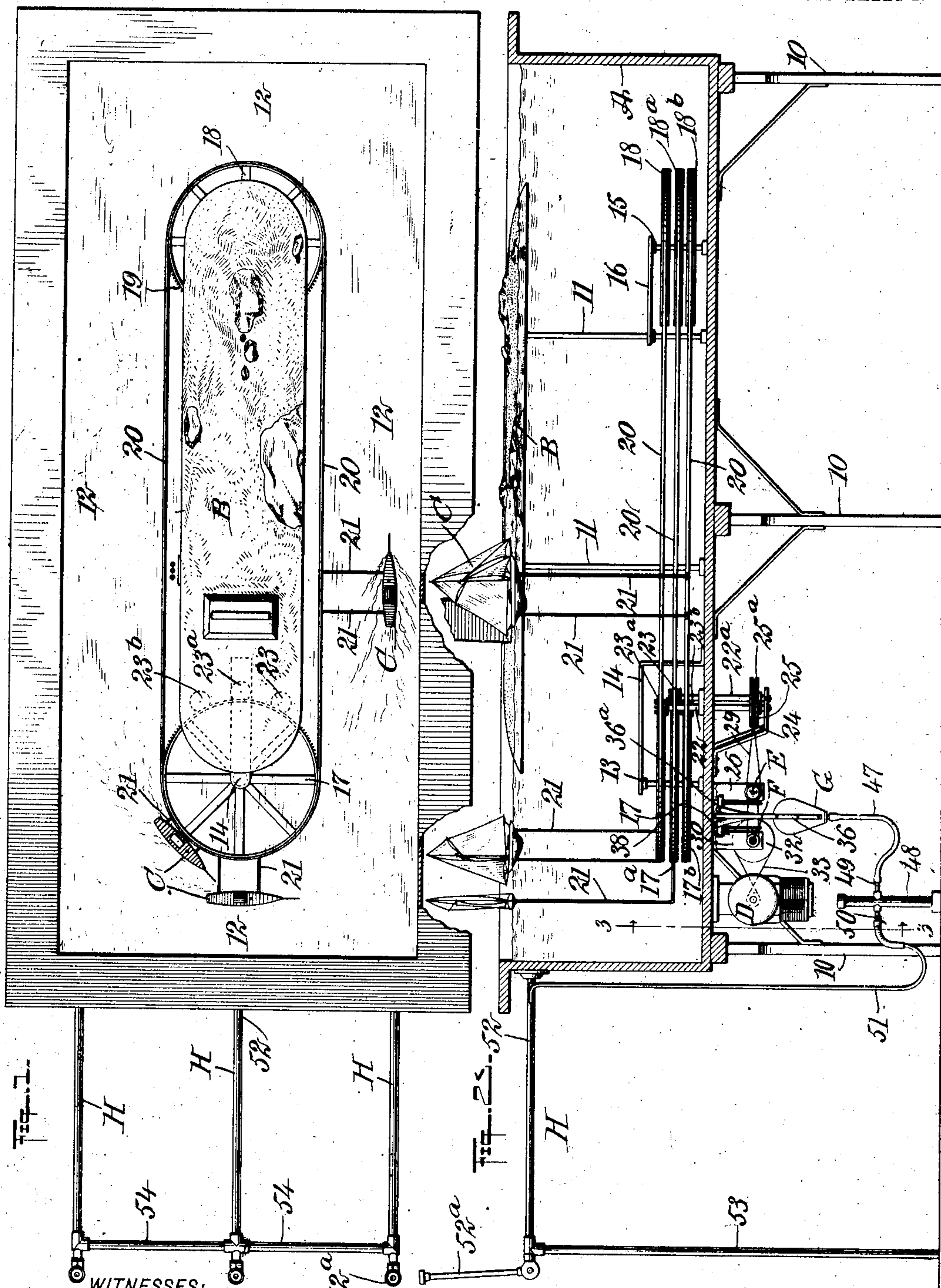


No. 834,055.

PATENTED OCT. 23, 1906.

O. HENRICHSEN.
AMUSEMENT DEVICE.
APPLICATION FILED DEC. 22, 1905.

3 SHEETS—SHEET 1.



WITNESSES:

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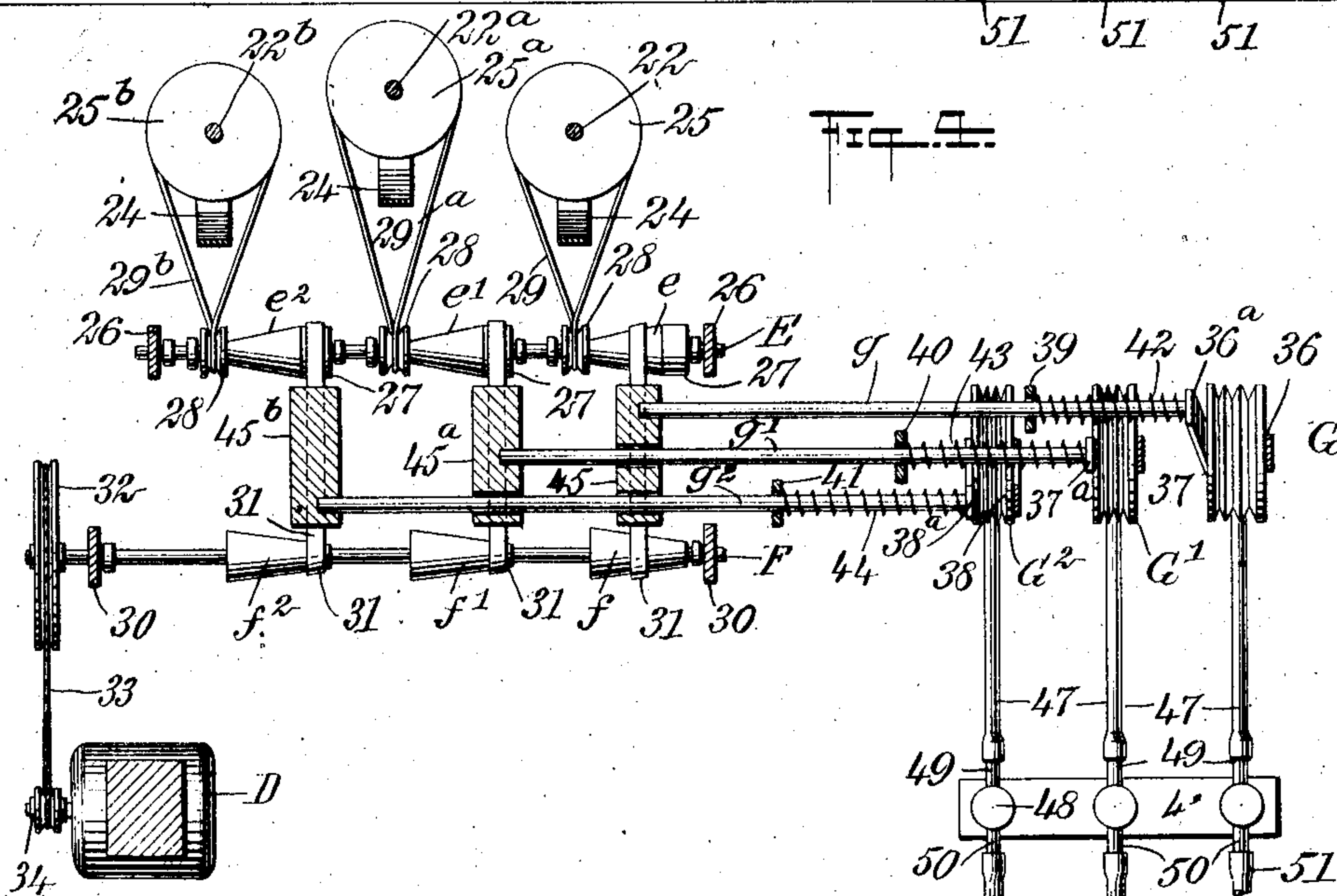
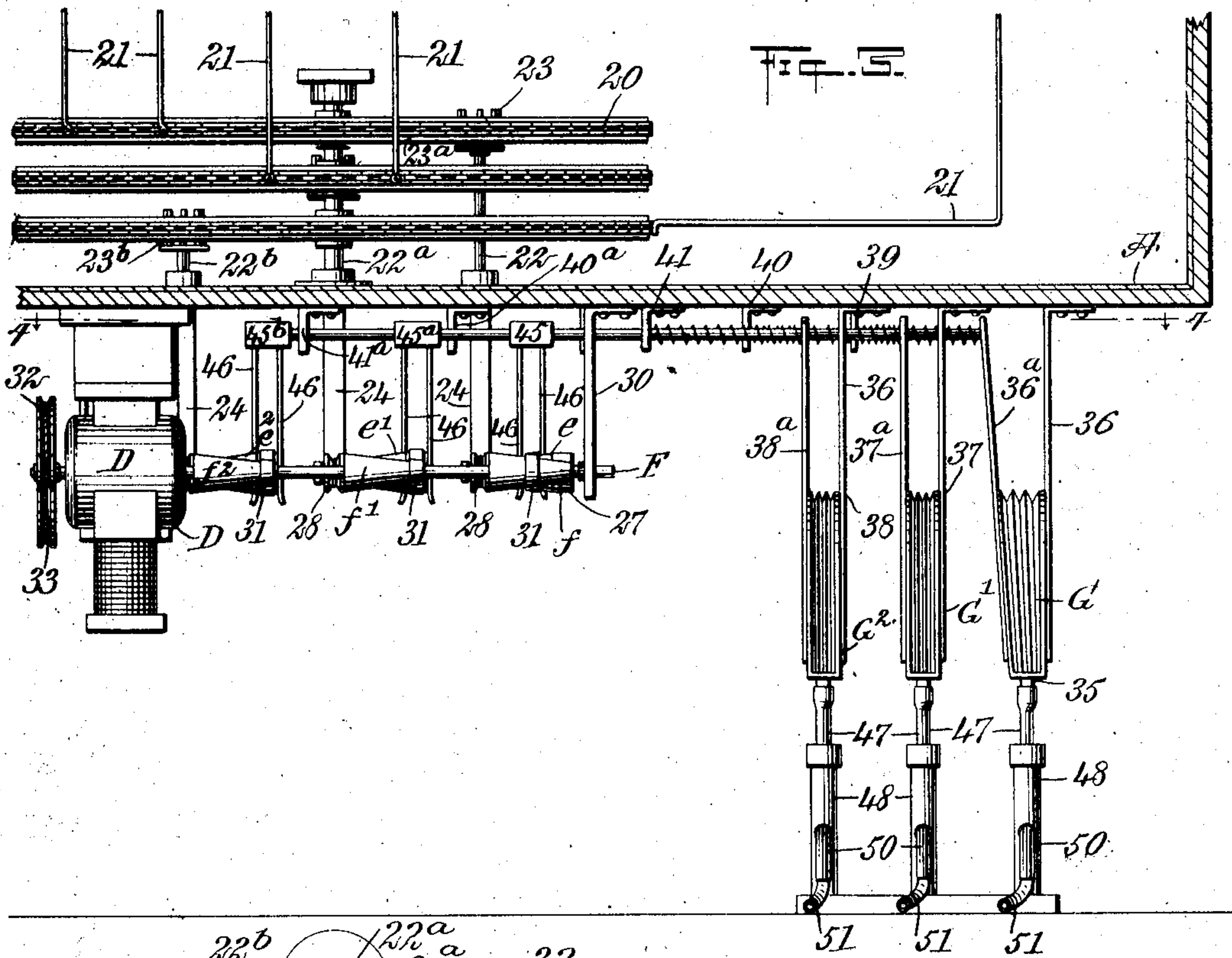
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3 SHEETS—SHEET 2.



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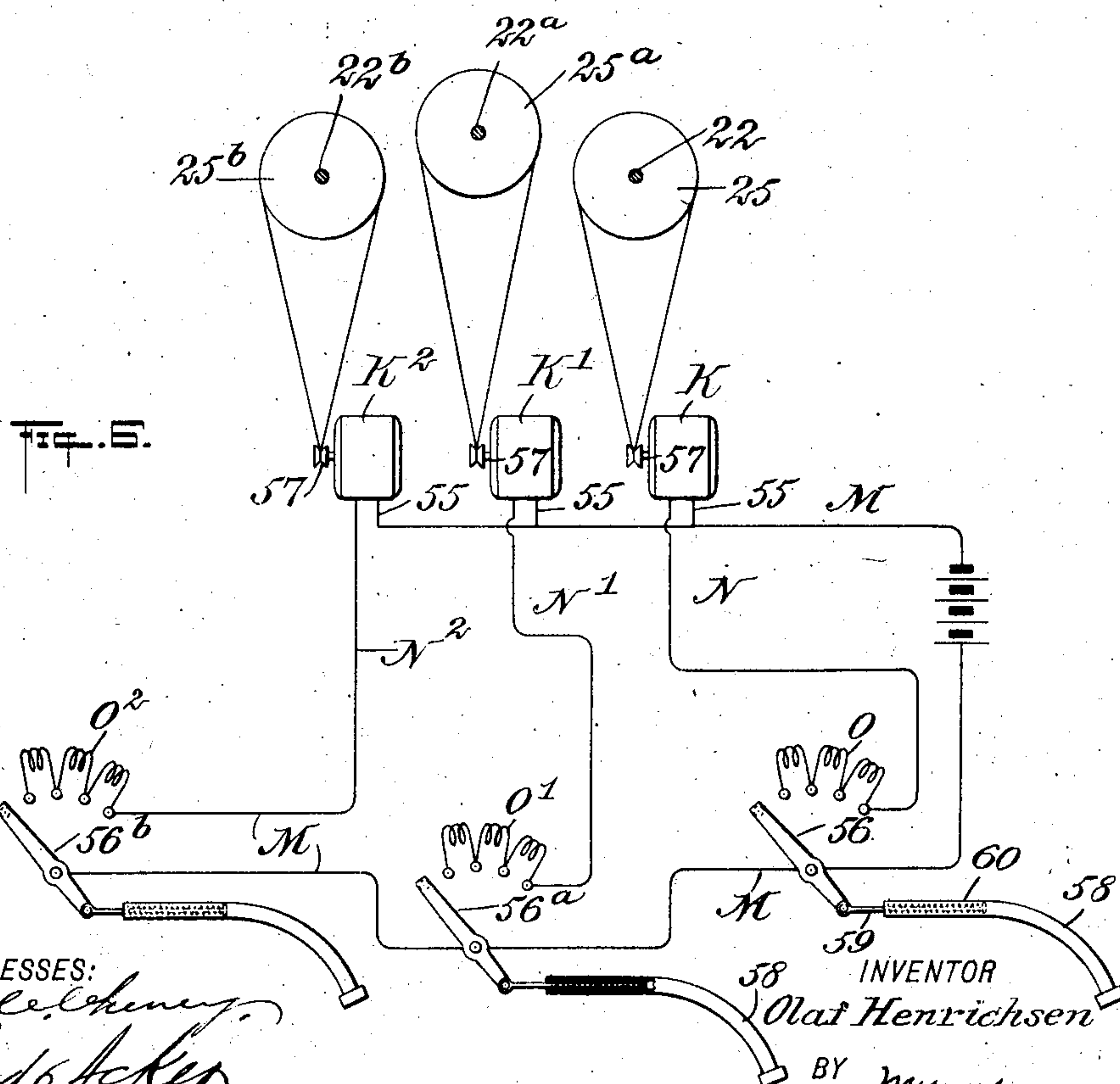
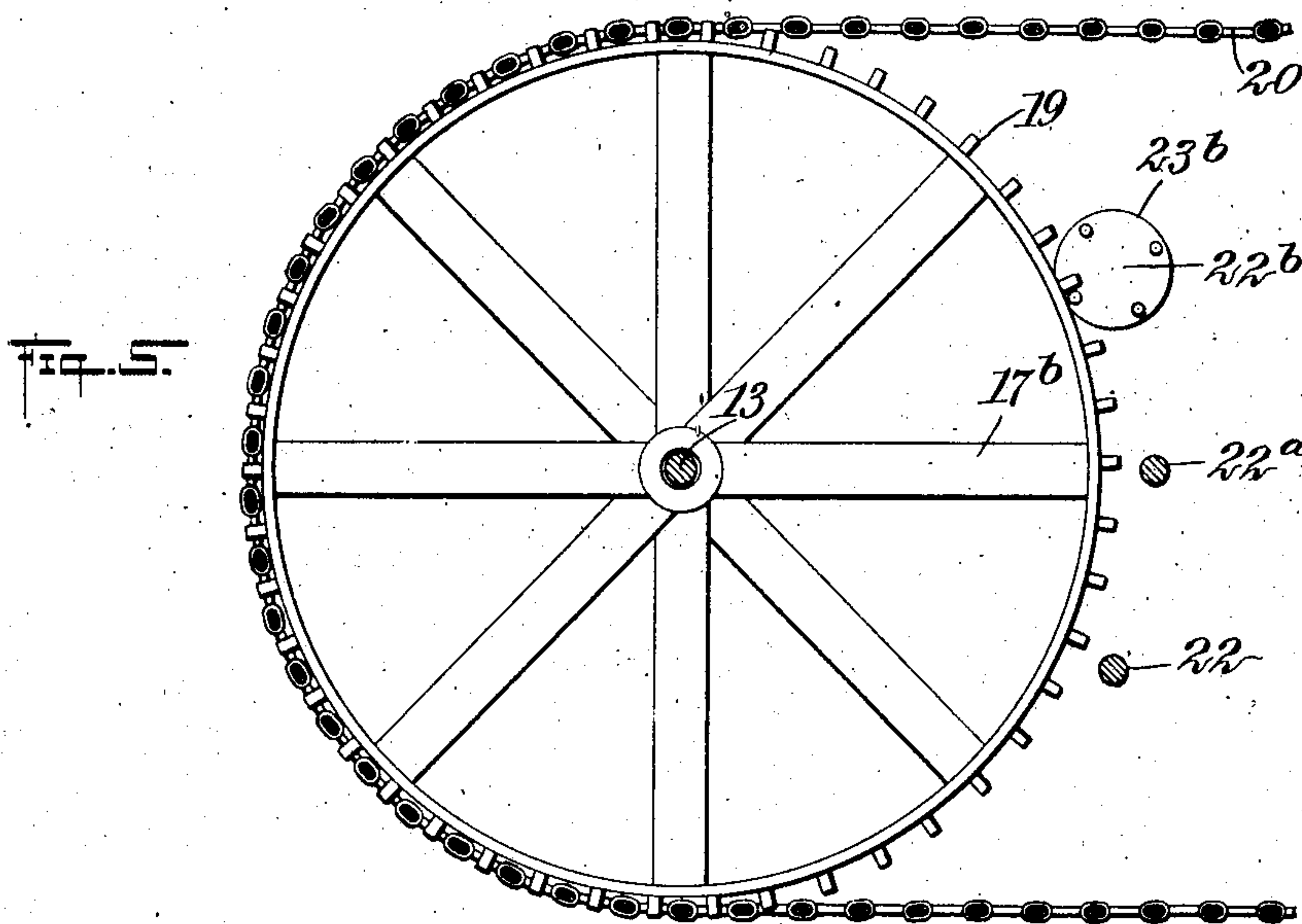
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

OLAF HENRICHSEN, OF NEW YORK, N. Y.

AMUSEMENT DEVICE.

No. 834,055.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed December 22, 1905. Serial No. 292,940.

To all whom it may concern:

Be it known that I, OLAF HENRICHSEN, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Amusement Device, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide an amusement device so constructed that independent objects—such as yachts, boats, or swimmers—may be individually moved at the surface of a body of water with more or less speed through the medium of a motor controlled by the instrumentality of lung-power or exhalations of individuals constituting players in the game, whereby to afford amusement in the form of a racing game and at the same time secure a physical benefit of the players by reason of the lung exercise obtained.

A further purpose of the invention is to provide rotary supports for the several objects or dummies; pneumatically-operated intermediaries for directing the power to such supports and controlling their movements, and blowpipes and connections whereby to supply air to the pneumatics of such intermediary devices.

A further purpose of the invention is to provide means whereby an independent electric motor may be provided for each rotary support to drive the same, all of the motors being in a main circuit with shunt-circuits branching therefrom, one shunt-circuit for each motor, and whereby the shunt-circuits are made and broken by pneumatically-operated switches arranged for contact with rheostats, one in each shunt-circuit.

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 characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improved device. Fig. 2 is a vertical longitudinal section through the casing and a side elevation of the mechanism contained therein. Fig. 3 is a transverse vertical section taken practically on the line 3 3 of Fig. 2, showing the mechanism

in front elevation, the view being drawn upon an enlarged scale. Fig. 4 is a sectional plan view of the device, the section being taken practically on the line 4 4 of Fig. 3. Fig. 5 is an enlarged plan view of a carrying-chain driving-wheel and driving-pinion employed in connection therewith and a plan view of a portion of the chain operated by said wheel; and Fig. 6 is a diagrammatic view illustrating a means whereby each object may be controlled by a motor, the circuits being opened and closed pneumatically, and whereby a rheostat is located in the circuit for each motor.

A represents a tank of any desired size and shape. Preferably, however, the tank is rectangular, as illustrated. The tank is adapted to contain water, and is shown as and is preferably supported by suitable legs 10, although other means of support may be employed. This tank is open at the top as fully as possible, and in the central portion of said tank a preferably-elongated representation of an island is supported a predetermined distance from the sides of the tank and from its ends, the supports being usually through the medium of standards 11, suitably secured to the center of the element representing the island and to the bottom portion of the tank, as is shown in Fig. 2, thereby providing a waterway 12 entirely around the aforesaid representation of an island.

At the transverse center of the tank A, near one end, a spindle 13 is secured to the bottom of the tank, its upper end being steadied by a suitable bracket-brace 14, and at a corresponding point at the opposite end of the said tank a second stationary spindle 15 is provided, steadied at its upper end by a brace 16, as shown in Fig. 2. Usually these spindles 13 and 15 are substantially in vertical alinement with the central end portions of the representation of the island. Carrying-wheels are supported and mounted to turn loosely upon the spindle 13, the said wheels being shown as three in number and designated, respectively, as 17, 17^a, and 17^b, and a corresponding number of carrying-wheels 18 of similar size are supported by and mounted to turn upon the spindle 15, the latter wheels being designated as 18, 18^a, and 18^b.

The wheels of both series of 17 and of 18 are provided with peripheral teeth 19, which may be in the form of sprocket-teeth, as the

said teeth are adapted to enter links of endless chains 20. These chains correspond in number to the number of wheels in each of the series of 17 and 18 and each chain is passed around corresponding wheels of the said series, as is best shown in Fig. 2. The number of chains carried by the said wheels corresponds to the number of racing objects or dummies C that are to be employed. These dummies in the drawings are shown in the form of yachts; but any other object adapted to travel upon or in the water or for aquatic sports may be substituted. These objects or dummies C are supported by vertical arms 21, which may be two or more in number, and the said arms are secured to the bottom portions of the said objects and to the carrying-chains 20, which serve to support, as well as to carry, the said objects. It will be understood that some of the arms 21 are straight and others are angular. In fact, the contour and arrangement of the arms 21 for the various objects C is such that as their supporting or carrying chains 20 are revolved the objects or dummies may readily pass each other throughout the entire circuit of the waterway 12 without interfering with each other.

A vertical shaft is provided for each of the chain-carrying wheels 17, 17^a, and 17^b, as is shown in Figs. 1 and 3. These shafts extend down through the bottom of the tank to a point below it, and the shafts are of different lengths, the shaft 22 extending up to the wheel 17, the shaft 22^a to the intermediate wheel 17^a, and the shaft 22^b to the lower wheel 17^b. Each shaft carries a pinion, the pinion on the shaft 22 being designated as 23, and it meshes with the teeth of the upper wheel 17, while the pinion 23^a on the shaft 22^a meshes with the teeth on the wheel 17^a and the pinion 23^b on the shaft 22^b meshes with the teeth of the lower wheel 17^b, as is illustrated in Figs. 3 and 5. The shafts are located between the side stretches of the carrying-chains 20. The lower ends of the shafts 22, 22^a, and 22^b are journaled in suitable bracket-hangers 24, as is shown best in Fig. 2, and each of the said shafts at its lower end is provided with a pulley, all of the pulleys being of the same size, the pulley on the shaft 22 being designated as 25, that on the shaft 22^a as 25^a, and that on the shaft 22^b as 25^b.

Transversely of the bottom of the tank in front of the pulleys of the series of 25 a line-shaft E is supported by suitable hangers 26, as is best shown in Fig. 4. This shaft E carries cone-pulleys corresponding in number to the number of objects employed and to the number of shafts of the series of 22. The said cone-pulleys are designated as *e*, *e'*, and *e*². These cone-pulleys are loosely mounted on the shaft E, as are likewise ordinary pulleys 27, located at the base of the said cone-

pulleys *e*, *e'*, and *e*². Each of the said cone-pulleys is provided with a grooved pulley 28 at its contracted end, the pulleys 28 being integral with the cone-pulleys to which they belong. The pulley 28 of the cone-pulley *e* is connected, preferably, by a cross-belt 29 with the pulley 25 on the shaft 22, the pulley 28 of the cone-pulley *e'* is connected by a similar belt 29^a with the pulley 25^a on the shaft 22^a, while the grooved pulley 28 of the cone-pulley *e*² is connected by a crossed belt 29^b with the pulley 25^b on the shaft 22^b, as is fully illustrated in Fig. 4.

Parallel with the line-shaft E a drive-shaft F is mounted to turn in hangers 30, secured to the under face of the tank, the drive-shaft F being in front of the line-shaft E. This drive-shaft F is provided with a series of cone-pulleys, which are fast on the shaft, and the cone-pulleys on the shaft F correspond in number to the number of cone-pulleys of the series of *e* on the line-shaft E, the cone-pulley *f* on the drive-shaft being opposite the pulley *e* on the line-shaft, the pulley *f'* on the drive-shaft being opposite the pulley *e'* on the line-shaft, and the pulley *f*² on the drive-shaft being opposite the pulley *e*² on the line-shaft, as is shown in Fig. 4, and from the same figure and likewise from Fig. 3, it will be observed that the two sets of cone-pulleys are reversely placed. For example, the contracted ends of the cone-pulleys of the series of *e* face forward, while the corresponding ends of the cone-pulleys of the series of *f* face rearward. Belts 31 connect opposing cone-pulleys of the series of *e* and of *f*, as is particularly shown in Fig. 4. Normally these belts 31 travel upon the ordinary loose pulleys 27 on the line-shaft E; but when the said belts are carried onto the cone-pulleys of the series of *e* they cause the shafts 22, 22^a, and 22^b, whichever is acted upon, to travel with more or less speed according to the approach of the belt to the contracted end of the cone-pulley of the series of *e* over which it may travel.

The driving-shaft F is provided with a large pulley 32 at its outer or forward end, and this pulley 32 is in belt connection 33 with a driving-pulley 34 on the drive-shaft of a motor D, preferably an electric motor, although any type of motor may be employed. The belts 31 are independently and automatically shifted to stop or to start the shafts of the series of 22, which they govern, preferably by means of the following mechanism: A series of bellows is employed, which I designate "pneumatics," and the said bellows are designated as G, G', and G². These bellows, by preference, are given the vertical position shown in Figs. 2 and 3, being supported beneath the bottom of the tank with their nozzle ends 35 pointing downward. These bellows are preferably arranged in a

longitudinal row, and each bellows is provided with an arm secured to each of its side faces. These arms extend some distance above the butts of the bellows. The inner arm of the bellows G is designated as 36 and the outer arm as 36^a, the inner arm 36 being secured to the bottom of the tank and the outer arm 36^a being free. The corresponding arms of the bellows G' are designated as 37 and 37^a and those of the bellows G² as 38 and 38^a, the arm 37 of the bellows G' and the arm 38 of the bellows G² being secured to the bottom of the tank, while the arms 37^a and 38^a are free. In connection with the bellows shifting-rods are employed, and these shifting-rods are designated, respectively, as *g*, *g'*, and *g*², the shifting-rod *g* being the shortest and the shifting-rod *g*² the longest. These rods are arranged in the same horizontal plane one back of the other. The free bellows-arm 36^a is attached to the inner end of the short shifting-rod *g*, and the inner end of the intermediate shifting-rod *g'* is attached to the free arm 37^a of the intermediate bellows G', while the inner end of the shifting-rod *g*² is attached to the free arm 38^a of the forward or outer bellows G². In order that one shifting-rod shall not interfere with the other or that any of the bellows-arms shall not interfere with the shifting-rods, the free bellows-arm 36^a is carried, for example, in direction of one side of the tank, the free arm of the intermediate bellows is carried vertically upward, while both arms of the forward bellows G² are carried toward the opposite side of the tank, as is shown in Figs. 2 and 4. A guide 39 is provided for the short shifting-rod *g*, and corresponding guides 40 and 40^a are provided for the intermediate shifting-rod *g'*, while guides 41 and 41^a are provided for the shifting-rod *g*², the rods passing loosely through the guides and the said guides being secured to the bottom of the tank. A spring 42 is coiled around the shifting-rod *g*, bearing against the bellows-arm 36^a and against the guide 39. A corresponding spring 43 is coiled around the inner end of the intermediate shifting-rod *g'*, having bearing against the bellows-arm 37^a and against the guide 40, while a spring 44 is coiled around the inner end of the shifting-rod *g*², having bearing against the bellows-arm 38^a and against the guide 41 for the said rod. The shifting-rod *g* is attached to a shifting-bar 45, adapted for action relative to the belt 31, carried by the cone-pulleys *e* and *f*, the intermediate shifting-rod *g'* is connected with a shifting-bar 45^a, which operates over the belt 31, adapted to connect the cone-pulleys *e'* and *f'*, while the shifting-rod *g*² is connected with a shifting-bar 45^b, adapted for movement over the belt 31, which connects the cone-pulleys *e*² and *f*². The intermediate shifting-rod *g'* passes loosely through the

shifting-bar for the rod *g*, and the rod *g*², having the shifting-bar 45^b, passes loosely through both of the shifting-bars 45 and 45^a, as is shown in Fig. 4. Each shifting-bar 45 and 45^a and 45^b is provided with downwardly-extending fingers 46 near each longitudinal edge adapted to extend down at opposite sides of the belt 31, to which the shifting-bar belongs, so that as the bellows is inflated and to the extent to which the bellows is inflated the shifting-rod of that bellows will operate the shifting-bar connected with said rod to move the belt 31 it operates to a greater or lesser extent in direction of the tapered end of the pulley of the series of *e* over which the belt may pass, thus giving more or less speed to the objects operated from said pulley, and as soon as the bellows collapses the spring on the shifting-rod which was operated will return the shifting-bar carried by said rod to its normal position, thus bringing the belt 31, operated by said bar, off from the cone-pulley of the series of *e* on which it had traveled onto the loose ordinary pulley 27 at the base of the said cone-pulley, thus stopping the further continued motion of the object or dummy previously driven.

Pipes 47, preferably made of rubber, are attached to the nozzles of the bellows G, G', and G², and each of said pipes 47 is connected with a branch pipe 49 from a stand-pipe 48, closed at the top and at the bottom, which stand-pipes are suitably supported at any desired point outside to the tank A, preferably beneath said tank, as is shown in Fig. 2. Each stand-pipe 48 is provided with a second branch 50 opposite its branch 49, and each branch 50 is connected with one end of preferably a flexible tube 51, and each tube 51 is connected with a blowpipe H. The blowpipes may be secured to the tank at any desired point or points—at an end, for example—or may be placed some distance from the tank.

As many blowpipes are employed as there are objects or dummies to be moved. Hence three blowpipes are shown in the drawings located at the forward end of the tank, being supported by props 53 and laterally braced by rods 54. The blowpipes may be of any desired character and may be made of any suitable material. They may be made in one piece or may be made with a stationary inner section 52 and an adjustable mouthpiece-section 52^a, as is shown.

In Figs. 1, 2, 3, and 4 the driving is accomplished through a single motor D; but in Fig. 6 I have shown an arrangement whereby a separate electric motor is provided as a driving factor for each object or dummy to be driven, which motors are designated as K, K', and K². These motors may be placed wherever desired, some distance from the tank, if necessary, and in different compart-

ments. All of the motors are in a main electric circuit M parallel with each other, the connections with the motors being through the medium of branch wires 55. Shunt-circuits N, N', and N² branch from the main circuit M, one for each motor, and in each shunt-circuit N, N', and N² a rheostat is located, (designated, respectively, as O, O, and O².) The shunt-circuits are opened and closed by switches, (designated, respectively, as 56, 56^a, and 56^b,) which switches are pivoted and are in the main circuit and are arranged for movement to and from the rheostats, so that the motor by increasing or decreasing the resistance may be made to move fast or slow. The driving-pulley 57 of each motor in the series of K has a belt connection with one or the other of the pulleys of the series of 25 on the shafts of the series of 22. The switches are pneumatically operated through the medium of blowpipes connected with tubes 58 and by pivoting a plunger-rod 59 to the outer end of each switch, which plunger-rod operates in the inner end of the tube 58 designed for the particular switch. The said plunger-rod is normally drawn outward by means of a spring 60, located in the tube, having one end, for example, secured to the inner end of the tube and the other end to the outer portion of the plunger-rod. Each spring 60 acts normally to keep the switches of the series 56 open, as shown in Fig. 6. However, when a player blows into a blowpipe the air entering the tube 58 forces the plunger-rod outward against the resistance of its spring 60 and carries the particular switch connected with that particular rod to an engagement with the rheostat with which it is to engage and in proportion to the pressure of air to which the plunger-rod 59 is subjected will be the movement of the switch connected with said rod to one or the other of the loops in the rheostat and correspondingly will the motor in that shunt-circuit be driven slowly at a moderate rate of speed or fast and the object operated from said motor be made to move at a proportionate speed.

I desire it to be understood that the belts for the carrying-wheels may be plain belts instead of chain belts, as shown, and that the belts for the pulleys, particularly the cone-pulleys, are by preference made of elastic material.

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

1. In an amusement device, a support, opposing and corresponding series of carrying-wheels mounted to revolve upon said support, belts passed around and driven by the said wheels, arms connected with and extending from the belts, objects or dummies supported by said arms, pneumatically-con-

trolled means for individually bringing into action any set of belt-connected carrying-wheels, a motor, and connections between the motor and said means.

2. In an amusement device, a support, opposing and corresponding series of carrying-wheels mounted to revolve upon said support, endless chains passed around and driven by said wheels, arms connected to and extending from the chains, objects or dummies supported by said arms, pneumatically-controlled means for individually bringing into action any set of belt-connected carrying-wheels and controlling the speed thereof, a motor, and connections between the motor and said means.

3. In an amusement device, a support, opposing and corresponding series of carrying-wheels mounted to revolve upon said support, carrying-belts driven from corresponding carrying-wheels of the series, arms connected with the said belts, objects or dummies carried by said arms, individual driving-gearing for individual carrying-wheels of a series, a line-shaft, cone-pulleys loosely mounted on the said line-shaft, connections between individual cone-pulleys and individual driving-gears for the carrying-wheels, a drive-shaft, cone-pulleys secured on the said drive-shaft, reversely placed to those on the line-shaft, but corresponding in position and number, driving-belts connecting corresponding pulleys on the said line and drive shafts, a motor for driving the drive-shaft, and pneumatically-operated shifting devices for the belts.

4. In an amusement device, a support, opposing and corresponding series of carrying-wheels mounted to revolve upon said support, carrying-belts driven from corresponding carrying-wheels of the series, arms connected with said belts, objects or dummies carried by the said arms, individual driving-shafts for the carrying-wheels of a series, driving connections between the shafts and the said carrying-wheels, a line-shaft, cone-pulleys loosely mounted on the said line-shaft, regular pulleys likewise loosely mounted on the line-shaft adjacent to the base of the cone-pulleys, belt connections between each of said cone-pulleys at the tapered end thereof and one of the drive-shafts for the carrying-wheels, a main drive-shaft parallel with the line-shaft, cone-pulleys secured to the main drive-shaft, being reversely placed to the cone-pulleys on the line-shaft but otherwise corresponding in number and position thereto, a driving-belt for each loosely-mounted cone-pulley and corresponding fast cone-pulley, a motor, connections between the motor and the main drive-shaft, shifting devices for the belts on the cone-pulleys, individual pneumatics operatively connected with individual shifting devices, individual

blowpipes, and connections between individual blowpipes and individual pneumatics.

5. In an amusement device, a support, a shaft fixed on said support, a series of individual toothed wheels mounted to turn on the said shaft, individual objects or dummies, and means for revolving said objects by the revolution of the said wheels, individual shafts for the individual wheels, a pinion on each of the said shafts, engaging one with each of the said wheels, a line-shaft, a series of cone-pulleys loosely mounted on said shaft, corresponding in number to the number of shafts for the wheels, each cone-pulley being provided with an integral pulley at its tapered end, ordinary pulleys loosely mounted on the said line-shaft at the base of the cone-pulleys, belt connections between integral pulleys on the cone-pulleys and the said shafts for the carrying-wheels, a main drive-shaft parallel with the line-shaft, cone-pulleys secured to the drive-shaft, reversely placed to those on the line-shaft but otherwise corresponding in number and position, belts connecting opposing cone-pulleys on the parallel shafts, means for driving the drive-shaft, a series of shifting devices corresponding in number to the number of belts on the cone-pulleys and adapted for engagement with said belts to move the same on said pulleys, a series of pneumatics corresponding in number to the number of shifting devices, tension-controlled connections between the said pneumatics and the said shifters, an individual blowpipe for each pneumatic, and connections between the pneumatics and the blowpipes.

6. In an amusement device, the combination with a tank adapted to contain a fluid, fixed alining shafts secured to the said tank, toothed wheels loosely mounted upon the said fixed shafts, the wheels on the shafts corresponding in number and position, carrying-belts engaging with corresponding wheels on the said alining shafts, arms attached to the said belts and extending therefrom, objects or dummies supported by the said arms, a series of driving-shafts adjacent to one series of wheels, and a pinion on each shaft, the pinions being in engagement one with each of said wheels adjacent to the shaft, of a line-shaft located below the tank, cone-pulleys loosely mounted on the said line-shaft, each cone-pulley having a grooved pulley at its tapered end, ordinary pulleys loosely mounted on the said line-shaft adjacent to the base of the cone-pulleys, belt connections between each of the grooved pulleys and one of the driving-shafts for the said toothed wheels, a drive-shaft parallel with the line-shaft, cone-pulleys secured on the said drive-shaft, reversely placed to those on the line-shaft but otherwise corresponding in number and position thereto, belts connect-

ing opposing cone-pulleys, a motor having driving connection with the drive-shaft, a shifting device for each belt, a pneumatic for each shifting device, and a blowpipe connected with each pneumatic.

7. In an amusement device, the combination with a tank adapted to contain a fluid, fixed alining shafts secured to the said tank, toothed wheels loosely mounted upon the said fixed shafts, the wheels on the shafts corresponding in number and position, carrying-belts engaging with corresponding wheels on the said alining shafts, arms attached to the said belts and extending therefrom, objects or dummies supported by the said arms, a series of driving-shafts adjacent to one series of wheels, and a pinion on each shaft, the pinions being in engagement one with each of said wheels adjacent to the shaft, of a line-shaft located below the tank, cone-pulleys loosely mounted on the said line-shaft, each cone-pulley having a grooved pulley at its tapered end, ordinary pulleys loosely mounted on the said line-shaft adjacent to the base of the cone-pulleys, belt connections between each of the grooved pulleys and one of the drive-shafts for the said toothed wheels, a drive-shaft parallel with the line-shaft, cone-pulleys secured on the said drive-shaft, reversely placed to those on the line-shaft but otherwise corresponding in number and position thereto, belts connecting opposing cone-pulleys, a motor having driving connection with the drive-shaft, a shifting-bar for each of the belts carried by the cone-pulleys, a shifting-rod connected with each shifting-bar, guides for the same and springs carried by the said rods, which springs are placed under tension when the shifting-bars are carried into action, a bellows for each shifting-rod, having arms connected one with a rod and the other with a support, a blowpipe for each bellows, and a connection between each blowpipe and the bellows to which it belongs.

8. In an amusement device, the combination with a series of drive-shafts, a corresponding number of electric motors, each in belt connection with the drive-shaft, a main circuit, a shunt-circuit for each motor, branched from the main circuit, a rheostat located in each of the shunt-circuits, a switch for each shunt-circuit capable of movement to and from the rheostat of such shunt-circuit, blowpipes, a spring-controlled plunger in each blowpipe, a pivotal connection between the plunger of each blowpipe and each of the said switches, the springs operating the plungers in a manner to normally keep the shunt-circuits open, said circuits being closed only by air forced into the blowpipes and operating on the plungers therein.

9. In an amusement device, a casing, opposing and corresponding series of wheels

mounted to revolve in said casing, belts
passed around and driven by the said wheels,
arms connecting with and extending from
the said belts, objects or dummies supported
5 by said arms, means for bringing into action
any set of belt-connected carrying-wheels, a
motor, and connections between the motor
and said means.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

OLAF HENRICHSEN.

Witnesses:

J. FRED ACKER,
JNO. M. RITTER.