

No. 633,526.

Patented Sept. 19, 1899.

W. P. MAXSON.  
WATER FEED DEVICE.

(Application filed Mar. 24, 1899.)

(No Model.)

Fig. 2.

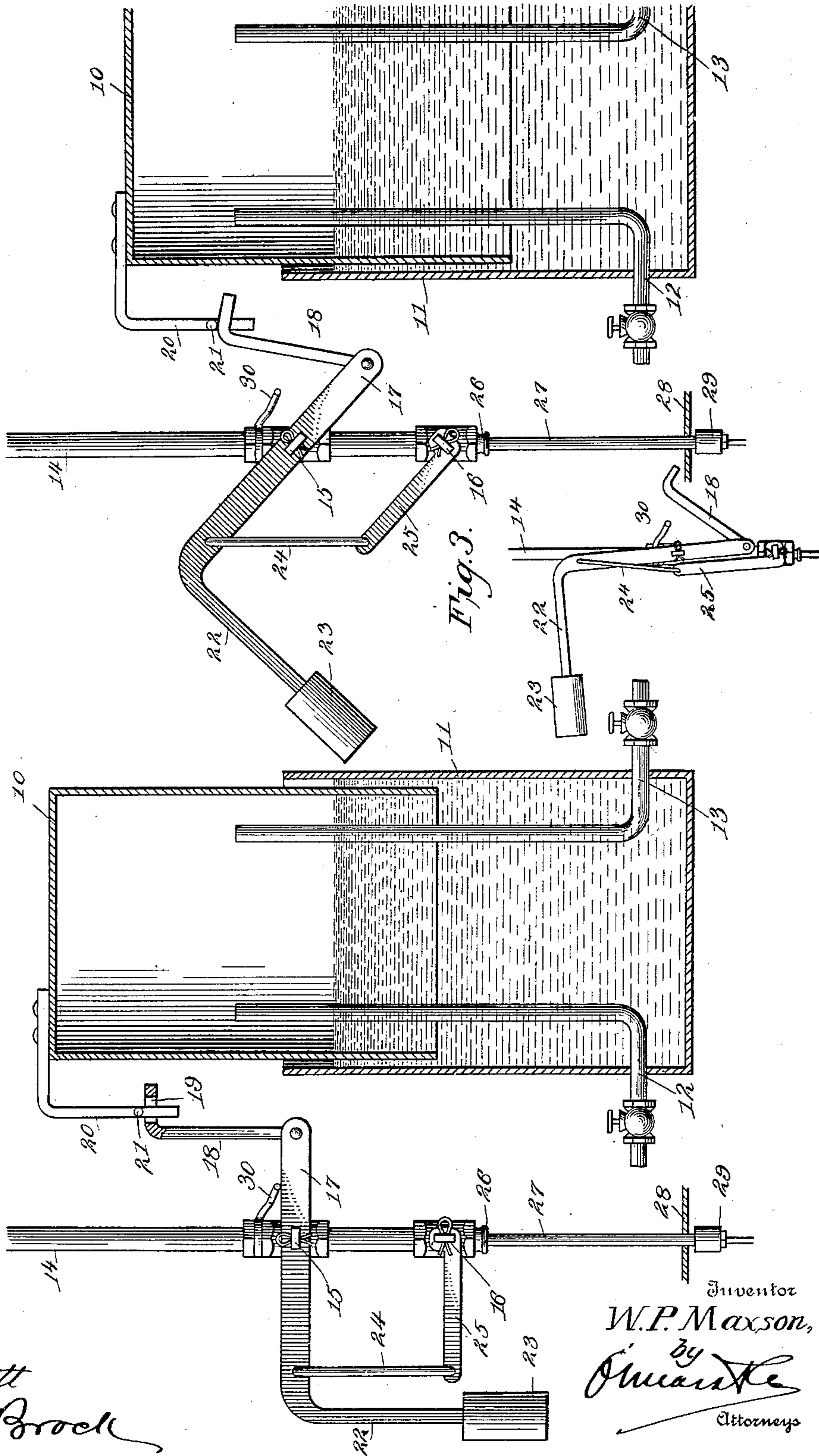


Fig. 1.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## WATER-FEED DEVICE.

SPECIFICATION forming part of Letters Patent No. 633,526, dated September 19, 1899.

Application filed March 24, 1899. Serial No. 710,394. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM P. MAXSON, a citizen of the United States, residing at Commercial Point, in the county of Pickaway and State of Ohio, have invented a certain new and useful Water-Feed for Acetylene-Gas Generators, of which the following is a specification.

My invention relates to devices for feeding water from the water-tank upon the carbide contained in acetylene-gas generators.

The object of my invention is to furnish a water-feed device for such purposes, to be operated by the rise and fall of the bell of the gasometer, the valves of which will be opened and closed by either the rise or fall, the arrangement being such that it will be impossible to flood the generator with water when there is no carbide in it.

A further object of my invention is to provide a water-feed device which may be applied to all the numerous styles and sizes of generators and in which the amount of water to be injected into the generator during a single descent of the gas-bell can be accurately regulated.

With these objects in view my invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the claims.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, having reference to the accompanying drawings, forming part hereof, in which—

Figure 1 is a view illustrating a gasometer and a small portion of a generator in vertical section with my improved water-feed device connected therewith and shown in elevation, the water-tank being omitted and the parts being shown in the positions they assume when the gas-bell is full and raised and the water-feed cut off by the closing of the upper valve. Fig. 2 is a similar view with the parts in the positions they assume during the early portion of the fall of the gas-bell, the water-feed being open by reason of the opening of both valves of the water-feed device. Fig. 3 is a view in elevation of the valve-operating devices in the positions they assume when the gas-bell falls below the position

shown in Fig. 2, the water-feed being again cut off by the closing of the lower valve.

Like numerals of reference mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by numerals, 10 indicates an ordinary gas-bell water-sealed in an ordinary well or tank 11 and provided with a gas-induction pipe 12, leading from the generator, and a gas-education pipe 13, leading to the burners, such pipes being provided with suitable valves and all of these parts being of any known approved construction.

14 indicates a pipe leading from any suitable water tank, reservoir, or supply, provided with an upper valve 15 and a lower valve 16. Upon the stem of valve 15 is a lever 17, extending toward the gasometer, upon the outer end of which there is pivoted an arm or bar 18, extending normally in substantially a vertical direction and provided with a horizontal extension at its upper end having a central slot or opening 19. A vertical bar 20, secured to the gas-bell, is adapted to work in the slot 19, and a key or pin 21 in the bar is adapted to depress the arm or bar 18 when the gas-bell falls.

The lever 17 is extended at the opposite side of valve 15 and bent at right angles, forming a downward-projecting bar 22, at the lower end of which is affixed a suitable weight 23. A link 24 connects lever 17 with a lever 25, attached to the stem of the lower valve 17, so that the two levers 17 and 25 move simultaneously when lever 17 is in one direction by the fall of the gas-bell or in the other direction by the weight 23.

The openings in the plugs of valves 15 and 17 are at right angles to each other, as indicated by their respective stems, so that when valve 15 is closed valve 17 is open, and vice versa, both valves being partially open during the middle portion of the opening and closing movements.

The pipe 14 has a reducer 26 just below valve 17, the remainder of the pipe below, as at 27, being of about half the diameter of pipe 14 and extending through the top 28 of the gas-generator.

29 indicates a second reducer inside of the generator. A stop 30 prevents the lever 17



from rising any higher than the horizontal position indicated in Fig. 1, in which it remains unaffected by the further rise of the gas-bell.

The construction of my invention will be readily understood from the foregoing description, and its operation may be described as follows: The gas-holder, generator, and water-tank having been installed in the proper relative positions, the key 21 being removed from bar 20, that bar passes down, with the empty gas-bell, to its bottom position without affecting the position of the valve-operating mechanism, which is normally that illustrated in Fig. 1. The valve-weight 23 is now raised by hand to the position shown in Fig. 2. This will partially open both valves 15 and 17 and permit water to pass into the generator, falling upon the carbid. Gas will be immediately generated and flow through pipe 12 into the gas-bell 10, which will at once rise, carrying bar 18 with it. As soon as the seat of key 21 is above the slot 19 the key is inserted and the devices are ready for automatic action. As soon as the gas-bell is lowered by the consumption of gas the key 21 will depress bar 18 and lever 17, lever 24 being also simultaneously moved until the position of Fig. 2 is reached, when both valves will be half open and water to the full capacity of pipe 27 will be permitted to pass into the generator. Should the gas-bell immediately fill and rise, the weight 23 will cause the valve-operating devices to resume the positions of Fig. 1, with the water cut off by the closing of valve 15. Should the carbid in the generator be spent or defective or should there be no carbid therein, the gas-bell will continue to fall, carrying the valve-operating device to the positions shown in Fig. 3, the water-supply being cut off during such descent from the middle position by the closing of valve 17, thereby preventing the flooding of the generator.

The dimensions of the pipes and valves may

be so regulated, their action so limited, and the quantity of carbid so regulated that a single opening and closing of the valves will permit of the passage of exactly the required quantity of water for the attainment of the best results.

My improved device may be applied to the largest and smallest plants within a large range of sizes, the quantity of water admitted at each movement being accurately gaged by the capacity of the reducer 29 in the generator, which may be changed to suit any of the various sizes of generators.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with the gas-bell and the water-feed pipe, of upper and lower valves set at substantially right angles to each other, a lever for each valve, a link connecting the two levers, a right-angled extension to one lever, a weight thereon, an extension at the opposite end of one of the levers and connections between the last-named extension and the gas-bell, substantially as described.

2. The combination with the gas-bell and water-feed pipe of the upper and lower valves, set at right angles to each other, a lever for each valve, a link connecting the two levers, an extension at one end of the lever of one of the valves, a weight thereon, a bar pivotally connected at the other end of said lever having a slotted horizontal extension on said bar, a vertical rod secured to the gas-bell passing downward through said slot, and a removable key in said rod adapted to engage the top of the horizontal extension of the pivoted bar, when the gas-bell falls, substantially as described.

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Witnesses:

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