

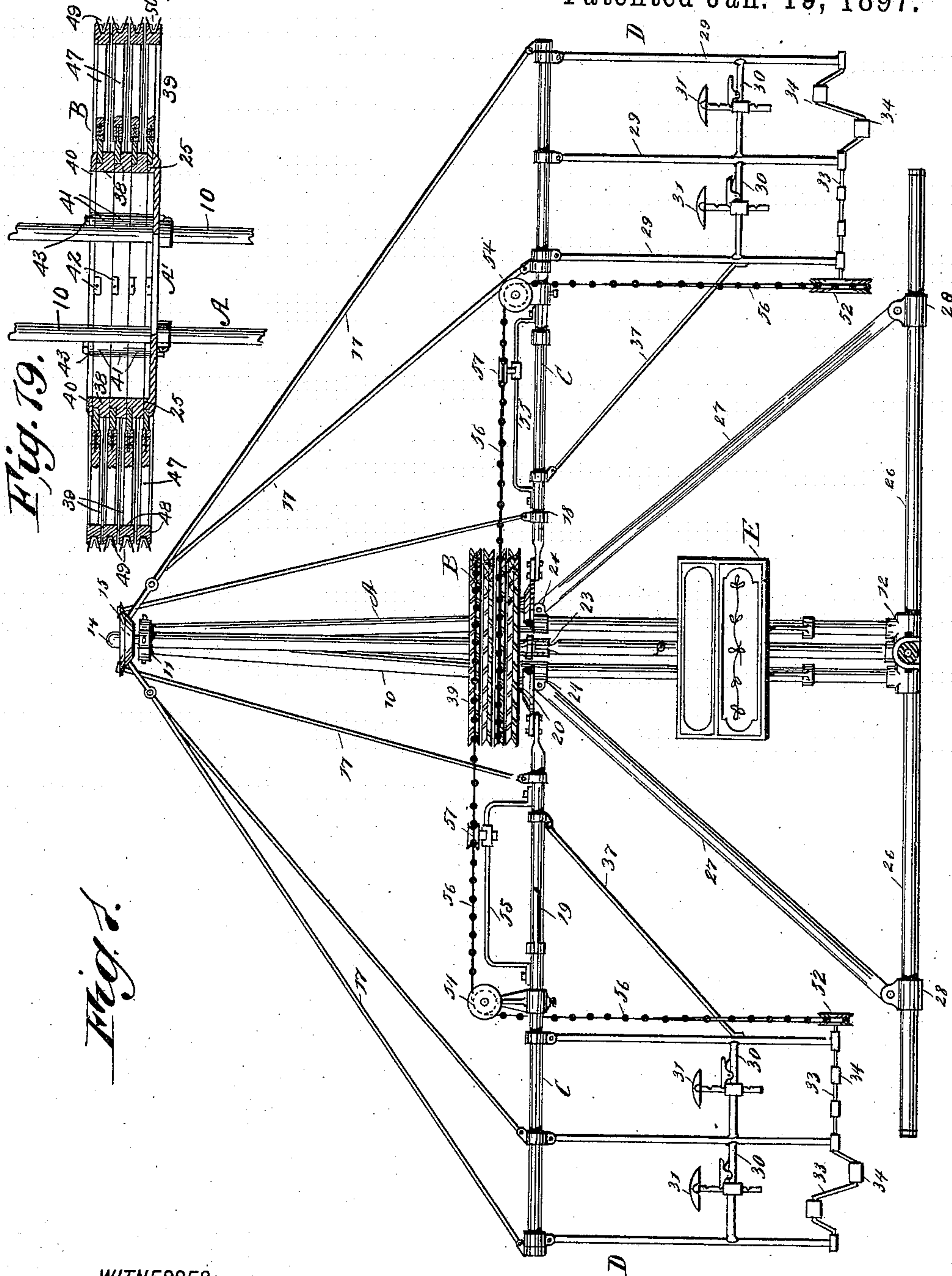
(No Model.)

3 Sheets—Sheet 1.

M. T. WESTON.
CAROUSEL.

No. 575,624.

Patented Jan. 19, 1897.



WITNESSES:

Wm. C. Orde
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INVENTOR

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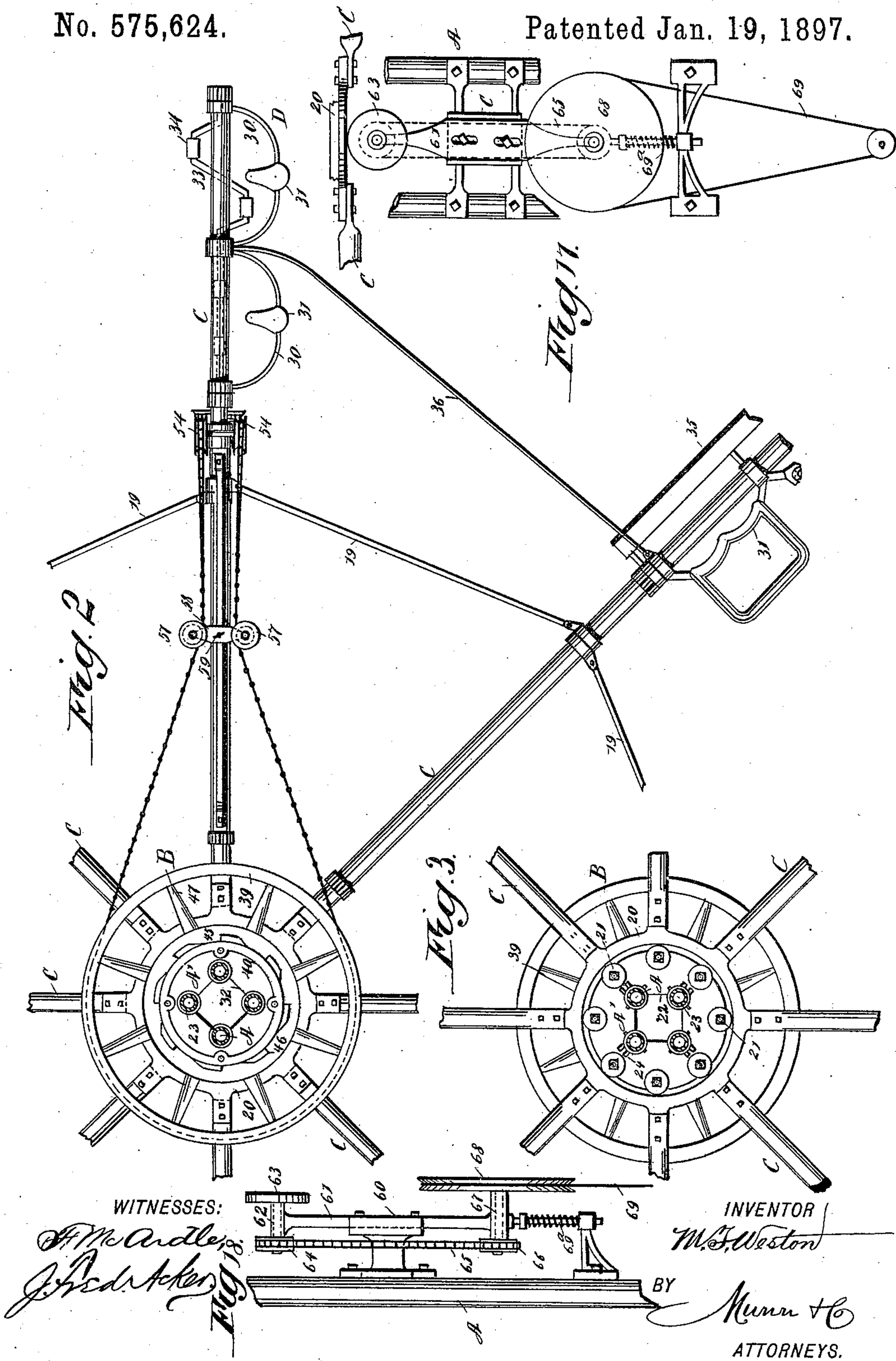
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3 Sheets—Sheet 2.

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3 Sheets—Sheet 3.

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Fig. 6.

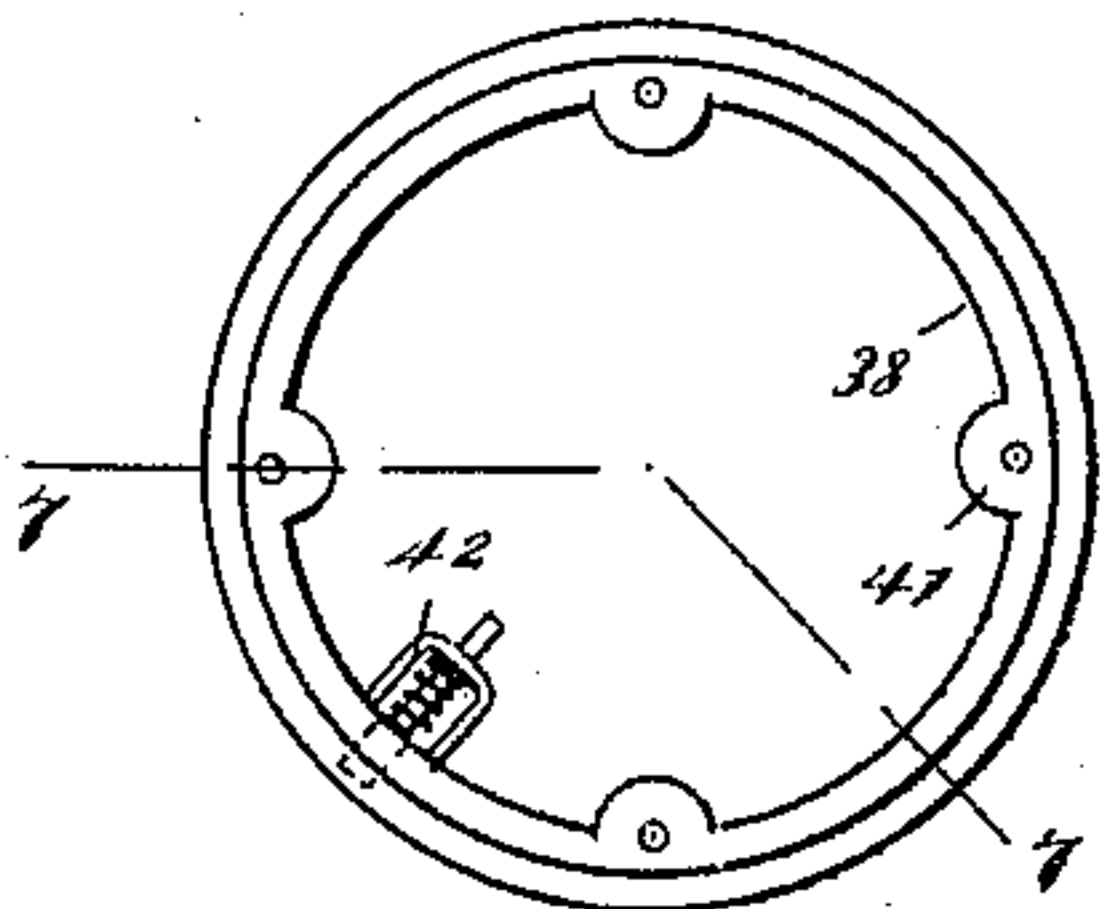


Fig. 7.

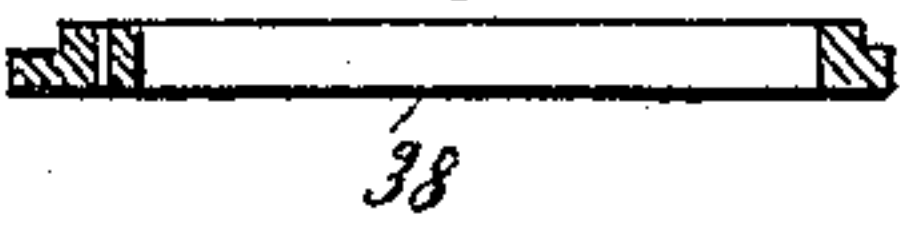


Fig. 8.

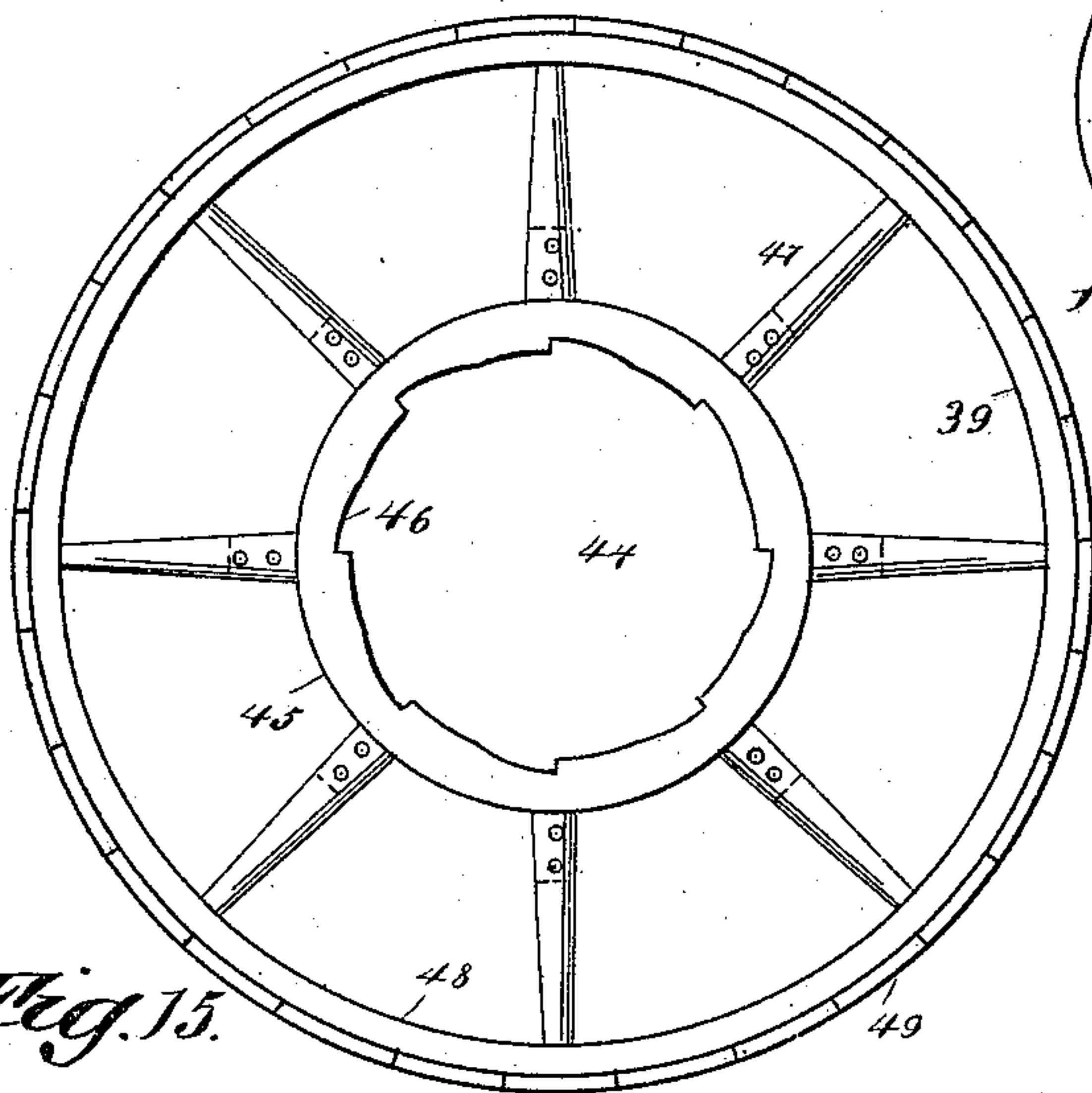


Fig. 9.

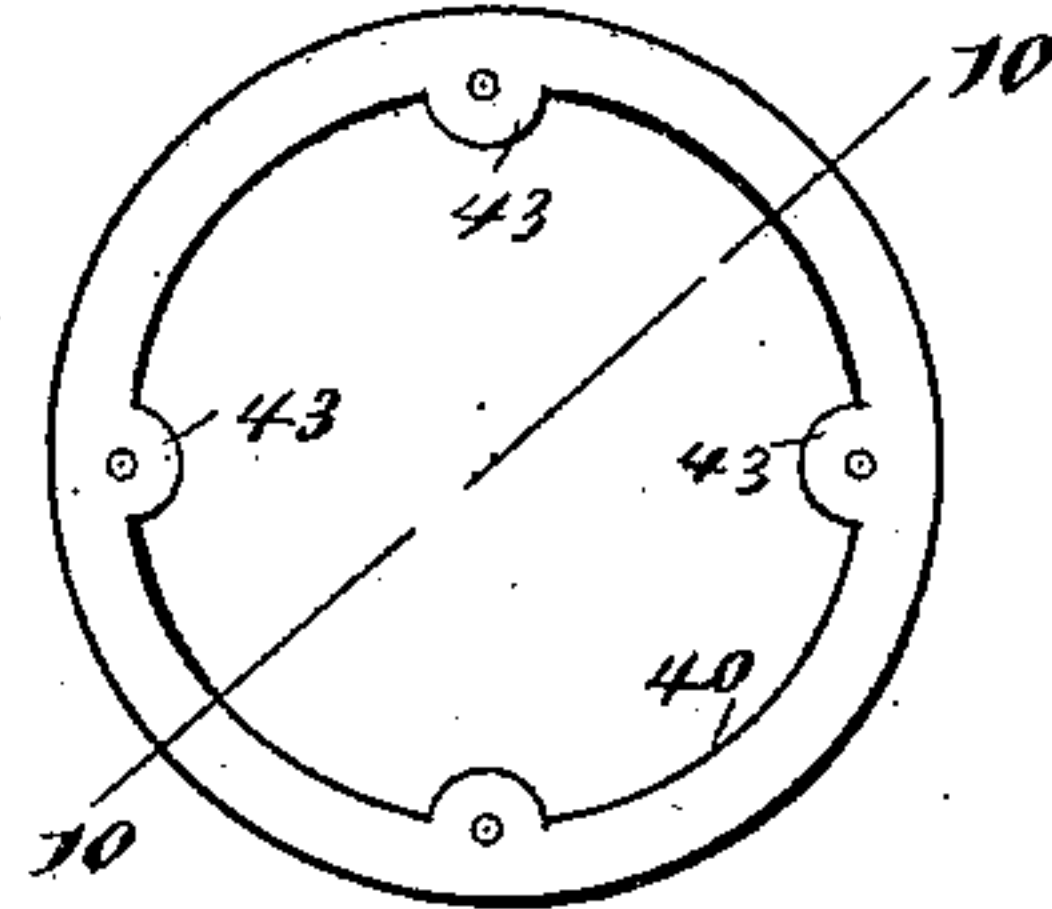


Fig. 10.



Fig. 11.

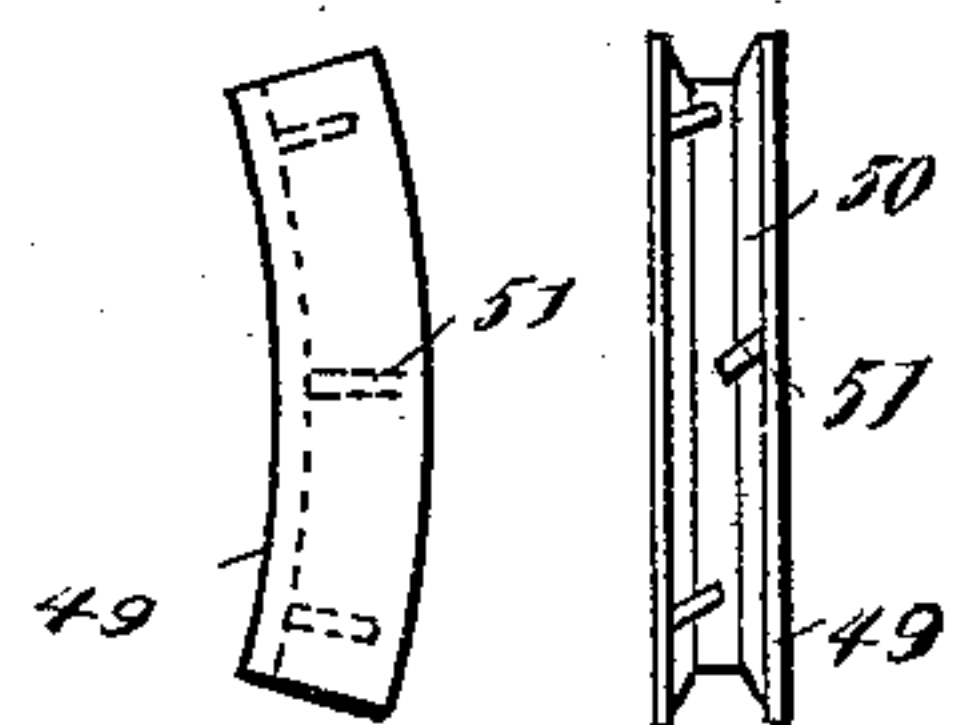


Fig. 12.



Fig. 14.

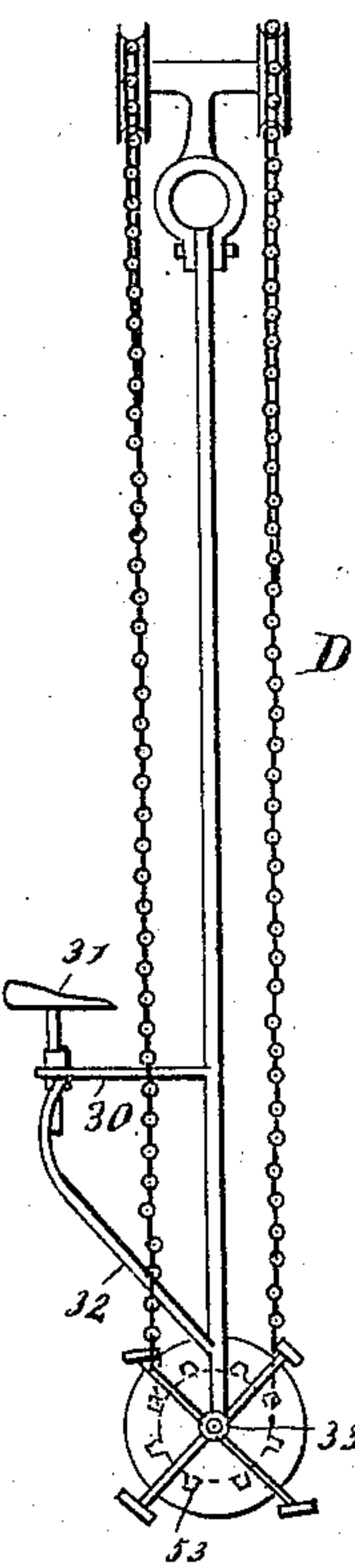


Fig. 15.

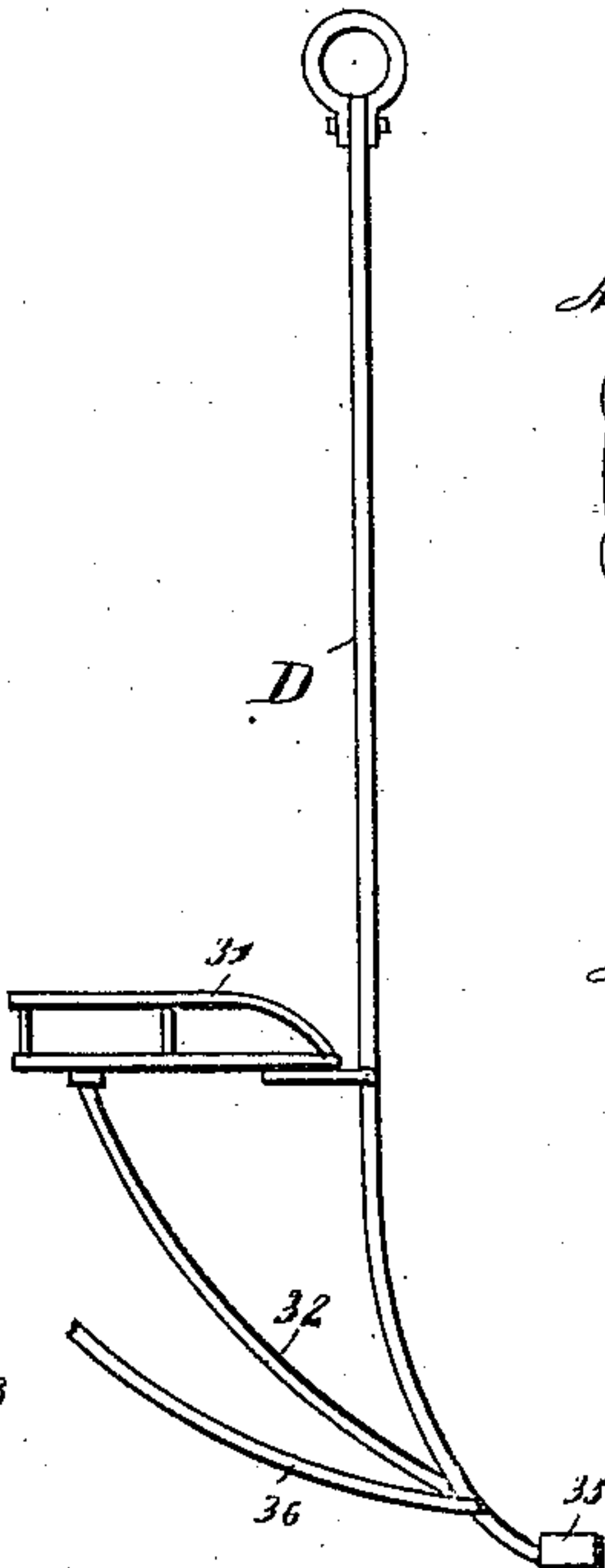


Fig. 4.

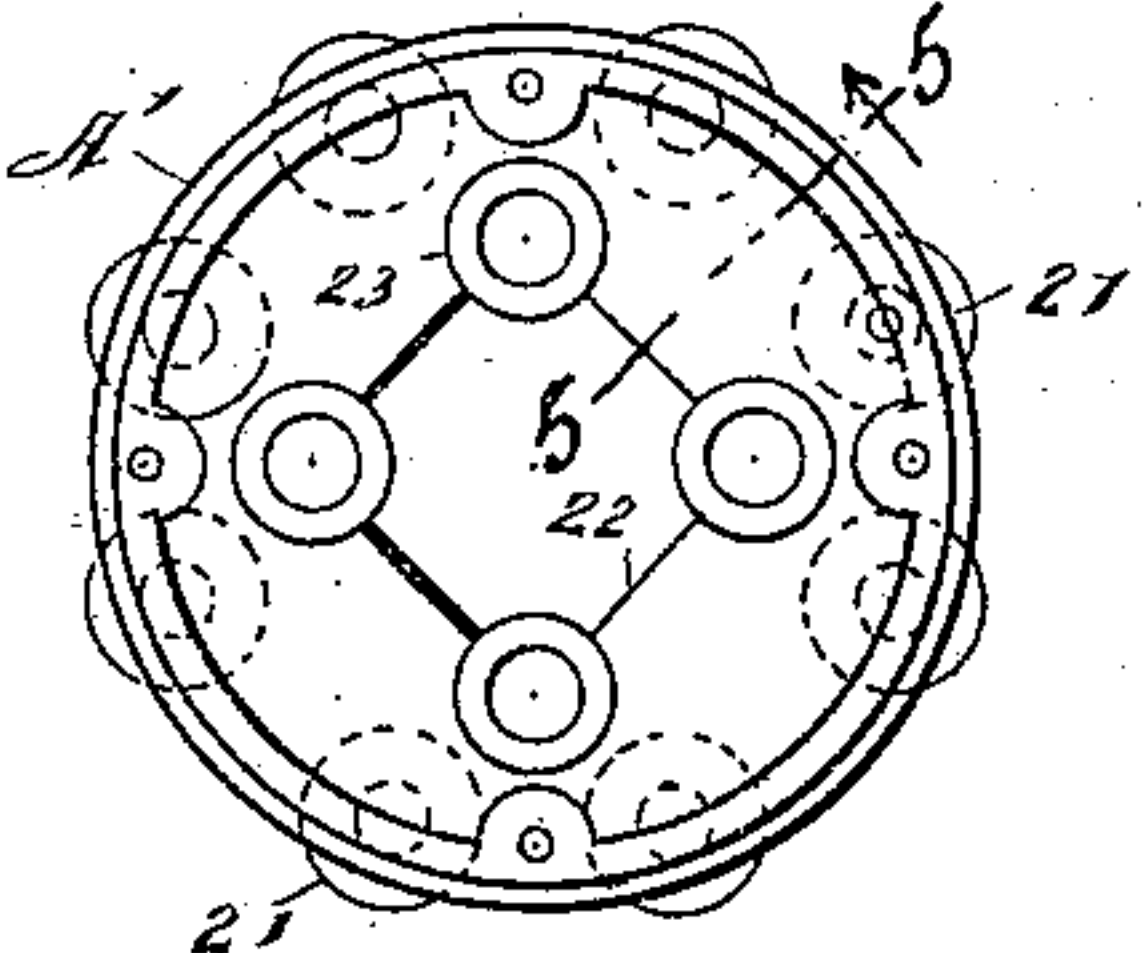


Fig. 5.

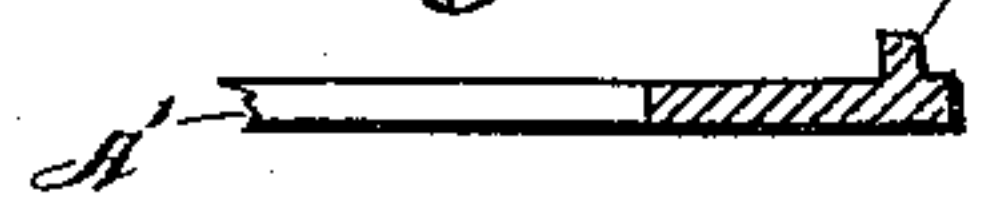


Fig. 13.

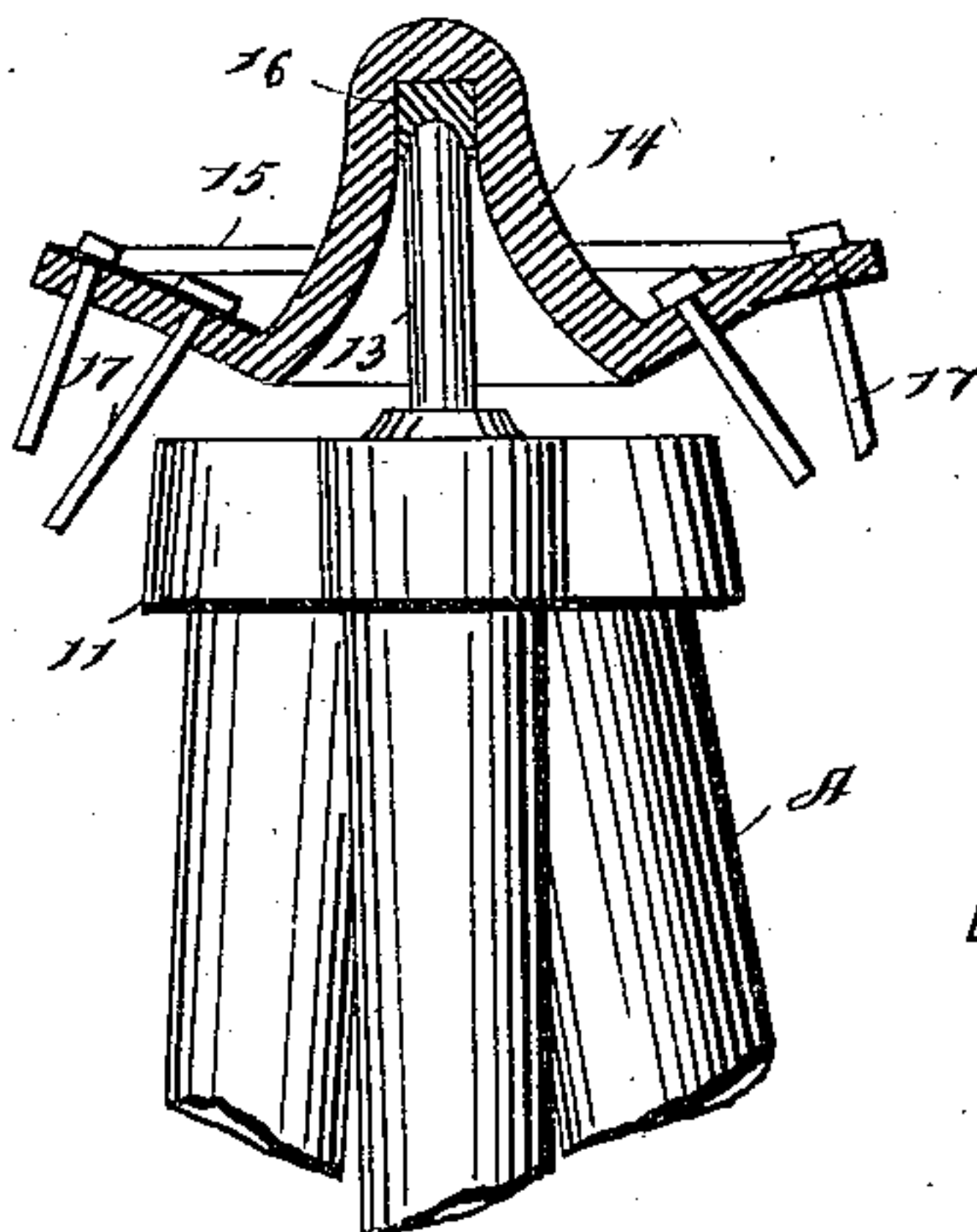
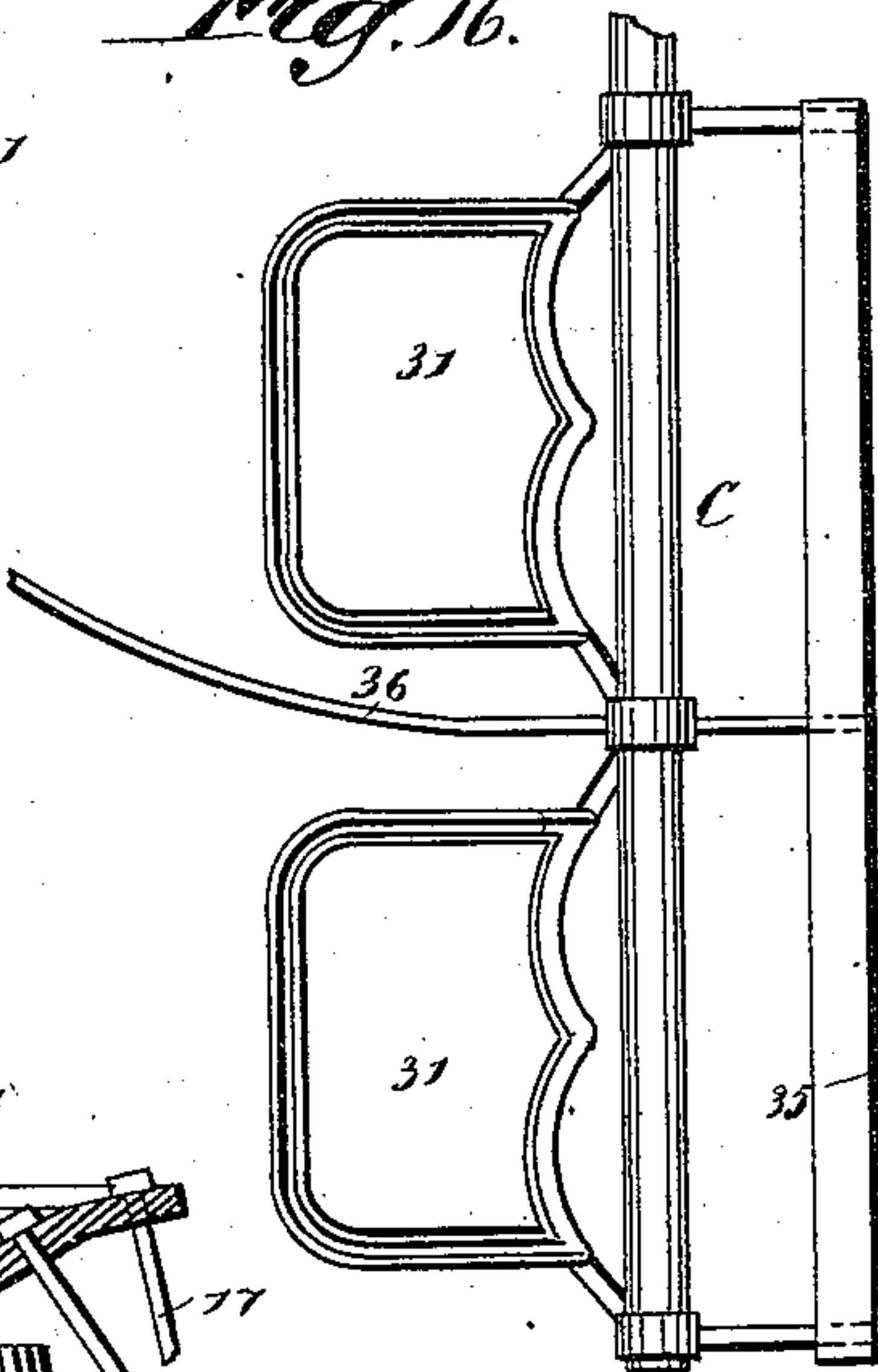


Fig. 16.



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UNITED STATES PATENT OFFICE.

MILTON T. WESTON, OF KENTON, OHIO, ASSIGNOR TO THE HALCYON CYCLE COMPANY, OF SAME PLACE.

CAROUSEL.

SPECIFICATION forming part of Letters Patent No. 575,624, dated January 19, 1897.

Application filed August 22, 1894. Serial No. 520,970. (No model.)

To all whom it may concern:

Be it known that I, MILTON T. WESTON, of Kenton, in the county of Hardin and State of Ohio, have invented a new and Improved Carousal, of which the following is a full, clear, and exact description.

My invention relates to an improvement in merry-go-rounds or carousals; and it has for its object to provide such a device in which the frame and mast will be tubular, and whereby the mast may be adjusted to a vertical position although the base of the frame may rest upon an uneven or inclined surface.

A further object of the invention is to provide a simple and economic means whereby the machine may be driven, and likewise to provide an independent driving mechanism for each carriage forming a portion of the machine, the mechanism of one carriage, although stopped, or no matter how worked, not interfering with the movement of the machine as a whole.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the complete machine. Fig. 2 is a horizontal section taken through the mast just above the upper wheel of the drum, illustrating two of the arms, one having the driving mechanism attached and the other the driving mechanism removed. Fig. 3 is an inverted sectional plan view taken through the mast immediately below the arm-supporting ring. Fig. 4 is a plan view of the hub-plate adapted for attachment to the mast. Fig. 5 is a section through the said plate, taken practically on the line 5 5 of Fig. 4. Fig. 6 is a plan view of one of the hub-spacing rings. Fig. 7 is a section through the ring, taken practically on the line 7 7 of Fig. 6. Fig. 8 is a plan view of one of the wheel-sections of the drum. Fig. 9 is a plan view of the finishing-ring of the drum. Fig. 10 is a section through said ring, taken essentially on the line 10 10 of Fig. 9. Fig. 11 repre-

sents, respectively, a side elevation and edge view of one of the segments carried by the peripheral surface of the drum-wheel. Fig. 12 is a transverse section through one of the said segments. Fig. 13 is a sectional view of the cap by means of which the movable parts of the machine are supported upon the mast, the upper portion of the mast being shown in side elevation. Fig. 14 is an edge view of one of the carriages provided with a bicycle seat or saddle and a driving mechanism. Fig. 15 is a similar view of a carriage adapted for the use of children, in which the driving mechanism is omitted. Fig. 16 is a plan view of the carriage shown in Fig. 15. Fig. 17 is a front elevation of a driving mechanism whereby an organ may receive power from the movable portions of the machine. Fig. 18 is an edge view of the mechanism shown in Fig. 17, and Fig. 19 is a sectional view of the drum.

In carrying out the invention the mast A is made up of a series of tubes 10, and the said tubes may be of any length and of any predetermined diameter, being ordinarily four in number and grouped in substantially rectangular order in cross-section, as shown in Figs. 2 and 3. The mast-tubes are connected at the top by a coupling 11 and at the bottom by a coupling 12, and at or near the center the tubes are further connected by a coupling A', which coupling likewise serves as a hub-plate for a drum B, to be hereinafter described.

The cap-coupling 11 consists of a casing or forging having a series of sockets corresponding in number to the number of tubes employed in the construction of the mast, each socket receiving the upper end of the tube, as shown best in Fig. 13, and this cap-coupling is provided with a pin 13, projected upward from its center. This pin is a pivot-pin for a cap 14 of substantially conical construction and having an annular flange 15, flared in an upwardly direction, as is also shown in Fig. 13. This conical cap is provided with a bearing-block 16 of steel or other hard substance, having a semicircular seat to receive the correspondingly-shaped upper end of the said pivot-pin.

A number of supporting-rods 17 are at-

tached to the flaring flange of the cap and carried downward at quite an inclination outward as to some, while others are at a less inclination. Each of these rods is provided with
 5 a clamp 18 at its lower end, and the clamps are adapted to receive and support in horizontal positions the carrying-arms C of the machine. Ordinarily, as shown, three supporting-rods 17 are connected with each arm,
 10 one near the inner and the other near the outer end, while the third is at a point intermediate of the ends, as is best shown in Fig. 1.

The arms C are connected with each other by horizontal braces 19, (shown in Figs. 1 and
 15 2,) and likewise each arm is connected with a ring 20, which is of much greater diameter than the diameter of the mast, the ring being adapted to turn loosley around the mast. This ring is provided with a number of lugs
 20 projected horizontally from its periphery, the lugs corresponding in number to the number of carrying-arms C, each carrying-arm being bolted or otherwise secured to one of these lugs, as shown in Figs. 1, 2, and 3. In this
 25 manner the under surface of the ring is smooth and uninterrupted; and this ring has guided movement around the mast by having its inner edge brought in contact with a series of friction-rollers 21, pivoted upon the under
 30 face of the center coupling A' or hub-plate, as shown in Fig. 3, the friction-rollers extending beyond the periphery of the plate or coupling. This coupling, as shown in Figs. 4 and 5, and likewise in Fig. 3, consists of a circular
 35 plate having a central opening 22, substantially corresponding in shape to the cross-sectional shape of the mast, and sleeves 23 are formed around apertures in the plate grouped around the central opening 22, and
 40 each sleeve-aperture is adapted to receive one of the tubes 10 of the mast, and, as shown in Fig. 1, the sleeves project beyond the lower face of the plate, each of them being provided upon their outer faces with ears 24.

The circular plate comprising the central coupling A' is likewise provided with a marginal rib or flange 25 upon its upper face, for a purpose hereinafter set forth. The lower
 45 coupling 12 consists of a casting or forging, or a series of connected fittings, adapted to receive a number of horizontally-located base-tubes 26, and these tubes are connected with the sleeves of the central coupling by tubular
 50 connecting-rods 27, pivoted between ears 24 of the sleeves of the said central coupling; and the lower ends of the connecting-rods 27 are pivotally connected with ferrules 28, held to slide upon the base-tubes 26, being held
 55 wherever placed by set-screws or their equivalents.

Each arm is intended to carry suspended therefrom a carriage D. These carriages may be of any approved construction, and those that are shown in the drawings consist ordi-
 65 narily of three uprights 29, connected at their upper ends with an arm, and in each compartment of the carriage, that is, between

each of the uprights 29, a rearwardly-bowed horizontal bar 30 is located, as shown in Fig. 14, when the seat 31 is in the nature of a bi-
 70 cycle-saddle and is adjustable, the said bowed rod being supported by suitable braces 32. In this form of seat, when it is used, a crank-shaft 33 is journaled in the lower ends of the
 75 uprights 29, and the shaft in each compartment of the carriage is provided with two crank-arms 34, having pedals applied, the crank-arms in one compartment of the carriage being at right angles to the crank-arms
 80 in the other compartment, as is clearly shown in Fig. 1. Sundry of the carriages, however, may be constructed as shown in Figs. 15 and 16 and as shown to the left in Fig. 2, in which the seat 31 is made in the shape of a tricycle
 85 or carriage seat, and is adapted especially for the use of children, invalids, or persons who do not care to work the pedal-shafts. In this latter form of carriage the lower ends of the uprights 29 are forwardly curved in order that
 90 they may support, instead of a pedal or crank shaft, a foot-rest 35. In either event, however, the carriages are held preferably stationary, and this is accomplished by attaching to the back of each carriage a brace-bar
 95 36, which is carried upward and rearward to an engagement with the next rear arm of the machine, an outward movement on the part of the carriages being prevented by a second
 100 brace or staying bar 37, secured to the inner side of the carriage and to the supporting-arm thereof near its inner end.

I will next describe the construction of the drum B, which is utilized to revolve the arms, power being applied to the pedal or crank
 105 shafts 33.

The drum is made up of a series of spacing-rings 38, (shown in Figs. 6 and 7,) a series of
 110 wheels 39, one of which is illustrated in Fig. 8, and a capping or finishing ring 40, (illustrated in Figs. 9 and 10.) The spacing-ring is made angular or L-shaped in cross-section, as shown in Fig. 7, comprising thereby a ver-
 115 tical and a horizontal member. The vertical member of a spacing-ring is provided with a series of inwardly-extending apertured lugs 41, usually four in number and equally spaced, and the vertical member of each of the said
 120 spacing-rings is further provided with a spring-controlled bolt 42, the bolt being normally acted upon by the spring in a manner to project the bolt through the vertical member of the ring and beyond the outer face of
 125 the said member. The finishing-ring 40 is of about the same diameter as the spacing-ring and is of like construction, except that it is flat and the spring-controlled bolt 42 is omitted, said ring being perfectly plain and provided with inwardly-extending apertured
 130 lugs 43. The wheels 39 of the drum are considerably larger in diameter than the spacing and finishing rings, since the vertical members of the spacing-rings are adapted to enter an opening 44 in the hub 45 of a wheel, the wall of the opening in the hub being provided

with a series of inclined recesses 46, whereby it has a ratchet-like appearance. All the recesses incline in the same direction. A series of spokes 47 is projected from the hub 45 and connect with the rim 48 of the wheel. The wheel is provided with a tire made up of a series of segments 49. These segments are secured to the rim in any desired manner. Each segment is provided with a peripheral and preferably V-shaped groove 50 and with lugs 51 upon the side walls of the grooves, the lugs being alternately arranged, as shown particularly in Fig. 11.

In building up a drum one of the wheels is placed upon the hub-plate A', the flange 25 of said plate entering the opening 44 of the hub, and a spacing-ring 38 is placed upon the hub of the wheel, the vertical member of the ring entering the opening 44 in the hub of a second wheel, which is then placed upon the spacing-ring, and another spacing-ring placed upon the hub of this second wheel, and this arrangement is continued until a number of wheels 39 have been placed in rotating order around the mast corresponding to the number of supporting-arms C employed. Finally, the finishing-ring 40 is placed upon the uppermost wheel, and bolts are then passed through the lugs 41 and 43 of the spacing and finishing rings, and also preferably through the hub-plate A'. In this manner all the rings are connected and are stationary, as is likewise the hub-plate, while the wheels of the drum will be held stationary as soon as the bolts of the spacing-rings contact with the straight end walls of the recess 46 of the wheel-hub in which it may have entered; but if the wheels are turned in an opposite direction they will readily move around the mast in like manner as a pawl will slip over a ratchet when traveling over the inclined faces of its keeper. In the operation of the machine, however, the wheels of the drum will be turned in a direction to bring the straight walls of the recess against the bolt under ordinary circumstances.

On the inner end of each rock-shaft 33 of a carriage carrying such a shaft a peripherally-grooved pulley 52 is securely mounted, and the said pulley is provided with lugs 53 in the bottom of this groove, and upon each side of each supporting-arm a peripherally-grooved guide-pulley or idler 54 is journaled, the two pulleys being opposite one another, and between these pulleys and the inner end of each arm a yoke 55 is firmly attached to the arm, the yokes being of different heights in order that a link belt 56, passed over a pulley 52 and over the guide-pulleys 54, may be passed over tightening-pulleys 57 and guided to the drum-wheel appertaining to that particular carriage. The tightening-pulleys 57, as shown in Figs. 1 and 2, are mounted upon a slide 58, having movement longitudinally upon a yoke 55, each slide being provided with a set-screw 59. Thus by passing the slide 58 outward or inward along a yoke

the belt with which it is connected may be brought under proper tension, and when such tension is secured the slide is fastened in position. When the pedals are worked, the drums are carried around until the straight walls of the notches or recesses in the hubs of the drum-wheels are engaged by the bolts, and force then exerted propels the machine.

If some of the carriages are unoccupied, or if the occupants of one carriage wish to stop working for awhile, the drum-wheels will be carried around on the arms supporting those carriages, so that no unnecessary work is done in turning the idlers and pedal-shafts in the empty carriages, and no occupants of any carriage can in any way retard the motion of the machine by holding back.

An organ E is supported in any approved manner upon the mast, below the drum, and the said organ may be driven and preferably is driven from the ring 20, connecting the rotary and supporting arms C. This is accomplished in the following manner: A bracket 60 is secured to the mast, as shown in Figs. 17 and 18, and in this bracket a supporting-arm 61 is adjustably fastened, provided with a collar at top and bottom. In the upper collar a driving-shaft 62 is journaled, carrying at one end a friction-wheel 63 and at its opposite end a pulley 64, the friction-wheel being brought in engagement with the under surface of the ring 20. The pulley 64 is connected by a belt 65 with a pulley 66 upon a shaft 67, located in the lower collar, and this shaft likewise carries a large pulley 68, connected by a belt 69 with the driving-pulley of the organ. The hanger or supporting arm 61, having sliding connection with the bracket 60, is controlled in its upward movement by a spring 69^a, connected with its lower end, and by adjusting the tension of this spring the degree to which the friction-roller may engage with the ring 20 may be regulated, or the said roller may be carried entirely out of engagement with the ring.

It will be understood that any one or all of the spring-controlled bolts 42 may be disengaged from the hubs of the drum-wheels for the purpose of stopping the machine by simply attaching cords or levers to the said bolts, capable of operation from any point below the drum.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a carousel, a mast comprising a plurality of tubes, a top coupling provided with sockets, a bottom coupling provided with sockets, and a center coupling in the form of a plate provided with openings for the passage of the tubes, and with a marginal rib or flange on its upper surface, in combination with a drum resting upon the said central coupling the rib or flange of the said coupling projecting into the bore of the drum, substantially as described.

2. In a carousel, the combination, with a

mast, a ring held to revolve around the mast,
 arms connected with the said ring, and car-
 riages pendent from said arms, a cap pivoted
 upon the mast, and braces connecting the cap
 5 with the said arms, of a hub secured to the
 mast, wheels held to revolve around the said
 hub, having the inner faces of their hubs pro-
 vided with beveled recesses, spacing-rings in-
 10 tervening between the hubs of the wheels,
 spring-controlled latches carried by the spac-
 ing-rings and adapted to enter the recesses
 in the wheel-hubs, fastening devices whereby
 the spacing-rings are held in stationary con-
 15 nection with the hub, driving-shafts located
 in the carriages, and belts connected with
 said shaft and likewise each belt with one of
 the wheels, substantially as shown and de-
 scribed.

3. In a carousel, a multiple drum, com-
 20 prising a plurality of flanged spacing-rings
 provided with apertured lugs and spring-
 pressed bolts, a plurality of wheels having
 inclined recesses, on the inner faces of their
 hubs, a top plate provided with apertured

lugs registering with the lugs of the spacing- 25
 rings, and bolts passing through said lugs,
 substantially as shown and described.

4. In a carousel, the combination with a
 mast, a ring around the mast, arms carried
 by the said ring, and provided with carriages, 30
 and means for causing the arms to turn
 around the mast of a bracket carried by the
 mast, an arm fitting loosely in the bracket,
 shafts mounted in each end of the arm, the
 upper shaft carrying a pulley at one end and 35
 a friction-wheel at the other, and the lower
 shaft provided with a pulley at each end, a
 spring supporting the said arm, and a belt
 connecting the pulleys on one end of the said
 shafts, the friction-wheel engaging the ring 40
 of the arms and one of the pulleys of the
 lower shaft being adapted to be connected by
 a belt with an organ, substantially as de-
 scribed.

MILTON T. WESTON.

Witnesses:

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 JOHN STILLINGS.