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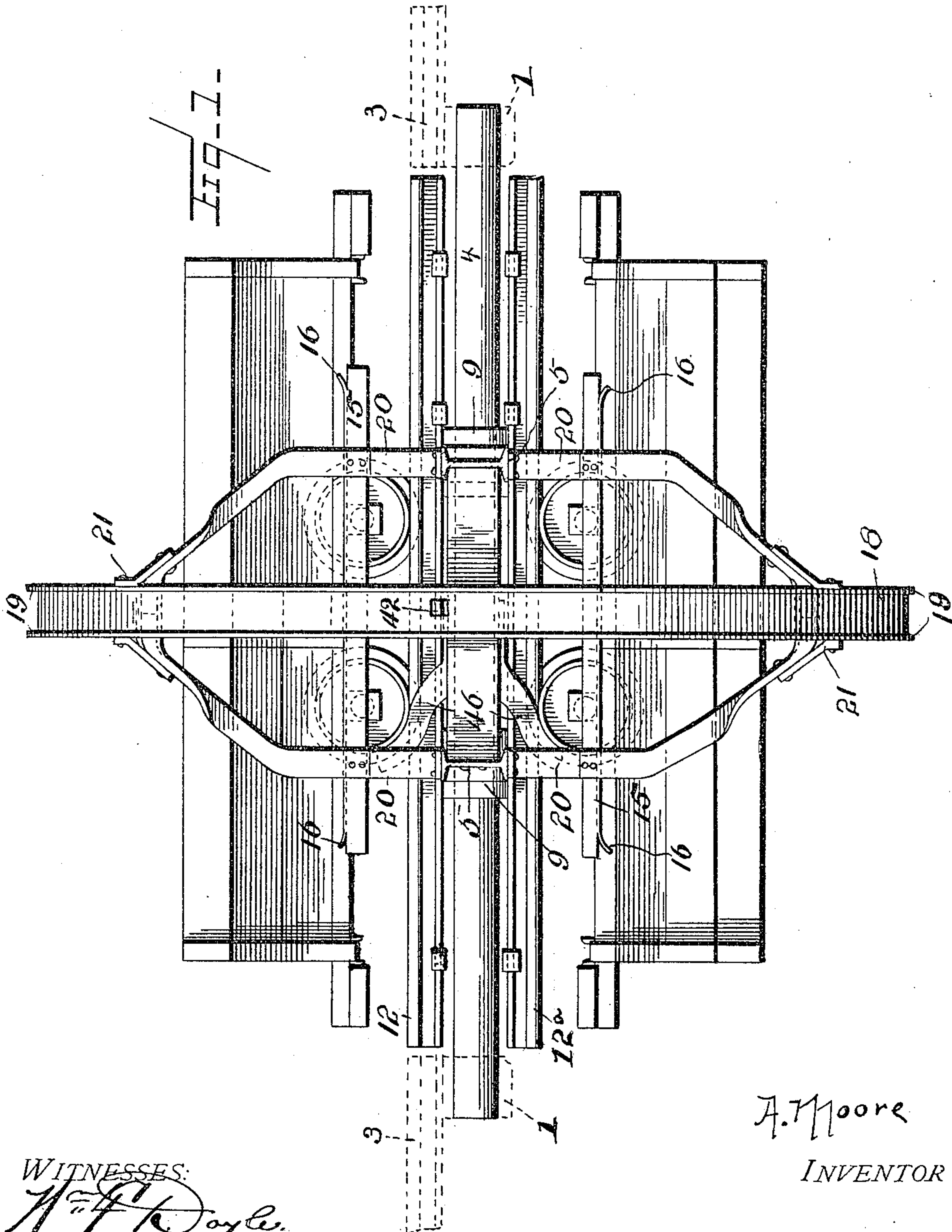
PATENTED DEC. 19, 1905.

A. MOORE.

AUTOMATIC REVOLVING CAR DUMP.

APPLICATION FILED APR. 18, 1904.

6 SHEETS—SHEET 1.



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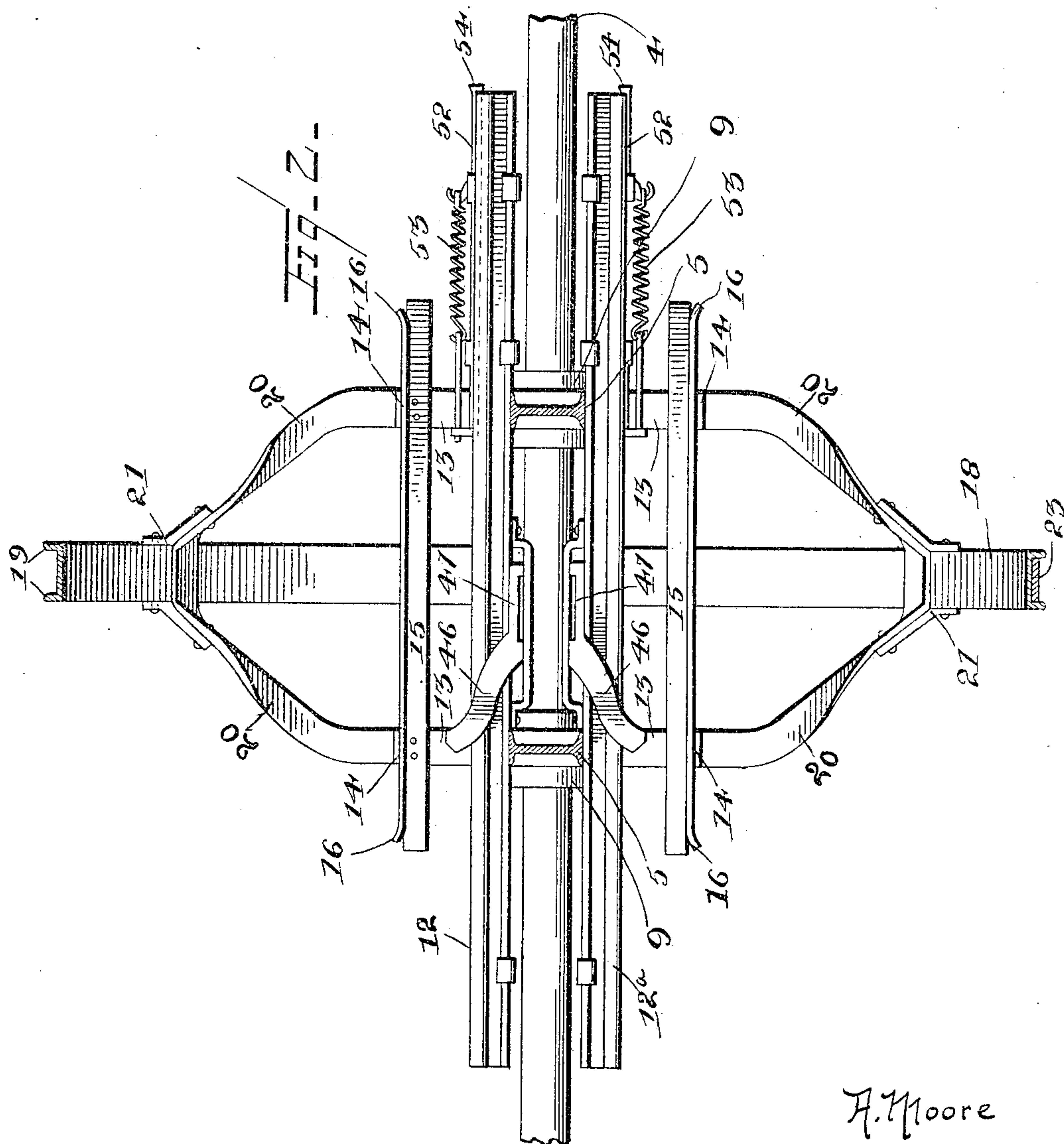
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6 SHEETS—SHEET 2.



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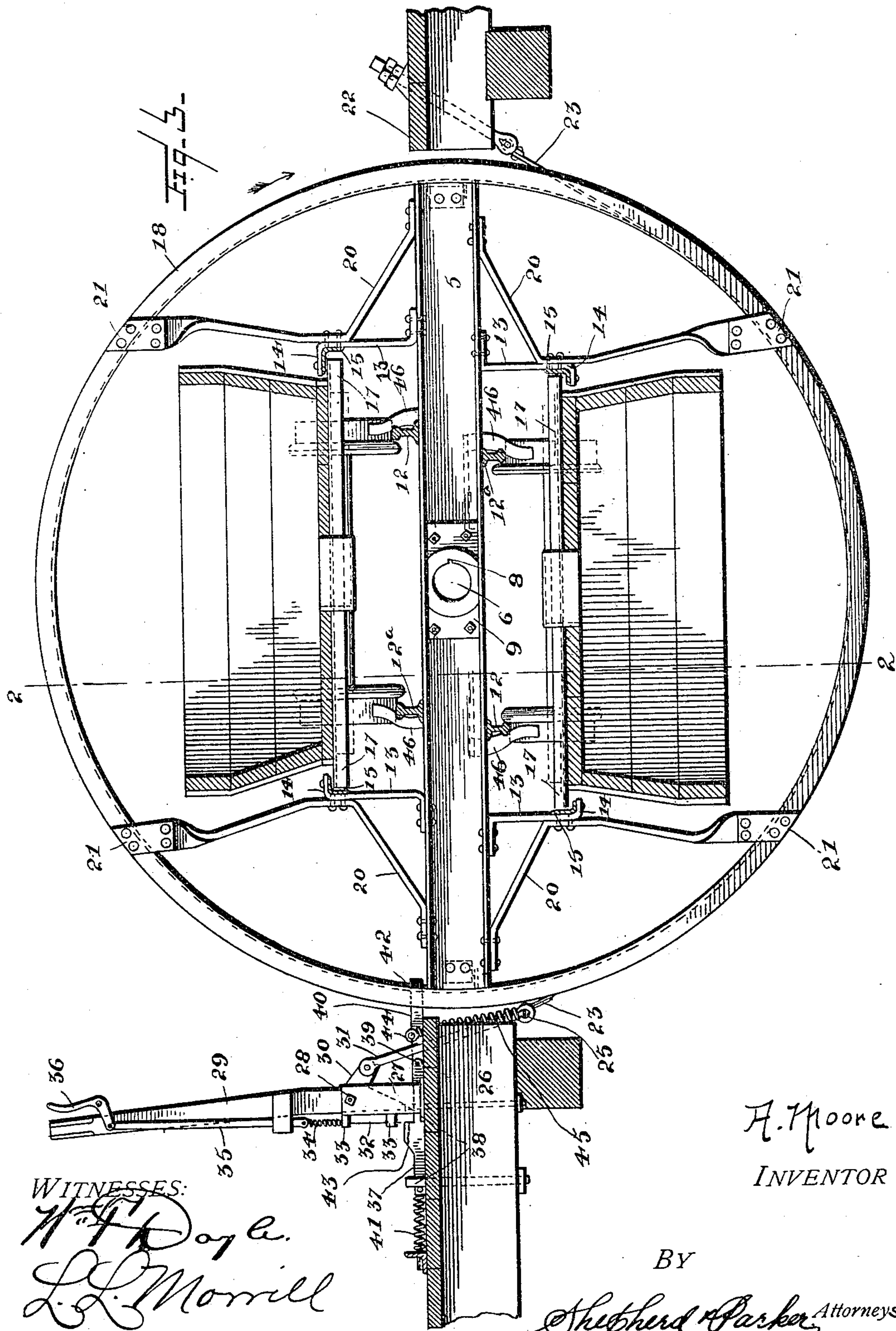
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6 SHEETS—SHEET 3.



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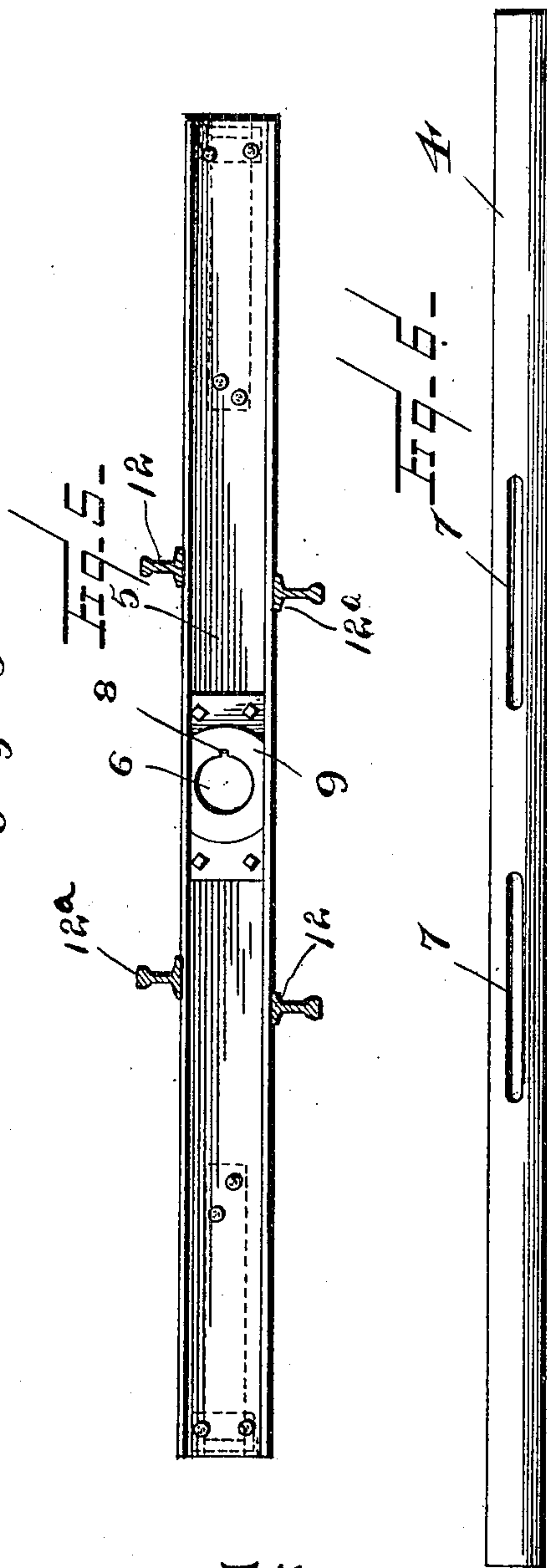
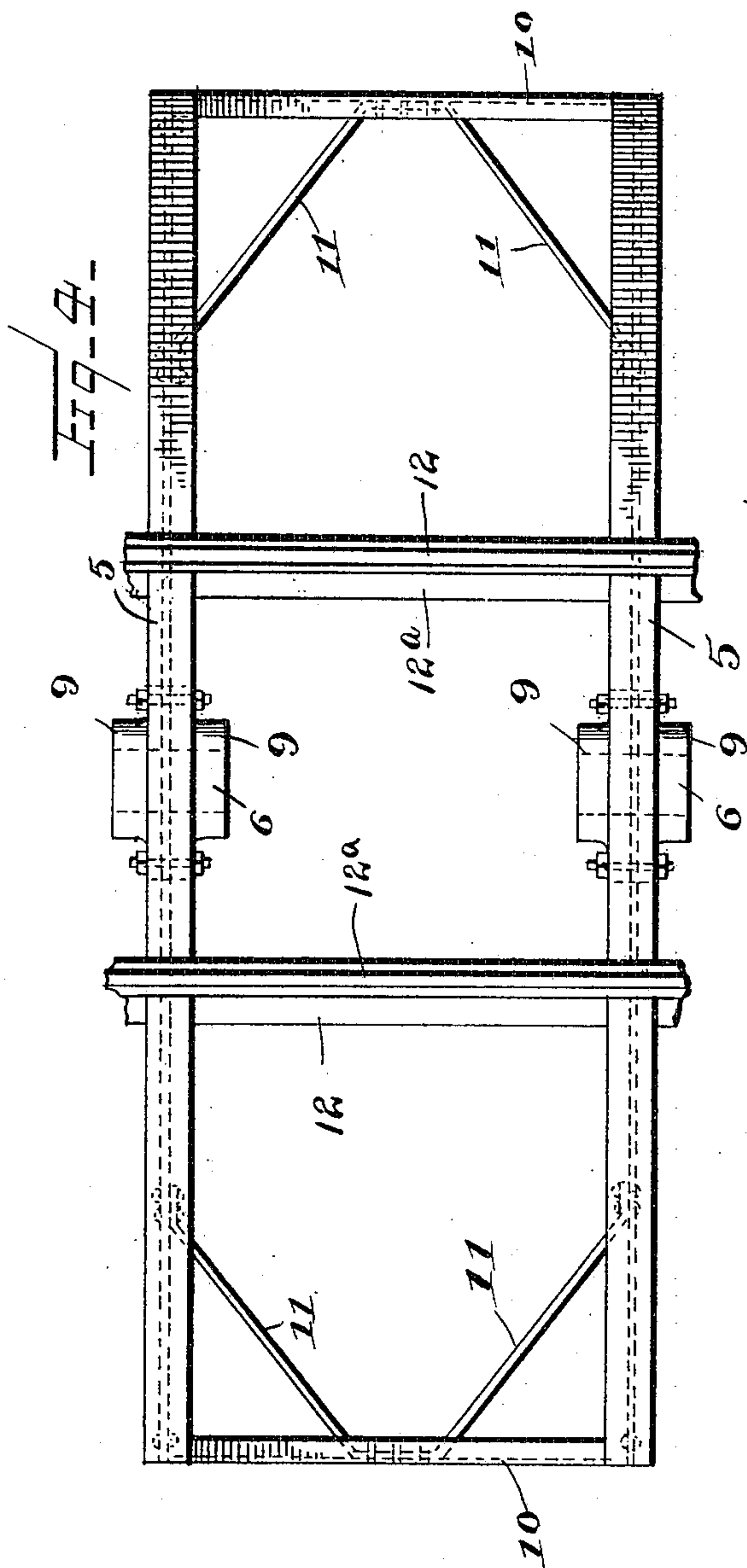
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6 SHEETS—SHEET 4.



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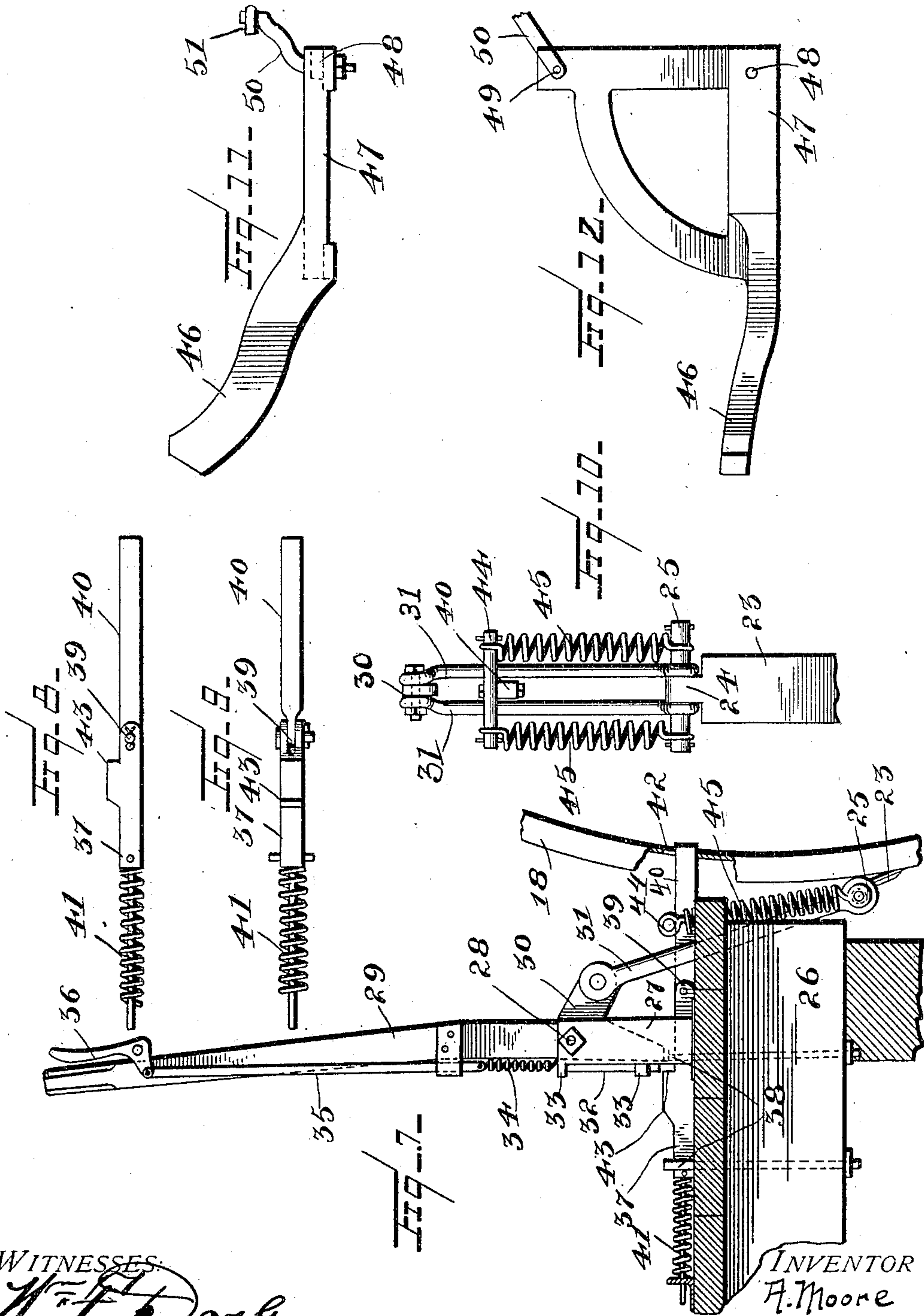


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6 SHEETS—SHEET 5.



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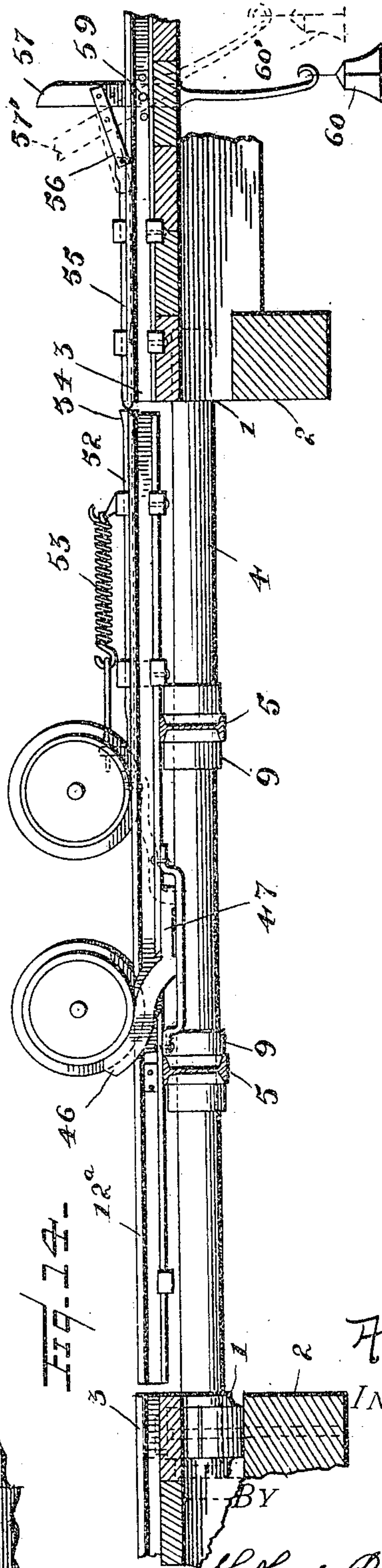
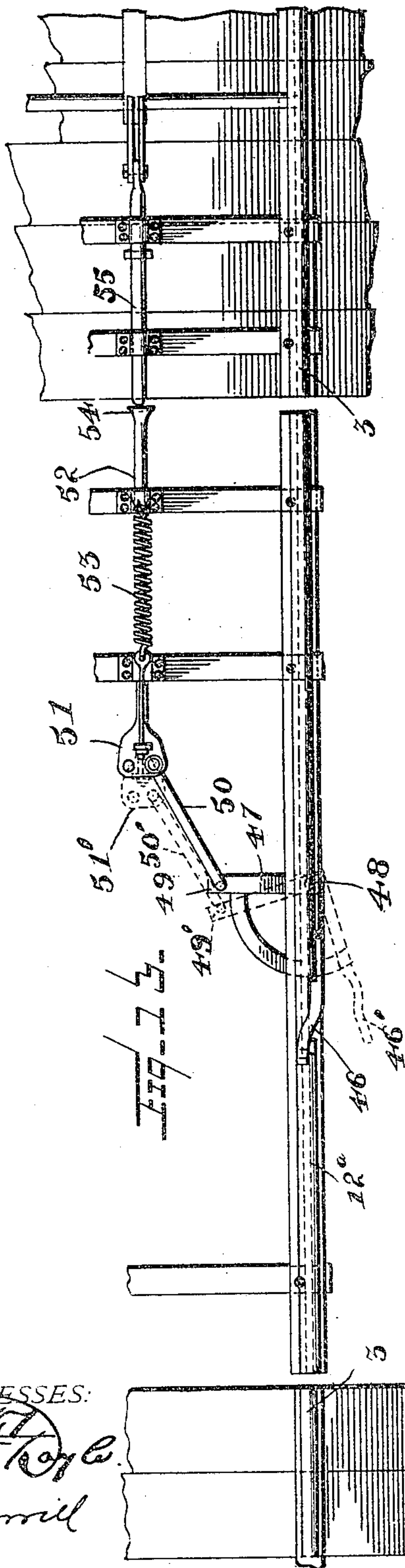
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APPLICATION FILED APR. 18, 1904.

6 SHEETS—SHEET 6.



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# UNITED STATES PATENT OFFICE.

ARTHUR MOORE, OF WAR EAGLE, WEST VIRGINIA.

## AUTOMATIC REVOLVING CAR-DUMP.

No. 807,845.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed April 18, 1904. Serial No. 203,755.

*To all whom it may concern:*

Be it known that I, ARTHUR MOORE, a citizen of the United States, residing at War Eagle, in the county of Mingo and State of West Virginia, have invented a certain new and useful Improvement in Automatic Revolving Car-Dumps, of which the following is a specification.

My invention relates to revolving car-dumps, and has for its object to provide means primarily intended for use at a mine or in connection with mining operations for dumping an entire load of coal, ore, or any similar material by turning the car completely over, thereby allowing the contained material to fall out.

Mining-cars and appliances of the construction in common use are commonly emptied by opening a gate at one end of the car and by tilting the car allowing the contents to slide out. The repeated sliding of contents soon wears the bottom of the car to such an extent that repairs become necessary, entailing considerable expense.

In the devices now in use wherein a car is turned over to dump the contents thereof such rotation is accomplished by the application of power, which entails considerable expense. In my improved dumping device the rotation is accomplished by the weight of the loaded car alone, it being necessary to apply no power whatever.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a side elevation of my complete invention mounted and showing cars in position. Fig. 2 shows a vertical section on line 2 2 of Fig. 3, not showing the cars. Fig. 3 is an end view of the dump. Fig. 4 is a plan view of the dumping-platform. Fig. 5 is a side elevation of the I-beam forming such platform and upon which is mounted the track and car-retaining mechanism, and Fig. 6 shows the shaft upon which such rotating platform revolves. Fig. 7 is a detail view of the brake-operating lever. Fig. 8 is a side elevation,

and Fig. 9 is a plan view of the pawl and spring which locks the rotating member. Fig. 10 is a detail view of the end of the brake-band, showing the connection of such brake-band with the brake-operating lever and the locking-pawl. Fig. 11 is a side elevation, and Fig. 12 is a plan view in detail of the horn for stopping a car at the desired point upon the rotating platform. Fig. 13 is a plan view, and Fig. 14 is a side elevation showing the car-stopping horn and the mechanism for operating the same.

In the accompanying drawings like reference-numerals designate corresponding parts throughout the several views.

In the preferred embodiment of my invention I mount my improved dumping device in convenient journal-bearings 1 1, mounted upon stationary abutments 2 2. These abutments 2 2 also support the ends of the stationary railway 3 3 at either side of the space in which it is desired to dump the contents of the car.

In bearings 1 1 I rotatably mount a shaft of suitable dimensions 4, and thereupon I mount I-beams 5 5 by embracing shaft 4 within the opening 6, securing it in position by keys within keyways 7 and 8, the former located in shaft 4 and the latter formed in bearing-plates 9 9. With these I-beams 5 5 as sides I form a rigid platform by connecting the ends with cross-pieces 10 10 and braces 11 11. Upon the platform so constructed I secure ordinary railroad-rails 12 and 12<sup>a</sup>, parallel with but unequally distant from shaft 4. The rails 12<sup>a</sup> I mount nearer to shaft 4 than rails 12, thus forming a track, so that when a car stands thereon the center of gravity of the car is not over shaft 4, but to one side thereof, so that the frame and the car thereon are in unstable equilibrium.

Upon I-beams 5 at points intermediate between the center and the ends I erect standards 13 13, with an inwardly-turned right-angular projection 14 14 at the end, and secure thereto angle-iron-retaining guides 15 15, with their openings disposed inward and downward, with the ends 16 of the horizontal leg of guides 15 disposed upwardly and also dimensioned as to give clearance above and to the sides of the rails 12 and 12<sup>a</sup> to allow cars with projections 17 17 to pass closely between and beneath such retaining-guides to retain the cars in position when inverted.

About the middle point of shaft 4, with such shaft as an axis, I construct the circular member 18, preferably having a flat surface par-



allel with the axis and an upturned flange 19 at each edge. This circular member 18 is bolted or otherwise secured to frame-strips or cross-pieces 10 10 at their middle points. The structure is further strengthened by securing  
 5 braces 20 20 to I-beams 5 5 near their ends and to standards 13 13 near the retaining-guide 15 15, then by curving such braces inwardly toward such circular member and bolt-  
 10 ing or otherwise securing them thereto at points 21 21.

To a framework 22, parallel with shaft 4 opposite its middle point and adjacent to circular member 18, I secure a band 23 to serve  
 15 as a brake. This band passes under the device and is retained between the flanges 19 19 of circular member 18. In the free end of brake-band 23 is formed a loop 24, through which passes bolt 25.

20 : Upon a framework similar to and opposite from framework 22 I mount two uprights 27, rigidly secured to such framework, and between and at the upper ends 28 of such uprights I pivotally secure lever 29, and upon  
 25 an angularly-projecting integral portion 30 thereof I pivotally secure links 31 31, pivotally embracing at their other ends bolt 25, passed through the loop 24 of brake-band 23. The lever is provided near its lower end with  
 30 plunger-pawl 32, longitudinally slidable in guides 33 33 and held normally at its upper extremity by spring 34, which is adapted to be depressed by pressure on connecting-rod 35, exerted by hand-lever 36.

35 Between the uprights 27, below and adjacent to the lower end of lever 29, I mount plunger 37, longitudinally slidable in guides 38 38, hinged at 39 to pawl 40 and held normally in contact with circular member 18 by  
 40 spring 41. Pawl 40 is adapted to engage one of openings 42, formed at diametrically opposite points in circular member 18, to lock the entire revolving portion of my device in the position shown in Fig. 3.

45 Upon the upper side of plunger 37 I form integrally therewith a shoulder 43, adapted to engage pawl 32 when depressed to impart longitudinal movement to such plunger through the operation of lever 29. Bearing upon pawl  
 50 40 and transverse thereto I mount bolt 44, engaged near its ends by springs 45 45, which in turn engage at their outer ends bolt 25, embraced within the loop end of brake-band 23.

To stop and hold a car at the desired point  
 55 longitudinally upon the dumping device, I place horns 46 46 beside the rail and so curved that their ends extend directly above the rail and are adapted to engage the "tread" of the car-wheels. To permit the car being pushed  
 60 off the dumping member to allow another to take its place, I mount horns 46 upon a right-angularly-shaped frame 47, as shown in detail in Figs. 11 and 12, but in pairs, the other member of the pair being the reverse of the one  
 65 here shown. This frame 47 I pivotally secure

at point 48 in a horizontal position beneath the rail and so disposed that the point 49 is between the rails. To such point 49 I pivotally secure connecting-rod 50, pivotally en-  
 70 gaging head 51 of plunger-rod 52. This plunger-rod is mounted midway between and parallel with the rails and is held by spring 53, so that normally horn 46 is above the rail and in position to hold a car, but is adapted to be  
 75 swung so that it assumes the position 46', in which position it is out of engagement with and line of car-wheel. The end 54 of plunger-rod 53 extends adjacent to supports 2 2 and is preferably constructed cup-shaped, as shown, to receive a thrust from thrust-bar 55, slidably  
 80 mounted midway between and parallel with the rails 3 3 of the permanent track and pivotally engaging at its other end connecting-rod 56, which rod is in turn pivotally secured to lever 57, fulcrumed at 59 and standing nor-  
 85 mally substantially vertical and held in its position by weight 60.

In operating my improved car-dumping device the rotating member thereof is placed in the position shown in Figs. 1, 2, and 3.  
 90 A car loaded with the material to be dumped is pushed along permanent track 3 3 and upon rails 12 and 12<sup>a</sup> until the tread of the wheels come in contact with horns 46, projection 17 being under and retained by guide 15. Lever  
 95 36 is now pressed, forcing pawl 32 downward, engaging shoulder 43. Lever 29 is now forced toward the car, which withdraws pawl 40 from opening 42 and at the same time forces downward on links 31 31 against the tension  
 100 of springs 45 45, thus removing the tension from brake-band 23 and leaving the entire rotating member, journaled upon shaft 4 in journals 1, free to rotate. It will be noted that the center of the car is not exactly over  
 105 the shaft 4, so that when the revolving member is left free to rotate the unequal weight on either side of shaft causes a rotation in the direction indicated by the arrow until the car has been turned bottom upward and, ob-  
 110 viously, the contents dumped. The velocity of rotation is controlled by the brake-band 23, acted on by brake-lever 29. When a complete semirevolution has been accomplished, pawl 40 is forced into engagement with open-  
 115 ing 42 by spring 41 and by means of connecting-springs 45 draws brake-band 23 tight upon circular member 18, thereby automatically bringing the rotary movement to an end and locking the rotary member in position to re-  
 120 ceive another car. In case the inertia of the rotary member carries it slightly beyond the desired point pawl 40, being pivoted at 39, will be lifted somewhat out of position. To remedy this, brake-lever 29 is pushed forward  
 125 without engaging shoulder 43. This removes the tension from brake-band 23 and increases the tension on springs 45, which, bearing upon pawl 40, retracts the rotary member to the required position, and the release of lever 29  
 130



locks it. After one car has been dumped the device is in position for dumping another car, which operation is accomplished in like manner. This time, however, the loaded car in rotating the revolving member lifts the empty car into position to be removed, the revolution being always in one direction. To move the empty car, a loaded car to be dumped is pushed along permanent track 3 3 and the axle, or some other predetermined portion comes in contact with lever 57, forcing it forward to assume position 57', which, acting through connecting-rod 56, thrusts bar 55 against the end 54 of plunger 52, causing a longitudinal displacement thereof, which displacement is in turn communicated, through connecting-rod 50, swinging horns 46, outwardly until it assumes the position 46'. The on-coming car can then "kick" the empty car off the dump, and as the horn 46 is retracted by spring 53 this horn is in position to stop the on-coming car in the proper position, when the dumping operation may be repeated.

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

1. A device for unloading cars, provided with means whereby two cars, with their tops oppositely disposed, and the wheels of each car disposed upon opposite sides of a common axis may be simultaneously rotated entirely by the force of gravity.

2. A device for unloading cars, provided with means whereby two cars, with their tops oppositely disposed, and the wheels of each car disposed upon opposite sides of a common axis disposed between the cars may be simultaneously rotated entirely by the force of gravity, and turned entirely over.

3. A device for unloading cars, provided with means whereby two cars, with their tops oppositely disposed, may be supported from opposite faces of a platform and simultaneously rotated, entirely by the force of gravity, about an axis disposed within such platform, between the wheels of each of the cars and parallel with their lengths.

4. A device for unloading cars, provided with means whereby two cars, with their tops oppositely disposed, may be supported from opposite faces of a platform, with the wheels of each car upon opposite sides of a common axis disposed within said platform simultaneously rotated, entirely by the force of gravity, and turned entirely over.

5. A device for unloading cars, provided with means whereby two cars, with their tops oppositely disposed, may be supported from opposite faces of a platform and simultaneously rotated entirely by the force of gravity about an axis within such platform, between the wheels of each car and parallel with their lengths and turned entirely over.

6. A device for unloading cars, provided with means whereby two cars, with their tops

oppositely disposed, may be supported from opposite faces of a rotatable platform, rigidly secured within a circular member, and rotatable entirely by the force of gravity upon a common axis disposed between the wheels of each car.

7. A device for unloading cars, provided with means whereby two cars, with their tops oppositely disposed, may be supported from opposite faces of a platform secured within a circular member and simultaneously rotated entirely by the force of gravity upon a shaft disposed axially to such circular member within the platform, between the wheels of each car and parallel with their lengths.

8. A device for unloading cars, provided with means whereby two cars, with their tops oppositely disposed, may be supported from opposite faces of a platform, rigidly secured within a circular member and simultaneously rotated entirely, by the force of gravity, on a shaft disposed axially to such circular member, between the wheels of each car and parallel with their lengths and turned entirely over.

9. In a device for unloading cars, a platform rigidly secured within a circular member, and adapted to support two cars, upon opposite faces thereof, an axis for such circle, within and parallel with the plane of such platform, and between the wheels of each car and all adapted to be rotated upon such axis and turned entirely over by the force of gravity alone.

10. In a device for unloading cars, a rotatable platform rigidly secured within, and with its plane arranged diametrical to a circular member, said platform being adapted to support two cars upon opposite faces thereof, an axis disposed within said platform, means for retaining said cars in position upon said platform with the wheels of each car upon opposite sides of the axis and means for turning the platform and cars entirely over by the force of gravity alone.

11. In a device for unloading cars, a platform rigidly secured within, with its plane arranged diametrical to a circular member, and adapted to be rotated upon the axis of such circular member, said axis being disposed within, and parallel with the plane of such platform, the platform being adapted to support two cars, upon opposite faces thereof, with their tops oppositely disposed and the wheels of each upon opposite sides of the axis, means for retaining said cars in position upon said platform and means for turning the platform and cars entirely over upon said axis by the force of gravity alone.

12. In a device of the character described, the combination of a circular member, a platform rigidly secured therein and diametrical thereto, a shaft mounted axially within said circular member and within said platform and parallel with its opposite faces, a pair of



rails, each parallel with, but upon opposite sides of and unequally distant from said axis, and mounted upon each of the opposite faces of such platform.

5 13. In a device of the character described, the combination of a circular member, a platform rigidly secured therein and diametrical thereto, a shaft mounted axially within said circular member, and within said platform,  
10 and parallel with its opposite faces, a pair of rails, each parallel with, but upon opposite sides and unequally distant from said axis, mounted upon each of the opposite faces of said platform and all adapted to be turned  
15 entirely over upon said axis by the force of gravity alone.

14. In a device of the character described, the combination of a circular member, a platform rigidly secured therein, and arranged  
20 diametrical thereto, a shaft mounted axially to said circular member, within said platform and parallel with its opposite faces, a pair of rails, each parallel with, but upon opposite sides of and unequally distant from, said axis,  
25 mounted upon each of the opposite faces of said platform, and means for turning said platform entirely over upon such axis.

15. In a device of the character described, the combination of a circular member mounted  
30 axially upon a shaft, a platform rigidly secured within and diametrical to said circular member, the opposite faces of said platform being upon opposite sides of and parallel with the axis, a pair of rails, each parallel with,  
35 but upon opposite sides of and unequally distant from said axis, mounted upon each of the opposite faces of said platform, and means adapted to secure a car upon each pair of rails.

40 16. In a device of the character described, the combination of a circular member mounted upon a shaft, a platform rigidly secured within and arranged diametrical to said circular member, its opposite faces being located upon  
45 opposite sides of and parallel with the axis, a pair of rails, each parallel with, but upon opposite sides of and unequally distant from said axis and mounted upon each of the opposite faces of said platform, means adapted to  
50 secure a car upon each of said pair of rails and means for turning said platform and cars entirely over without displacing said cars, relative to the platform.

17. In a device of the character described, the combination of a circular member mounted  
55 upon a shaft, a platform rigidly secured within and arranged diametrical to said circular member, its opposite faces being located on opposite sides of and parallel with the axis, a pair  
60 of rails, each parallel with, but upon opposite sides of and unequally distant from said axis, mounted upon each of the opposite faces of said platform, means adapted to secure a car upon each of said pairs of rails and means for utiliz-  
65 ing the force of gravity to turn said platform

and cars entirely over without displacing said cars, relative to the platform.

18. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein, with its plane diametrical thereto, a pair of rails upon its upper face, one on either side of, and parallel with, but unequally distant from the axis, means for securing a loaded car upon the rails, a pair of rails secured to the under  
7 face of such platform, one on either side of, and parallel with, but unequally distant from the axis, means for suspending an empty car from the under side of such platform, and all so disposed that the excess weight of the loaded  
7 car upon the upper face of the platform, will rotate such platform upon the axis in one direction intermittently through one-half a complete revolution to bring the empty car to the upper side of such platform. 8

19. In a device of the character described, a rotatable dumping member, a slidable, hinged and spring-pressed pawl adapted to engage and lock the revolving member, a band rigidly secured at one end, passed part way  
9 around such revolving member, means connecting the pawl and the free end of the band, adapted to automatically tighten such band and stop the motion of the said revolving member. 9

20. In a device of the character described, a rotatable dumping-platform, and a circular member rigidly secured thereto, adapted to rotate on a common axis, a slidable, hinged and spring-pressed pawl, adapted to engage  
10 and lock such circular member, a band rigidly secured at one end passed part way around such circular member, means connecting the pawl and the free end of the band, adapted to automatically tighten such band and stop the motion of said rotating member. 10

21. In a device of the character described, a revolving dumping member, a slidable, hinged and spring-pressed pawl adapted to engage and lock the revolving member, a band  
11 rigidly secured at one end passed part way around such revolving member, springs connecting the pawl and the free end of the band, adapted to automatically tighten such band and stop the motion of said rotating member. 11

22. In a device of the character described, a rotatable dumping-platform and a circular member rigidly secured thereto adapted to rotate on a common axis, a slidable, hinged and spring-pressed pawl, adapted to engage  
12 and lock such circular member, a band rigidly secured at one end, passed part way around such circular member, springs connecting the pawl and the free end of the band, adapted to automatically tighten such band and stop the motion of said rotating member. 12

23. In a device of the character described, a revolving dumping member, a slidable, hinged and spring-pressed pawl, adapted to engage and lock the revolving member, a band rigidly  
13



idly secured at one end, passed part way around such revolving member, springs connecting the pawl and the free end of the band, adapted to automatically tighten such band and stop the motion of the said rotating member, and means adapted to release the tension upon such band, permitting the springs to rotatorily retract such circular member.

24. In a device of the character described, a rotatable dumping-platform and a circular member rigidly secured thereto adapted to rotate on a common axis, a slidable, hinged and spring-pressed pawl, adapted to engage and lock such circular member, a band rigidly secured at one end, passed part way around such circular member, springs connecting the pawl and the free end of the band, adapted to automatically tighten such band and stop the motion of said rotating member, and means adapted to release the tension upon such band, permitting the springs to rotatorily retract such circular member.

25. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein, with its plane diametrical thereto, a pair of rails upon its upper face, one on either side of and parallel with, but unequally distant from the axis, means for securing a loaded car upon the rails, a pair of rails secured to the under face of such platform, one on either side of and parallel with, but unequally distant from the axis, means for suspending an empty car from the under side of such platform engaging the under pair of rails and all so disposed that the excess weight of the loaded car upon the upper face of the platform will rotate such platform upon the axis in one direction intermittently through one-half a complete revolution to bring the empty car to the upper side of such platform, a band rigidly secured at one end, passing part way around such circular member and secured at its other end to means for tightening such band upon such circular member, said band being adapted to act as a brake to control the rotation of the dumping device.

26. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured within and adapted to support a loaded car upon its upper face and an empty car from its under face, one above the other and having their tops opposite and parallel, said circular member being adapted to be rotated upon said axis entirely by the force of gravity in one direction intermittently through one-half a revolution, a band rigidly secured at one end, passing part way around said circular member and secured at its other end to means for tightening said band upon said circular member, said band being adapted to act as a brake to control the rotation of the dumping device.

27. In a device of the character described, a circular member axially journaled, a platform

rigidly secured within, adapted to support a loaded car upon its upper face and an empty car from its under face one above the other with their tops opposite and parallel and adapted to be rotated upon its axis entirely by the force of gravity in one direction intermittently through one-half a revolution, a band rigidly secured at one end, passing part way around said circular member, and secured at its other end to a lever adapted to tighten said band upon said circular member and adapt it to act as a brake to control the rotation of the dumping device.

28. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein, and adapted to support a loaded car upon its upper face and an empty car from its under face, one above the other with their tops opposite and parallel and be rotated in one direction intermittently, through one-half a revolution entirely by the weight of the loaded car, a band rigidly secured at one end, passing part way around said circular member and adapted to act as a brake to control the rotation of the dumping device.

29. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein, a pair of rails upon its upper face, one on either side of, parallel with, but unequally distant from the axis, means for securing a loaded car upon the rails, a pair of rails secured to the under face of such platform and similarly disposed, means for suspending an empty car from the under side of such platform, and all so disposed that the excess of weight of a loaded car upon the upper face of the platform will rotate such platform upon the axis in one direction intermittently through one-half a revolution and bring the empty car to the upper side of such platform, a band rigidly secured at one end, passing part way around such circular member and secured at its other end to a lever adapted to tighten such band upon such circular member and adapt it to act as a brake to control the rotation of the dumping device.

30. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein and adapted to support a loaded car upon its upper face and an empty car from its under face, and adapted to be rotated upon such axis in one direction intermittently through one-half a revolution, a band rigidly secured at one end, passing part way around such circular member, and secured at its other end to a lever adapted to tighten such band upon the circular member and adapt it to act as a brake to control the rotation of the dumping device, openings in such circular member at diametrically opposite points, a spring-pressed, hinged pawl slidably mounted and adapted to engage such openings in turn and to lock the



dumping device and to be engaged by a plunger upon the brake-operating lever, and all so disposed that a movement of the lever to remove the tension of the brake, withdraws the pawl, leaving the dumping device free to rotate.

31. In a device of the character described, a circular member axially journaled, a platform rigidly secured within, adapted to support a loaded car upon its upper face and an empty car from its under face, said circular member being adapted to be rotated about its axis by the force of gravity, in one direction intermittently through one-half a revolution, a band rigidly secured at one end, passing part way around such circular member and secured at its other end to a lever adapted to tighten such band upon the circular member and adapt it to act as a brake to control the rotation of the dumping device, openings in such circular member at diametrically opposite points, a spring-pressed, hinged pawl, slidably mounted and adapted to engage such openings in turn to lock the dumping device, and also adapted to be engaged by a plunger upon the brake-operating lever, and all so disposed that a movement of the lever to remove the tension of the brake, withdraws the pawl, leaving the dumping device free to rotate.

32. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein, adapted to support a loaded car upon its upper face and an empty car from its under face and be rotated in one direction intermittently through one-half a revolution by the weight of the loaded car, a band rigidly secured at one end, passing part way around such circular member and adapted to act as a brake to control the rotation of the dumping device, openings in such circular member at diametrically opposite points, a spring-pressed pawl, slidably mounted and adapted to engage said openings in turn to lock the dumping device and also to be engaged by a plunger upon the brake-operating lever, all so disposed that a movement of the lever to remove the tension of the brake, withdraws the pawl, leaving the dumping device free to rotate.

33. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein, a pair of rails upon its upper face, one on either side of, and parallel with, but unequally distant from the axis, means for securing a loaded car upon the rails, a pair of rails similarly disposed on the under face of such platform, means for suspending an empty car from the under side of such platform, and all so disposed that the excess of weight of the loaded car upon the upper face of the platform will rotate such platform upon its axis, in one direction intermittently through one-half a revolution and bring the empty car to the upper side of the platform, a band rigidly

secured at one end, passing part way around such circular member and secured at its other end to a lever adapted to tighten such band upon the circular member, to adapt it to act as a brake to control the rotation of the dumping device, openings in such circular member at diametrically opposite points, a spring-pressed, hinged pawl, slidably mounted and adapted to engage said openings in turn to lock the dumping device and to be engaged by a plunger upon the brake-operating lever, all so disposed that a movement of the lever to remove the tension of the brake, withdraws the pawl, leaving the dumping device free to rotate.

34. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured within, adapted to support a loaded car upon its upper face and an empty car from its under face and adapted to be rotated upon its axis in one direction intermittently through one-half a revolution, a band rigidly secured at one end, passing part way around such circular member, and secured at its other end to a lever adapted to tighten such band upon the circular member, openings in such circular member at diametrically opposite points, a hinged pawl slidably mounted, adapted to engage said openings in turn to lock the dumping device and also to be engaged by a plunger upon the brake-operating lever, all so disposed that a movement of the lever to remove the tension of the brake, withdraws the pawl, leaving the dumping device free to rotate, springs connecting the ends of brake-band with the locking-pawl, so disposed that the displacement of the hinged portion of such pawl, automatically tightens the brake-band, preventing further rotary movement.

35. In a device of the character described, a circular member axially journaled, a platform rigidly secured therein, adapted to support a loaded car upon its upper face and an empty car from its under face and adapted to be rotated upon such axis by the force of gravity in one direction intermittently through one-half a revolution, a band rigidly secured at one end, passing part way around such circular member and secured at its other end to a lever adapted to tighten such band upon the circular member, openings in such circular member at diametrically opposite points, a hinged pawl, slidably mounted, adapted to engage said openings in turn to lock the dumping device, and also adapted to be engaged by a plunger upon the brake-operating lever, all so disposed that a movement of the lever to remove the tension of the brake, withdraws the pawl, leaving the dumping device free to rotate, springs connecting the end of the brake-band with the locking-pawl, so disposed that the displacement of the hinged portion of such pawl automatically tightens the brake-band, preventing further rotary movement.



36. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein, adapted to support a loaded car upon its upper face and an empty car from its under face and be rotated in one direction intermittently through one-half a revolution by the weight of the loaded car, a band rigidly secured at one end, passing part way around such circular member, and secured at its other end to a lever to control the rotation of the dumping device, openings in such circular member at diametrically opposite points, a slidably-mounted pawl adapted to engage said openings in turn to lock the dumping device and also to be engaged by a plunger upon the brake-operating lever, all so disposed that a movement of the lever, to remove the tension of the brake, withdraws the pawl, leaving the dumping device free to rotate, springs connecting the free end of the brake-band with the locking-pawl, so disposed that the displacement of the hinged portion of such pawl, automatically tightens the brake-band, thereby preventing further rotary movement.

37. In a device of the character described, the combination of a circular member, a platform rigidly secured therein, a pair of rails upon its upper face, one on either side of, and parallel with, but unequally distant from the axis, means for securing a loaded car upon the rails, a pair of rails similarly disposed on the under face of the platform, means for suspending an empty car from the under side of such platform, all so disposed that the weight of the loaded car upon the upper face of the platform will rotate such platform upon the axis in one direction intermittently through one-half a revolution, to bring the empty car to the upper side of the platform, a band rigidly secured at one end, passing part way around such circular member and secured at its other end to a lever adapted to tighten such band upon the circular member to control the rotation of the dumping device, openings in such circular member at diametrically opposite points, a slidably-mounted, hinged pawl adapted to engage said openings in turn to lock the dumping device and also to be engaged by a plunger upon the brake-operating lever, all so disposed that a movement of the lever to remove the tension of the brake withdraws the pawl, leaving the dumping device free to rotate, springs connecting the end of the brake-band with the locking-pawl, so disposed that the displacement of the hinged portion of such pawl, automatically tightens the brake-band, preventing further rotary movement.

38. In a device of the character described, mechanism adapted to stop a car and prevent longitudinal displacement, consisting of a member horizontally and pivotally secured beneath the rail, an upstanding horn disposed by the side of and so curved above the rail as

to engage the periphery of a wheel, a plunger slidably mounted parallel with the rails, a rod connecting said plunger and the pivotally-secured horizontal member, a spring adapted to hold the plunger in normal position and the upstanding horn in contact with the rail, a thrust-rod slidably mounted parallel with the rails, and adapted to engage the end of the plunger, a lever mounted between and capable of rotary displacement in a plane parallel with the rails, means for holding such lever normally vertical, a rod connecting such lever and the thrust-bar and all so disposed that an oncoming car, by contact with such lever, will longitudinally displace the thrust-bar and plunger and displace the horizontally-pivoted member and the said horn, to permit forward movement of the car.

39. In a device of the character described, a dumping member capable of being rotated entirely over, a railway-track thereupon, a frame pivotally and horizontally secured beneath the rail, an upstanding horn integral therewith, disposed by the side of and curved above one of the rails of said track, adapted to engage the periphery of a wheel to stop and hold a car from longitudinal displacement, means for displacing said horizontal frame and horn to permit forward movement of the car.

40. In a device of the character described, a dumping member capable of being rotated entirely over, a railway-track thereupon, a frame pivotally and horizontally secured beneath the rail, an upstanding horn disposed by the side of and curved above one of the rails of said track, adapted to engage the periphery of a wheel to stop and hold a car against longitudinal displacement, and means whereby an oncoming car disposes such horizontal frame and horn, to permit forward movement of the car.

41. In a device of the character described, a rotatable dumping member, a railway-track thereupon, a frame pivotally and horizontally secured beneath the rail, an upstanding horn, integral therewith, disposed by the side of and curved above one of the rails of said track, adapted to engage the periphery of a wheel to stop and hold a car against longitudinal displacement, a plunger slidably mounted midway between the rails and extending adjacent to the end of such dumping member, a rod connecting such plunger and horizontally-pivoted frame, a spring adapted to retract such plunger and hold the upstanding horn adjacent to the rail, a thrust-bar slidably mounted midway between the rails of a stationary abutment, adapted to engage the end of the plunger, a lever fulcrumed between the rails, means for keeping such lever normally vertically disposed, a rod connecting such lever and thrust-bar, all so disposed that an oncoming car throws the lever, longitudinally displacing the thrust-bar and plunger, and



displacing the horizontal frame and horn, to permit forward movement of the car.

42. In a device of the character described, a circular member, a platform rigidly secured therein, a shaft mounted axially to such circular member, within such platform and parallel with its opposite faces, a pair of rails, each parallel with, but at unequal distance from such axis, mounted upon each of the opposite faces of such platform, horns disposed above such rails, adapted to contact with and hold a car against longitudinal displacement, and means whereby another car approaching will displace such horns allowing the car to be pushed off such dumping-platform.

43. In a device of the character described, a circular member axially mounted upon a shaft, a platform rigidly secured within such circular member, its opposite faces upon opposite sides of and parallel with the axis, a pair of rails, each parallel with, but at unequal distance from such axis mounted upon each of the opposite faces of such platform, means adapted to secure a car upon each pair of rails, horns disposed above such rails adapted to contact with and hold a car against longitudinal displacement, and means whereby another car approaching will displace such horns, allowing the car to be pushed off such dumping-platform.

44. In a device of the character described, the combination of a circular member axially journaled, a platform rigidly secured therein, a pair of rails upon its upper face, each parallel with, but unequally distant from the axis, means for securing a loaded car upon the rails, a pair of rails similarly disposed on the under face of such platform, means for suspending an empty car from the under side of such platform, all so disposed that the excess of weight of the loaded car upon the upper face of the platform, will rotate such platform upon the axis in one direction intermittently through one-half a revolution and bring the empty car to the upper side of such platform, horns disposed above such rails adapted to contact with and hold a car against longitudinal displacement, and means whereby another car approaching will displace such horns, allowing the car to be pushed off such dumping-platform.

45. In a device of the character described, a circular member, a platform rigidly secured therein, a shaft mounted axially with such circular member within such platform and parallel with its opposite faces, a pair of rails each parallel with, but at unequal distance from such axis, mounted upon each of the opposite faces of such platform, a frame pivot-

ally secured beneath each of the rails, an upstanding horn integral with such frame and normally disposed above the rail and adapted to contact with and hold a car against longitudinal displacement, a plunger slidably mounted between the rails, and extending to the end of the dumping member, a rod connecting such plunger and the frame, a thrust-bar slidably mounted between the rails on a stationary abutment and adapted to engage the end of the plunger, a lever disposed adjacent to such thrust-bar, a rod connecting such lever and the thrust-bar, a weight secured to the lower end of such lever adapted to hold it normally vertical and all so disposed that an approaching car will throw such lever causing the thrust-bar to contact with the end, and cause a longitudinal displacement of the plunger, which, through the medium of the connecting-rod, causes a displacement of the frame and the horn integral therewith, allowing the car to be pushed off said dumping member.

46. In a device of the character described, a circular member mounted axially upon a shaft, a platform rigidly secured therein, its opposite faces upon opposite sides of and parallel with the axis, a pair of rails, each parallel with, but at unequal distance from such axis, mounted upon each of the opposite faces of such platform, means adapted to secure a car upon each pair of rails, a frame pivotally secured beneath each of the rails, an upstanding horn integral with such frame and normally disposed above the rail and adapted to contact with and hold a car against longitudinal displacement, a plunger slidably mounted between the rails and extending to the end of the dumping member, a rod connecting such plunger and the frame, a thrust-bar slidably mounted between the rails on a stationary abutment and adapted to engage the end of the plunger, a lever disposed adjacent to such thrust-bar, a rod connecting such lever and the thrust-bar, a weight secured to the lower end of such lever, adapted to hold it normally vertical, and all so disposed that an approaching car will throw such lever, causing the thrust-bar to contact with the end, and cause a longitudinal displacement of the plunger, which, through the medium of the connecting-rod, causes a rotary displacement of the frame and the horn integral therewith, allowing the car to be pushed off such dumping member.

ARTHUR MOORE.

In presence of—

N. F. JAMES,  
E. C. WEBSTER.