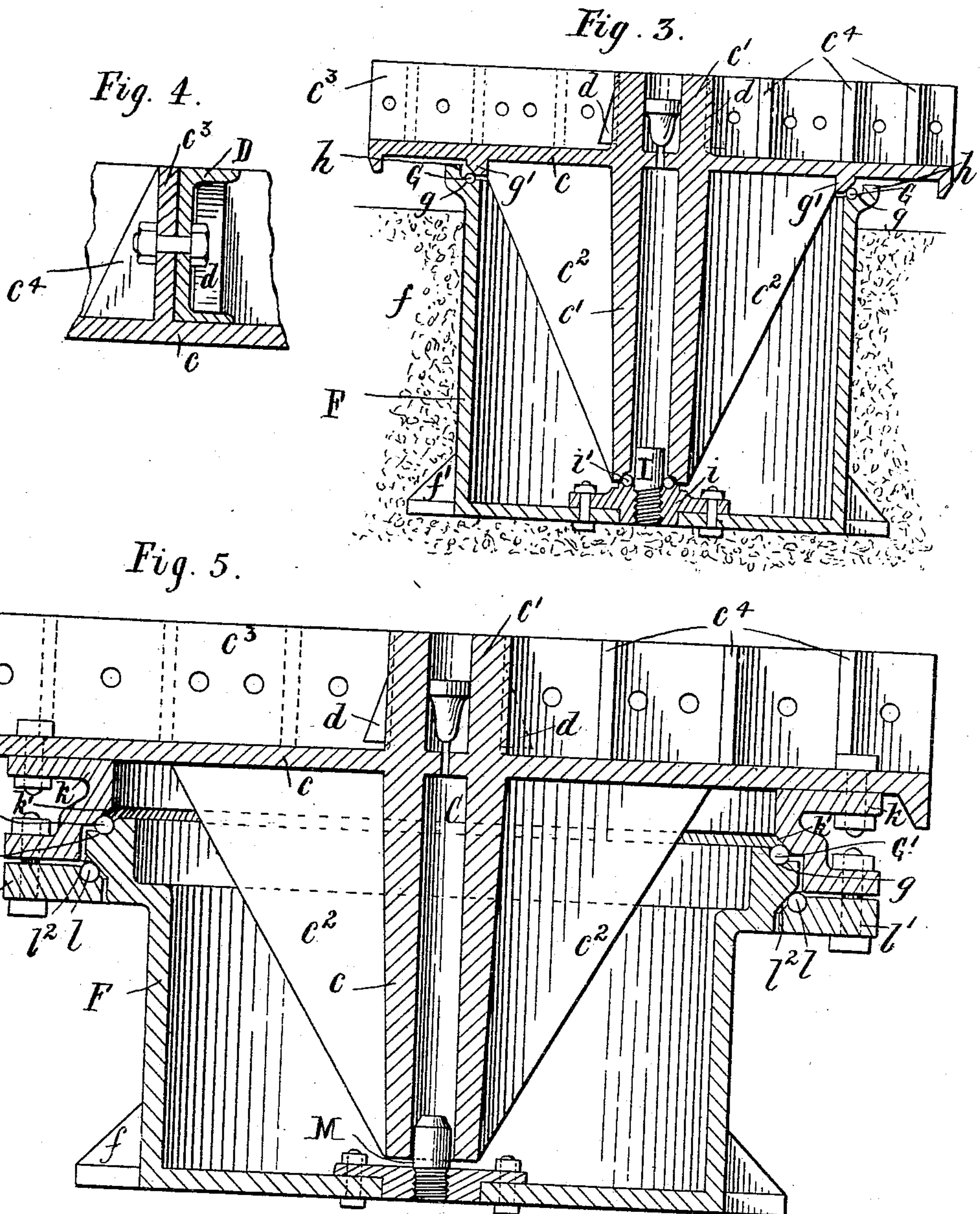
No. 824,632.

PATENTED JUNE 26, 1906.

C. K. ERNST.
TURN TABLE.

APPLICATION FILED APR. 30, 1906.

2 SHEETS—SHEET 2.



Witnesses.
A. I. Diamond
E. A. Volk.

Inventor.
Charles K. Ernst,
by
Wilhelm, Parker & Hard
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES K. ERNST, OF BUFFALO, NEW YORK.

TURN-TABLE.

No. 824,632.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed April 30, 1906. Serial No. 314,377.

To all whom it may concern:

Be it known that I, CHARLES K. ERNST, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Turn-Tables, of which the following is a specification.

This invention relates more particularly to turn-tables such as are used in garages and stables for automobiles and other vehicles which are not excessively heavy; but the improvements are not necessarily restricted to turn-tables for such use.

The objects of the invention are to produce a turn-table of relatively light but strong and rigid construction which will turn with great freedom without tilting or wobbling, which can be built and installed at a reasonable cost, and which will be stable without requiring a large and expensive pit and foundation.

In the accompanying drawings, consisting of two sheets, Figure 1 is a section of a turn-table embodying the invention. Fig. 2 is a fragmentary plan view thereof, part of the turn-table 4 being removed to expose the supporting-frame thereof. Fig. 3 is a sectional elevation, on an enlarged scale, of the hub and bearing of the turn-table. Fig. 4 is a detail sectional elevation of the turn-table frame, showing the manner of attaching the floor-supporting beams. Fig. 5 is a sectional elevation, on an enlarged scale, of the hub and bearing, showing a slightly different construction.

Like letters of reference refer to like parts in the several figures.

The turn-table consists of a frame A, arranged in a suitable pit to turn horizontally on a bearing in the pit, and a circular floor B, which is supported by the frame substantially flush with the floor or ground of the building in which the turn-table is located. The floor B may be of wood or other material and of any suitable construction.

The frame A is preferably built of metal and composed, as shown in the drawings, of a hub or center casting C, horizontal floor-supporting beams D, which are secured at their inner ends to and project radially from the hub, and a circular rim E, which encircles and is secured to the outer ends of the radial beams. The beams D and rim E are preferably made of channel-beams arranged on edge.

The hub or center casting has a horizon-

tal circular bearing plate or web *c*, on which the inner ends of the floor-beams rest for a considerable portion of their length, an upright center post *c'*, which extends above the bearing-plate substantially to the tops of the floor-beams and depends for a considerable distance below the bearing-plate, and radial upright webs or braces *c''*, which join the depending portion of the center post to the bearing-plate. These webs or braces *c''* are wide at their upper ends or extend outwardly for a considerable distance from the center post and taper downwardly, preferably extending to the lower end of the center post. They greatly strengthen the center post and bearing-plate and make the hub very rigid and strong without greatly increasing its weight. *c'''* represents radial ribs which extend upwardly from the bearing-plate beside the radial floor-beams. Each beam is bolted or otherwise securely fastened to one of these ribs, and the ribs shown are provided with stiffeners or braces *c''''* at one side, joining them to the bearing-plate.

The upper portion of the center post *c'* is preferably provided with lugs *d*, which overhang the inner ends of the lower flanges of the radial beams to relieve the beam-securing bolts of the strain which would otherwise be thrown thereon by weight on the outer edge of the turn-table.

F represents a metal bearing-box or hollow bearing-casting for the turn-table. The bearing-box is embedded in a concrete or cement foundation *f* or is otherwise firmly fixed in the pit for the turn-table. Suitable lugs or projections *f'* are shown on the bearing-box for firmly anchoring it in the concrete foundation. The bearing-box is preferably cylindrical and of sufficient size to receive the depending post *c'* and braces *c''* of the turn-table hub and is provided at the edge of its upper open end with a circular race *g* for bearing-balls G, on which the turn-table bears and is supported. The bearing-plate *c* of the hub has a depending bearing-flange *g'* resting on the balls. The bearing-flange preferably depends within a retaining lip or flange *h* on the edge of the bearing-box and has a conical or beveled face which rests on the balls. The turn-table is supported by and turns on the bearing, which being considerably removed from the axis of the turn-table forms a stable support therefor.

A center bearing is also provided between the lower end of the center post and bearing-

box. This center bearing preferably consists of a hardened-steel stud *l*, removably secured to the bottom of the bearing-box and entering a hole in the lower end of the center post.

5 In the construction shown in Figs. 1 and 3 the stud is screwed into a removable hardened-steel plate *i*, which is seated in a hole in the bottom of the bearing-box and secured by bolts or otherwise, and bearing-balls *i'* are
10 arranged between the stud and center post, the balls working and being confined in circular grooves or races in the plate *i* and lower end of the center post. This center bearing is not intended to carry any of the weight of
15 the turn-table, but acts as a centering or steadying bearing therefor to hold the same from tilting and to prevent the possible disengagement of the bearing-flange *g'* from the balls *G* of the supporting-bearing at the up-
20 per end of the bearing-box. Both the supporting and centering bearings are provided on the bearing-box, and the center post and its braces are confined within the box. This box entirely supports the turn-table and is
25 the only part requiring a foundation. No supporting wheels or tracks at the outer edge of the turn-table are necessary.

Fig. 5 shows a slightly different bearing construction, in which *G'* represents the balls of
30 the supporting-bearing. These balls, as in the construction before described, are located in a circular groove in the upper end of the bearing-box *F*; but the bearing-plate *c* has a depending bearing flange or rim *k*, which sur-
35 rounds the bearing-balls and is provided with an inner beveled bearing-face *k'* for the balls. In addition to this supporting-bearing an antifriction retaining-bearing is provided, consisting of a second circular row of balls *l*,
40 confined in a groove or race in a ring *l'* and bearing upwardly against a downwardly-facing beveled portion of a flange *l''* on the upper end of the bearing-box. This groove-ring is removably secured by bolts or otherwise to
45 the depending flange *k* of the bearing-plate and is of sufficiently large diameter to be slipped over the lower end of the bearing-box, or this ring could be made in sections. The retaining-bearing acts, in conjunction with
50 the center bearing *M* between the lower end of the center post and box, to prevent the disengagement of the turn-table from its supporting-bearing and to insure its rotation in a horizontal plane. Antifriction-balls are
55 not required in this construction for the center bearing *M*. In this construction, like the other, the turn-table is entirely supported by the bearing-box.

I claim as my invention—

60 1. The combination of a fixed hollow bearing-box having an open upper end provided with a circular race, a turn-table arranged above the bearing-box and having a center post depending into the bearing-box, anti-

friction supporting-bearings for the turn-table arranged between the same and the circular race at the upper end of the bearing-box, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth. 70

2. The combination of a fixed hollow metal bearing-box having an open upper end provided at its rim with a circular race, a turn-table arranged above the bearing-box and having a center post depending into said box, antifriction supporting-bearings for the turn-table arranged in said circular race and bearing against a circular face on the turn-table, and a center bearing for the turn-table consisting of a bearing member removably secured to the bottom of the bearing-box and provided with means for engaging the lower end of said center post, substantially as set forth.

3. The combination of a fixed hollow metal bearing-box having an open upper end provided with a circular race, a turn-table arranged above the bearing-box and having a center post depending into said box, braces for said center post also arranged within said bearing-box, antifriction supporting-bearings for the turn-table arranged between the same and said circular race at the upper end of the bearing-box, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth. 95

4. The combination of a fixed hollow bearing-box having an open upper end, a turn-table having a horizontal bearing-plate arranged above the bearing-box, a center post depending below said bearing-plate into the bearing-box, braces connecting said bearing-plate and the depending portion of the bearing-post and located within the bearing-box, antifriction-bearings arranged between the upper open end of the bearing-box and said bearing-plate, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth. 110

5. The combination of a fixed hollow bearing-box having an open upper end, a turn-table frame comprising a hub, and floor-supporting members secured to said hub, said hub consisting of a horizontal bearing-plate provided with upwardly-projecting parts to which the floor-supporting members are secured, and a center post which depends from said bearing-plate into the bearing-box, and braces connecting the center post and bearing-plate and located within the bearing-box, antifriction-bearings arranged between the open upper end of the bearing-box and said bearing-plate, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth. 125

6. The combination of a fixed hollow bearing-box having an open upper end, a turn-table frame comprising a hub, radial floor-supporting members secured to said hub, and a rim connecting the outer ends of said floor-supporting members, said hub consisting of a horizontal bearing-plate and a center post depending from said bearing-plate into the box-bearing, parts extending upwardly from said bearing-plate to which the said radial floor-supporting members are secured, and braces connecting said center post and said bearing-plate and located within the bearing-box, antifriction-bearings arranged between the upper end of the bearing-box and said bearing-plate, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth.

7. The combination of a fixed hollow bear-

ing-box having an open upper end provided with a circular race, a turn-table arranged above the bearing-box and having a center post depending into the bearing-box, antifriction supporting-bearings for the turn-table between the same and the circular race at the upper end of the bearing-box, antifriction retaining-bearings arranged between the upper end of the bearing-box and a depending portion of the turn-table, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth.

Witness my hand this 27th day of April, 1906.

CHARLES K. ERNST.

Witnesses:

C. B. HORNBECK,
CHARLES W. PARKER.