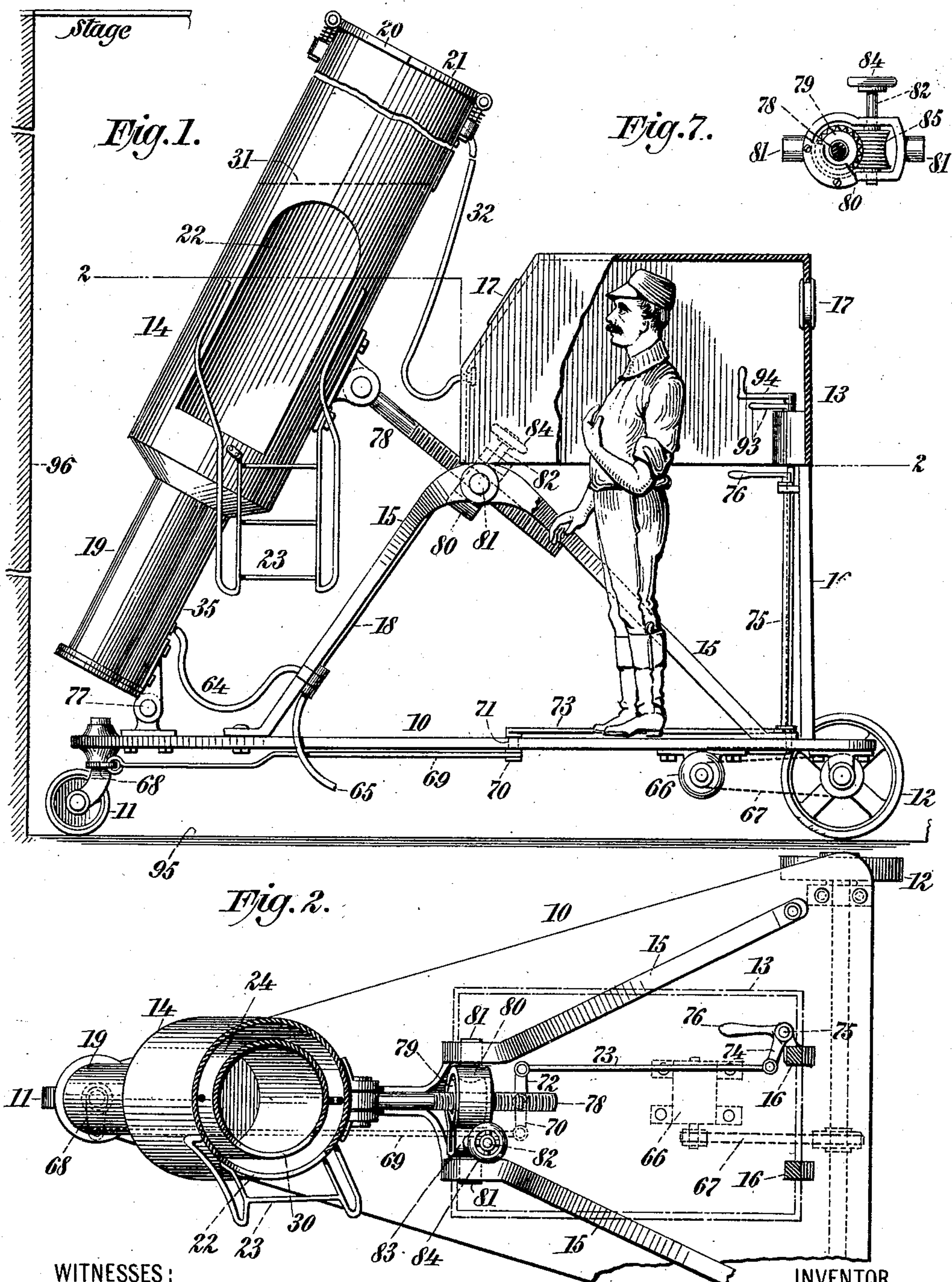


No. 877,167.

PATENTED JAN. 21, 1908.

H. L. BOWDOIN.  
THEATRICAL APPARATUS.  
APPLICATION FILED APR. 23, 1907.

4 SHEETS—SHEET 1.



WITNESSES:

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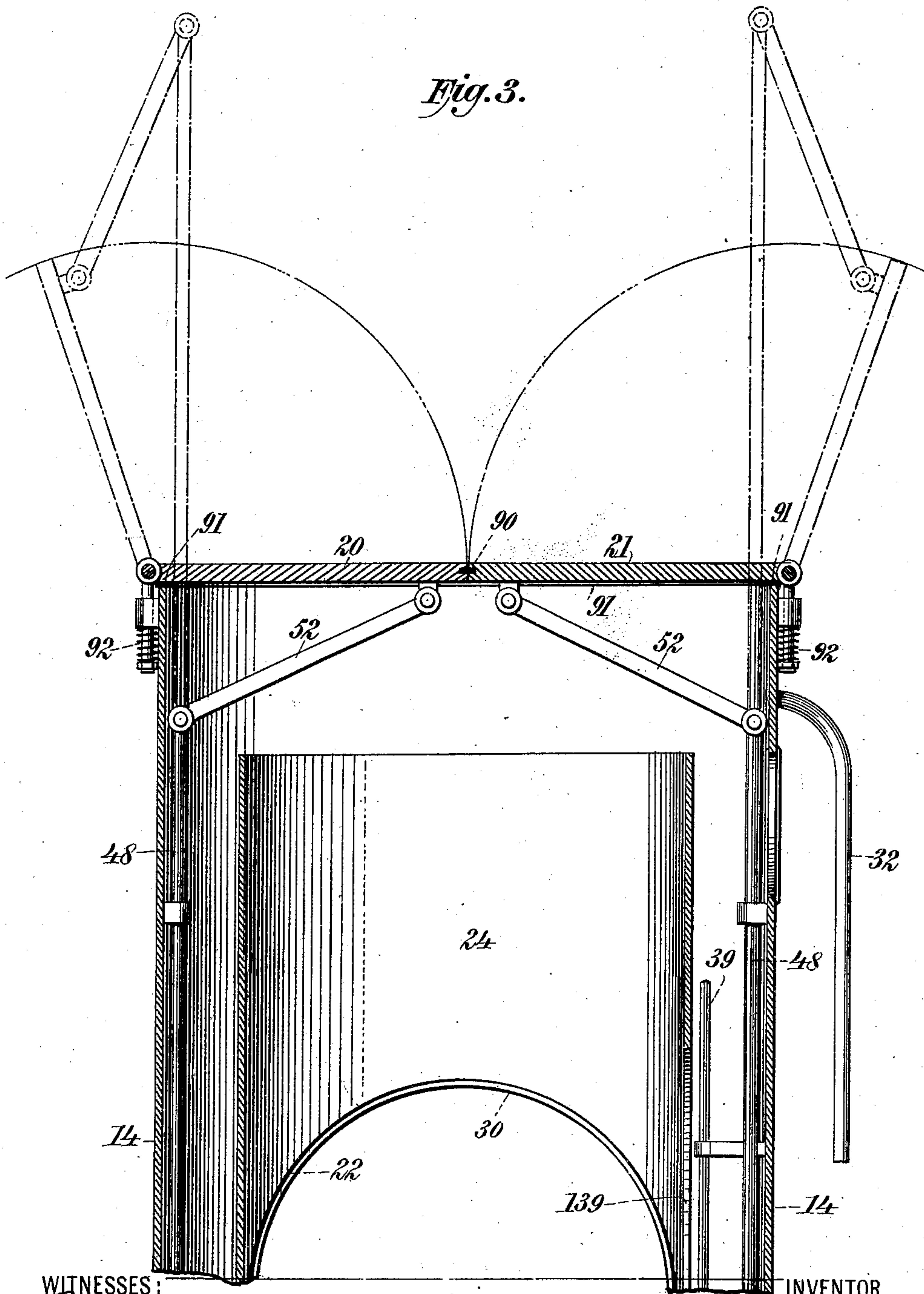
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4 SHEETS—SHEET 2.

*Fig. 3.*



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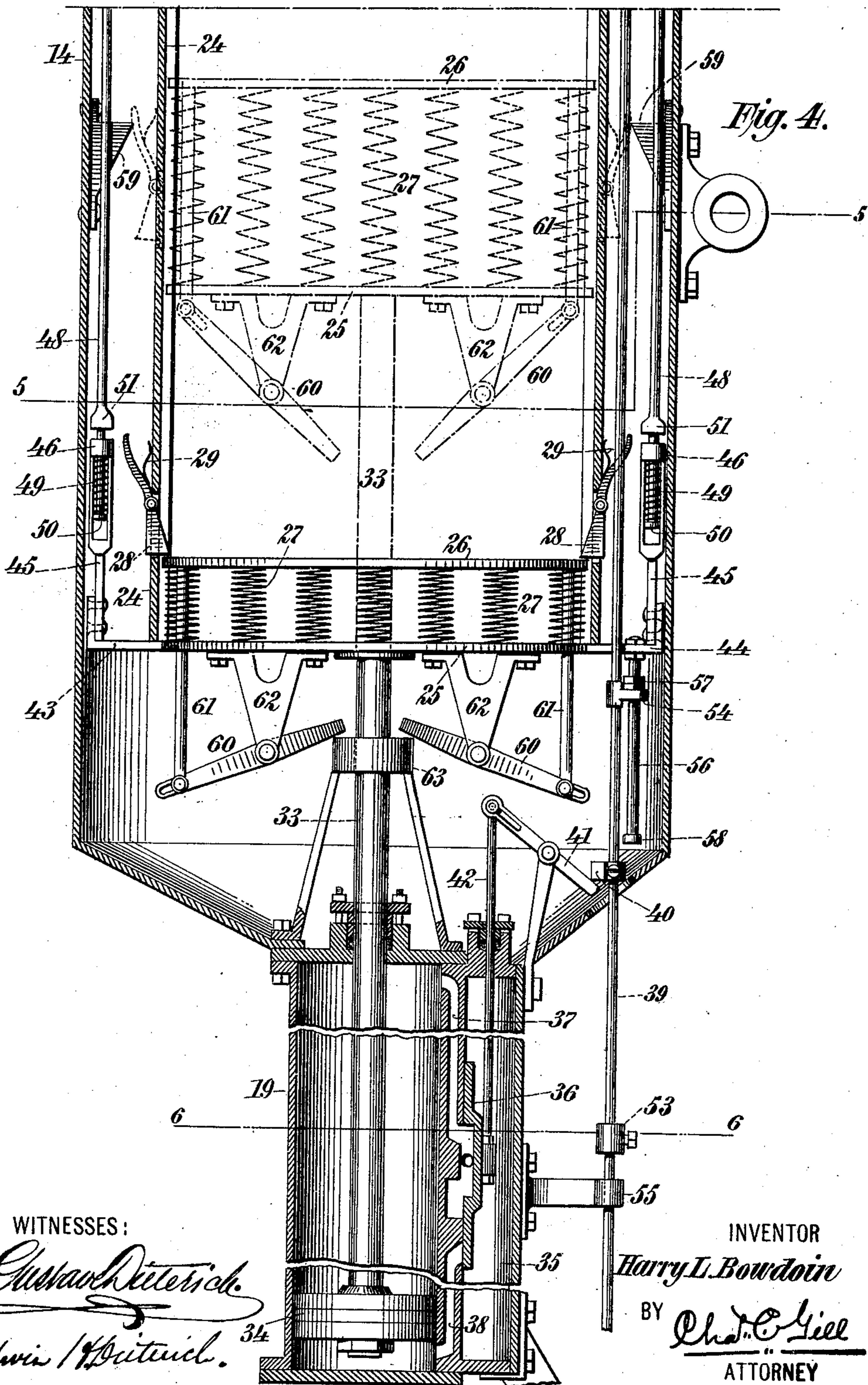
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4 SHEETS—SHEET 4.

Fig. 5.

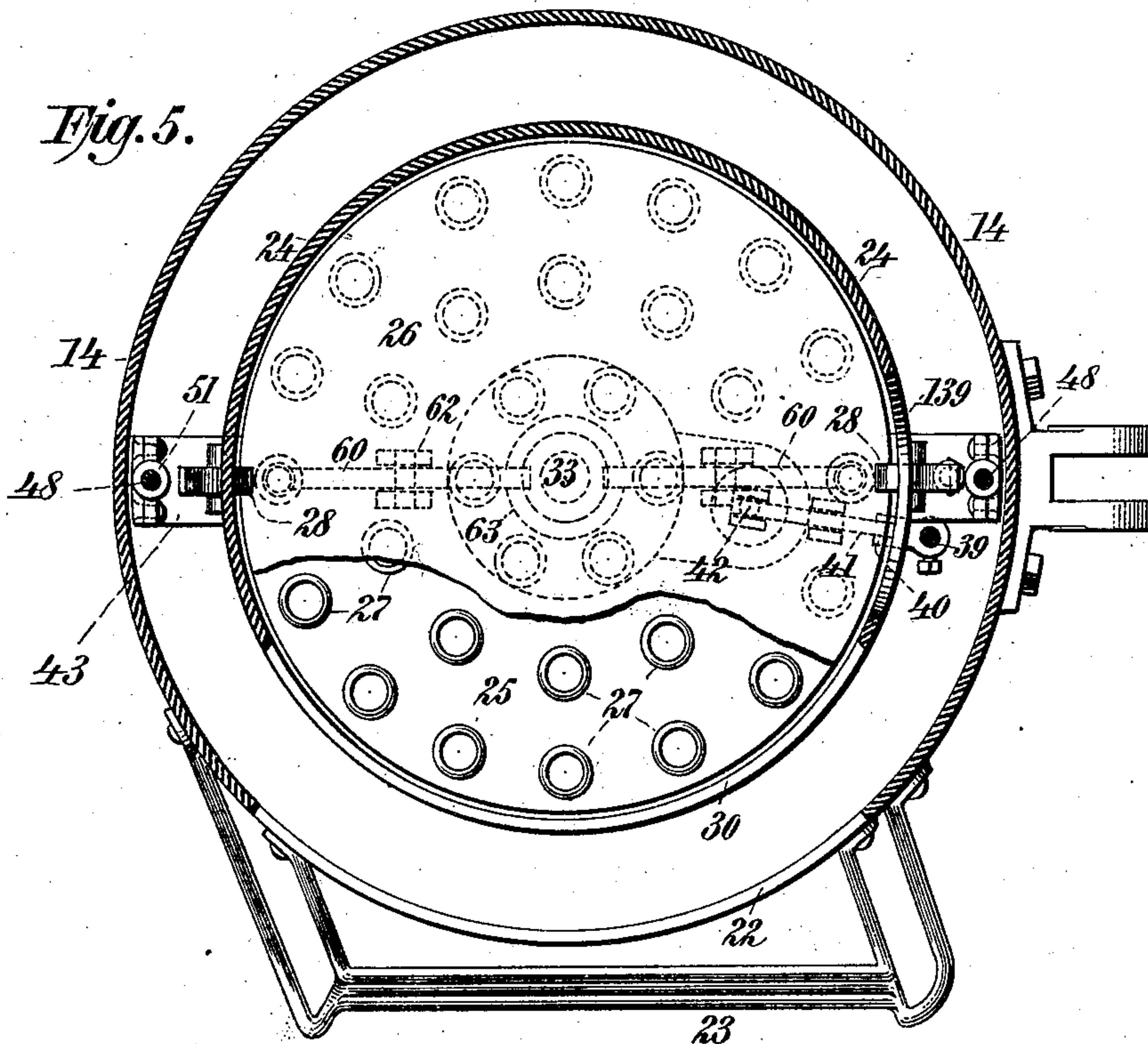


Fig. 6.

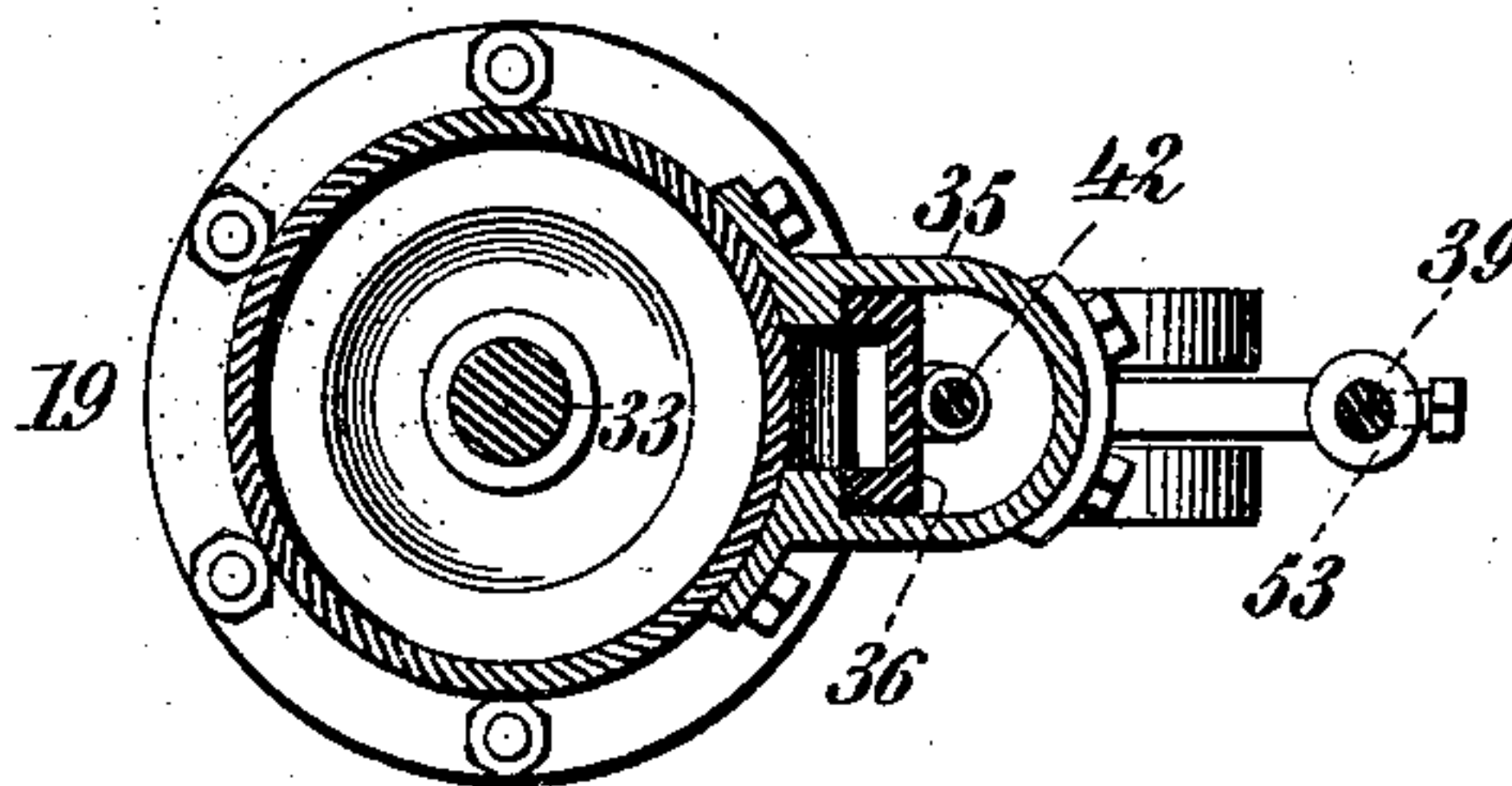
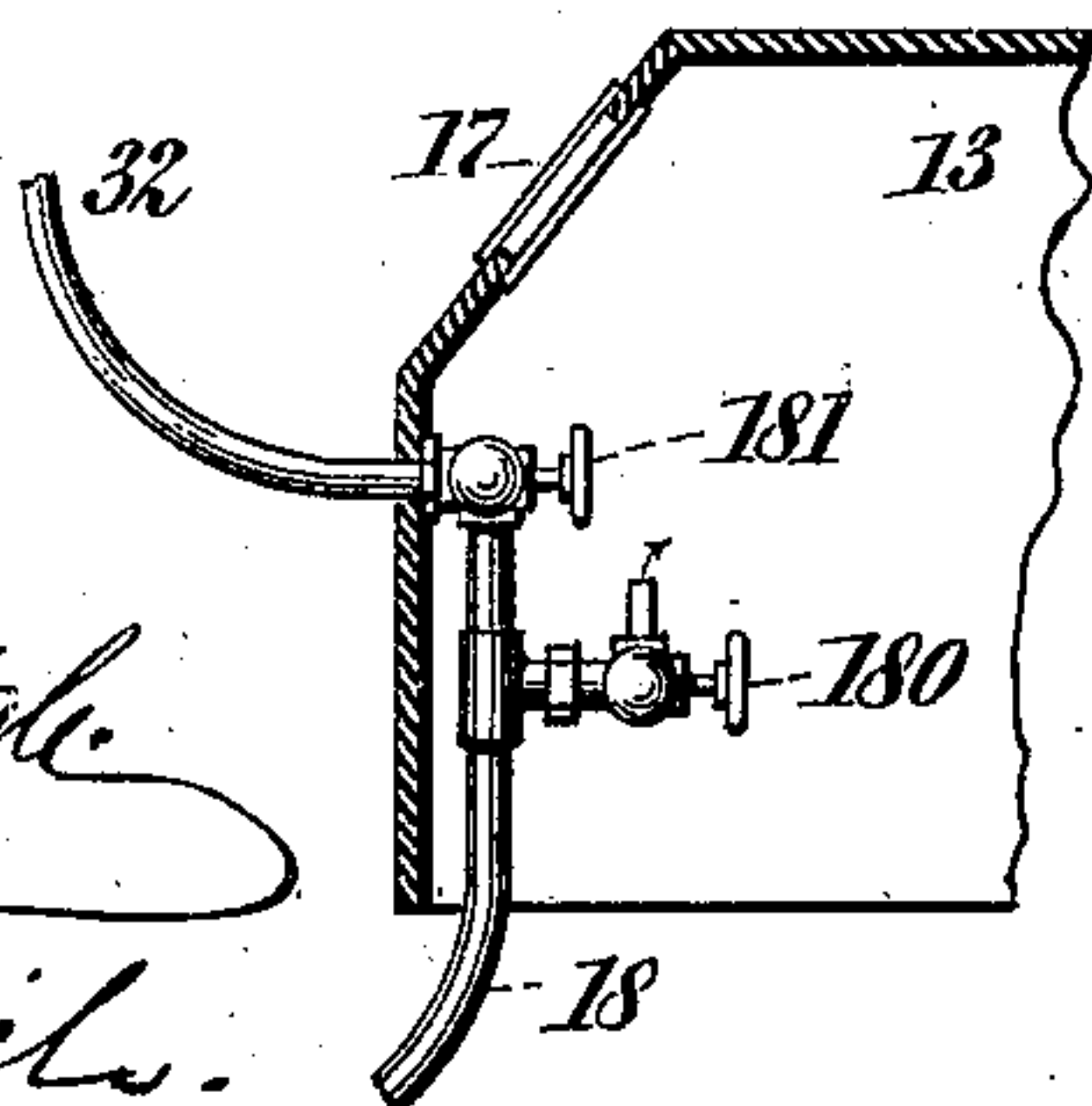


Fig. 8.



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# UNITED STATES PATENT OFFICE.

HARRY L. BOWDOIN, OF NEW YORK, N. Y.

## THEATRICAL APPARATUS.

No. 877,167.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed April 23, 1907. Serial No. 369,774.

*To all whom it may concern:*

Be it known that I, HARRY L. BOWDOIN, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Theatrical Apparatus, of which the following is a specification.

The invention relates to improvements in theatrical apparatus and the like, and it consists in the novel features, structures and combinations of parts hereinafter described, and particularly pointed out in the claims.

The object of the invention is to produce apparatus for use while submerged in a tank of water forming part of a stage, in enabling actors taking part in a play to remain under water any suitable length of time and then appear upon the surface or be ejected up through the water and above the same.

The apparatus constituting my invention will be made use of in plays involving marine effects or effects of an illusionary character which may be carried out by means of a tank of water and apparatus enabling persons to dive into the tank or enter the same unobserved and remain below the surface of the water any appropriate length of time and then ascend or be forcibly ejected up through the water, as the occasion may require.

The apparatus constituting my invention will be varied to suit the conditions of the play, and without variation the apparatus here presented may be employed in connection with plays varying in their plans and plots.

I present my invention herein as embraced in a submerged movable apparatus embodying two main features, one being an inverted air-receptacle adapted to receive the head and upper portion of the body of an actor while under water so that he may breathe therein and remain under water any suitable length of time, and the other being a receptacle into which an actor may pass from the first-mentioned receptacle and remain therein such time as may be required and then be by means of mechanism provided therefor, with the use of compressed air or the like, forcibly ejected out through the upper end of the receptacle and up through and above the surface of the water in the tank. The apparatus may be duplicated so that actors may be ejected up from various parts of the tank, and will be used in connection with plays or

sketches appropriate to the water-effects or scenes to be produced.

The apparatus of my invention will be wholly submerged, and all of the receptacles or chambers thereof within which the actors are to pass will be adapted to hold air, being closed at their upper ends and sides, and equipped with means for the supply of air thereto. I shall preferably mount the apparatus upon a platform supported by wheels and equipped with means for causing it to travel from place to place on the bottom of the tank and also with means for guiding it.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation, partly in section, of an apparatus constructed in accordance with and embodying the invention; Fig. 2 is a horizontal section, partly broken away, of the same on the dotted line 2—2 of Fig. 1; Fig. 3 is a central vertical section through the upper portion of the chamber within which an actor may pass and from the upper end of which he may be ejected and caused to shoot up through and above the body of water within the tank; Fig. 4 is a like section, partly broken away, of the apparatus whose upper portion is shown in Fig. 3, Figs. 3 and 4 matched together representing a complete central vertical section of said apparatus; Fig. 5 is a transverse section of the same on the dotted line 5—5 of Fig. 4; Fig. 6 is a transverse section through the same on the dotted line 6—6 of Fig. 4; Fig. 7 is a detached sectional view, partly broken away, of the screw and worm gearing for adjusting the inclination of the ejector cylinder; and Fig. 8 is a vertical longitudinal section through one of the air reservoirs and is presented to illustrate the air-pipe connections.

In the drawings, 10 designates a suitable platform mounted upon wheels 11, 12, and adapted to support the air-receptacle 13 and ejector-receptacle 14, the receptacle 13 being rigidly mounted upon supports above the platform 10 and the receptacle 14 being preferably hinged or pivotally mounted, so that it may be given such inclination as may be desired. Upon the platform 10 is mounted a tripod frame 15 which supports the front end of the receptacle 13, while the rear end of said receptacle may be supported by vertical standards 16. The receptacle 13 is



closed at its top and sides and entirely open at its lower end and said receptacle is located at such height above the platform 10 that a person standing on the platform may have his head and the upper portion of his body within said receptacle. I preferably provide the air-receptacle 13 with windows 17 through which light may pass into the receptacle and out through which a person whose head is within said receptacle may look. The receptacle 13 will be formed of sheet iron and in use forms an air-reservoir located below the surface of the water and within which an actor or other person may insert his head, for breathing purposes, and thereby be enabled to remain under water for an indefinite length of time. The platform 10 will be supported upon the bottom of the tank and when the water is filled into the tank until it covers the entire apparatus, the said water will not fill up into the air-receptacle 13 except to a very limited extent at the lower edges of the same, whereby a commodious air chamber is left within said receptacle.

In the employment of the apparatus air will be forced in limited quantities through a tube 18 into the receptacle 13, so that a supply of fresh air may be maintained within said receptacle and the water kept down to the lower edges of the same during the use of the apparatus. In the usual employment of the apparatus the actors will place their heads into and withdraw them from the receptacle 13 a number of times during a performance, and this act on their part will naturally have the effect of taking some of the air from the receptacle and permitting water to enter the same to a corresponding extent. The fresh air admitted to the receptacle 13 through the pipe 18 will, however, have the effect of preventing any undue exhaustion of the air from the receptacle and keeping the water from rising within said receptacle further than to a very slight distance above the lower edges of the same.

The ejector receptacle 14 is in the form of an exterior cylinder having a power cylinder 19 at its lower end, hinged trap doors 20, 21 at its upper end and an entrance doorway 22 in its side, this doorway 22 being sufficiently large to permit an actor to pass through the same and the cylinder being provided with a ladder 23 for the convenience of the actors in reaching the doorway 22. The interior details of the cylinder 14 are more clearly illustrated in Figs. 3, 4 and 5. Within the cylinder 14 I provide a movable cylinder 24 which has a fixed bottom 25 and a movable bottom 26, the latter being mounted upon a series of coiled springs 27 and being normally locked down against said springs, with the latter under compression, by means of pivoted dogs 28 which are disposed in slots in opposite sides of the cylinder 24 and have their lower

ends held normally above the edges of the movable bottom 26 by means of springs 29, as shown in Fig. 4. The dogs 28 are weighted or heavier at their lower ends so that said dogs will have a normal tendency to assume the position in which they are shown in Fig. 4, but for assurance of operation I provide the springs 29 for forcing said dogs into their normal locking position. While the dogs 28 are in the position shown in Fig. 4 by solid lines, the bottoms 26, 25 maintain their uniform relation to each other and move with the cylinder 24 when the latter is moved. The cylinder 24 is provided, above the initial normal position of the bottom 26 and in line with the doorway 22 of the exterior cylinder 14, with the doorway 30 through which the actors may pass to the chamber formed within the cylinder 24.

When an actor is within the cylinder 24 and standing upon the floor or bottom 26 thereof, his head will be within the upper portion of the said cylinder and above the doorways 22, 30. The upper end of the exterior cylinder 14 is sealed by the hinged doors 20, 21, when the latter are in closed position, and hence an actor standing upon the floor 26 of the inner cylinder 24 will have his head located within an air-chamber, enabling him to breathe and remain within the cylinder 24 the requisite length of time. The water of the tank will entirely cover the cylinder 14 and fill within the cylinder 24, but will not rise within said cylinder except to a point slightly above the upper edge of the doorways 22, 30, thereby leaving the upper ends of said cylinders filled with air and in condition to receive the head of the actor. The dotted line 31 in Fig. 1, indicates approximately the level to which the water will rise within the cylinder 14, although entirely covering the exterior of said cylinder. The upper portion of the cylinders 14, 24 will also be supplied with air from a suitable compressor or other forcing means, and this air may pass from the pipe 18 leading into the air reservoir 13 and through a pipe 32 connected therewith and leading into the upper end of the cylinder 14. The actor will enter the inner cylinder 24 at a time when said cylinder is in its lower position and condition shown in Fig. 4 and when the lids 20, 21 are closed, and the purpose of the cylinders 14, 24 is to enable the ejection of the actor up through the upper ends of said cylinders and through the water within which the apparatus is submerged. I, therefore, secure the bottom 25 of the cylinder 24 upon a piston-rod 33 and extend the latter downwardly into the power cylinder 19, wherein said rod carries a piston 34. Upon compressed air being admitted to the lower end of the cylinder 19, the piston 34, rod 33 and cylinder 24 will be driven upwardly, and upon the exhaustion from the air of the lower



end of the cylinder 19 and the admission of compressed air to the upper end thereof, the piston-rod 33 and inner cylinder 24 will be forced downwardly to their initial normal position, shown in Fig. 4. Upon one side of the cylinder 19 is provided a chest 35 for the compressed air, and this chest contains an ordinary slide-valve 36 for controlling the ports 37, 38 leading to the respective ends of the cylinder 19. The valve 36 will be operated in one direction from the cylinder 24 through a rod 39 by an actor within said cylinder when he desires to be ejected therefrom up through the water. When the parts are in the position shown in Fig. 4 the compressed air is within the cylinder 19 at the upper side of the piston 34, and when an occupant of the cylinder 24 desires to effect the ascent of said cylinder and his ejection from the apparatus, he will reach the rod 39 through an opening 139 in the side of said cylinder and press the same downwardly, thereby causing the stop 40 on said rod to turn the outer end of the lever arm 41 downwardly, and, through the valve rod 42, elevate the valve 36 sufficiently to uncover the port 38 and connect the port 37 with the exhaust, thereby enabling the compressed air to pass below the piston 34 and cause the ascent of the latter and all parts connected with it.

The inner cylinder 24 has at opposite sides of its bottom 25, arms 43, 44 (Fig. 4) to which are secured vertical rods 45 upon whose upper ends are formed housings 46 to receive the lower ends of the vertical rods 48 and cushioning springs 49 therefor, said springs being confined between shoulders or heads 50 on the lower ends of the rods 48 and the upper ends of said housings 46. Immediately above the housings 46 the rods 48 are formed with shoulders 51 which prevent any undue descent of the lower ends of said rods through the housings 46. The upper ends of the rods 48 are connected by links 52 (Fig. 3) with the adjoining portions of the hinged doors 20, 21. The rods 48 are carried by the inner cylinder 24 and when said cylinder ascends said rods force the doors 20, 21 to their open position, indicated by dotted lines in Fig. 3, so that the actor being at such time ejected from the apparatus by means of said cylinder 24 may not strike the doors 20, 21, but pass out through the then open end of the exterior cylinder 14. When the inner cylinder 24 returns to its lower position shown in Fig. 4, it will, through the rods 48 and links 52 return the doors 20, 21 to their closed position. The rods 48 and links 52 thus constitute convenient means for effecting the opening and closing of the doors 20, 21, by the movement of the cylinder 24.

The vertical rod 39 hereinbefore referred to is the only part of the apparatus contained within the cylinder 14 which will be operated

by the person within the inner cylinder 24, and this rod extends upwardly along the exterior side of the inner cylinder 24 in line with the opening 139 therein. The rod 39 will be mounted in suitable guides and carries the lug 40 hereinbefore referred to, a stop 53 (Fig. 4), and a stop 54, the stop 53 being adapted to engage the lever arm 41 during the upward movement of the cylinder 24 and thereby reverse the valve 36, and the stop 54 being apertured to slide upon a rod 56 suspended from the arm 44 of the cylinder-bottom 25 and to be engaged by stops 57, 58, respectively, on said rod 56.

In the position of the rod 39 shown in Fig. 4 the stop 57 on the rod 56 is in engagement with the upper side of the stop 54 on the rod 39, and the latter rod is thereby prevented from moving upwardly but may be moved downwardly by the effort of the actor within the cylinder 24. When the inner cylinder 24 is to ascend and the rod 39 is pulled downwardly so as to effect the admission of air to the lower side of the piston head 34, the ascent of said cylinder will cause the upward movement of the rod 56, and thereby the stop 58 on said rod will meet the stop 54 on the rod 39 and draw the latter upwardly, whereby the stop 53 will become elevated and pass against the outer end of the lever arm 41 and reverse the valve rod 42 and valve 36, thereby causing said valve to slide downwardly to close the port 38 from communication with the chest 35 and place said port into communication with the exhaust, and also to open the port 37 for the admission of the air to the upper end of the cylinder 19. The reversal of the valve rod 42 and valve 36 takes place during the ending portion of the up-stroke of the inner cylinder 24 and just after the person who was within said cylinder has been ejected therefrom, the admission of the air to the upper end of the cylinder 19 at first cushioning the final portion of the upstroke of the piston 34 and connected parts and then returning said piston and parts to their lower position.

During the upward travel of the inner cylinder 24 under the force of the compressed air admitted below the piston-head 34, the dogs 28 are carried upwardly and finally their upper outwardly inclined ends ride against the inclined cams 59 secured to the inner walls of the exterior cylinder 14, the effect of which is to force the upper ends of said dogs inwardly and their lower ends outwardly from the inner movable bottom 26 of the cylinder 24, the said bottom being thereby released to be rapidly forced upwardly by the expansion of the springs 27, as represented by the dotted lines in Fig. 4, and during such action facilitating the forcible ejection of the actor from the cylinder 24 without shock or jar.

The upward movement of the inner cylinder 130



der 24 is effected wholly by the compressed air but auxiliary to such movement the inner bottom 26 of said cylinder is forced upwardly at the proper time by means of the springs 27, and the actor is ejected by the combined action of the cylinder and said springs, the latter being released to expand only after the cylinder 24 has traveled upwardly a suitable distance and it is desired that the actor shall be forcibly ejected. The proportions of the parts of the apparatus are such that the doors 20, 21 at the outer end of the cylinder 14 will be thrown to their wide open position before the inner cylinder reaches the links 52 and before the inner bottom 26 is released by the dogs 28 to be acted upon by the springs 27.

During the descent of the inner cylinder 24 the inner bottom 26 must be returned to its initial relation to the bottom 25 so that the dogs 28 may again engage the upper surface of and lock said bottom 26, and to effect this result I have provided the pivoted lever arms 60 and rods 61 (Fig. 4), said rods 61 being secured at their upper ends to the bottom 26 and at their lower ends to the lever arms 60, which are supported by hangers 62 carried by the bottom 25. During the upward movement of the cylinder 24 and until the dogs 28 meet the cams 59 the levers 60 and rods 61 remain in the relation in which they are shown in Fig. 4 by solid lines, but when the dogs 28 are released from the bottom 26 and said bottom is forced upwardly by the expansion of the springs 27, the rods 61 are drawn upwardly and the inner ends of the levers 60 turned downwardly, as shown by dotted lines in Fig. 2, and thereafter upon the descent of the cylinder 24, the said ends of said levers will engage a stop ring 63 supported from the base of the exterior cylinder 14 and be held thereby during the continued descent of said cylinder 24, with the result that the outer ends of the levers 60 will be moved downwardly and through the rods 61 draw the inner bottom 26 downwardly below the plane of the dogs 28, thereby enabling the latter to swing inwardly above the edges of said bottom and relock the same in its initial position.

The chest 35 may be fed with air through a pipe 64 (Fig. 1) supplied from a main pipe 65 leading from the air-compressor and from which the pipe 18 leads to the air reservoir 13 and thence through the pipe 32 to the upper end of the cylinder 14. Within the air reservoir 13 will be provided valves 180 and 181 for permitting the flow of the air from the pipe 18 either into the air-reservoir 13 or pipe 32 leading into the cylinder 14.

The platform 10 carrying the air-reservoir 13 and ejector cylinder 14 may be moved from place to place on the bottom of the tank, and I shall preferably utilize an elec-

tric motor 66 and sprocket chain 67 for compelling the travel of the platform from place to place as may be desired.

The front wheel 11 of the platform 10 is swiveled and from its frame a laterally extended arm 68 projects for enabling the turning of the wheel 11 in the direction desired. The arm 68 is pivotally connected with a rod 69 and this rod is connected with one end of an arm 70 which is secured upon a vertical pin 71 extending through the platform 10 and carrying above the latter an arm 72 to which a rod 73 is connected, said rod 73 at its rear end being pivotally secured to an arm 74 rigid on the lower end of a vertical operating shaft 75 having a handle 76 at its upper end. By means of the handle 76 and the connections just referred to leading therefrom to the swivel-wheel 11, the latter may be turned in any direction desired and thus caused to guide the platform 10 during the movements of the latter.

The ejector cylinder 14 is pivotally secured upon a pin 77 and on its side carries a pivotally mounted screw 78, which extends through an internally threaded worm-wheel or nut 79 rotatably held within a sleeve 80 carried by trunnions 81 mounted within the upper portion of the tripod-frame 15. Upon the rotation of the worm-wheel 79 the screw 78 may be drawn rearwardly or forced forwardly and thereby while aiding in the support of the cylinder 14, adjusting the inclination of said cylinder. The worm-wheel 79 will be rotated by means of a worm 85 on a stem 82 secured within a lateral portion 83 of the sleeve 80 and operable by means of a hand-wheel 84, the latter being in convenient position to be reached by a person standing on the platform 10 with his head within the air-reservoir 13.

The operation of the apparatus hereinbefore described will be largely understood without further detailed explanation. The apparatus is, when in use, entirely submerged in water and rests upon the bottom of the tank, and the said apparatus being mounted upon wheels and equipped with means for driving and guiding it, may be moved from place to place. The platform 10 of the apparatus is large enough to support the air-receptacle 13 and ejector-cylinder 14 with its mechanism. The platform 10 is also sufficiently large to enable one or more actors to stand upon it with their heads and shoulders within the air-reservoir 13. An actor standing upon the platform 10 may incline the cylinder 14 to such position as may be desired. As hereinbefore explained the air-reservoir 13 and the upper portion of the cylinder 14 contain air. If it should be desired that an actor dive below the surface of the water and remain a given period and then return to the surface, such actor may make use of the air-reservoir 13 only, and the pres-



ence of this reservoir would enable him to remain under the water such length of time as to arouse the apprehension or curiosity of an audience, and he may ascend directly above the reservoir 13 or move the platform 10 to a different location and ascend at a point removed from that at which he entered the water. The top of the reservoir affords a broad supporting surface and, if desired, the actor in ascending may pass up the outer side of the reservoir 13 and sit or stand upon the top of said reservoir. There will be occasions in which the reservoir 13 may be used alone and other occasions when it will be used in conjunction with the cylinder 14. In the event that it is desired to eject a person up through and above the water, such person will enter the air reservoir 13, and thereafter at the proper time pass up the ladder 23 and through the doorways 22, 30 into the inner ejector cylinder 24, wherein he may stand until receiving the proper signal, upon which he will pull downwardly upon the rod 39 for shifting the valve 36 and admitting compressed air from the chest 35 into the lower end of the cylinder 19. The compressed air entering the lower end of the cylinder 19 will act upon the piston 34 to drive the rod 33 and inner cylinder 24 upwardly, with the actor standing upon the bottom 26. The upward movement of the cylinder 24 will operate through the rods 48 and links 52 to open the doors 20, 21, and also to carry the actor within said cylinder upwardly. When during the ascent of the cylinder 24 the dogs 28 are, by means of the cams 59, released from the bottom 26, the springs 27 will expand and drive said bottom upwardly and shoot the actor out through the upper end of the cylinders 24, 14 with sufficient force to drive him through the water and above the same. The apparatus may be duplicated at various points in the tank, so that a number of actors may be driven up through the water by them, either in unison or one following another. The ejector apparatus may be employed in depicting scenes such as would or might result from an accident or explosion below the surface of the water. After the inner cylinder 24 has reached a certain elevation on its ascent, the stop 53 on the operating rod 39 reverses the valve 36 and the lower end of the cylinder is placed in communication with the exhaust, while the upper end of said cylinder is placed into communication with and receives compressed air from the chest 35, this air acting against the upper surface of the piston 34 and returning the latter and the cylinder 24 to their lower position. During the descent of the cylinder 24 the inner ends of the lever arms 60 will pass into contact with and be arrested by the stop 63, and thereby during the continued descent of said cylinder 24 the rods 61 will be drawn downwardly and pull the bottom 26

to its lower position, compressing the springs 27 and enabling the locking dogs 28 to swing inwardly over the edge of said bottom and secure it in its initial position shown in Fig. 4. The downward movement of the inner cylinder 24 also results in the doors 20, 21 being closed through the pull of the rods 48, and in the valve 36 being restored to its closed position by the lug 40 on the rod 39. After the ejector apparatus has been used and the doors 20, 21 closed, the entire apparatus will have become filled with water, and in order to displace the water from the upper end of the apparatus so that the latter may be used again, compressed air will be admitted through the pipe 32 into the upper end of the cylinder 14, this air driving the water downwardly and leaving an air-chamber into which a succeeding actor may place his head, for breathing purposes, while standing upon the bottom 26. The upper end of the cylinder 14 should, when the doors 20, 21 are closed, be air and liquid tight, and to this end I provide a packing 90 at the adjoining edges of said doors and a packing 91 around the upper edge of the cylinder 14 to receive said doors, and also provide the rods 48 with the springs 49 which create a downward tension on said rods and through them against the said doors. The hinges of the doors 20, 21 are also provided with tension springs 92, which exert a downward pull on said doors tending to bind them against the packing 91.

The operation of the motor 66 will be controlled in the usual manner by means of a reversing lever 93 and operating lever 94.

The entire apparatus will be of such weight that it will remain submerged upon the bottom 95 of the tank 96 in which it may be used and obviously the receptacle 13 and cylindrical receptacle 14 may both be used to enable actors to remain under water, both receptacles affording inverted air chambers or reservoirs, and the cylindrical receptacle 14, with its equipment, serving the further purpose of enabling an actor to be ejected up through the water.

What I claim as my invention and desire to secure by Letters Patent, is:

1. Theatrical apparatus comprising a tank for water, and an ejector apparatus therein comprising an exterior casing having at its upper end a closure adapted to be opened and closed, at its lower end a cylinder, piston, piston-rod and valve for controlling the admission of the motive fluid to said cylinder and in its side a doorway, and a cylinder within said casing having an open top, a bottom connected with said piston-rod, and an opening in its side in line with said doorway, combined with means operable from said inner cylinder for moving said valve to effect the upward movement of said inner cylinder with its occupant, and means for opening said closure on the ascent of said cylinder for



permitting the ejection of said occupant, the upper end of said ejector apparatus normally affording an air reservoir into which an occupant thereof may place his head for breathing purposes; substantially as set forth.

2. Theatrical apparatus comprising a tank for water, and an ejector apparatus therein comprising an exterior casing having at its upper end a closure adapted to be opened and closed, at its lower end a cylinder, piston, piston-rod and valve for controlling the admission of the motive fluid to said cylinder and in its side a doorway, and a cylinder within said casing having an open top, a bottom connected with said piston-rod, and an opening in its side in line with said doorway, combined with means operable from said inner cylinder for moving said valve to effect the upward movement of said inner cylinder with its occupant, and means for opening said closure on the ascent of said cylinder for permitting the ejection of said occupant, the upper end of said ejector apparatus normally affording an air reservoir and being equipped with means for feeding air under pressure thereto; substantially as set forth.

3. Theatrical apparatus comprising a tank for water, and an ejector apparatus therein comprising an exterior casing having at its upper end hinged closure doors, at its lower end a cylinder, piston, piston-rod and valve for controlling the admission of the motive fluid to said cylinder and in its side a doorway, and a cylinder within said casing having an open top, a bottom connected with said piston-rod and an opening in its side in line with said doorway, combined with means connected with said inner cylinder enabling the occupant of the latter to set said valve to effect the ascent of said cylinder and adapted to automatically operate said valve during and by the movement of said cylinder to cushion the ascent and effect the descent of the latter, and means connected with said cylinder adapted to open and close said doors, the upper end of said ejector apparatus normally affording an air reservoir into which an occupant thereof may place his head for breathing purposes; substantially as set forth.

4. Theatrical apparatus comprising a tank for water, and an ejector apparatus therein comprising an exterior casing having at its upper end hinged closure doors, at its lower end a cylinder, piston, piston-rod and valve for controlling the admission of the motive fluid to said cylinder and in its side a doorway, and a cylinder within said casing having an open top, a bottom connected with said piston-rod and an opening in its side in line with said doorway, combined with means connected with said inner cylinder enabling the occupant of the latter to set said valve to effect the ascent of said cylinder and adapted to automatically operate

said valve during and by the movement of said cylinder to cushion the ascent and effect the descent of the latter, and means connected with said cylinder adapted to open and close said doors, the upper end of said ejector apparatus normally affording an air reservoir into which an occupant thereof may place his head for breathing purposes and being equipped with means for feeding air under pressure thereto; substantially as set forth.

5. Theatrical apparatus comprising an ejector cylinder to receive an actor and having a fixed bottom and an inner movable bottom, springs confined between said bottoms and normally under compression exerting their force against said inner bottom, movable dogs for normally locking said inner bottom down against said springs, a piston-rod connected with said cylinder, a piston thereon, a power cylinder for said piston, and a control valve therefor, combined with a closure for the upper end of said apparatus whereby an air-reservoir is formed therein to receive the head of the occupant, means operable from said ejector cylinder for moving said valve to effect the ascent of said cylinder, means for opening said closure on the ascent of said cylinder, and means for freeing said dogs from said inner bottom on such ascent to enable said springs to expand and drive said bottom upwardly; substantially as set forth.

6. Theatrical apparatus comprising an ejector cylinder to receive an actor and having a fixed bottom and an inner movable bottom, springs confined between said bottoms and normally under compression exerting their force against said inner bottom, movable dogs for normally locking said inner bottom down against said springs, a piston-rod connected with said cylinder, a piston thereon, a power cylinder for said piston, and a control valve therefor, combined with a closure for the upper end of said apparatus whereby an air-reservoir is formed therein to receive the head of the occupant, means connected with said ejector-cylinder enabling the occupant to set said valve to effect the ascent of said cylinder and adapted to automatically operate said valve during and by the movement of said cylinder to cushion the ascent and effect the descent of the latter, means for opening said closure on the ascent of said cylinder and closing the same on the descent thereof, means for freeing said dogs from said inner bottom on such ascent to enable said springs to expand and drive said bottom upwardly, and means adapted during the descent of said cylinder to compress said springs and return said inner bottom to its lower position where it may be reengaged by said dogs; substantially as set forth.

7. Theatrical apparatus comprising an ejector cylinder to receive an actor and hav-



ing a fixed bottom and an inner movable bottom, springs confined between said bottoms and normally under compression exerting their force against said inner bottom, movable dogs for normally locking said inner bottom down against said springs, a piston-rod connected with said cylinder, a piston thereon, a power cylinder for said piston, and a control valve therefor, combined with a closure for the upper end of said apparatus whereby an air-reservoir is formed therein to receive the head of the occupant, means for feeding air under pressure to said reservoir, means connected with said ejector-cylinder enabling the occupant to set said valve to effect the ascent of said cylinder and adapted to automatically operate said valve during and by the movement of said cylinder to cushion the ascent and effect the descent of the latter, means for opening said closure on the ascent of said cylinder and closing the same on the descent thereof, means for freeing said dogs from said inner bottom on such ascent to enable said springs to expand and drive said bottom upwardly, and means adapted during the descent of said cylinder to compress said springs and return said inner bottom to its lower position where it may be reengaged by said dogs; substantially as set forth.

8. Theatrical apparatus comprising an ejector cylinder to receive an actor and having a fixed bottom and an inner movable bottom, springs confined between said bottoms and normally under compression exerting their force against said inner bottom, movable dogs for normally locking said inner bottom down against said springs, a piston-rod connected with said cylinder, a piston thereon, a power cylinder for said piston, and a control valve therefor, combined with a closure for the upper end of said apparatus whereby an air-reservoir is formed therein to receive the head of the occupant, means connected with said ejector-cylinder enabling the occupant to set said valve to effect the ascent of said cylinder and adapted to automatically operate said valve during and by the movement of said cylinder to cushion the ascent and effect the descent of the latter, means for opening said closure on the ascent of said cylinder and closing the same on the descent thereof, means for freeing said dogs from said inner bottom on such ascent to

enable said springs to expand and drive said bottom upwardly, and means adapted during the descent of said cylinder to compress said springs and return said inner bottom to its lower position where it may be reengaged by said dogs, said means comprising rods connected with said inner bottom and extending downwardly below said fixed bottom, pivoted lever arms connected at one end with said rods, and a stop to engage the other end of said lever arms on the descent of said ejector-cylinder for causing said arms to turn on their pivots and pull said rods and said inner bottom downwardly; substantially as set forth.

9. Theatrical apparatus comprising a tank for water, and an ejector apparatus therein comprising an exterior casing having at its upper end a closure adapted to be opened and closed, at its lower end a cylinder, piston, piston-rod and valve for controlling the admission of the motive fluid to said cylinder and in its side a doorway, and a cylinder within said casing having an open top, a bottom connected with said piston-rod, an opening in its side in line with said doorway, an inner movable bottom, springs confined between said bottoms and normally under compression exerting their force against said inner bottom, and movable dogs for normally locking said inner bottom down against said springs, combined with means connected with said ejector-cylinder enabling the occupant to set said valve to effect the ascent of said cylinder and adapted to automatically operate said valve during and by the movement of said cylinder to cushion the ascent and effect the descent of the latter, means for opening said closure on the ascent of said cylinder and closing the same on the descent thereof, means for freeing said dogs from said inner bottom on such ascent to enable said springs to expand and drive said bottom upwardly, and means adapted during the descent of said cylinder to compress said springs and return said inner bottom to its lower position where it may be reengaged by said dogs; substantially as set forth.

Signed at New York city, in the county of New York, and State of New York, this 22nd day of April, A. D., 1907.

HARRY L. BOWDOIN.

Witnesses:

CHAS. C. GILL,  
ARTHUR MARION.