

No. 815,103.

PATENTED MAR. 13, 1906.

G. LEINERT.
ROUNABOUT.

APPLICATION FILED APR. 22, 1906.

3 SHEETS—SHEET 1.

Fig. 1.

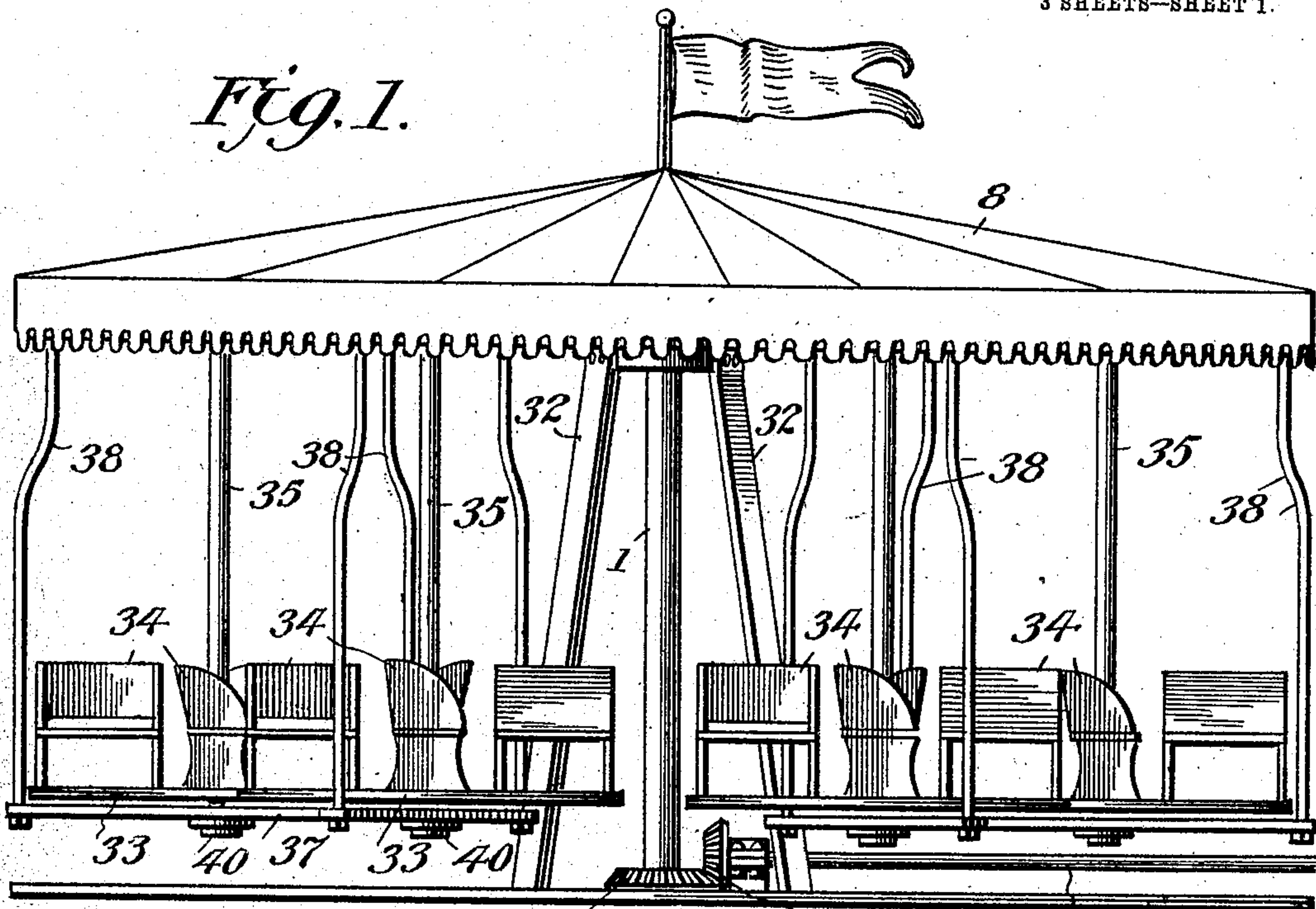
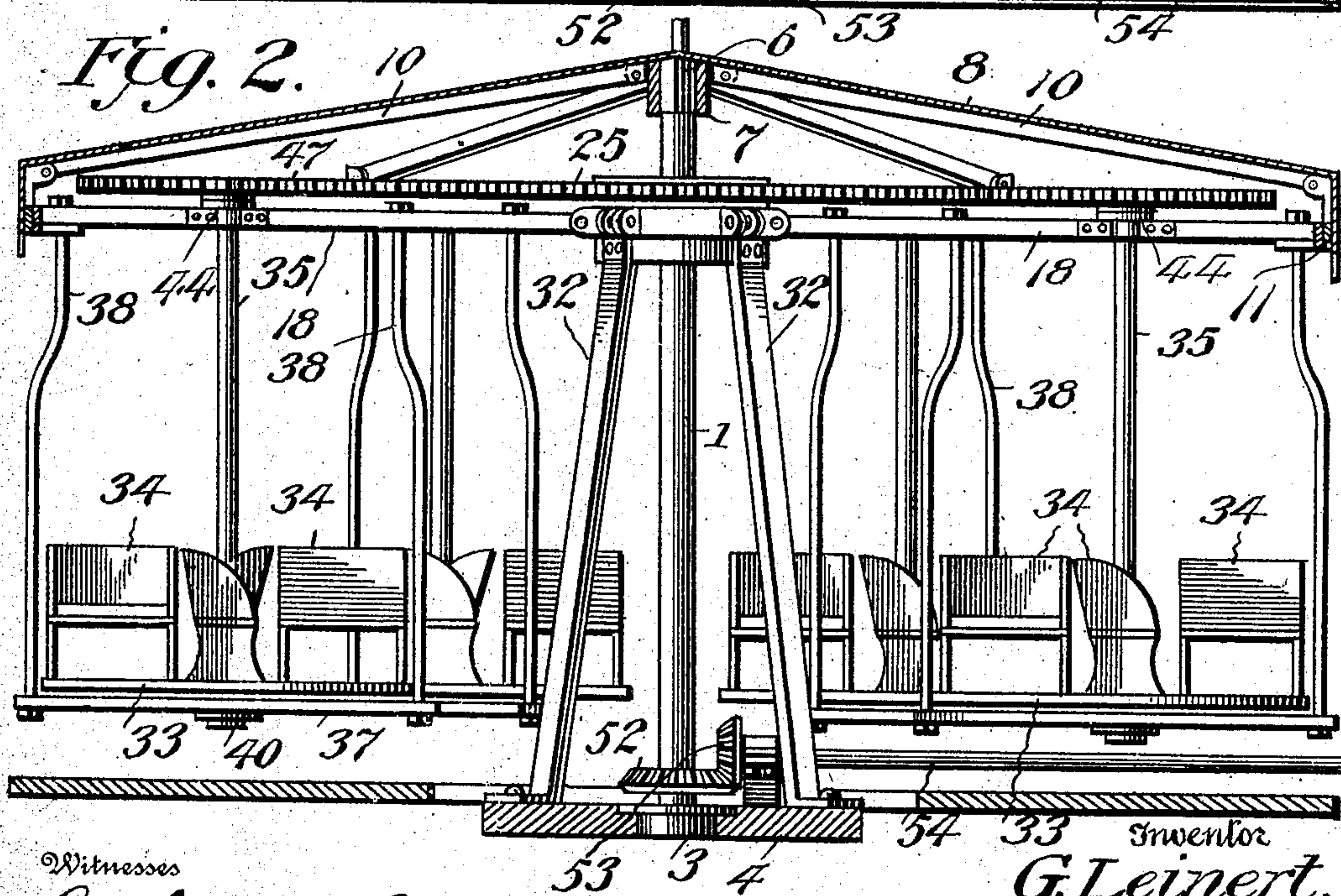


Fig. 2.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 3.

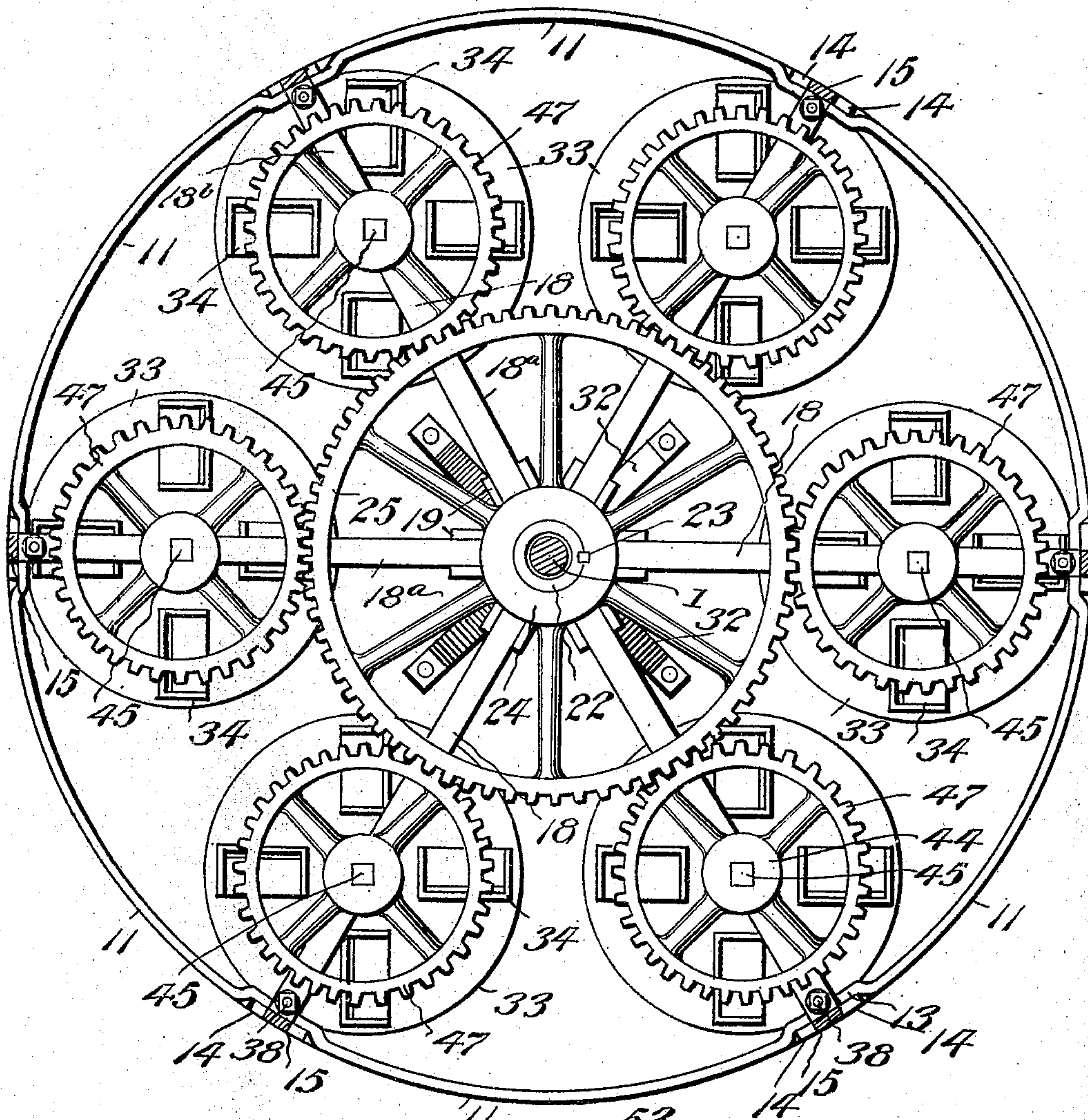
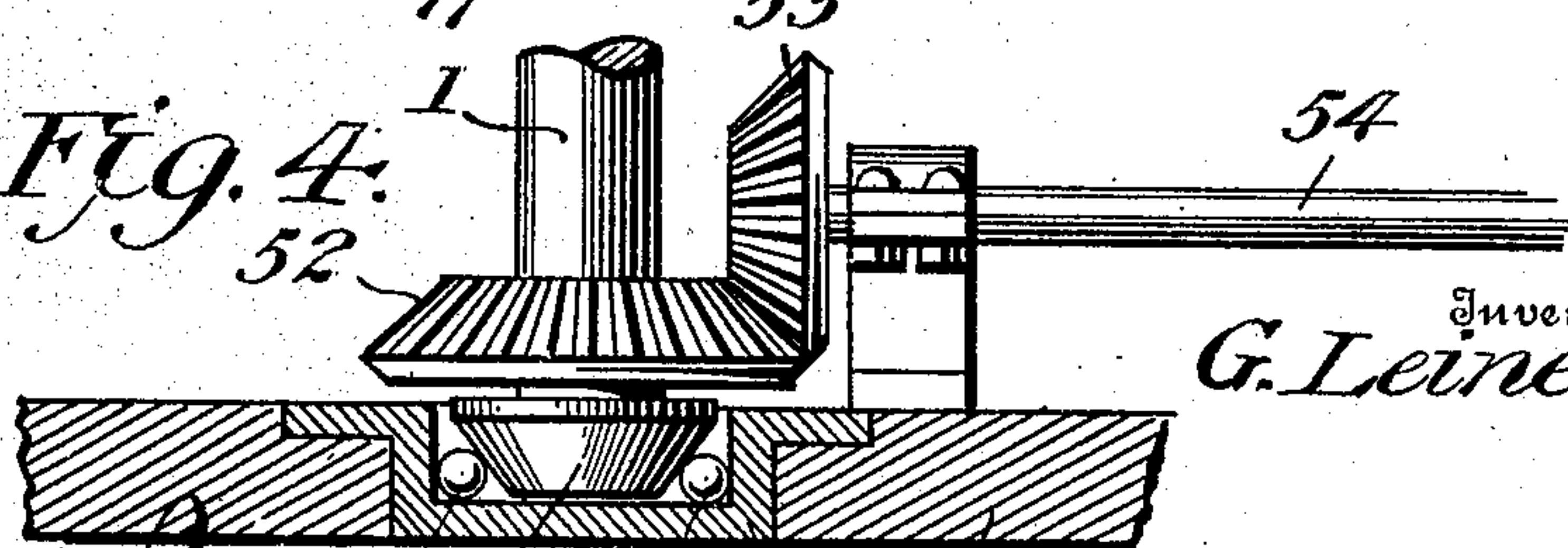


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

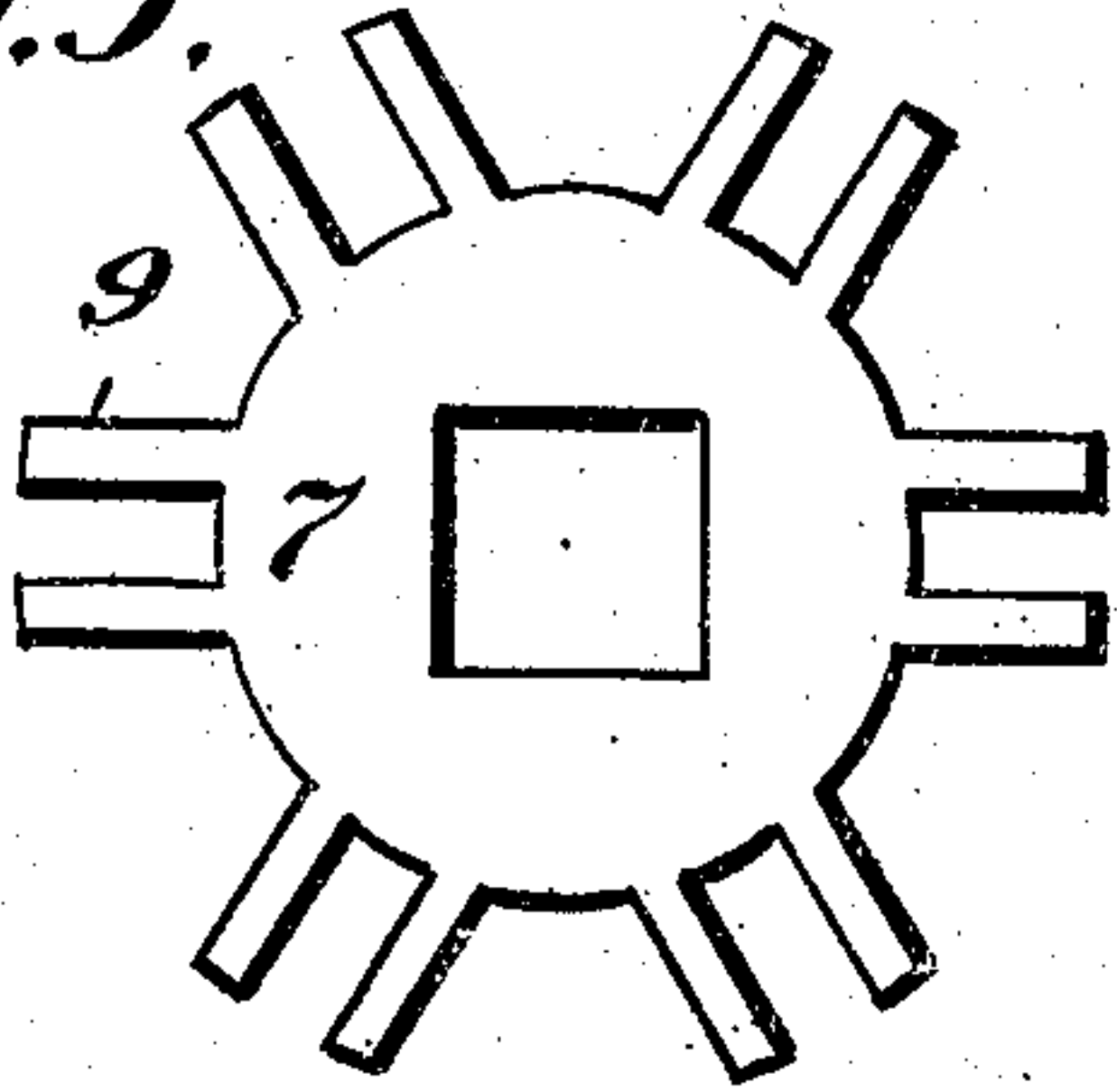


Fig. 6.

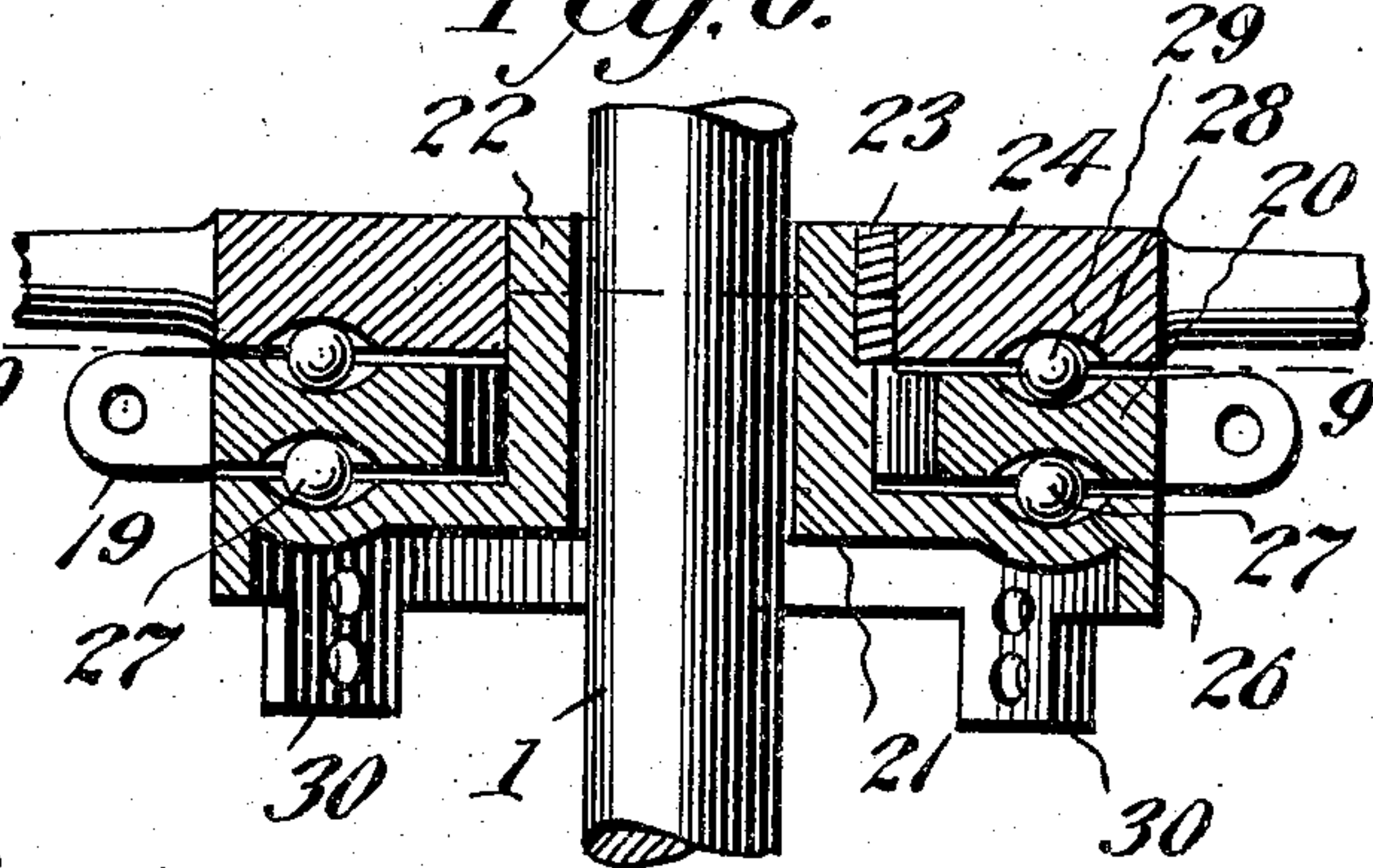


Fig. 7.

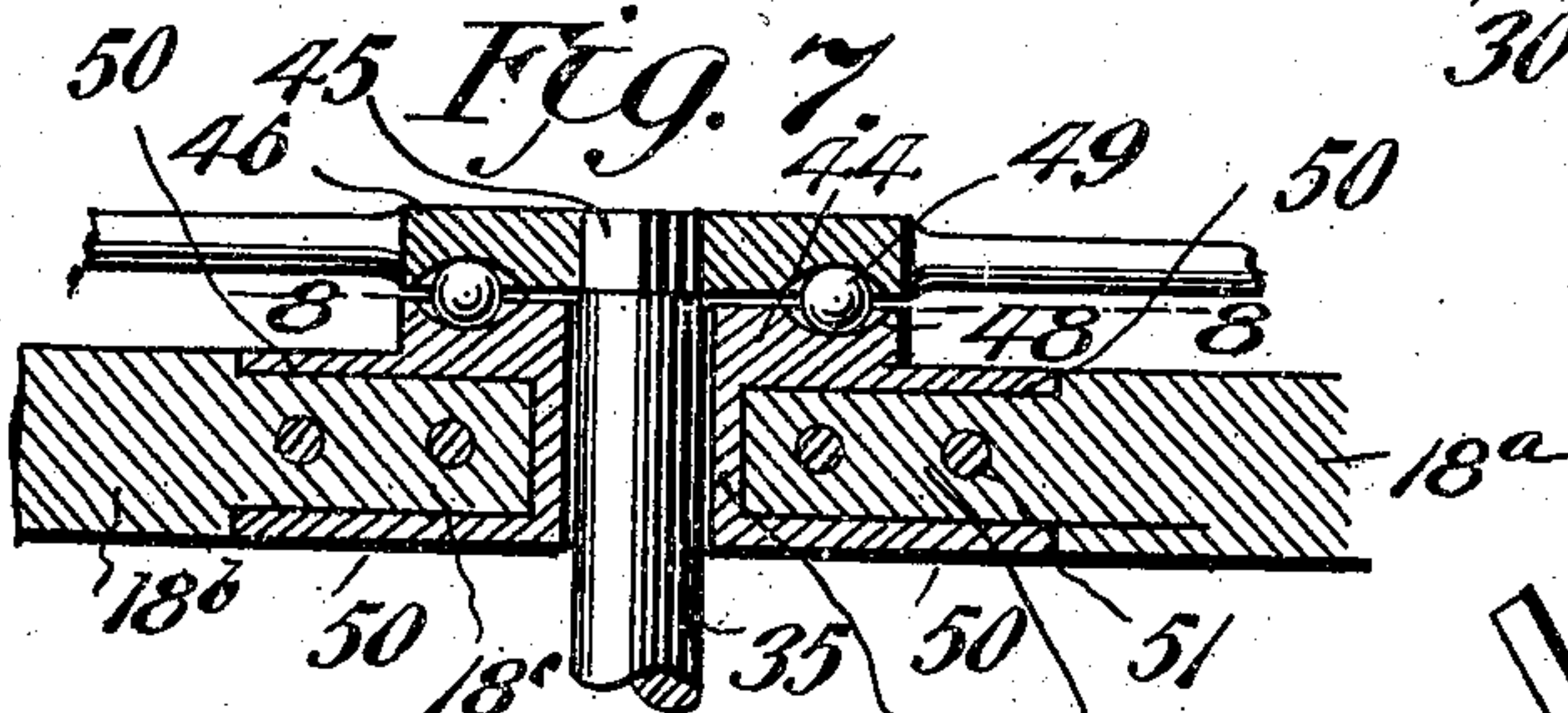


Fig. 8.

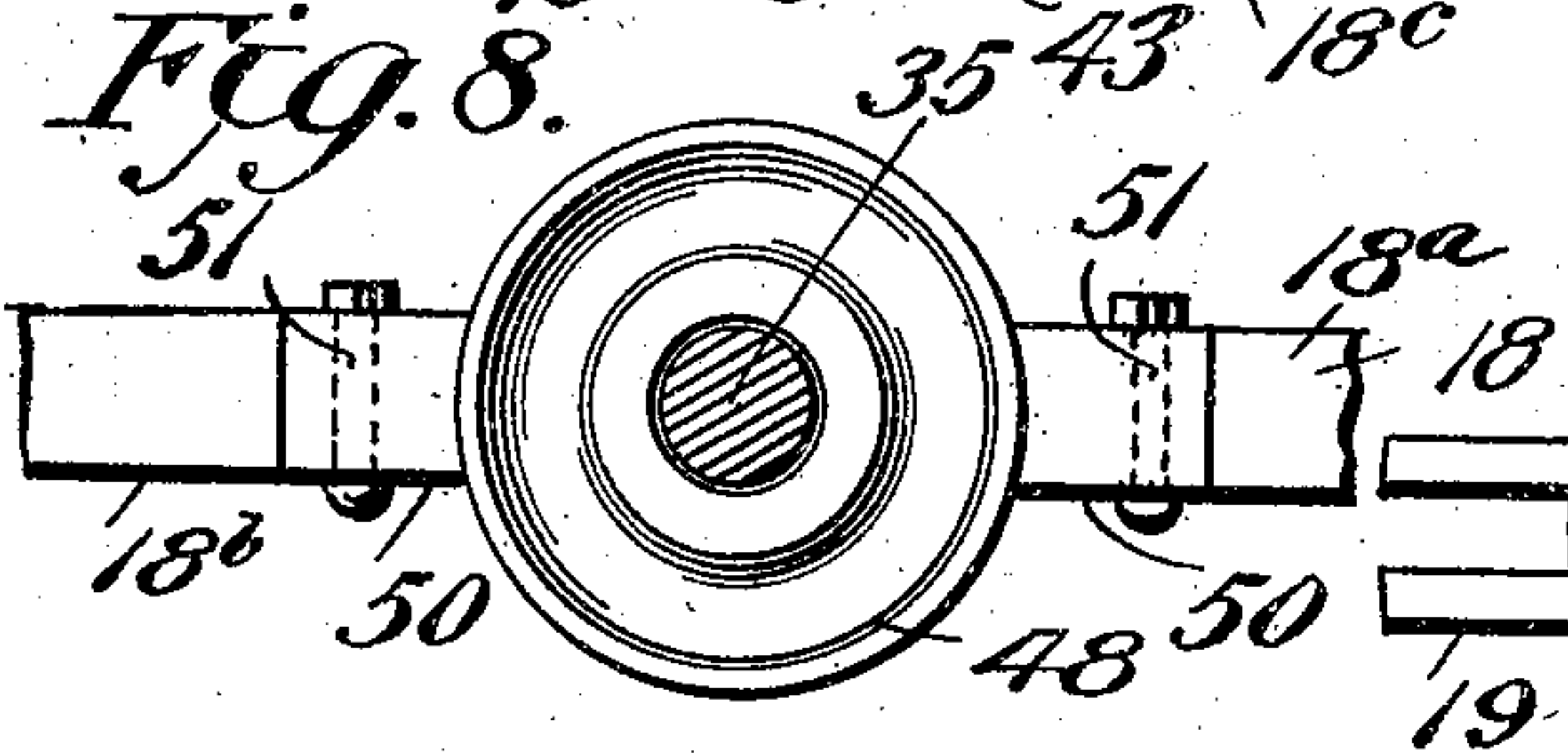


Fig. 9.

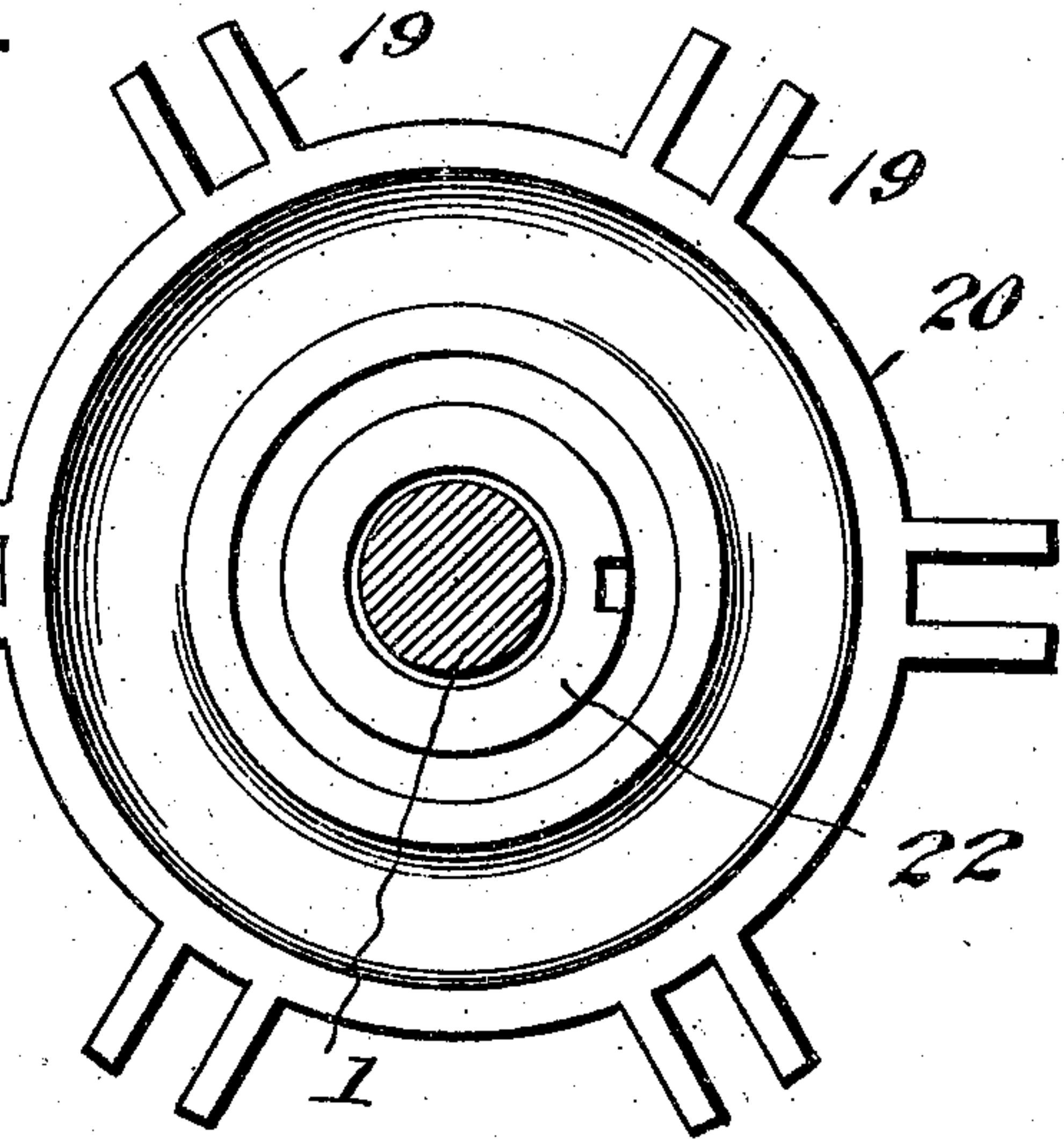


Fig. 10.

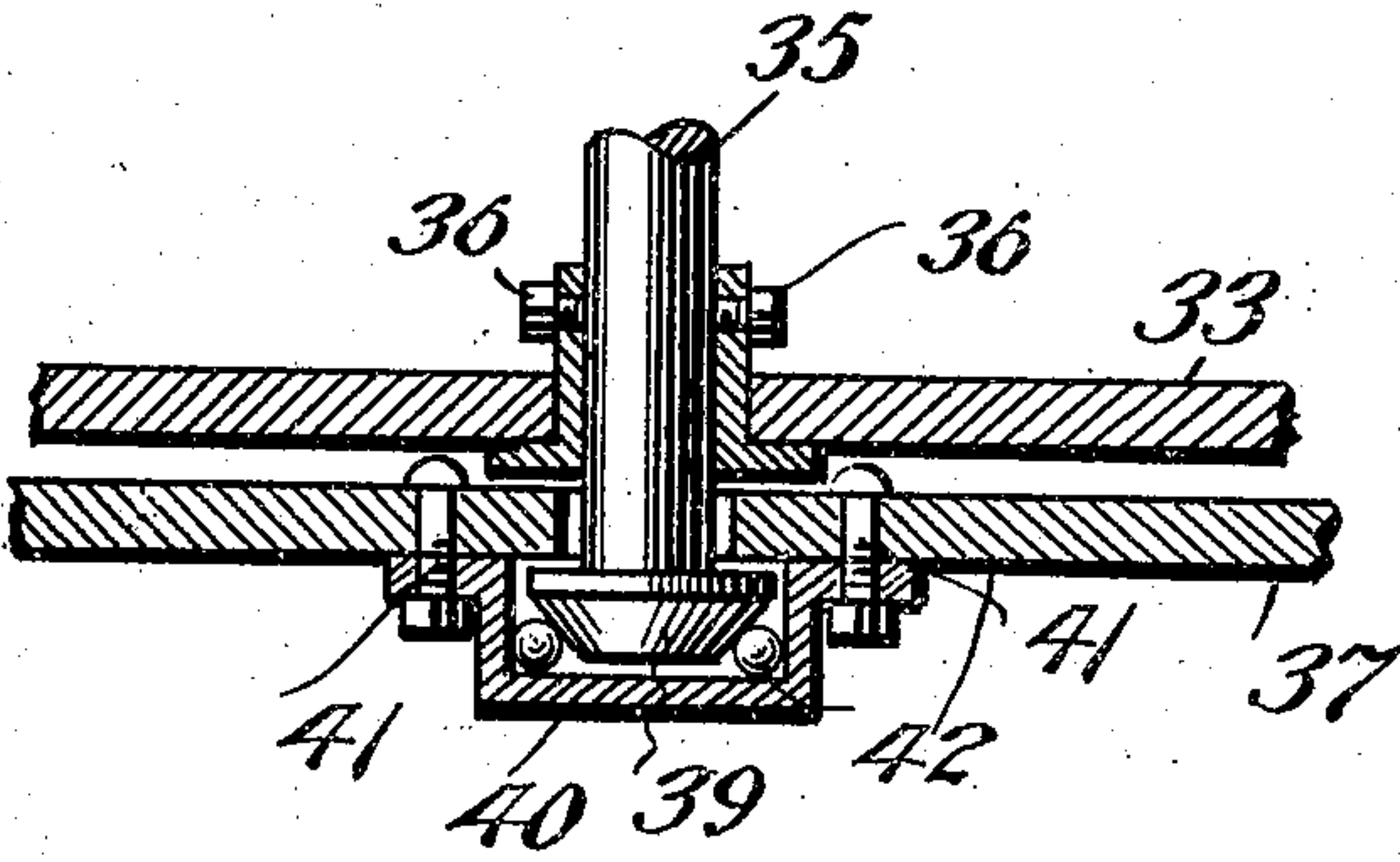
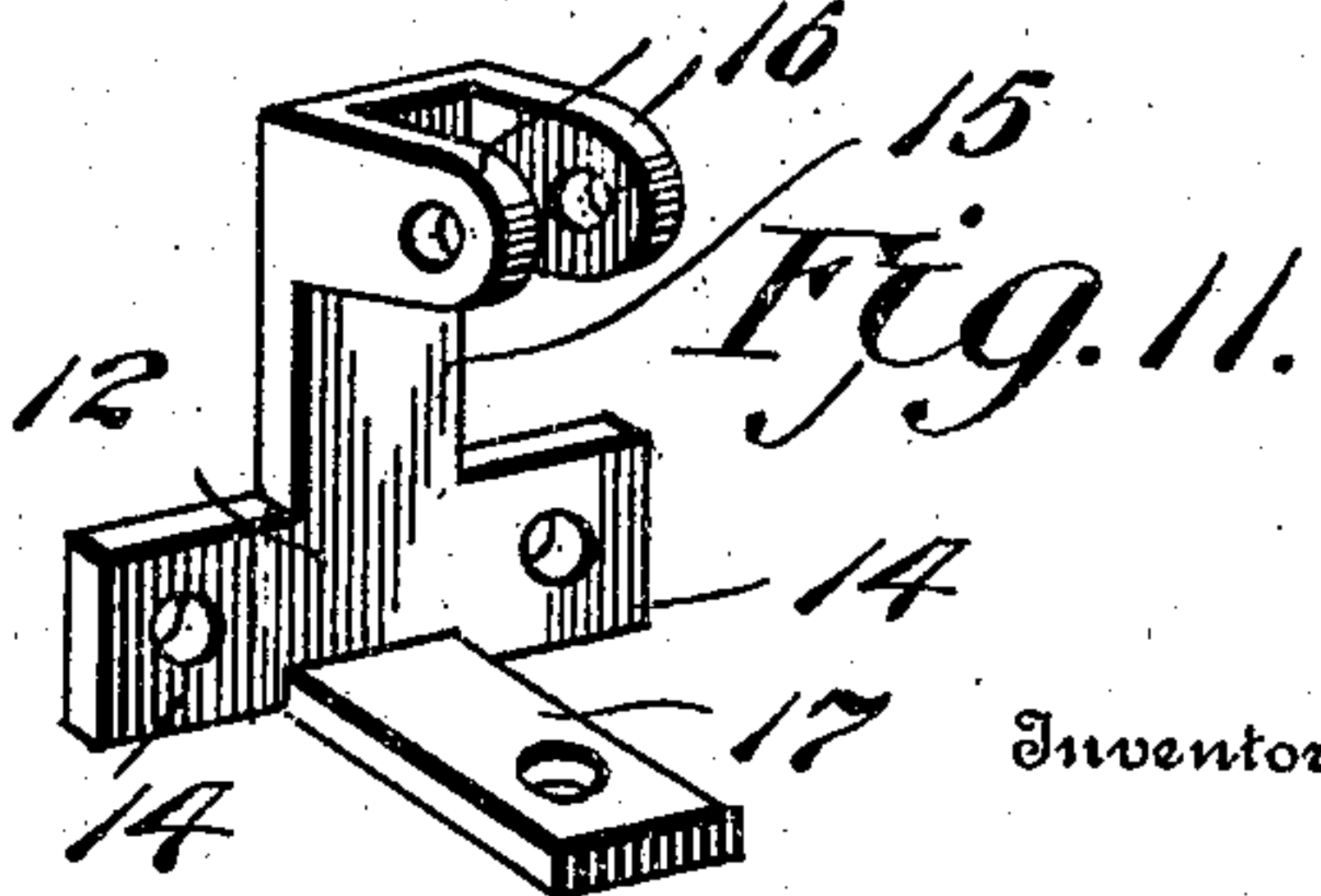


Fig. 11.



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ROUNABOUT.

No. 815,103.

Specification of Letters Patent.

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Application filed April 22, 1905. Serial No. 256,943.

To all whom it may concern:

Be it known that I, GUSTAV LEINERT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Roundabouts, of which the following is a specification.

This invention relates to pleasure apparatus of that class known as "carousels," "merry-go-rounds," or "roundabouts," the object of the invention being to provide a device of this class in which independent rotation is imparted to the seats or dummies as the apparatus as a whole rotates and in which the parts are constructed, combined, and arranged to produce an apparatus of maximum simplicity, strength, and durability.

With this and other objects in view the invention consists of the construction and combination of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a view in elevation of a roundabout embodying my invention. Fig. 2 is a substantially vertical transverse section of the same. Fig. 3 is a top plan view with the roof or cover removed. Fig. 4 is a detail section showing the lower bearing of the central shaft. Fig. 5 is a top plan view of the socketed head receiving the upper end of the central shaft. Fig. 6 is a vertical section through the rotary head, its supporting-collar, and the hub of the gear-ring. Fig. 7 is a similar view through one of the cross-arms, showing the bearing for the upper end of one of the seat-spindles and the hub of the gear which operates the spindles. Fig. 8 is a horizontal cross-section through one of the seat-supporting spindles and a top plan view of the bearing-head for the gear carried thereby, the said section being taken on line 8 8 of Fig. 7. Fig. 9 is a similar view taken on line 9 9 of Fig. 6. Fig. 10 is a vertical section through one of the seat-platforms, the cross-piece of the supporting-frame thereof, and the bearing for the lower end of the seat-spindle; and Fig. 11 is a detail perspective view of one of the brackets for securing the radial cross arms and braces to the frame-ring.

Referring to the drawings, the numeral 1 designates the central shaft of the apparatus, which is provided at its lower end with a conical journal 2, arranged to turn within a bearing-box 3, fitted within a suitable foundation-plate 4, antifriction-bearing balls 5 being interposed between the journal and wall of the

box to adapt the shaft to turn easily therein. The shaft has a rectangular upper end 6, which fits within a correspondingly-shaped socketed head 7, supporting the crown of the canopy roof or cover 8. The head 7 is formed with pairs of spaced ears 9, projecting radially from the periphery thereof, and rigidly attached to these ears are the inner ends of bracing bars or rods 10, which extend outwardly and downwardly from the head and are attached at their outer ends to a frame-ring 11 by means of attaching-brackets 12. As shown in Figs. 3 and 11, the ring 11 is provided at each point of attachment of a bracket 12 thereto with an inward offset 13, forming an exterior recess to receive the body portion of the bracket, which is provided with laterally-projecting apertured ears 14 for the passage of fastenings securing it to the offset portion 13. Each bracket 12 is also provided with an upwardly-extending arm 15, projecting above the offset portion 13 and formed with inwardly-projecting spaced ears 16, to which the outer end of the brace 10 is bolted or otherwise attached.

Secured at their outer ends to arms 17, projecting inwardly beneath the ring 11 from the bracket 12, are a series of radial cross-arms 18, which are attached at their inner ends to ears 19, projecting from a head 20, arranged to rotate upon a bearing-support encompassing the central shaft 1. As shown, this bearing-support comprises a supporting-collar 21, provided with an upwardly-extending bushing-sleeve 22, loosely surrounding the shaft and to the upper end of which is keyed, as indicated at 23, the hub 24 of a gear-ring 25, which effects the simultaneous rotation of the seats and their supporting-platforms, as hereinafter described. The lower face of the rotary head 20 and upper face of the collar 21 are grooved to form a raceway 26 for the reception of bearing-balls 27, while the upper face of the head and lower face of the hub 24 are correspondingly grooved to form a raceway 28 for the reception of bearing-balls 29, thus forming a double ball-bearing support for the head 20 to enable it to rotate with a minimum degree of friction about the support on the central shaft. The supporting-collar 21 is provided with depending arms or ears 30 for the attachment of the upper ends of upright braces or standards 32, which are fixed at their lower ends to the foundation-plates 4, thus rigidly supporting the collar and gear-ring 25

in position. It will thus be seen that the shaft 1, collar 21, and standards 32 form a rigid supporting structure, while the head 7, braces 10, ring 11, and cross-arms 18 form a rotary frame which revolves about said structure and with the central shaft.

The cross-arms 18 support a series of rotary platforms 33, each carrying one or more dummies or seats 34. As shown, each platform 33 is rigidly connected with a supporting-spindle 35, which spindle passes downward through a flanged sleeve 36', fitted in a central opening in the platform and suitably secured thereto and keyed or otherwise rigidly fixed to the spindle, as by means of set-screws 36. Below the platform 33 is arranged a cross-piece 37, suspended from the overhanging cross-arm 18 by hanger-rods 38, and below the sleeve 36 this cross-piece is formed with an opening through which the lower end of the spindle projects. The spindle terminates at its lower end in a conical head or journal 39, which turns within a bearing-block 40, flanged for the passage of bolts 41, securing it to the cross-piece. Bearing-balls 42 are arranged in this box to permit the journal 39 to turn easily therein. It will thus be seen that the cross-piece 37 and hangers 38 form a supporting-frame in which the lower end of the spindle 35 is journaled and that the platform 33 is rigidly connected to the spindle to rotate therewith. Preferably the upper ends of the outer hangers 38 pass through the arms 17 of the brackets 12 and outer ends of the cross-arms 18 and are provided with nuts to secure the same together, thus dispensing with the use of auxiliary and independent sets of fastenings.

The upper end of each spindle 35 is journaled in a bearing-sleeve 43, carried by the cooperating cross-arm 18, and this sleeve is formed at its upper end with a bearing plate or head 44. The spindle 35 has a rectangular extremity 45, fitting within a corresponding socket in the hub 46 of a gear-wheel 47, meshing with the gear-ring 25, the meeting faces of said bearing plate or head and hub being grooved to form a raceway 48 for the reception of bearing-balls 49 to adapt the spindle and gear-wheel to rotate with a minimum amount of friction. As shown in detail in Fig. 7, each cross-arm 18 is preferably formed of sections 18^a and 18^b, attached, respectively, at their inner and outer ends to the rotary-head 20 and frame-ring 11 and formed at their proximate ends with tenons or reduced extensions 18^c, fitting within sockets 50, carried by the bearing-sleeve 43 and rigidly fastened therein by bolts or rivets 51. The gear-wheels 47 of all the spindles 35 are arranged annularly between the gear-ring 25 and frame-ring 11 and mesh with said gear-ring, whereby as the rotating frame revolves with the central shaft 1 motion will be communicated to all the spindles to rotate

the several seat or dummy supporting platforms 33, thus providing an apparatus in which independent rotation is imparted to the seats as the apparatus as a whole rotates, thus giving a waltzing effect during the operation of the apparatus.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of my improved roundabout will be readily understood, and it will be seen that it provides an apparatus of this character which imparts independent rotation to the seat-supports in an effective manner and in which the parts are constructed, combined, and arranged to produce an apparatus of maximum simplicity, strength, and durability.

The central shaft 1 may be rotated by any approved type of driving means. In the present instance I have shown it provided at its lower end with a miter-gear 52, meshing with a similar gear 53 on a drive-shaft 54, which may receive motion from any suitable source of power.

Having thus described the invention, what is claimed as new is—

1. In a roundabout, the combination of a central shaft, a rotary frame supported thereby and turning therewith, a stationary bearing supported about the upper end of the shaft, a gear-ring rigidly connected with said bearing, a rotary head turning on said bearing and connected with the rotary frame, a series of seat-supports carried by the rotary frame, spindles journaled in said seat-supports and rotary frame, and ears attached to the upper ends of the spindles and meshing with the gear-ring.

2. In a roundabout, the combination of a central shaft, a stationary bearing arranged about the upper end of said shaft, a gear-ring rigidly connected with the stationary bearing, a rotary head journaled on the stationary bearing, a rotary frame connected with the shaft and rotary head, spindles journaled in said rotary frame, gears carried by the spindles and meshing with the gear-ring, and seat-supports carried by said spindles.

3. In a roundabout, the combination of a central shaft, a rigid supporting-frame carrying a supporting-collar arranged about the upper end of the shaft, a rotary head mounted on said collar, a rotary frame connected to and supported by the central shaft and rotary head, seat-supporting frames hung from the rotary frame, spindles journaled in the rotary frame and seat-supporting frame and carrying gears at their upper ends, seats connected with the spindles to rotate therewith, and a gear-ring fixed to said supporting-collar and meshing with the spindle-gears.

4. In a roundabout, the combination of a central shaft, a stationary frame, a collar arranged about the upper end of the shaft and supported by said frame, a gear-ring rigidly

connected with the collar, a head arranged to rotate upon the collar and between the same and the gear-ring, a rotary frame supported by the shaft and head, seat-supports, spindles carrying the same and journaled upon the rotary frame, and gears upon the upper ends of the spindles and meshing with the rigid gear-ring.

5. In a roundabout, the combination of a central shaft, a stationary frame, a collar arranged about the upper end of the shaft and supported by said frame, a gear-ring fixed to the collar, a rotary head mounted upon the collar and between the same and the gear-ring, a frame-ring, a supporting element fixed to the upper end of the shaft, braces connecting said supporting element with the frame-ring, cross-arms connecting the rotary head with the frame-ring, a series of pendent frames supported from the cross-arms, spindles journaled at their lower ends in the pendent frames and at their upper ends upon the cross-arms, seat-supports carried by the spindles, and gears upon the upper ends of the spindles meshing with the gear-ring.

6. In a roundabout, a central shaft, a stationary frame, a rotary head upon the stationary frame, a stationary gear element upon the stationary frame, a rotary frame connected with the shaft and head, a series of seat-supporting spindles carried by the rotary frame, and gears carried by said spindles meshing with the stationary gear upon the stationary frame, whereby the spindles are rotated in unison from and about the stationary frame as the rotary frame revolves.

7. In a roundabout, a central shaft, a stationary frame having a bearing disposed about the upper portion of the shaft, a stationary gear supported by the frame above said bearing, a collar rotatable on said bearing, a rotary frame connected with the central shaft and collar, spindles on the rotary frame, and gears carried by said spindles and meshing with said stationary gear.

8. In a roundabout, a central shaft, a stationary frame having a bearing portion, and a bushing surrounding the upper portion of the shaft, a stationary gear fixed to said bushing, a collar rotatable between the bearing and gear and about the bushing, a rotary frame connected with the shaft and collar, a series of seat-supporting spindles carried by the rotary frame, and gears carried by said spindles and meshing with said stationary gear.

9. In a roundabout, a central shaft, a stationary frame provided with a supporting portion, a bearing disposed about the upper portion of the shaft, a rigid gear carried by said supporting portion, a revoluble collar supported by said bearing, a rotary frame connected with the shaft and collar, a series of seat-supporting spindles carried by the ro-

tary frame, and gears carried by said spindles meshing with the stationary gear.

10. In a roundabout, a central shaft, a stationary frame, a rotary head upon the stationary frame, a frame-ring, sectional cross-arms connected with the rotary head and frame-ring, coupling members connecting the sections of the cross-arms and provided with bearings, seat-supporting spindles journaled at their upper ends in said bearings, gears carried by said spindles, and a fixed gear upon the stationary frame for communicating motion to said spindles.

11. In a roundabout, a central shaft, a stationary frame, a rotary head on the stationary frame, a frame-ring, cross-arms connecting the rotary head with the frame-ring, each of said cross-arms being composed of two sections, couplings connecting the sections and provided with bearing-sleeves and bearing-heads, seat-supporting spindles journaled at their upper ends in said bearing-sleeves, gears carried by said spindles, antifriction-bearings between said gears and the bearing-heads, and a fixed gear carried by the stationary frame and meshing with said spindles.

12. In a roundabout, a central shaft, a stationary frame, a rotary head upon the stationary frame, a rotary frame connected with the shaft and head, a fixed gear carried by the stationary frame, rods depending from the supporting-frame and carrying cross-pieces provided with openings, bearing-sockets disposed upon the cross-pieces below said openings, seat-supporting spindles journaled at their upper ends in the rotary frame and at their lower ends in said sockets, antifriction-bearings for the journaled portions of the spindles, and gears upon the upper ends of the spindles meshing with said stationary gear upon the stationary frame.

13. In a roundabout, a central shaft, a sleeve or socket rigidly mounted upon the upper end of the shaft, a stationary frame, a rotary head supported by said stationary frame adjacent to and below said socket, a frame-ring, cross-arms between the rotary head and frame-ring, brackets having body portions fixed to the frame-ring, inwardly-extending arms connected with said cross-arms, and also having portions projecting above the frame-ring and provided with ears, braces between the sleeve or socket and ears of the bracket, a stationary gear upon the stationary frame, a series of seat-supporting spindles journaled in the rotary frame, and gears carried by said spindles and meshing with said stationary gear.

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

GUSTAV LEINERT.

Witnesses:

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ELIZABETH LEINERT.