Dec. 4, 1928. 1,693,724

C. E. MORRIS

CARROUSEL DRIVING MECHANISM

Filed July 26, 1926 3 Sheets-Sheet 1

Fig 1

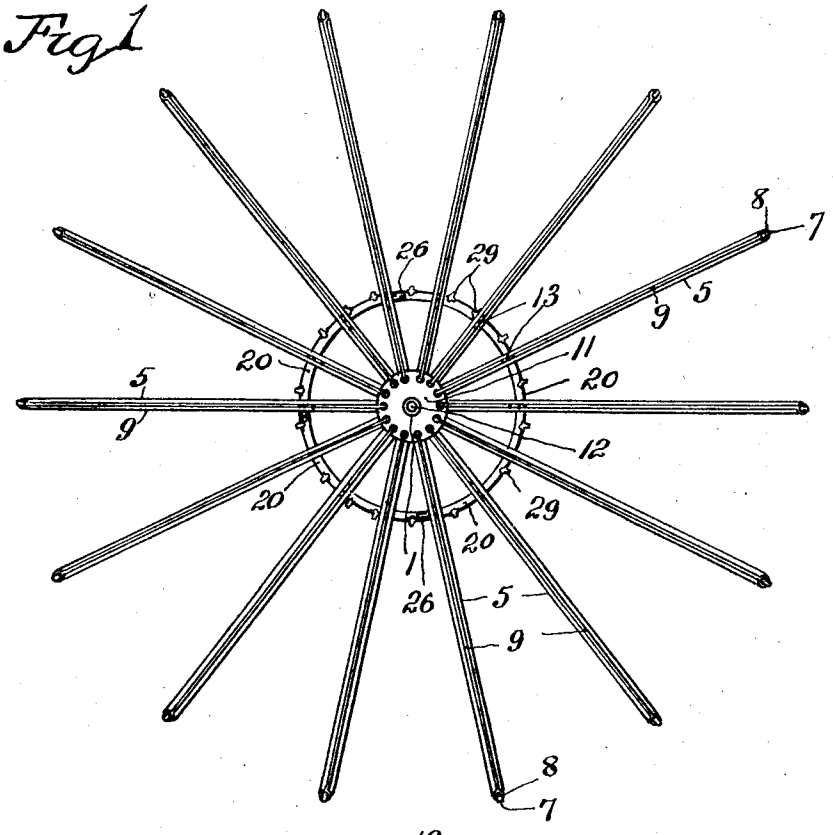
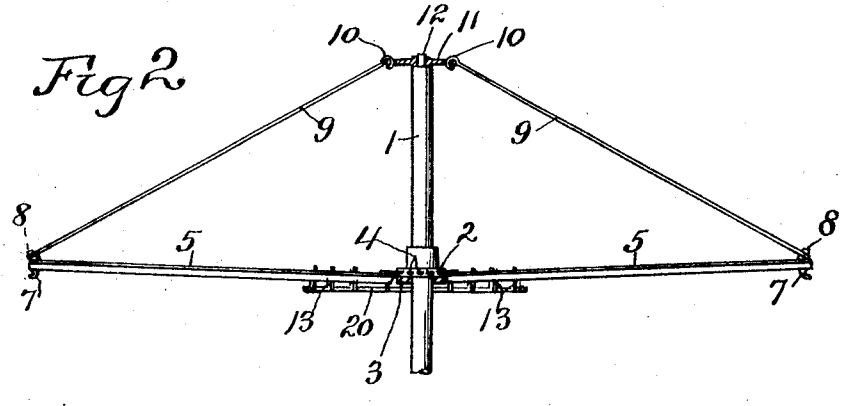


Fig 2



WITNESS:

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Charles E. Morris

BY

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Dec. 4, 1928. 1,693,724

C. E. MORRIS

CARROUSEL DRIVING MECHANISM

Filed July 26, 1926 3 Sheets-Sheet 2

Fig 3

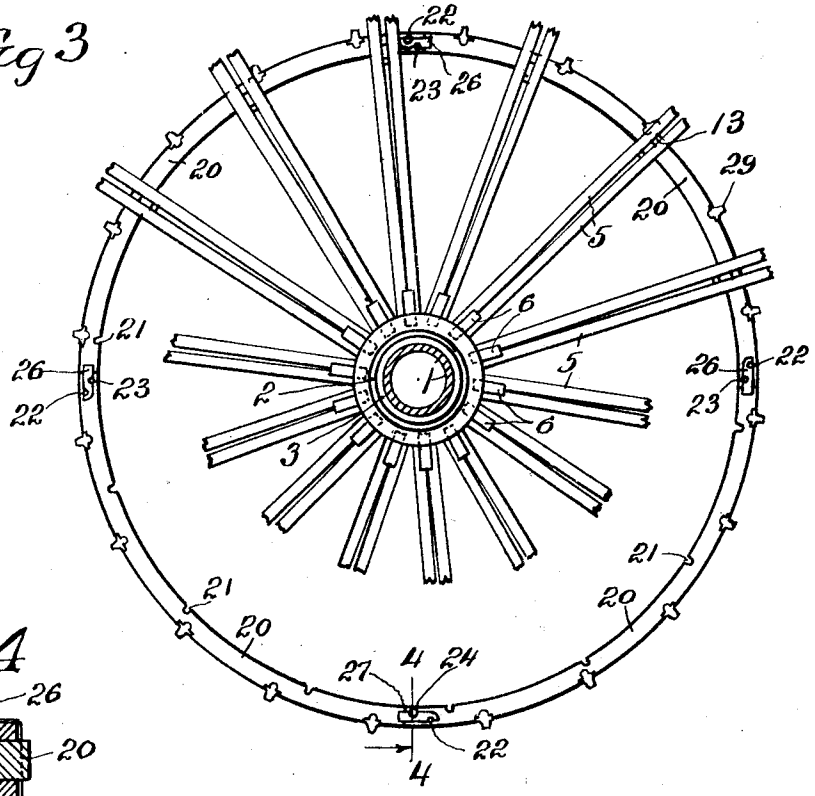


Fig 4

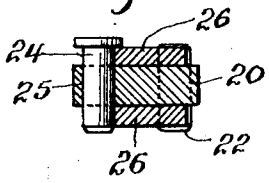


Fig 5

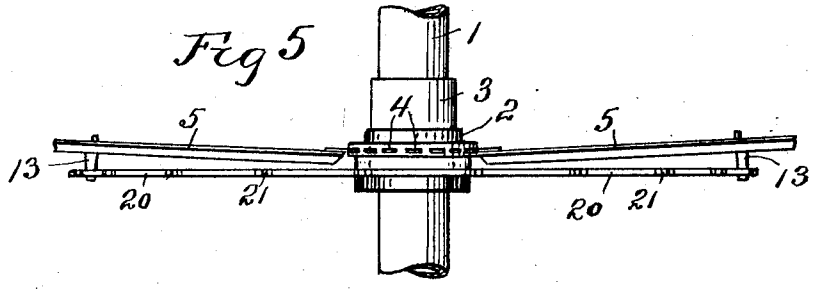
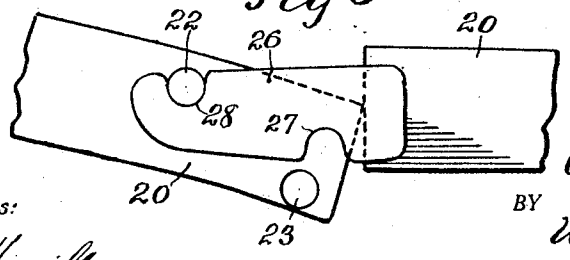


Fig 6



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CARROUSEL DRIVING MECHANISM

Filed July 26, 1926 3 Sheets-Sheet 3

Fig 7

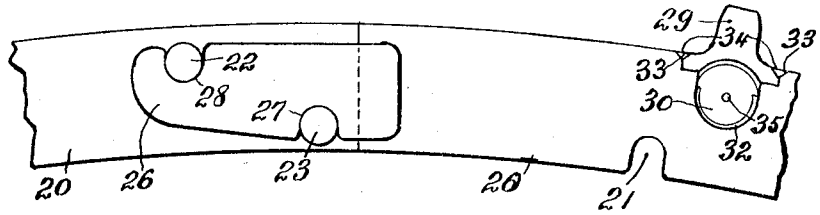


Fig 8

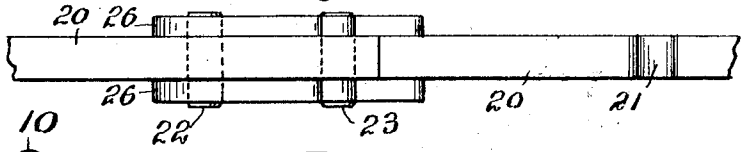


Fig 9

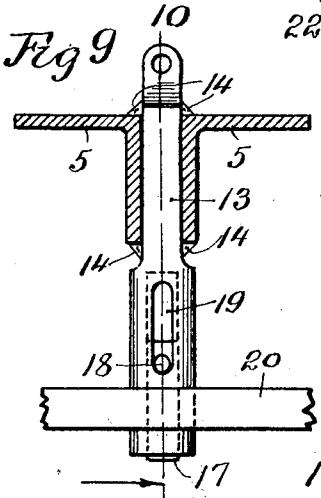
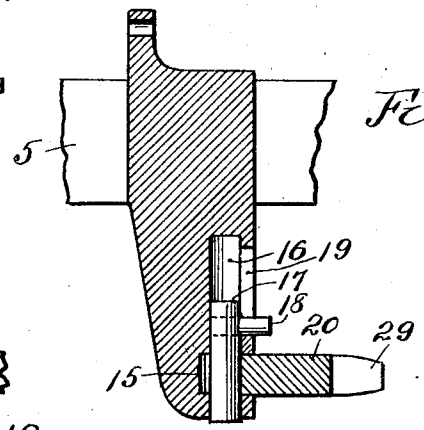


Fig 10



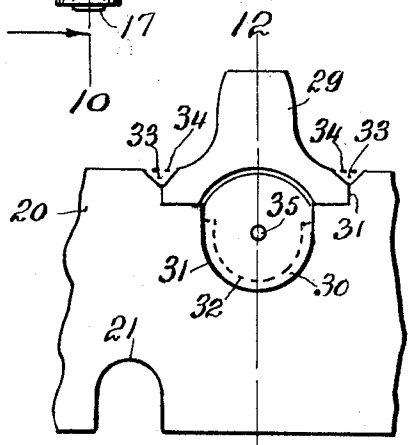
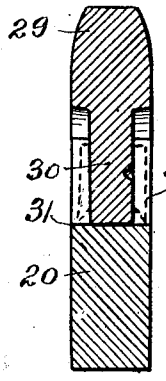


Fig 11 12

Fig 12



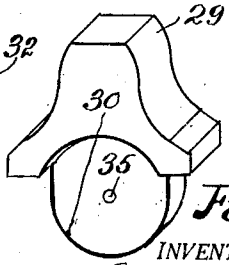


Fig 13

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Patented Dec. 4, 1928. 1,693,724

UNITED STATES PATENT OFFICE.

CHARLES E. MORRIS, OF LEAVENWORTH, KANSAS.

CARROUSEL-DRIVING MECHANISM.

Application filed July 26, 1926. Serial No. 124,936.

My invention relates to improvements in carrousel driving mechanisms.

It is particularly adapted for use in connection with carrousels having sweeps revoluble around a center pole.

One of the objects of my invention is to provide a novel driving mechanism for a carrousel of the kind described, which is removably attached to demountable sweeps.

A further object of my invention is to provide a novel driving wheel composed of sections detachably connected with each other.

Still another object of my invention is to provide novel interlocking means between the sweeps and the sectional driving wheel by which the latter may be easily, quickly and securely fastened to the sweeps, and as readily demounted therefrom.

A further object of my invention is to provide novel means for detachably attaching the sweeps to supporting means carried by a center pole.

Still another object of my invention is to provide a gear wheel with a novel replaceable tooth.

The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawings which illustrate the preferred embodiment of my invention,

Fig. 1 is a plan view of a portion of a carrousel provided with my improvement.

Fig. 2 is a view of the same partly in elevation and partly in vertical section, and parts removed.

Fig. 3 is an enlarged plan view of the driving wheel and portions of parts connected therewith.

Fig. 4 is an enlarged section on the line 4—4 of Fig. 4.

Fig. 5 is a side elevation, parts removed, of what is shown in Fig. 3.

Fig. 6 is an enlarged plan view of adjacent end portions of two wheel sections partly engaged with each other.

Fig. 7 is an enlarged plan view of two end portions of two wheel sections, shown operatively connected with each other.

Fig. 8 is an inside elevation of what is shown in Fig. 7.

Fig. 9 is an inside elevation, enlarged, of one of the wheel supporting brackets, and a portion of the adjacent wheel section, the angle bars of the supporting sweep being shown in cross section.

Fig. 10 is a section on the line 10—10 of Fig. 9.

Fig. 11 is a plan view of a portion of one of the wheel sections, enlarged, and one of the teeth mounted therein.

Fig. 12 is a section on the line 12—12 of Fig. 11.

Fig. 13 is an enlarged perspective view of one of the gear teeth of the driving wheel.

Similar reference characters designate similar parts in the different views.

1 designates a center pole having mounted on it a revoluble support comprising a hub 2 revoluble on a sleeve 3 fastened on the pole, the hub having peripheral radial slots 4 in which are respectively loosely fitted the inner ends of radial sweeps, each of which may comprise two parallel radial angle bars 5, to the inner ends of which are fastened plates 6, said plates 6 being respectively fitted in the slots 4, Figs. 2, 3 and 5.

Between and at the outer ends of the plates of each pair of sweep bars 5 is fastened a plate 7 having a hook 8. Respectively detachably attached to the hooks 8 are guy rods 9, the upper ends of which have hooks 10, Fig. 1 and Fig. 2, which are respectively removably fitted in holes provided therefor in a cap plate 11 revolubly centrally mounted on a central vertical pin 12 at the upper end of the pole 1.

Between the angle bars 5 of each pair is mounted a bracket 13, Figs. 9 and 10, which may be made integral with the bars 5, at opposite sides of the bracket and at the upper sides and lower edges of the bars 5, by welding 14, Fig. 9.

The outer side of each bracket 13 has a lateral recess 15, which is intersected by a vertical hole 16, which extends upwardly from the bottom of the bracket, and in which is slidably fitted a locking pin 17 having mounted in it a lateral pin 18 which is slidable in and projects outwardly from a vertical slot 19 in the bracket, and which communicates with the hole 16. The pin 17 is adapted to extend through the recess 15, and also to be lifted above said recess.

A driving wheel, which may be a sprocket wheel, comprising arcuate sections 20 is adapted to have the sections 20 removably fitted at their inner edges in the recesses 15 of the adjacent brackets 13.

The inner edges of the sections 20 are provided with recesses 21 adapted to aline re-

spectively with and to receive the locking pins 17, which hold the wheel from circumferential movement relative to the brackets 13, Figs. 9 and 10.

The brackets 13 are disposed in an annular row concentrically with the pole 1, the wheel sections 20 being disposed below the sweep bars 5.

The wheel sections 20 are arcuate and are adapted to be disposed end to end to form a ring, which is concentric with the pole 1.

Each section 20 is provided adjacent to one end with an outer transverse pin 22 which projects from both sides of the section, Figs. 7 and 8. Each section 20, excepting one, is provided adjacent to and spaced from the pin 22, with an inner pin 23, which also projects from opposite sides of the section. One of the sections 20 has a pin 24 removably fitted in a transverse hole 25 provided therefor in one of the sections 20 adjacent to the inner edge of the section and adjacent to the adjacent pin 22, Figs. 3 and 4.

The other end of each section 20 is provided with two endwise projecting parallel arms 26, Figs. 4, 6, 7 and 8, which are adapted to receive between them the adjacent end of the adjacent section, and which are adapted to be extended between the adjacent pins 22 and 23, the arms 26 being rigidly fastened, as by welding, to opposite sides respectively of the section of which they form a part. Each arm 26 is provided on its inner and outer edges respectively with two recesses 27 and 28 adapted to respectively receive the adjacent pins 23 and 22, whereby the sections are held from endwise and vertical movement with respect to each other. The removable pin 24 is adapted to be inserted into the hole 25 and into the adjacent recesses 27 of the adjacent arms 26, Figs. 3 and 4.

In assembling the structure, the sleeve 3 has fitted on it the hub 2, and the cap plate 11 is mounted on the pin 12 on the top of the pole 1. The plates 6 of the sweeps are then respectively fitted in the slots 4, and the rods 9 are attached to the hooks 8 and to the cap plate 11.

One of the sections 20 is then fitted in the recesses 15 of some of the brackets 13 and the locking pins 17 are slid through the recesses 21 of the mounted section.

The arms 26 of the next section 20 are then inserted between the pins 22 and 23, as shown in Fig. 6, after which the second section is swung to the operative position shown in Figs. 7 and 8, in which position the pins 22 and 23 will be in the recesses 28 and 27, the second section being swung into the lateral recesses 15 of the adjacent brackets 13.

The third section is similarly mounted in the second section and the adjacent recesses 15 of the adjacent brackets. The last section is then fitted in the third section in the same manner and swung ino the recesses 15 in the adjacent brackets 13. The removable locking pin 24 is then slipped into the hole 25 of the last section and into the adjacent recesses 27 of the arms 26 of the first section, Fig. 3. The locking pins 17 are then all slid in the holes 16 into the adjacent recesses 21 of the sections 20. The driving wheel will now be firmly locked to the sweep bars 5, and the latter will be securely fastened in their operative positions.

As shown, the driving wheel may be a sprocket wheel having peripheral teeth 29 adapted to be engaged by a chain belt, not shown, so as to be driven thereby.

The teeth 29 are, preferably fastened to the peripheries of the sections 20 so as to be replaceable in case of wear or breakage. For this purpose, each tooth is provided with an inwardly extending portion 30, which is semi-circular at its inner end and is fitted in a recess 31 in the outer edge of the section 20.

The inner ends of the recesses 31 are each semi-circular to fit the inner ends of the portions 30 of the teeth. Such portions 30 are of less thickness than the thickness of the section 20, Fig. 12 and Fig. 13, and the sides of the portions 30 are spaced from the adjacent sides respectively of the section.

The portion 30 of each tooth is welded at both sides and along its semi-circular edge to the semi-circular portion of the recess 31 in which it is fitted, such welding being indicated in dotted lines 32 in Fig. 11 and Fig. 12.

Each tooth 29 at opposite ends has two bevelled portions which converge respectively to two bevelled portions at opposite sides of the adjacent recess 31, so as to form two transverse grooves 33, Fig. 11, in which may be fused to the tooth and to the section 20 welding material 34.

If a tooth 29 wears or breaks, so as to require replacement, the worn tooth may be removed by sawing two transverse slots through the welding material 34 in alinement respectively with the ends of the tooth. A drill, not shown, having the radius of the semi-circular end of the portion 30, is used to bore through said portion transversely, the center of the drill being disposed in the center of said semi-circular portion, at which center the portion 30 may have a countersink 35 in which to place the center point of the drill. The drill will cut a circular hole, removing at the same time the welding material 32, whereby the tooth is freed from the section 20 to which it is attached.

Another tooth may then be substituted for the removed one and is similarly welded to the section 20 in the recess 31, in the manner already described.

I do not limit my invention to the structure shown and described, as many modifications, within the scope of the appended claims, may be made, without departing from the spirit of my invention.

What I claim is:—

1. In a carrousel driving mechanism, a revoluble support having circularly arranged brackets, each having a lateral recess and a hole intersecting said recess, and a pin in said hole extending across said recess, and a driving wheel mounted in said recesses and having peripheral recesses in which said pins are respectively disposed.

2. In a carrousel driving mechanism, a revoluble support having circularly arranged brackets, each having in its outer side a recess and having a hole intersecting said recess and a pin in said hole extending across said recess, and a driving wheel mounted at its inner edge in said recesses concentric with the axis of said support and having in its inner edge recesses in which said pins are respectively disposed.

3. In a carrousel driving mechanism, a revoluble support comprising a hub and radial sweeps removably attached at their inner ends to said hub and brackets respectively attached to said sweeps, each bracket having in its outer side a recess and having a hole intersecting said recess, and a driving wheel mounted at its inner edge in said recesses concentrically with said hub and having in its inner edge recesses in which said pins are respectively disposed.

4. In a carrousel driving mechanism, a center pole, a cap revoluble thereon, a hub revoluble on said pole below said cap, radial sweeps removably attached at their inner ends to said hub, each sweep having a bracket attached thereto provided in its outer side with a recess and having a hole intersecting said recess, guy rods respectively removably attached to said sweeps and removably attached to said cap, and a driving wheel mounted at its inner edge in said recesses and having in its inner edge recesses in which said pins are removably disposed.

5. In a carrousel driving mechanism, a revoluble support having circularly arranged brackets, each having a lateral recess and a hole intersecting said recess, and a pin in said hole extending across said recess, and a driving wheel comprising sections detachably connected with each other at their ends to form a ring, said sections being removably mounted in said recesses of adjacent brackets and said sections having peripheral recesses in which said pins are respectively removably disposed.

6. In a carrousel driving mechanism, a revoluble support having circularly arranged brackets, each having in its outer side a recess and having a hole intersecting said recess and a pin in said hole extending across said recess, and a driving wheel comprising sections detachably connected with each other at their ends to form a ring, said sections at their inner edges being removably mounted in the recesses of adjacent brackets, said sections having in their inner edges recesses in which said pins are respectively removably disposed.

7. In a carrousel driving mechanism, a center pole, a cap revoluble thereon, a hub revoluble on and supported by said pole below said cap and having radial slots, sweeps removably fitted at their inner ends in said slots respectively, each sweep having a bracket provided with a lateral recess, guy rods attached removably to said cap and respectively removably attached to said sweeps, a driving wheel concentrically encircling said pole and removably mounted in said recesses, and means carried by said bracket and having releasable interlocking engagement with said wheel for holding said wheel from circumferential movement relative to said bracket.

8. In a carrousel driving mechanism, a revoluble support having radial sweeps, each sweep having a bracket, and a driving wheel concentrically encircling the axis of said support and carried by said brackets, the latter and said wheel having means by which the wheel is held releasably supported and interlocked with said brackets and held from lateral and circumferential movement relative to said brackets.

9. In a carrousel driving mechanism, a revoluble support having brackets, each having a lateral recess and a hole intersecting said recess and having a pin in said hole extending across said recess, and a driving wheel comprising arcuate sections adapted to be disposed end to end to form a ring, each section being removably fitted in the recess of adjacent brackets, said sections having recesses adapted to respectively receive said pins, each section having adjacent to one end a pair of pins which project transversely from opposite sides of the section, one of said pins being removable, the other end of each section having two arms adapted to respectively embrace opposite sides of the adjacent section, and adapted to be inserted between the pins of the adjacent section, each arm having in its inner and outer sides respectively two recesses adapted to receive the adjacent pins.

In testimony whereof I have signed my name to this specification.

CHARLES E. MORRIS.