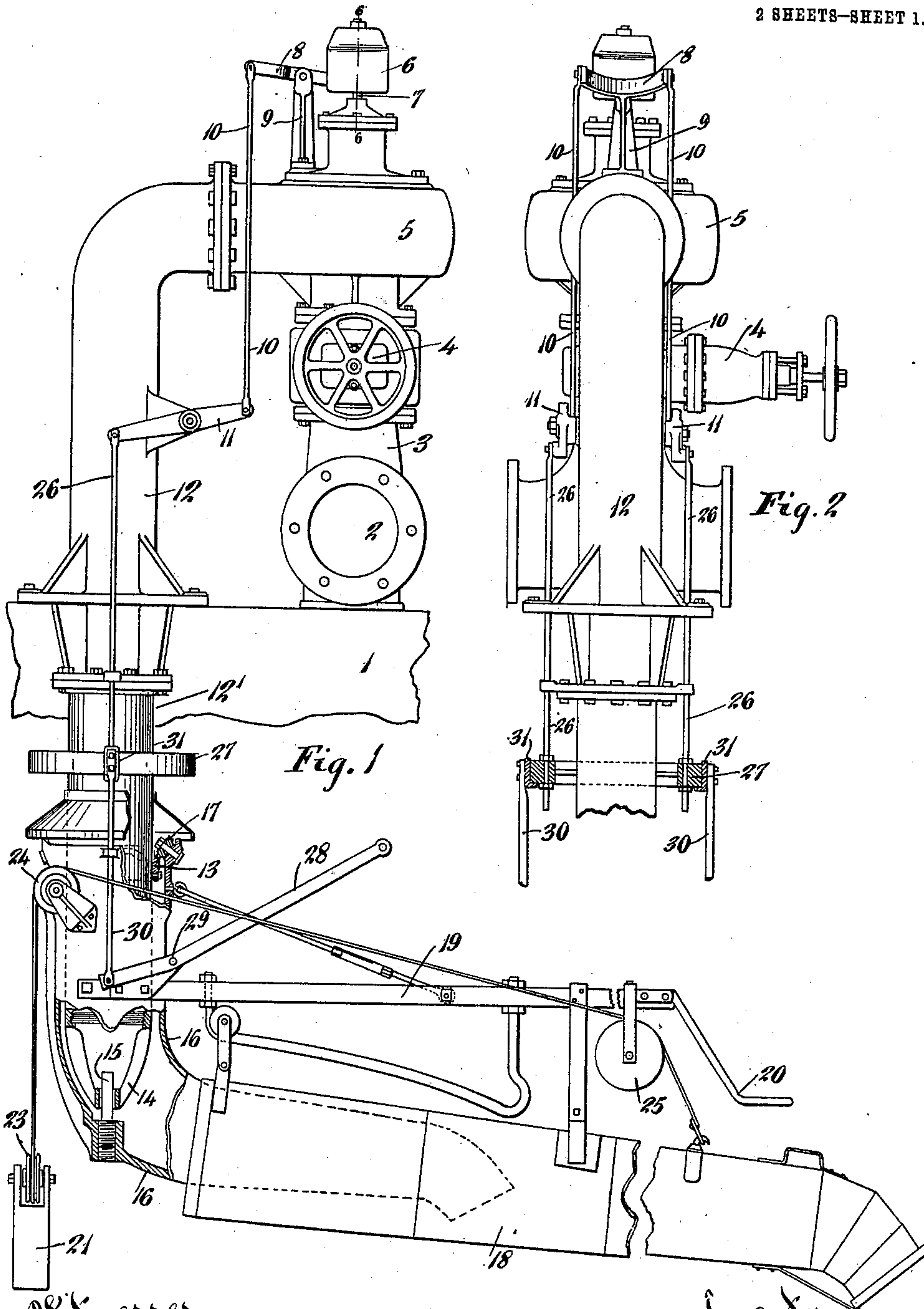


F. C. ANDERSON.
BRIDGE VALVE MECHANISM FOR SUPPLYING LOCOMOTIVES WITH WATER.
APPLICATION FILED AUG. 8, 1910.

995,584.

Patented June 20, 1911.

2 SHEETS—SHEET 1.



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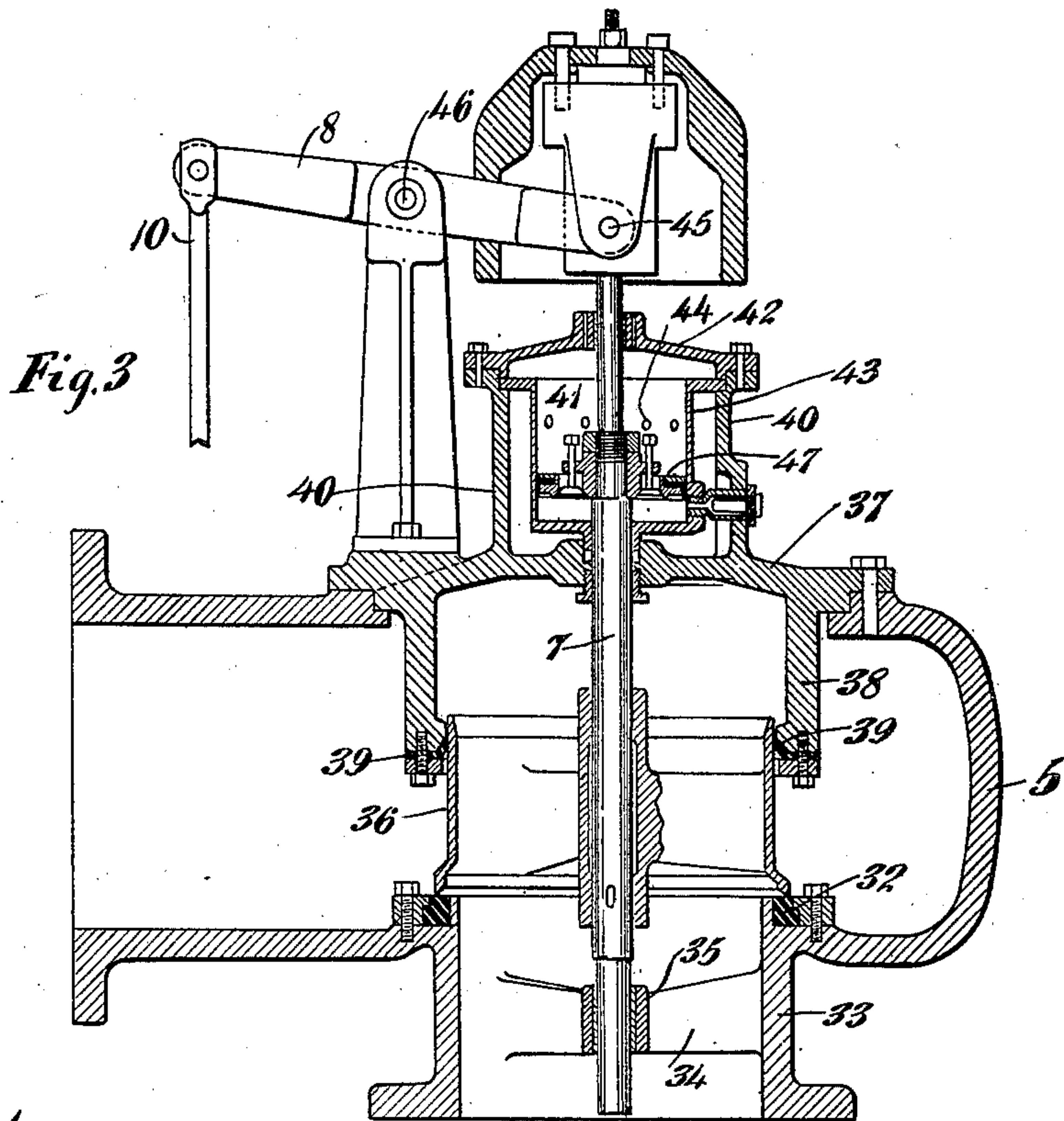


Fig. 3

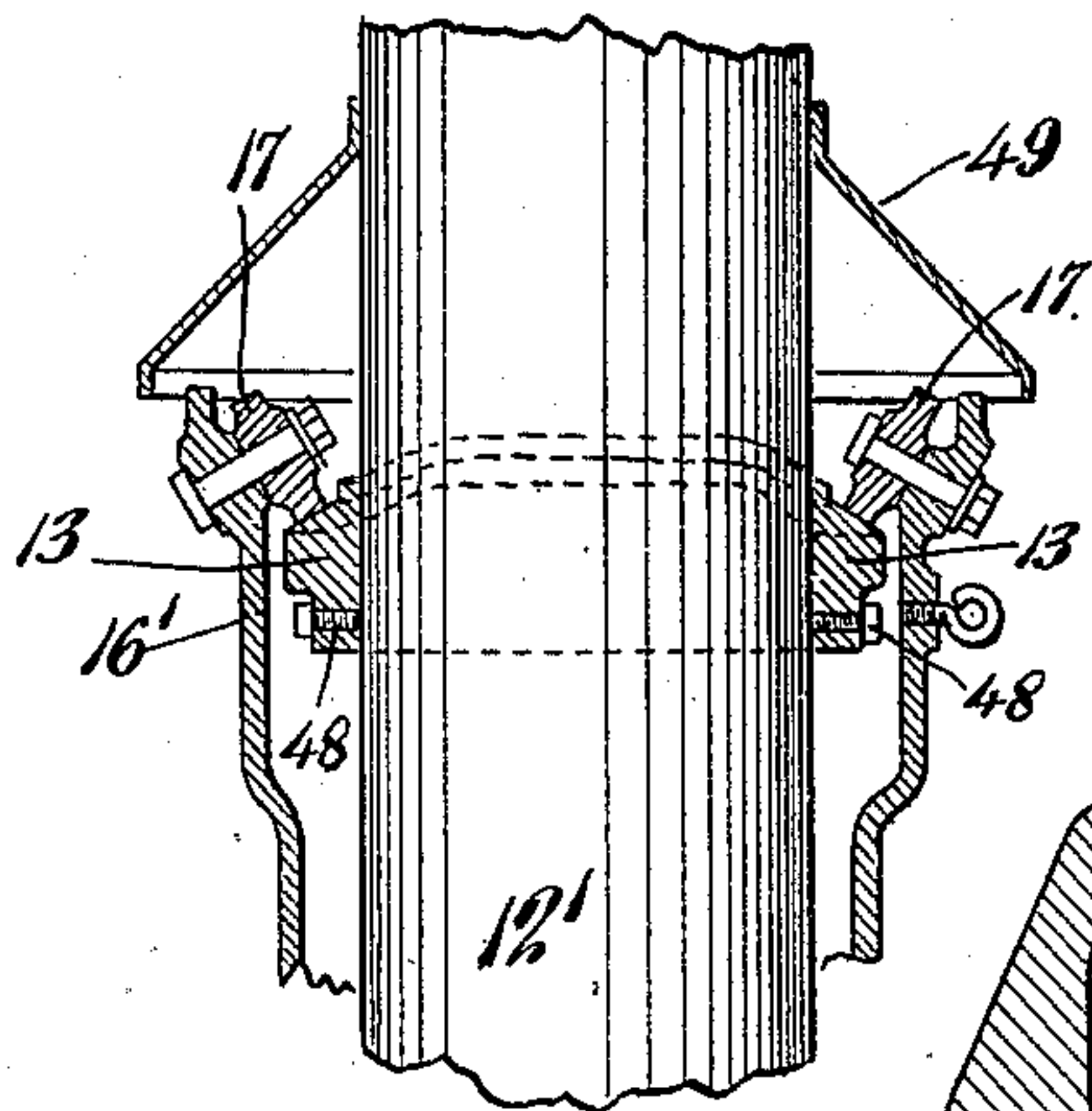


Fig. 4

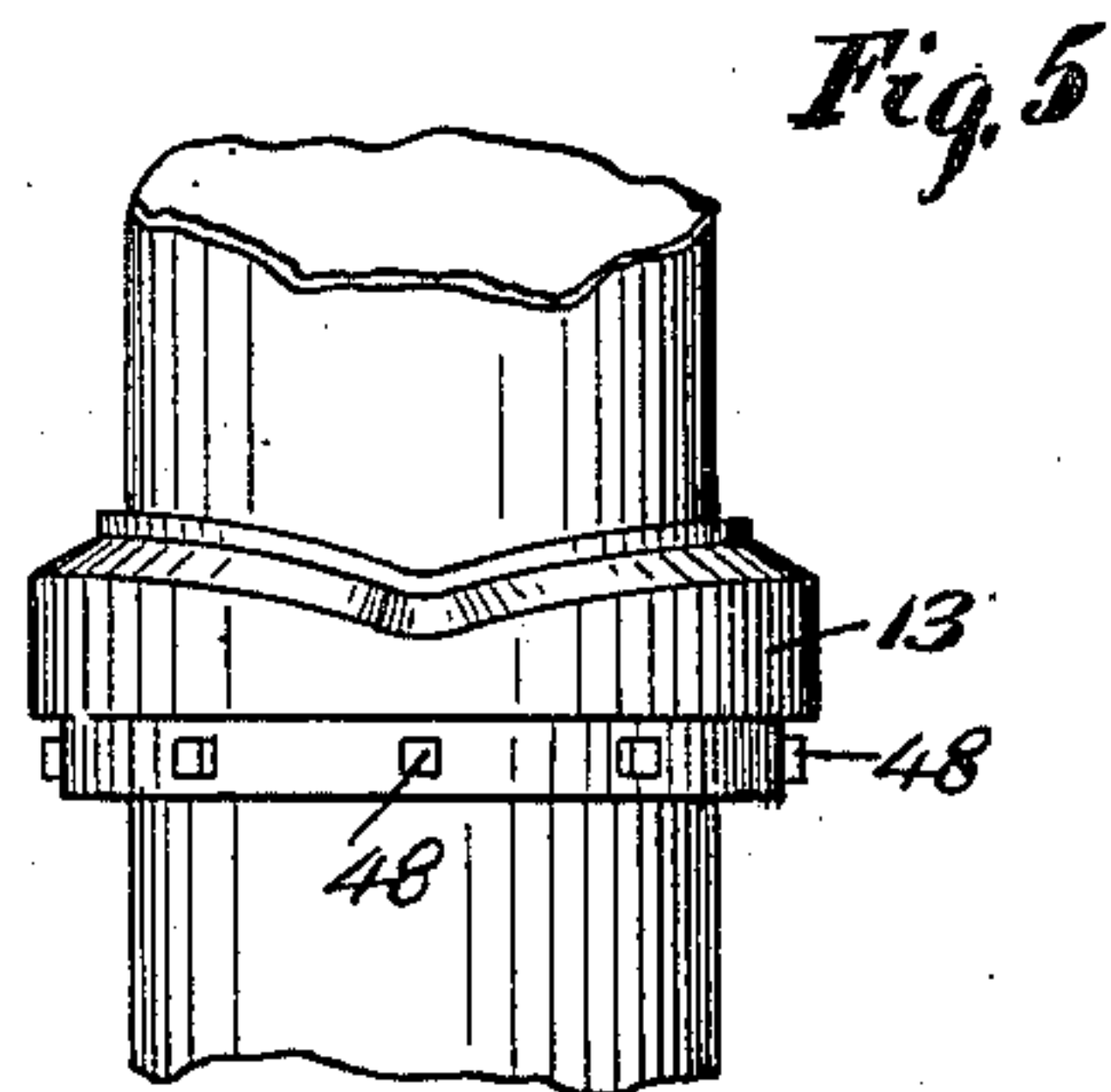


Fig. 5

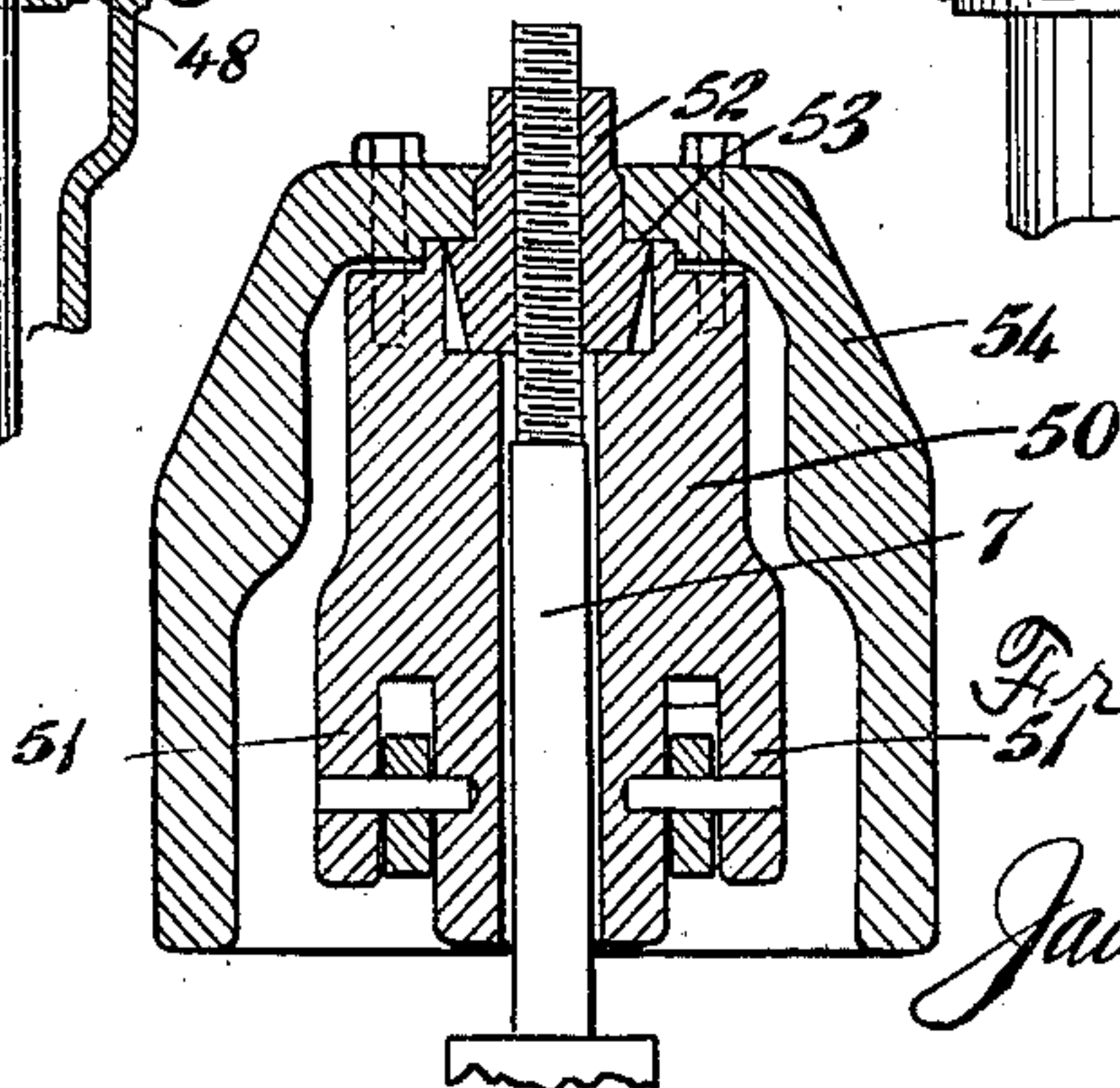


Fig. 6

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UNITED STATES PATENT OFFICE.

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BRIDGE-VALVE MECHANISM FOR SUPPLYING LOCOMOTIVES WITH WATER.

995,584.

Specification of Letters Patent. Patented June 20, 1911.

Application filed August 8, 1910. Serial No. 576,073.

To all whom it may concern:

Be it known that I, FRANK C. ANDERSON, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Bridge-Valve Mechanism for Supplying Locomotives with Water, of which the following is a specification.

My invention relates to valve mechanism for connecting water spouts to an overhead water main and means for operating same.

Railway terminals are becoming more and more congested and the ground space for the necessary tracks is so limited that in order to utilize all space possible it has been found desirable and convenient to construct a bridge over the tracks and provide the bridge with a water main and valve and spout mechanism at points where necessary to supply water to the locomotives, thus dispensing with the upright water columns extending upwardly from the ground between the tracks and allowing the tracks to be placed as close together as possible. The water main is provided with valve mechanism to which is attached water pipes so constructed as to engage the valve mechanism and the mechanism of the drop spout of the telescopic type, said drop spout mechanism being suspended therefrom and connected by a universal joint to permit the same to be swung to any angle or position desired.

The mechanism of my new improved device is suspended high enough to clear all trains and trainmen and at the same time the spout is provided with an adjustment that will permit it to be brought down in a position to engage the water hole of the tender.

The object of my invention is to provide means for supplying locomotives with water which will dispense with any vertical columns extending upwardly from the ground and which will allow the tracks at a railway terminal to be placed as close together as possible, thereby utilizing all previously wasted space.

Another object of my invention is to provide a bridge valve and suspended adjustable water spout which will be more convenient for trainmen to handle and easier to operate.

My invention consists in bridge valve mechanism adapted to engage a water main supported by a bridge over one or more tracks, said valve mechanism adapted to engage a water pipe so constructed as to engage spout mechanism of the telescopic type and means for operating said valve mechanism and also means whereby said spout can be swung to any angle relative to the tracks that may be desired and provided with the necessary adjustments to reach the various heights intended and also means whereby the spout can be swung out of alinement with the tracks by gravity, thus assuring that the spout, when not in service will always remain between the tracks.

My invention also consists in certain other novel parts and combination of parts and in the details of construction as herein set forth and claimed.

In the accompanying drawings which serve to illustrate my invention, Figure 1 is a side elevation of my improved supply mechanism, parts of the water spout being broken away for the sake of clearness. Fig. 2 is an end elevation of the bridge valve which embodies part of my invention. Fig. 3 is a cross-sectional elevation of the bridge valve. Fig. 4 is a detail sectional view of the connection between the stationary pipe and the revolving water spout. Fig. 5 is a detail view of the track bolted to the water pipe proper, upon which the revolving water spout rotates. Fig. 6 is an enlarged vertical section taken on a line corresponding to line 6—6 Fig. 1.

In the embodiment of my invention as illustrated 1 is a bridge constructed in any desired manner and preferably placed approximately 25 feet above the railway tracks and extending transversely across same.

2 is a water main mounted upon the bridge 1 and having an extension 3 on which is placed a gate valve 4. A main bridge valve chamber 5 is placed on the frame work of the gate valve. A weight 6 is provided on the top of the main valve stem 7 for the purpose of assisting the main valve to close. A bifurcated arm or lever 8 is mounted on a standard 9 supported on the main valve chamber 5 to which is connected rods 10, the other ends of which are connected to levers or arms 11 which are mounted on the

sides of the water pipe 12 bolted to the main valve chamber 5 extending downwardly to the bridge 1 to which it is secured. This main water pipe 12 is preferably bolted to the bridge. Another section 12' of the water pipe is bolted thereto and extends downwardly and is provided with a bearing member 13 on which the water spout is adapted to rest. The water pipe 12' is also provided with a spider 14 at its lower extremity having an opening therein to receive a pin or guide 15 mounted on the water spout 16. The water spout 16 is adapted to receive the lower end of the water pipe 12' and is provided with rollers 17 at its upper end which are adapted to bear upon the bearing member 13 and revolve thereon when the water spout is adjusted radially with relation to the water pipe.

The discharge spout 18 is of the ordinary type having the usual supporting means 19 and handle 20. The discharge spout is also provided with the usual counterweight 21 for holding it in place, having the cable or chain 22 passing around sheaves 23, 24 and 25.

Connected to one end of the lever 11, which is mounted on the water pipe 12, are operating rods 26 extending downwardly on each side of the water pipe and connected to the lift ring 27. An operating lever 28 is mounted on the side of the water spout 16 having its fulcrum at 29. Fastened to the end of the lever 28 are rods 30 which are connected at one end to slidable lift shoes 31, said shoes being adapted to slide on the outer and under surface of the lift ring 27.

When it is desired to operate the main valve in the valve chamber 5 the operator pulls downwardly on the lever 28 thereby forcing the rod 30 upwardly, which in turn engages and lifts the ring 27 forcing the rods 26 upwardly, thereby operating the lever 11 and pulling down the operating rods 10, which, being connected to the bifurcated arm or lever 8 which engages the main valve stem, operates the main valve.

The main valve chamber 5 is provided with a valve seat 32 and has a lower extension 33 thereon provided with arms 34 which support the hub 35 in the center of the valve chamber. It is the purpose of the hub 35 to form a guide for the main valve stem 7. The main valve 36 is mounted on the main valve stem 7 in the customary manner.

An upper casing 37 is mounted upon the main valve chamber 5 and has annular walls 38 extending downwardly into the main valve chamber 5 which forms a bearing surface for the main valve and is adapted to engage leather packing 39 to prevent leaking. Casing 37 also has annular walls 40 extending upwardly which form the walls of a dash pot 41. The dash pot is construct-

ed in the ordinary manner having a cap plate 42 and the cup-shaped member 43 inside having suitable perforations 44 therein and operates exactly the same as the ordinary dash pot in water columns. Mounted on the upper extremity of the main valve stem is a weight 6 having a bifurcated arm 8 fastened thereto shown at 45, being connected to the operating rods 10 at the other end, the fulcrum being shown at 46 in the standard 9 on the main valve chamber 5. Thus it is seen that when the lever or bifurcated arm 8 is operated it raises the main valve stem 7 thereby raising the piston 47 in the dash pot and also raising the main valve 36 and allowing the water to pass through into the main water pipe 12. When it is desired to close the valve the operating rods 10 being released the weight 6 will, by force of gravity, assist the valve to return to its proper position and the dash pot will perform its usual function of controlling the closing of the valve. The discharge spout is adapted to resume its normal position at right angles to the bridge as soon as it is released.

A track or bearing member 13 is provided and mounted upon the water pipe 12' as best shown in Fig. 4, it being held securely to the water pipe 12' by means of set screws 48. The main nozzle of the water spout 16 has an upward extending portion 16' which surrounds the pipe 12' and has rollers 17 mounted at its upper extremity which are mounted at an angle and are adapted to ride upon the beveled surface of the track or bearing member 13. A hood 49 is provided to cover the rollers and bearing member and protect it from the weather. By constructing the water spout in this manner I am enabled to dispense entirely with the upright and unsightly water columns and am thereby afforded greater space of operating room in the railroad yards and thereby obviate the danger of trainmen coming in contact with the upright water columns heretofore used between the tracks when the trains are in motion.

If when the operating mechanism is assembled the valve does not completely seat or does not properly operate for want of adjustment in the length of the arms and levers I have provided pivoted adjusting means in the weight 6 for the purpose.

The weight 6 is provided with slotted connection 50 to which is attached the bifurcated arm 8, the said member 50 having downwardly extending lugs 51. The main valve stem 7 passes through this slotted connection 50 and is threaded into a nut 52 of a special design mounted on the slotted connection 50. The nut 52 is provided with a shoulder 53 upon which rests the bell covering 54, the covering also being bolted to the slotted connection 50. Thus the connec-

tion of the bifurcated arm 8 may be varied relative to the fulcrum of said arm and thereby causing the valve to register with the operating mechanism.

5 Many modifications of my invention may be made without departing from its spirit and scope, and I do not wish to be confined to the exact details shown.

What I claim as new and desire to secure
10 by Letters Patent is:

1. A device of the character described, comprising a bridge, a water main mounted thereon, a valve in said water main mounted upon said bridge, a downwardly extending
15 pipe, a water spout on said water pipe adapted to swing in a complete circle radially from said water pipe, substantially as and for the purposes set forth.

2. A device of the character described
20 comprising a bridge valve, a water main, a water pipe, a water spout suspended on said water pipe and adapted to circumsolve on said water pipe, means whereby said water spout is held normally in proper position, an
25 operating lever pivoted on said water spout, an adjustable weight connected to the bridge valve stem, connecting means between said lever on the water spout and the adjustable weight on the bridge valve stem, said connecting means being adapted to be adjusted
30 by said adjustable weight, substantially as and for the purposes set forth.

3. A device of the character described comprising a bridge valve, a water main, a
35 water pipe, a water spout suspended on said water pipe and adapted to circumsolve on said water pipe, an operating lever pivoted on said water spout, having upwardly extending rods, a lift ring surrounding the
40 water pipe, shoes on said rods adapted to slide circumferentially on said lift ring and to lift said ring when said rods are forced upwardly, and means whereby said lift ring when lifted and lowered operates the bridge
45 valve accordingly, substantially as and for the purposes set forth.

4. A device of the character described comprising a bridge valve, a water main, a
50 water pipe, a water spout suspended on said water pipe, means whereby said water spout is held normally in proper position, a bifurcated lever arm pivoted on the outside of said water spout, rods connected to said
55 lever arm at one end, sliding lift shoes on the other end, surrounding the water pipe, a lift ring adapted to be lifted by said shoes and upon which said shoes slide, rods connected to the lift ring at one end, levers to
60 which they are attached at the other end, said levers pivoted on the sides of the water pipe, rods extending upwardly from said levers, a bifurcated arm to which said rods are connected, said bifurcated arm pivoted
65 on the bridge valve, a weight to which said bifurcated arm is attached at its other end

and which is adjustably mounted on the main valve stem of the bridge valve, substantially as set forth.

5. A device of the character described comprising a bridge valve having a valve
70 chamber adapted to engage a water main upon a bridge, a water pipe connected to said valve chamber, lever mechanism adapted to operate said valve, a weighted lift ring connected to said lever mechanism,
75 mechanism adapted to engage and lift said weighted lift ring and means to operate said mechanism, substantially as and for the purposes set forth.

6. A device of the character described
80 comprising a valve chamber, a bridge valve therein, a stem for said bridge valve, a lever adapted to actuate said stem, a fulcrum for said lever, a water pipe connected to said
85 valve chamber, a water spout pivotally connected to said water pipe, a lever pivotally mounted upon said water pipe, a rod connecting said levers, a lift ring on said water
90 pipe, an operating rod connecting said lift ring and the lever pivoted on said water pipe, means for actuating said operating rod and means for moving said lift ring vertically and said water spout radially, substan-
tially as and for the purposes set forth.

7. A device of the character described
95 comprising a bridge valve having a valve chamber mounted upon a bridge and adapted to engage a water main upon a bridge, means to control the closing of said bridge valve automatically directly over said valve,
100 a water pipe adapted to engage the valve chamber and a water spout adapted to engage said water pipe and adapted to swing in a complete circle radially from said water
105 pipe, and means for operating said bridge valve and water spout, substantially as and for the purposes set forth.

8. A device of the character described comprising a bridge valve having a valve
110 chamber adapted to engage a water main upon a bridge, means to operate said bridge valve, a water pipe connected to said valve chamber, a spider mounted on the lower end of said water pipe, a water spout having a
115 pivot adapted to engage said spider and means for holding said spout in rotatable engagement with said water pipe, substantially as set forth.

9. A device of the character described comprising a bridge valve having a valve
120 chamber adapted to engage a water main upon a bridge, a downwardly extending water pipe connected to said valve chamber, a lever adapted to operate said valve, rods connected to said lever, a second lever
125 mounted on said water pipe and connected to said rods, a weighted lift ring surrounding said pipe, rods connected to the lower end of said water pipe and to said weighted
130 lift ring, a lifting shoe engageable with said

weighted lift ring, a discharge spout rotatably mounted upon the lower end of said water pipe, rods connected to said water spout and to said engageable lifting shoe
5 whereby said rods are adapted to move in unison with said spout and be in operative engagement with said weighted lift ring,

substantially as set forth and for the purposes specified.

Cincinnati, Ohio, August 5, 1910.

FRANK C. ANDERSON.

Witnesses:

JAMES N. RAMSEY,
EMMA GRISCHY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
