

No. 848,408.

PATENTED MAR. 26, 1907.

J. M. TAYLOR.
ROUNDAABOUT OR CAROUSEL.

APPLICATION FILED SEPT. 26, 1906.

5 SHEETS—SHEET 1.

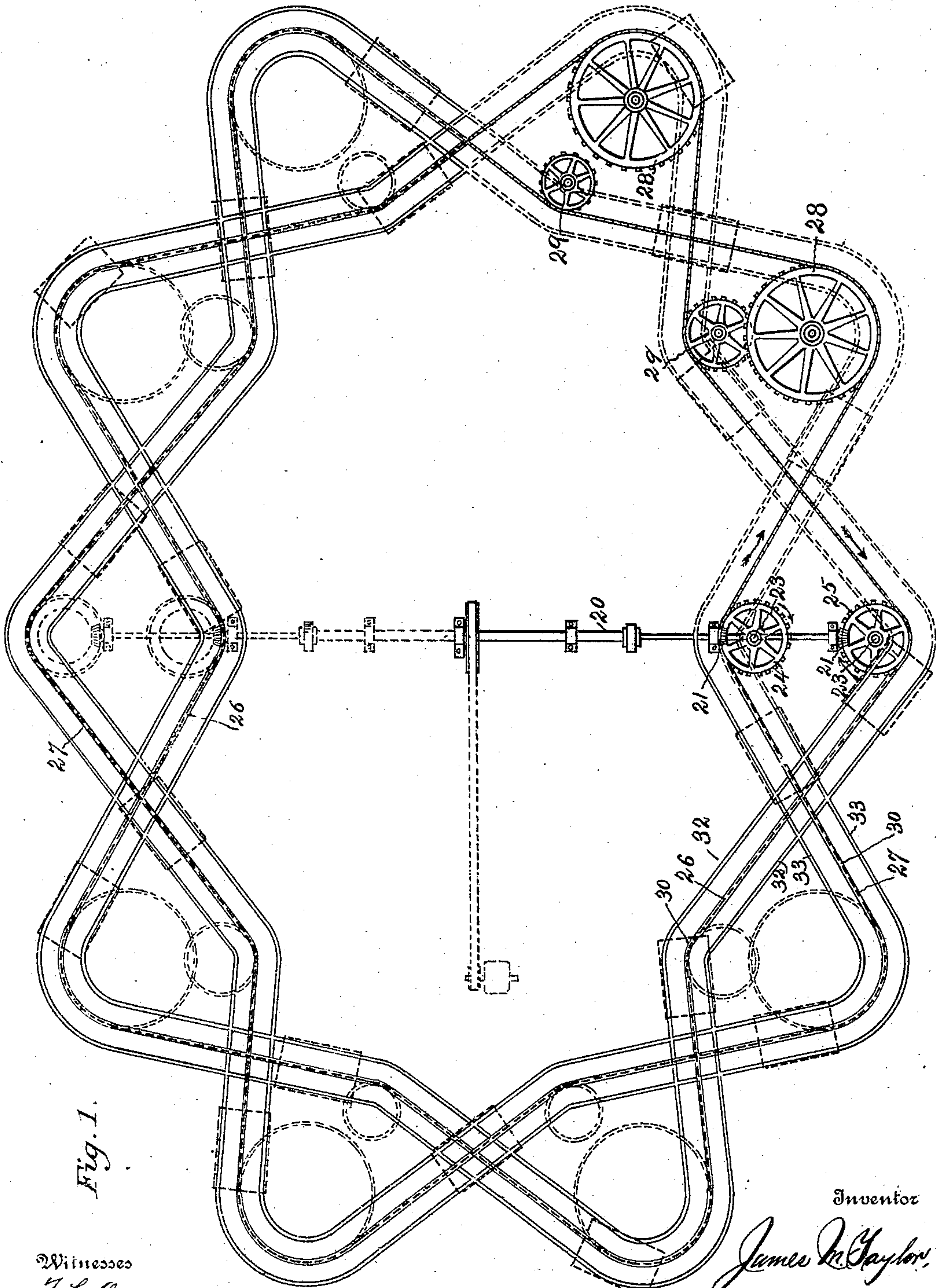


Fig. 1.

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5 SHEETS—SHEET 2.

Fig. 2.

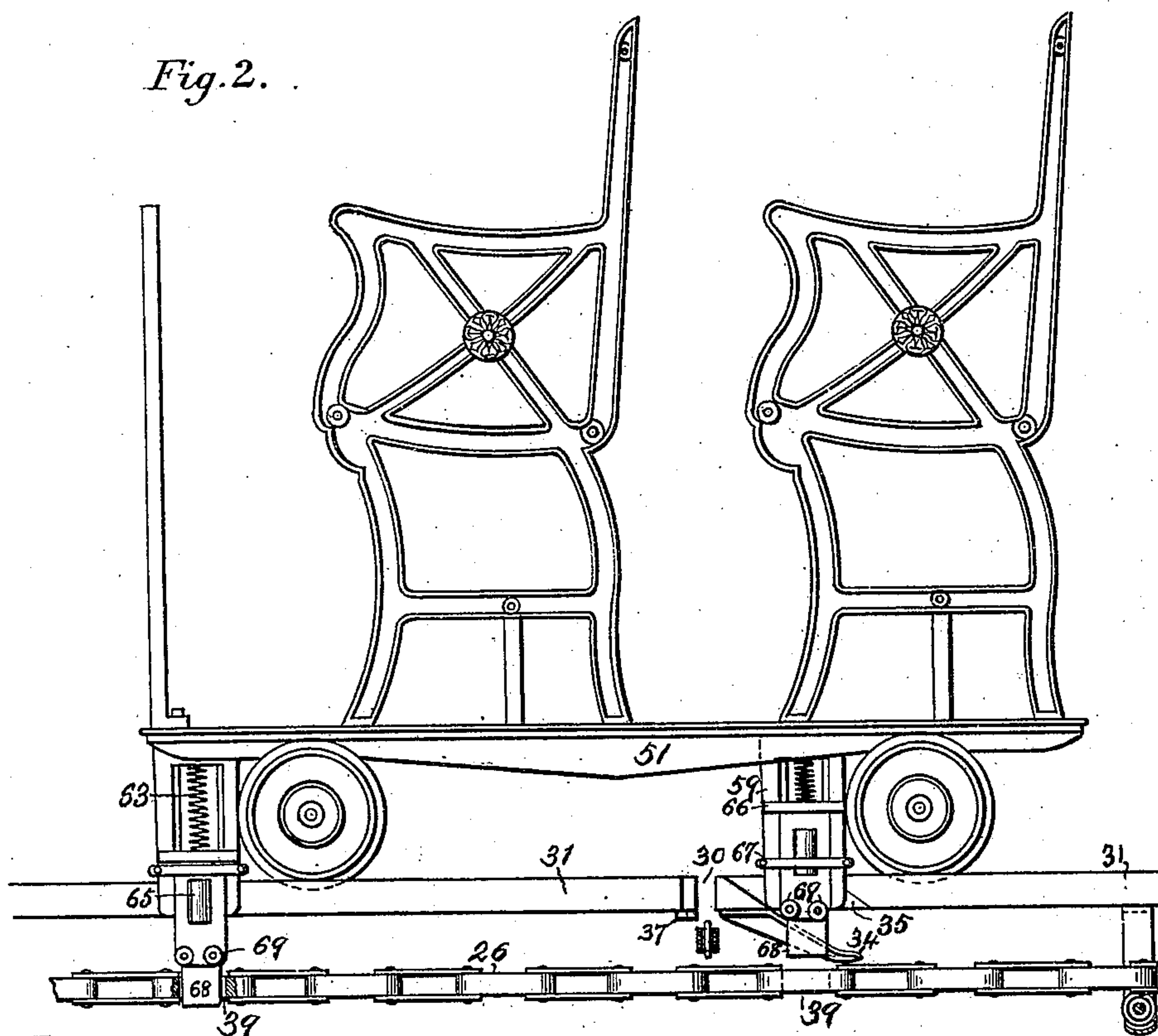
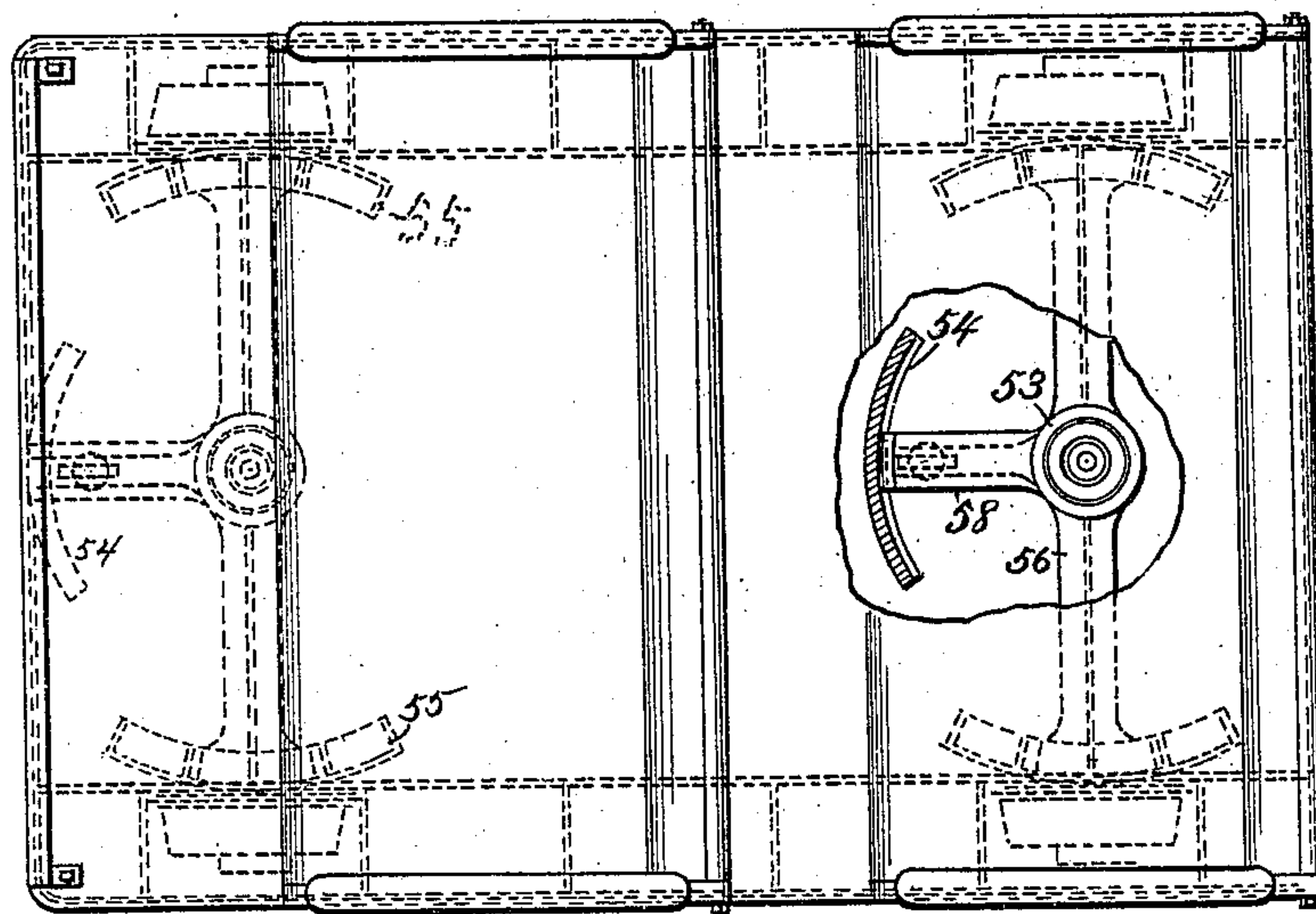


Fig. 3



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5 SHEETS—SHEET 3.

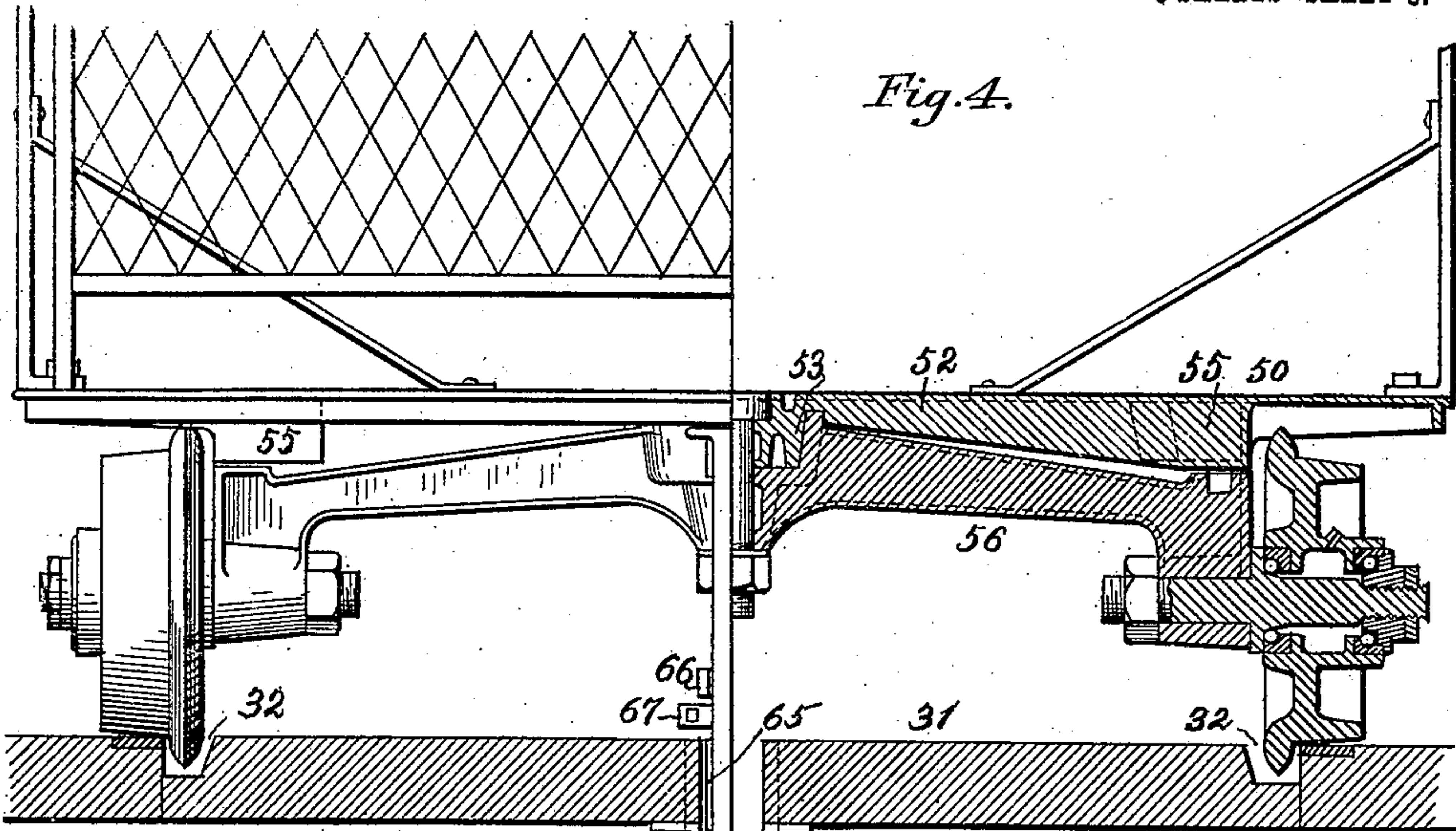


Fig. 6.

Fig. 5.

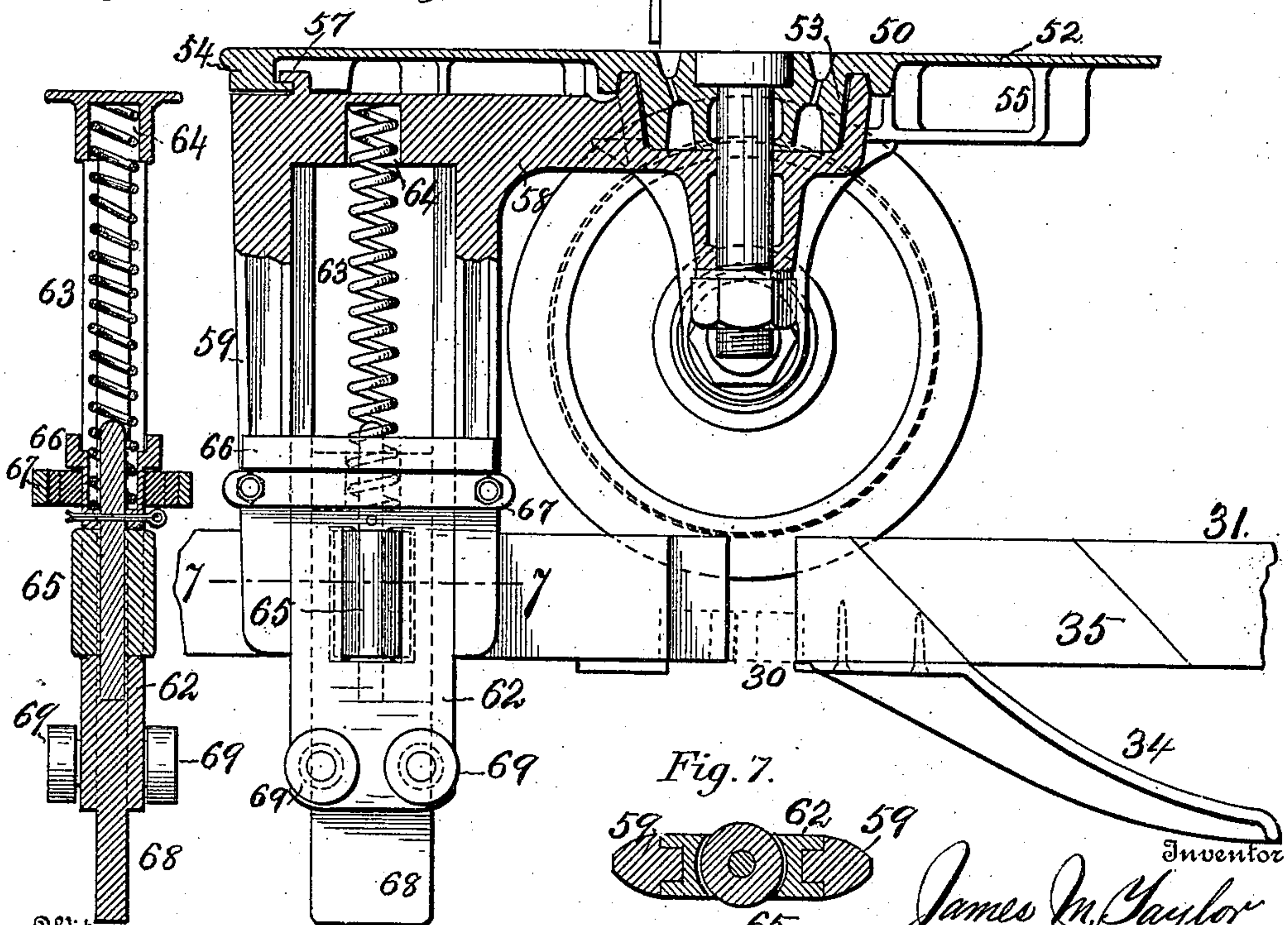
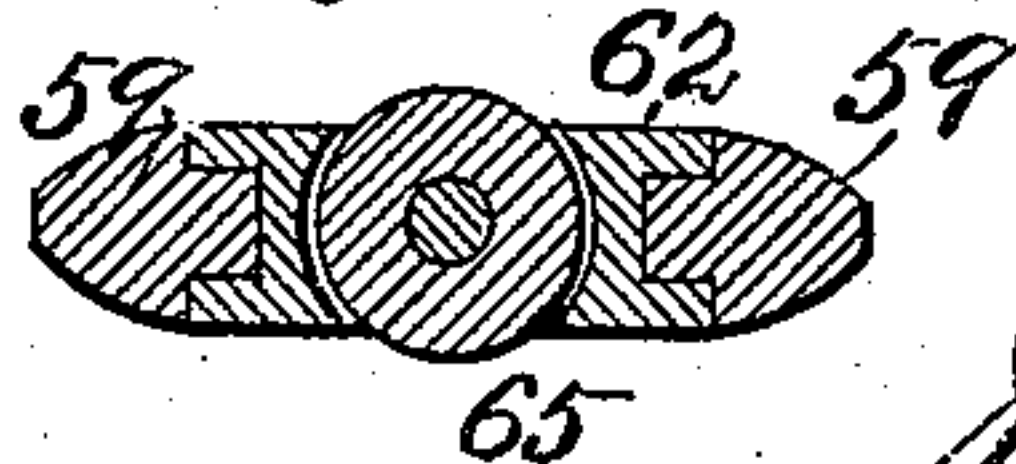


Fig. 7.



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6 SHEETS—SHEET 4.

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Fig. 9.

26

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6 SHEETS—SHEET 6.

Fig. 12.

Fig. 11

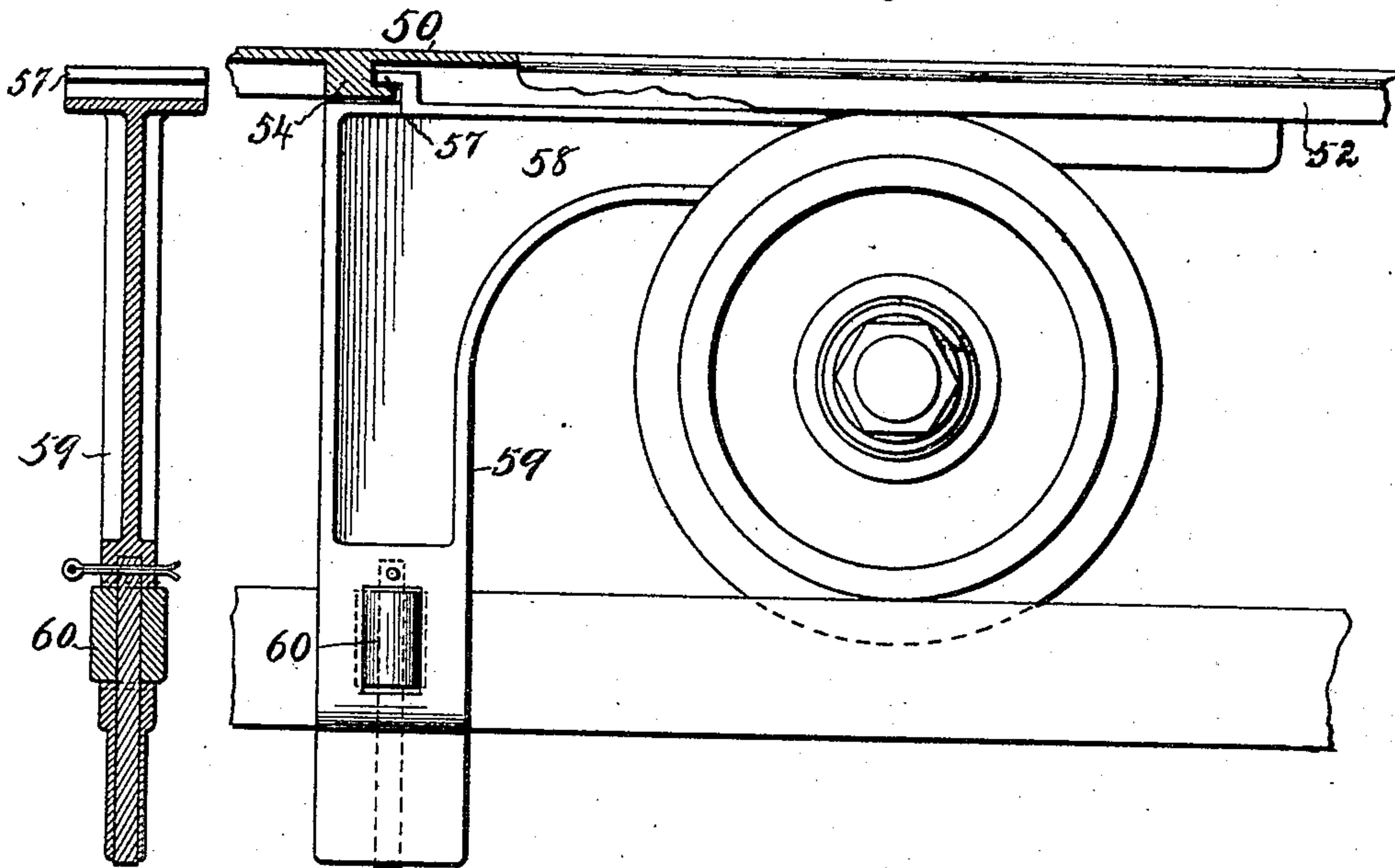


Fig. 14

Fig. 13

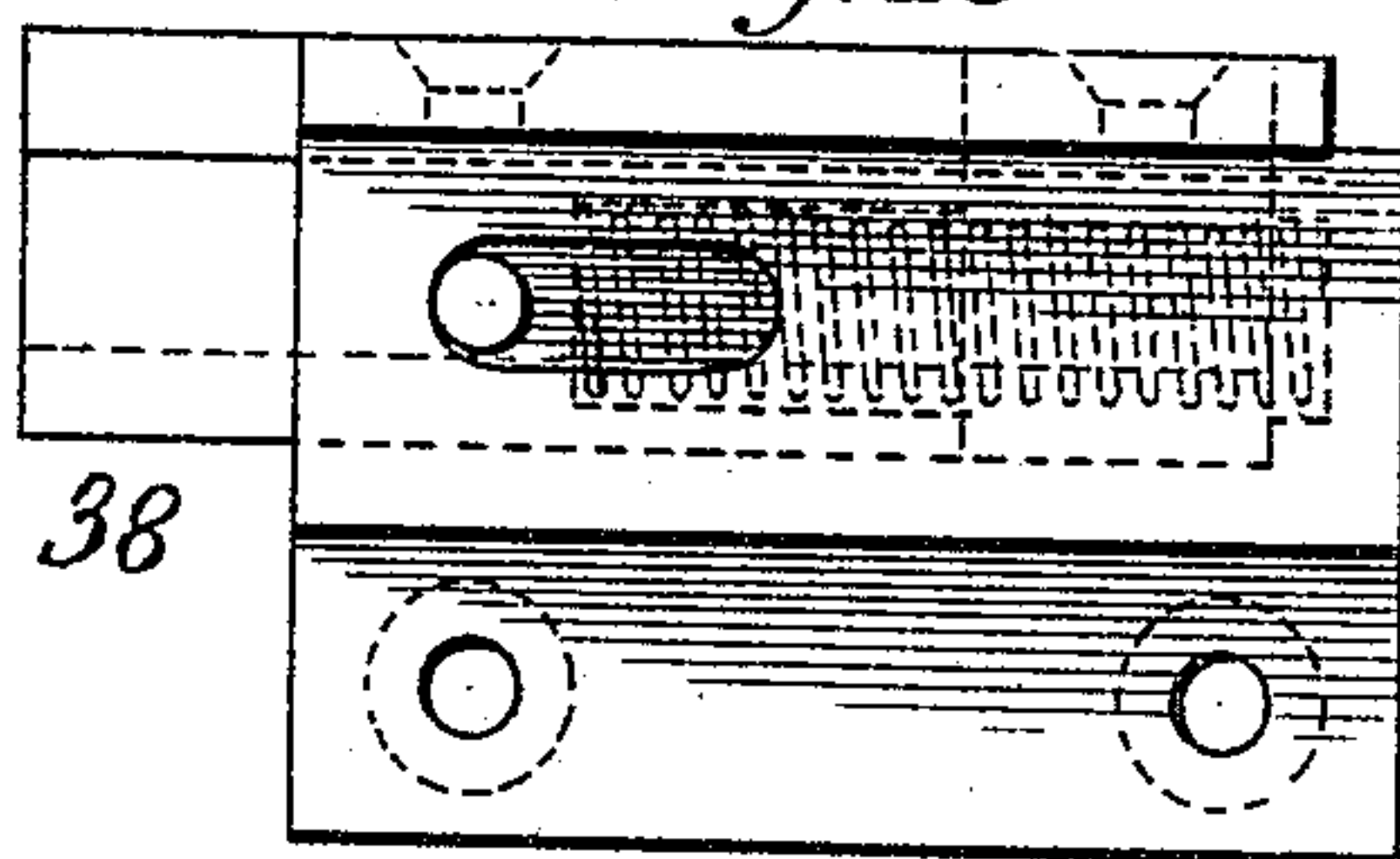
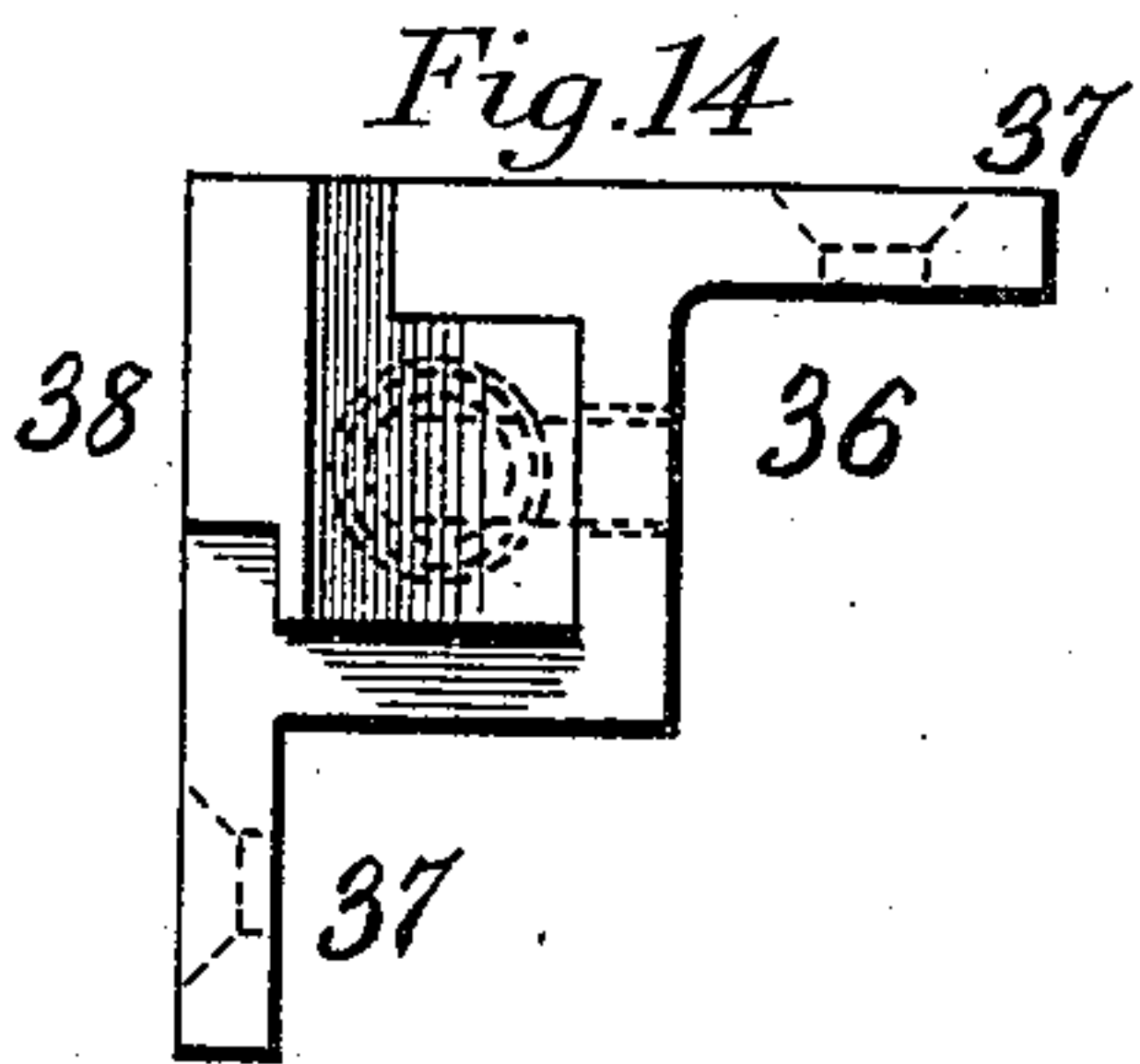
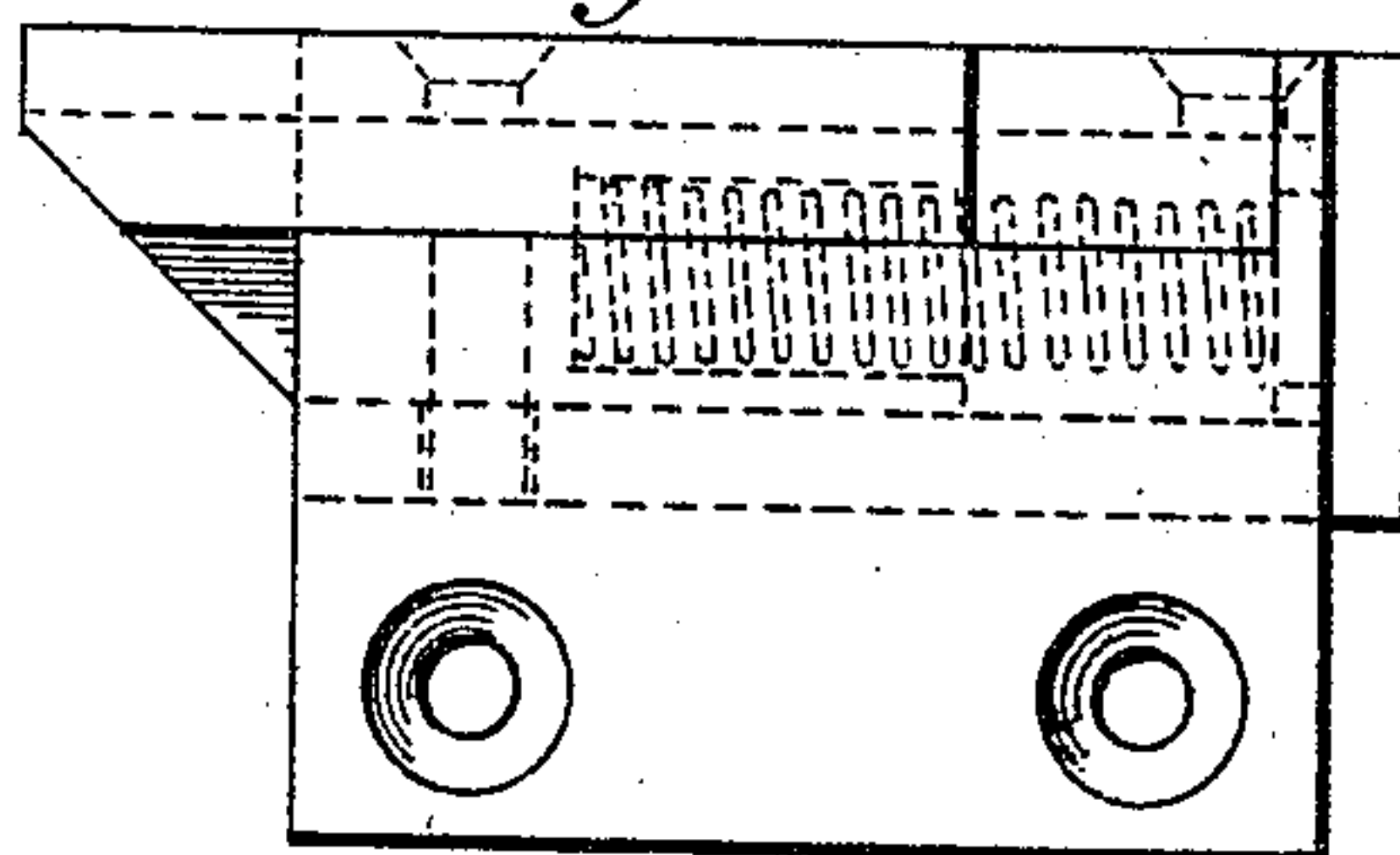


Fig. 15



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UNITED STATES PATENT OFFICE.

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ROUNABOUT OR CAROUSEL.

No. 848,408.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed September 26, 1906. Serial No. 336,272.

To all whom it may concern:

Be it known that I, JAMES M. TAYLOR, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful
5 Improvements in Roundabouts or Carousels, of which the following is a specification.

This invention appertains to improvements in amusement apparatus, as roundabouts or carousels, and provides a passenger-carrying device in which two series of trucks are moved in opposite directions upon sinuous tracks or ways, the trucks being moved by continuous drive chains or cables
10 maintained on different horizontal planes below the tracks or ways for the trucks, the drive-chains crossing at frequent intervals and the trucks having means whereby they are at all times held in engagement with the
20 moving drive-chains.

In the accompanying drawings, which show a roundabout or carousel made in accord with my invention, Figure 1 is a diagrammatical or plan view, part of the floor or platform being broken away to show part of the driving mechanism in full lines. Fig. 2 is a side elevation, partly in section, of one of the trucks or passenger-carriers, such truck having means in duplicate for engagement with the lower drive-chain, the truck being shown positioned above a crossing. Fig. 3 is a plan view, partly broken away, of the truck or passenger-carrier shown by Fig. 2. Fig. 4 is a combined front elevation and
35 section of the truck, the section also including a part of the floor or platform. Fig. 5 is a side elevation, partly in section, of a part of the truck shown in Fig. 2 and the drive-chain-engaging means attached thereto. Fig. 6 is a vertical section of the drive-chain-engaging means shown in Fig. 5. Fig. 7 is a cross-section on the line 7 7, Fig. 5. Fig. 8 is a combined section and elevation of a part of the driving mechanism for the drive-chains, including a part of the floor or platform. Figs. 9 and 10 are plan and side views of the drive-chains. Fig. 11 is a side elevation, partly in section, of a part of one of the trucks and the chain-engaging means that
45 engages the upper drive-chain. Fig. 12 is a vertical section of the chain-engaging means

shown by Fig. 11; and Figs. 13, 14, and 15 are side, plan, and end elevations of slot-closers that are attached to the floor or platform at the crossings where the slots through
55 the same intersect.

In an amusement apparatus having the characteristics of a roundabout or carousel and in addition thereto two series of passenger-carriers that travel in opposite directions
60 on sinuous and intersecting ways that are on the same horizontal plane it is desirable that the entire driving mechanism be located beneath the platform, and it is essential that the passenger-carriers of each series be main-
65 tained the same distance apart and that the moving parts be so proportioned that the passenger-carriers cannot meet at the intersection of the ways.

An amusement apparatus made in accord
70 with my invention has sinuous ways or tracks, a typical arrangement being shown by Fig. 1 of the drawings, and by reference thereto it will be seen that the device as illustrated has ten trucks or passenger-carriers that are
75 moved upon sinuous tracks by an unbroken or continuous chain or cable, and upon a similar track or way that intersects at intervals the first-mentioned track there are a like number of trucks that are caused to
80 travel in an opposite direction by another chain or cable that is driven at the same rate of speed, the driving-chains being on different horizontal planes, and in the typical arrangement shown it will be noted that the
85 tracks or ways and the driving-chains cross at ten different points, also that the direction of travel is varied ten times in making a single circuit.

Referring to Figs. 1 and 8 of the drawings, 90 the main driving-shaft 20 is provided with a pulley, over which passes a belt that also engages the drive-pulley of a motor or a pulley on another shaft. The shaft 20 is connected at each end by means of reducing joints or
95 couplings to smaller shafts, to which are fastened pinions 21, that engage the teeth of gear-wheels 22, that are fixedly attached to shafts 23. The two shafts 23 are both driven the lower ends of vertically-maintained
100 in the same direction and have secured thereto sprocket-wheels 24 and 25, one of the

sprockets 25 being maintained on a horizontal plane that is above the plane of the sprocket-wheel 24. The pinions 21, gears 22, shafts 23, and sprocket-wheels 24 and 25 are duplicated on both ends of the shaft 20, with the single exception of the shafts 23 and sprocket-wheels carried thereby, for on one side of the drive-pulley on the shaft 20 the higher sprocket-wheel 25 is driven by the pinion on the outer end of the shaft 20, and on the other side of the drive-pulley the corresponding sprocket is driven by the inner pinion. The continuous chains 26 and 27 each engage their respective sprocket-wheels 24 and 25, so that such chains will be driven from two distant points in opposite directions, and in order to cause the chains 26 and 27 to travel in circuitous routes and cross at intervals after the manner shown by Fig. 1 of the drawings there are provided a plurality of guide sprocket-wheels, and in the plan shown there are present eight large sprocket-wheels 28, four sprocket-wheels of the same size as the sprocket-wheels 24 and 25, and four smaller guide sprocket-wheels 29, such sprockets being carried by vertical shafts that are supported by eccentrically-adjustable bearing-boxes that admit of the shafts carrying the sprockets being adjusted to tighten the chains 26 and 27 without moving the chains out of alinement with the slots 30 through the platform 31.

The continuous chains 26 and 27, that are driven each by two sprocket-wheels on the shaft 20, are preferably constructed as shown by Figs. 9 and 10, such chains having side links made up of flat bars, and between such links pass the teeth of the driving and of the guide sprocket-wheels to engage the rounded ends of the one-piece links, and at proper intervals there are inserted special links 39, that are slightly wider than the other solid links, they also being provided at the ends of the openings therethrough with inclined or rounded end walls for the purpose of more readily guiding the coupling means attached to the trucks therethrough. The special links 39 are spaced on the lower chain 26 so that they will be the same distance apart as the chain-engaging couplings on the trucks that travel on the tracks or ways 32, each pair of special links being the same distance apart as the distance between the trucks. The special links for the upper chain 27 are not arranged in pairs, but are merely spaced so that they are present at a distance that equals the distance between the trucks that are driven by such chain. The couplings or clutches on the main shaft 20 are present to provide means whereby the smaller end sections may be attached to the larger central portion and to connect the shafts, so that one may be disconnected when placing the chains 26 and 27 in place. The tracks or ways 32

and 33 are parallel with the slots above the continuous chains 26 and 27, the platform or floor 31 having recesses for the flanges of the wheels of the trucks, and adjacent to the recesses are rails or flat bars for the treads of the wheels.

The platform or floor 31 has secured to its under side, between the tracks or ways 32 and adjacent to each crossing, depending releasing-brackets 34, and the platform 31 adjacent to the side walls of the slot 30 is cut away above the brackets 34 to provide recesses 35, through which may pass vertically-maintained rollers attached to the chain-engaging devices that depend from the bolsters of the trucks that travel on the tracks or ways 32.

The slot through which passes the couplings or chain-engaging devices attached to the trucks that travel on the tracks or ways 33 is provided adjacent to the crossings with slot-closers, as shown by Figs. 13, 14, and 15, the same consisting of frames 36, with flanges 37 and a housing for a spring-projected movable member or slide 38, which when projected extends about half-way across the slot, two of such slot-closers being applied at each crossing. The slides of the slot-closers have beveled or inclined ends, and against such inclined portions the coupling-pins, that engage the chain 27, strike, so that the slides will be pushed into the housings by the rollers carried by such pins, and when the movable sections of the coupling-pins that engage the chains 26 are raised by the releasing-brackets 34 the lower rollers carried by such pins will ride upon the slot-closers until the intersecting slot is passed.

The framing that supports the platform or floor 31, the shaft-bearings, the motor, and other parts may be of any suitable construction, and at intervals to the under side of the platform there may be attached hangers or chain-guides, the side pieces of such hangers carrying centrally-grooved rollers, with which the chains will contact and over which the lower ends of the coupling-pins will pass. The chain hangers or supports in practice are located between two of the guide sprocket-wheels or otherwise than where the chains cross.

The platforms 50 and 51 of the trucks or passenger-carriers are provided with seats and fenders, and to or on the under side of such platforms are bolster-bearings 52, that are centrally apertured for king-bolts, and adjacent center-bearings 53 the platforms are also provided with guideways 54 and 55, that are concentric to the king-bolts. The transverse portions of the swinging bolsters 56 below the segmental guideways 55 have depending portions that are apertured for the reception of the inner ends of spindles, upon which are secured the wheels of the trucks. The bolsters have forwardly-extending arms or

members 58. The forward ends of such arms bear against the guideways 54, the lips 57 entering the recesses, as shown in Fig. 5.

The trucks or passenger-carriers that travel 5 on the ways or tracks 33 have the forwardly-projecting members 58 of the swinging bolsters 56 shaped to provide depending members or chain-engaging pins 59, (see Figs. 11 and 12,) the lower ends that extend below 10 the slots, being somewhat flattened to enter the openings in the special links 39 of the chains 27, and above such chain-engaging part, to be opposite the side walls of the slot, there are rollers 60, that lie in recesses and 15 turn on vertical pins. The rollers 60 not only serve as guides for the swinging bolsters, but they also assist in pushing to one side the slot-closers. The trucks that travel on the trucks 33 may be provided with either 20 one or two coupling devices, for in operation the tracks that are drawn by the upper chain 27 are always in engagement with such chain.

Each of the bolsters for the trucks that travel on the tracks or ways 32 have chain- 25 engaging members that are of similar construction, for it is essential that one of the couplings be in engagement with the lower chain 26 at all times to avoid any forward or backward movement of such trucks independent of the chain. The depending 30 chain-engaging members of the bolsters for the trucks that travel on the tracks 32 have depending members 59 of a length sufficient to extend to the under side of the slot, and 35 the adjacent faces of the depending members 59 are provided with tongues to receive the recessed front and rear edges of vertically-movable chain-engaging members or couplings 62, which are depressed by a spring 63. 40 The upper end of the spring 63 lies in a recess 64, formed in the swinging bolster, and the lower end overlies the upper end of a vertical pin upon which a roller 65 turns. The upper part of the movable member 62 of 45 the coupling has a head 66, that engages tie-bars or clamps 67, which are bolted to the depending members 59 of the bolsters. The tie-bars are so spaced that the sliding member 62 and the vertical roller 65 may pass between the bars when moved upward, the ends 50 of the head 66 bearing on the tie-bars adjacent to their ends. The coupling member 62 carries above its reduced link-engaging end 68 rollers 69, the rollers being spaced farther 55 apart than the width of the slot, and in practice when the trucks approach a crossing the rollers on the first chain-coupling will engage the inclined brackets 34, such engagement raising the movable section 62, and as such 60 section moves upward the roller 65 will pass through the recess 35 and above the slot. The rollers 69 are carried upward and forward on the brackets 34, and before the rear roller has left the bracket the front roller will 65 have engaged short supports which may be

parts of the slot-closers or attached plates, the movable member of the coupling device being held raised until beyond the intersecting slot, when it descends and engages 70 the same link of the drive-chain from which it was withdrawn. After the first coupling device has passed the intersecting slot and engaged the drive-chain the second coupling device engages the bracket and is lifted over 75 the upper drive-chain. By providing the trucks that are driven from the lower chain with two coupling devices, one being at all times in engagement with the drive-chain, I provide means whereby the trucks move at 80 all times with the chain.

Instead of using chains, as shown, I may use cables with projections attached, and in such case the construction of the couplings will be modified, and it will be obvious that 85 any suitable coupling may be used to connect the trucks or other passenger-carriers to the upper chain.

A roundabout or circuit pleasure-railway may have the slots, tracks, and the driving mechanism arranged or placed different from 90 what is shown by the drawings, and such plan may be departed from and still be within the scope of my invention. The drawings illustrate a roundabout or circuit railway having ten cars or passenger-carrying trucks 95 connected to each drive-chain, the chains being about one hundred and eighty feet long and are driven in opposite directions at a rate that will move the cars at a speed of 10.25 miles per hour when the motor is run- 100 ning at its usual speed. The cars or passenger-carriers are spaced on each chain about eighteen feet apart.

I claim—

1. In a device of the character described, 105 two continuous and oppositely-driven chains maintained one above the other and crossing at intervals, a platform having therethrough slots which are located above the chains, passenger-carriers for each drive-chain, means 110 for positively connecting the upper one of the carriers to one of the drive-chains and means for connecting the other passenger-carrier to the other drive-chain at two separate and distinct points so that the carriers 115 will both be in constant engagement with their drive-chains.

2. In a device of the character described, two sinuously-supported endless chains maintained on different planes and guided to 120 cross at intervals, means for driving the chains at the same speed, a platform above the chains, slots through the platform, passenger-carrying trucks that travel on the platform above the slots, chain-engaging 125 means attached to the trucks and means attached to the under side of the platform with which the chain-engaging means for the lower chain contacts to successively release the same adjacent to the crossings. 130

3. In a device of the character described, a platform having two sinuous intersecting tracks or ways thereon, slots through the platform between the tracks or ways, a pair
5 of drive-chains below the slots, means for driving the chains in opposite directions at the same rate of speed, passenger-carriers mounted on the tracks or ways and provided with chain-engaging devices and means ad-
10 jacent to each crossing for successively disconnecting the chain-engaging devices of one of the passenger-carriers from its drive-chain.

4. In a device of the character described, a platform having thereon two sinuous sets of
15 tracks or ways, two sinuous slots through the platform between the tracks or ways, two continuous chains that are driven in opposite directions and are maintained on different planes below the slots, passenger-car-
20 riers that travel on the tracks or ways and means for maintaining each of the passenger-carriers in engagement with the continuous chains.

5. In a device of the character described, a
25 platform having thereon a plurality of sinuous and intersecting ways, slots between the ways, continuous chains maintained one above the other and beneath their respective slots, means for driving the chains in oppo-
30 site directions and at the same speed, passenger-carriers that travel on the ways and means attached to the passenger-carriers for engagement with the continuous chains.

6. In a device of the character described, a
35 platform having therethrough sinuous and intersecting slots, continuous chains below the slots, passenger-carrying trucks that travel on the platform and are provided with chain-engaging means that extend through
40 the slots, and means for disconnecting and holding raised the chain-engaging means of one of the trucks before the same reaches a crossing.

7. In a device of the character described,
45 two continuous drive-chains mounted to travel in opposite directions and to cross on different planes, two trains of passenger-carrying trucks; means for positively coupling the trucks of one of the trains to the upper
50 chain, two coupling devices on each of the trucks of the other train for detachable engagement with the lower chain, and means adjacent to where the chains cross for suc-
55 cessively disconnecting the couplings from the lower chain.

8. In a device of the character described, two continuous chains, driving and guiding mechanism for said chains, the driving and
60 guiding mechanism for one of the chains being on a different plane from the driving and guiding for the other chain; the guide mechanism being arranged to carry the chains in sinuous and crossed routes, a platform hav-
65 ing slots therethrough in line with the chains, and two series of trucks that travel in trains

upon the platform the trucks of one train having means for connecting the same to one of the chains and the trucks of the other train having duplicated coupling means for en-
70 gagement with the lower chain, and means for automatically and successively disconnecting the couplings that engage the lower chain therefrom and holding such couplings above the plane of the upper chain.

9. In a device of the character described, a
75 drive-shaft, sprocket-wheels maintained on different horizontal planes and in gear with the drive-shaft, two continuous chains that engage and are driven in opposite directions
80 by the sprocket-wheels, a plurality of guide-sprockets for each of the chains, a platform having therethrough slots which are in line with the chains, two trains of passenger-car-
85 riers that are adapted to travel upon the platform; one train over each slot, chain-engag-
ing means which depend from the trucks of one of the trains for engagement with the up-
per driven chain, and two chain-engaging
90 devices having movable lower sections attached to the trucks of the other passenger-carriers for engagement with the lower chain, and fixed means for elevating the movable
95 sections of such chain-engaging devices.

10. In a device of the character set forth, a
95 platform or floor having ways or tracks for two trains of passenger-trucks, sinuous slots between the ways, a plurality of sprocket-
wheels arranged on different horizontal
100 planes beneath the platform and between the points of intersection of the slots, two continuous chains that engage the sprocket-
wheels and cross each other at points corre-
sponding with the points of intersection of
105 the slots and means for connecting the passenger-carrying trucks to the chains and
maintaining them in fixed relation thereto.

11. In a device of the character set forth,
two continuous chains, mechanism for sup-
110 porting and driving the chains in sinuous and intersecting paths and in opposite direc-
tions at the same rate of speed; the chains being maintained on different horizontal planes,
a platform with tracks or ways and slots
115 above the chains, a train of passenger-carrying trucks each truck thereof having attached
thereto a single chain-engaging device for con-
necting the same to the upper chain, a sec-
ond train each of the trucks thereof having a
pair of vertically-movable chain-engaging
120 devices for connecting the trucks to the lower
chain, and means below the platform for consecutively engaging and elevating above
the plane of the upper chain the chain-engag-
ing devices for the lower chain.

12. In a device of the character described,
125 passenger-carrying trucks having front and rear bolsters to which are attached support-
ing-wheels, forwardly-extending portions at-
tached to the bolsters and provided with de-
130 pending members, and movable chain-engag-

ing parts carried by and depending below such members.

13. In a device of the character described, passenger-carrying trucks having bolsters with depending portions, vertically-movable chain-engaging members attached to the depending portions of the bolsters, springs for depressing the chain-engaging members

and rollers attached to the movable members above their lower ends, for the purpose set forth.

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Witnesses:

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MAUDE R. ORD.

It is hereby certified that in Letters Patent No. 848,408, granted March 26, 1907, upon the application of James M. Taylor, of Omaha, Nebraska, for an improvement in "Roundabouts or Carousels," an error appears in the printed specification requiring correction, as follows: Page 1, lines 99 and 100 should be transposed; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 28th day of May, A. D., 1907.

[SEAL.]

E. B. MOORE,
Acting Commissioner of Patents.