No. 712,803. Patented Nov. 4, 1902.

C. J. JOHNSON.

CARBURETER.

(Application filed Dec. 3, 1901. Renewed Sept. 18, 1902.)

(No Model.) 4 Sheets—Sheet 1.

Fig. I.

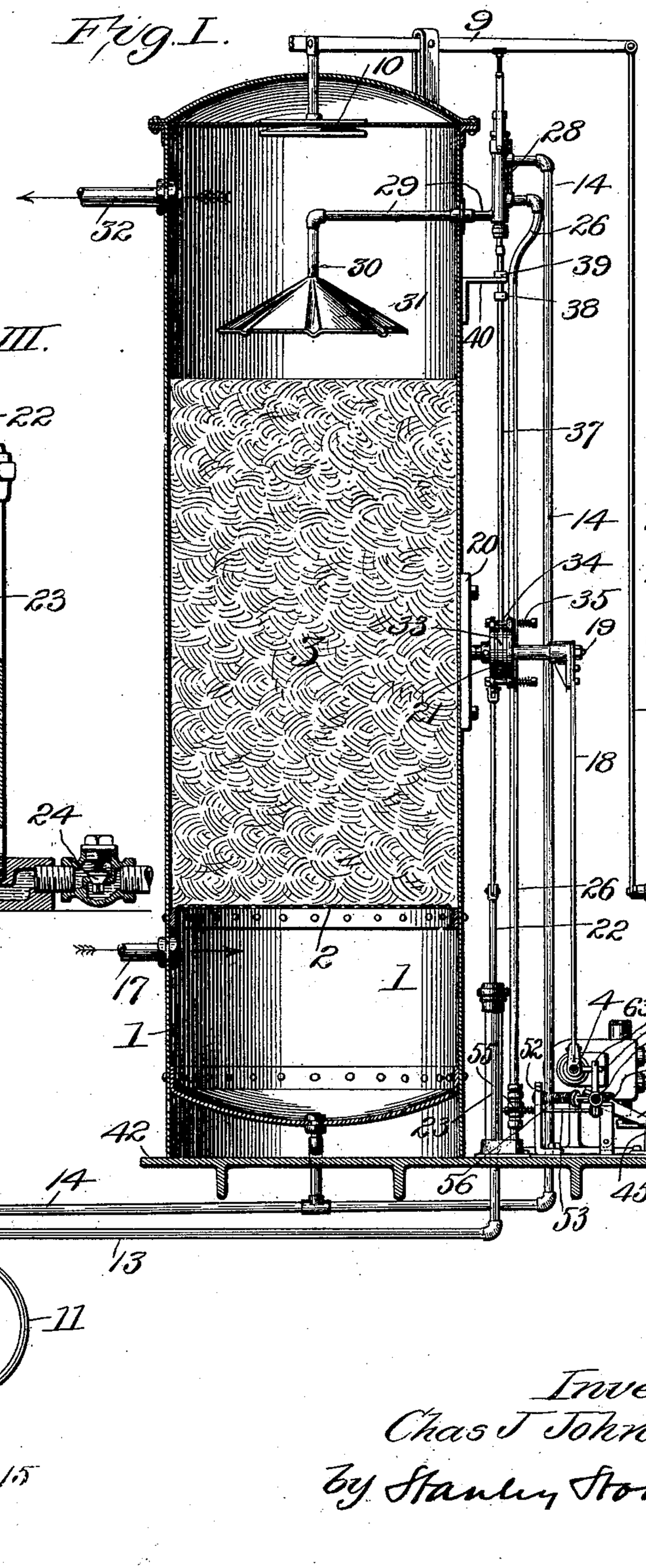


Fig. II.

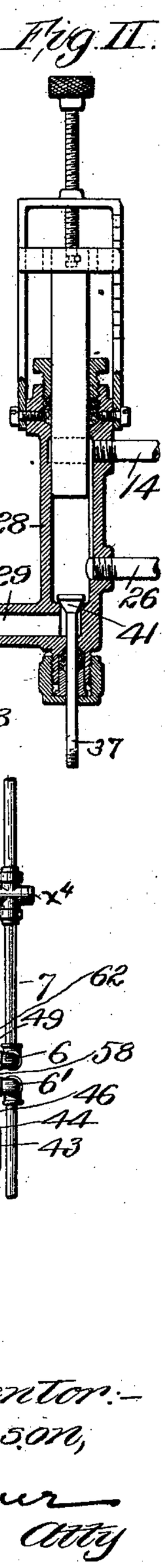
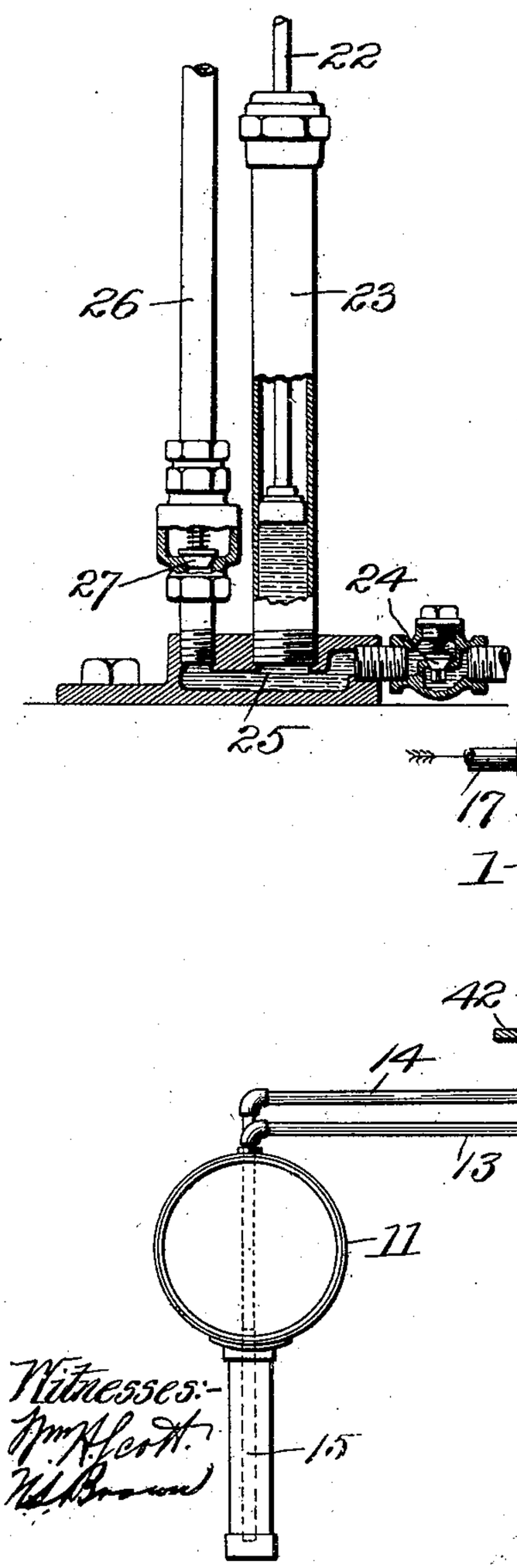


Fig. III.



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N. L. Brown

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Fig. V.

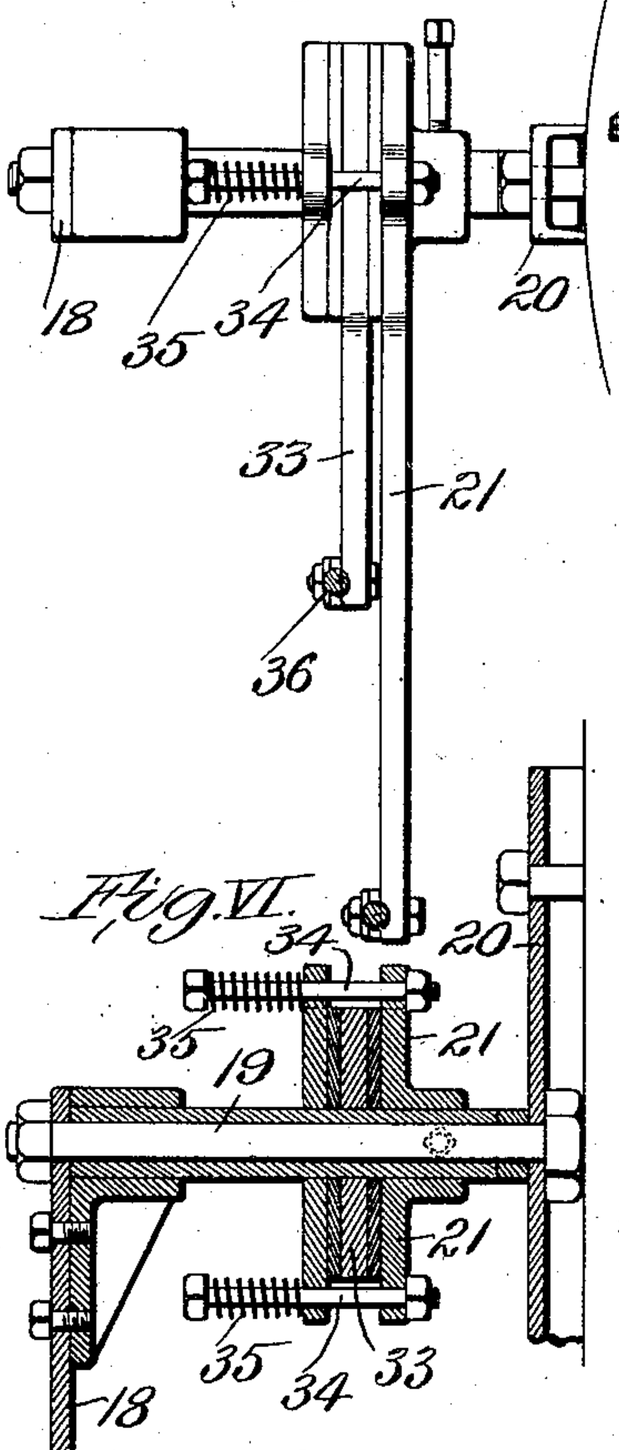


Fig. IV.

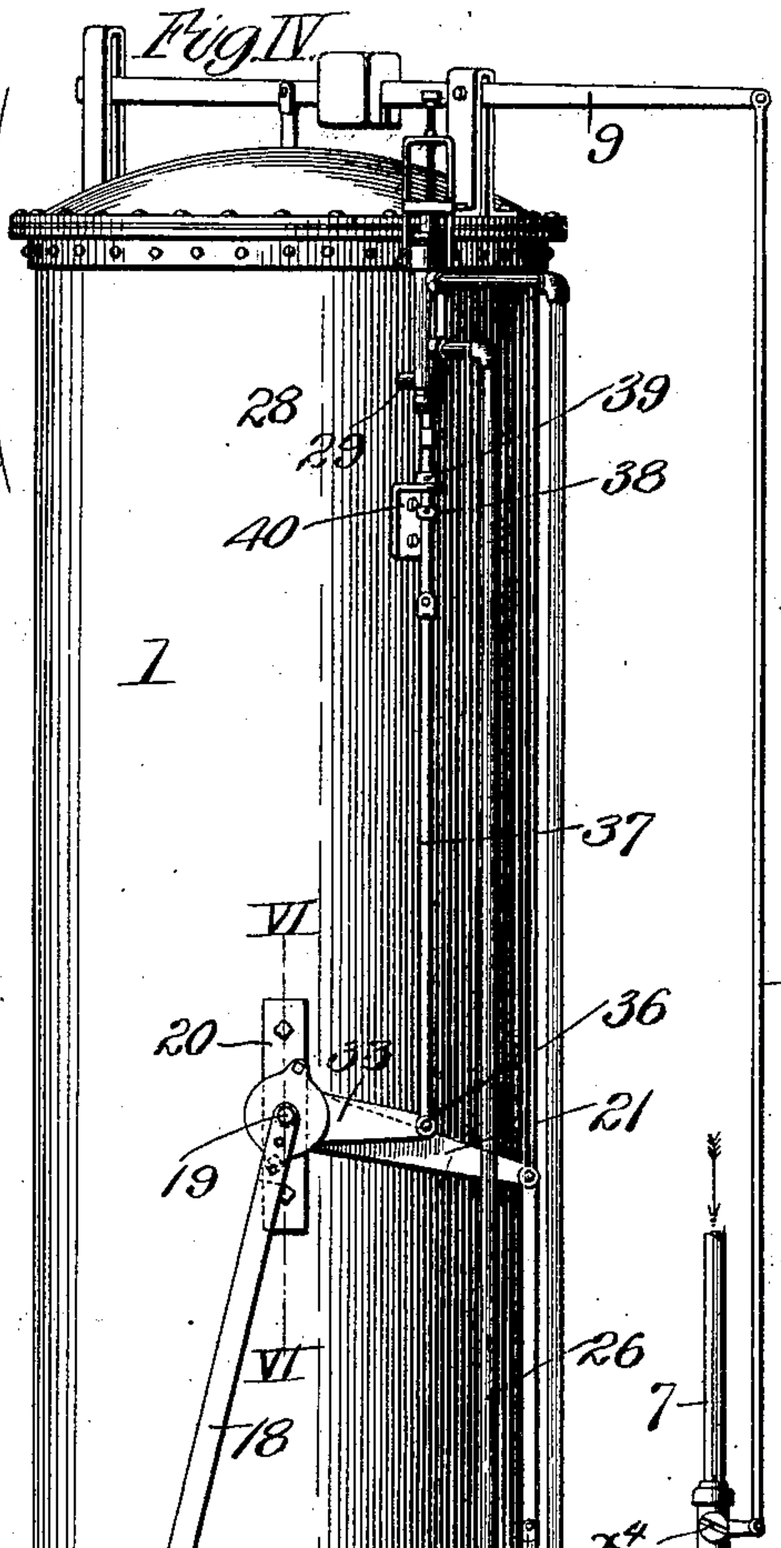


Fig. VII.

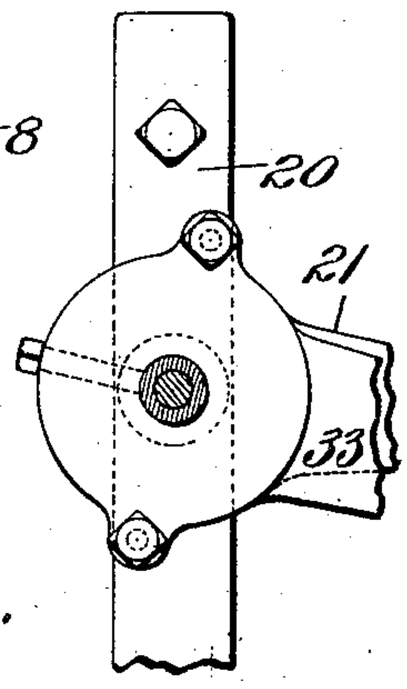
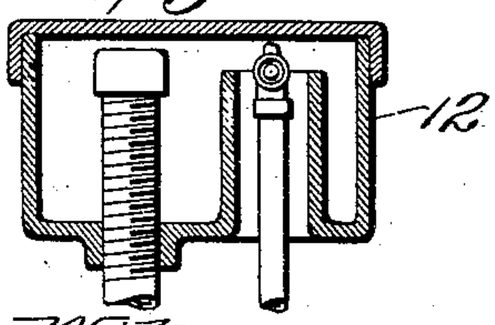


Fig. VI.

Fig. VIII.



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(No Model.) 4 Sheets—Sheet 3.

Fig. IX.

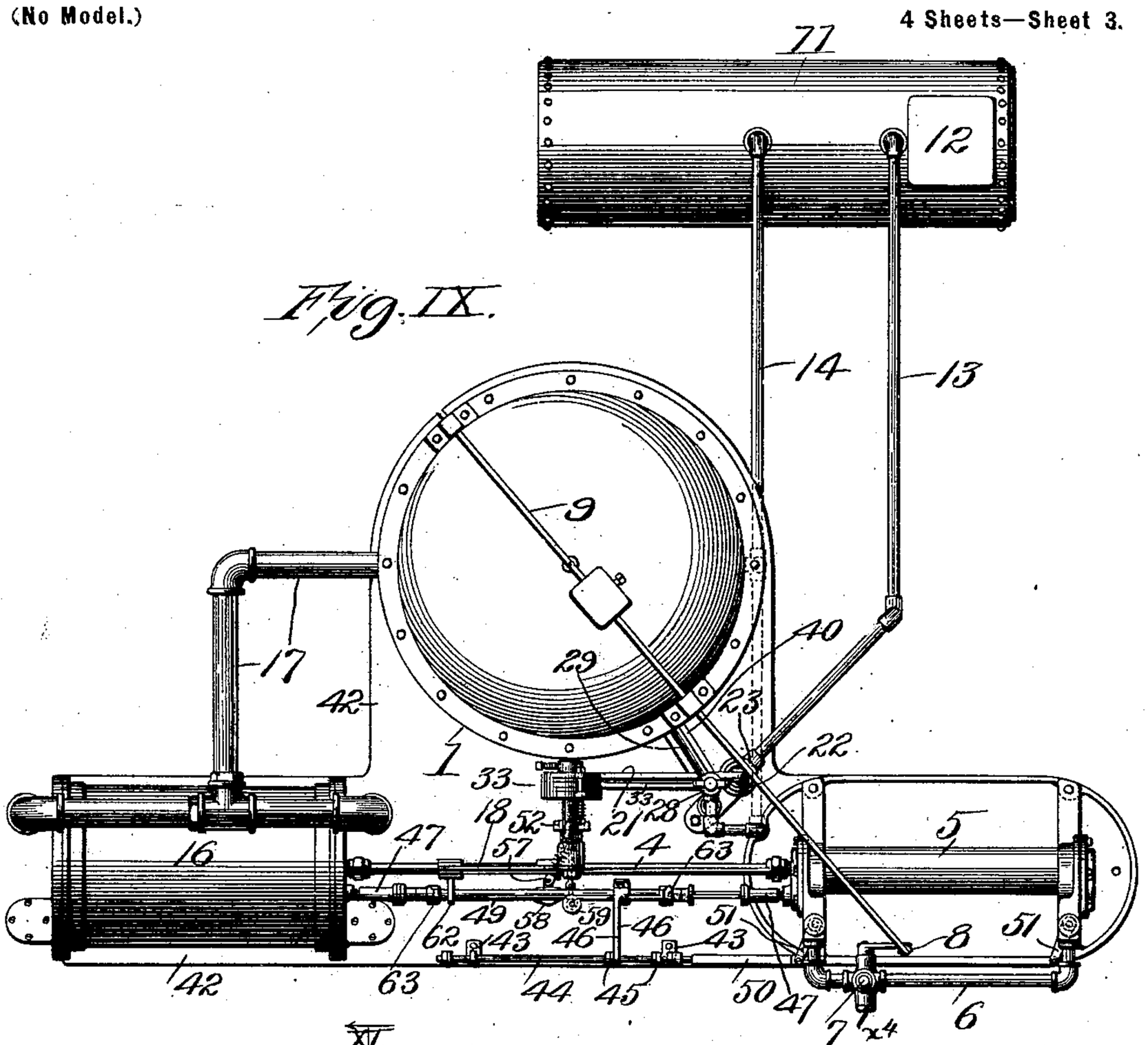


Fig. X.

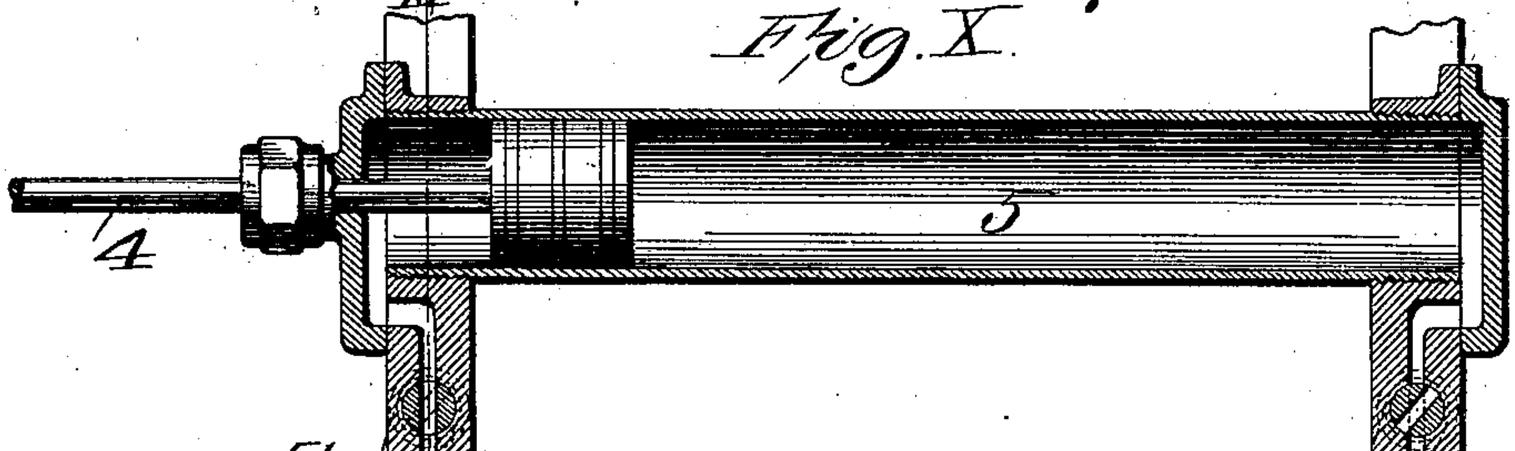
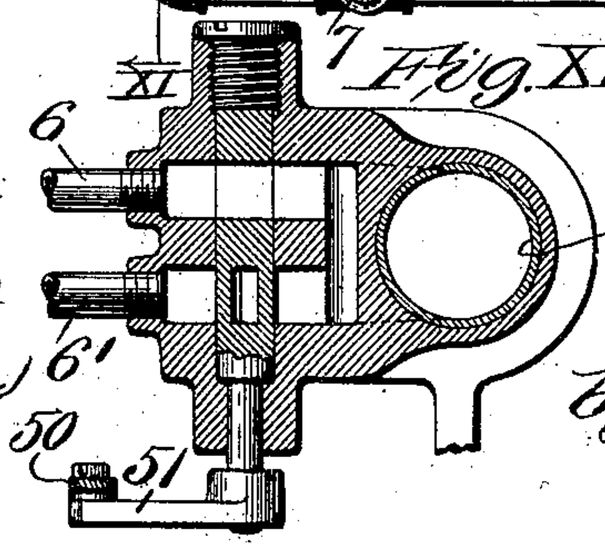


Fig. XI.



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No. 712,803. Patented Nov. 4, 1902.

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CARBURETER.

(Application filed Dec. 3, 1901. Renewed Sept. 18, 1902.)

(No Model.) 4 Sheets—Sheet 4.

Fig. XII.

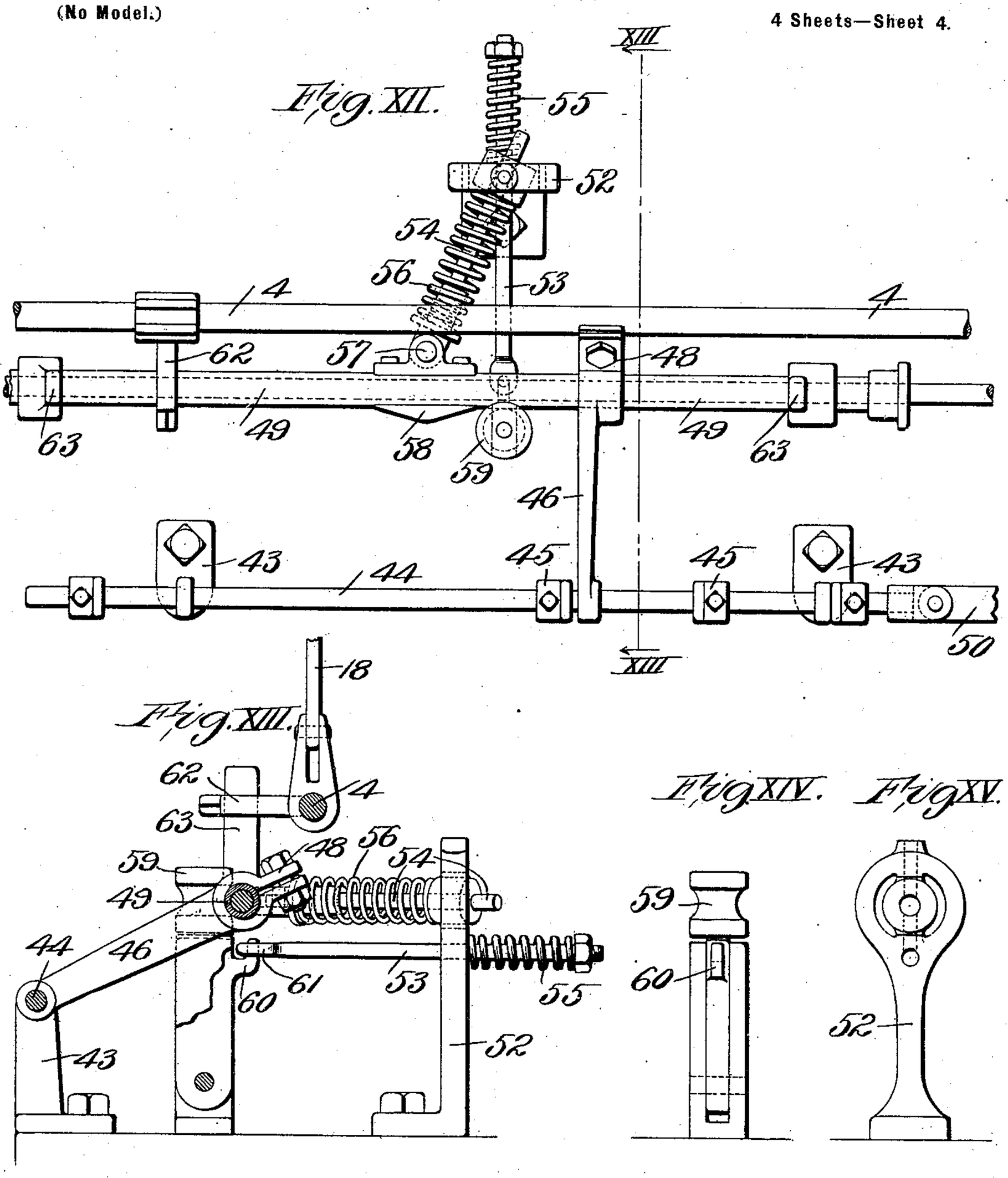

Fig. XIII.

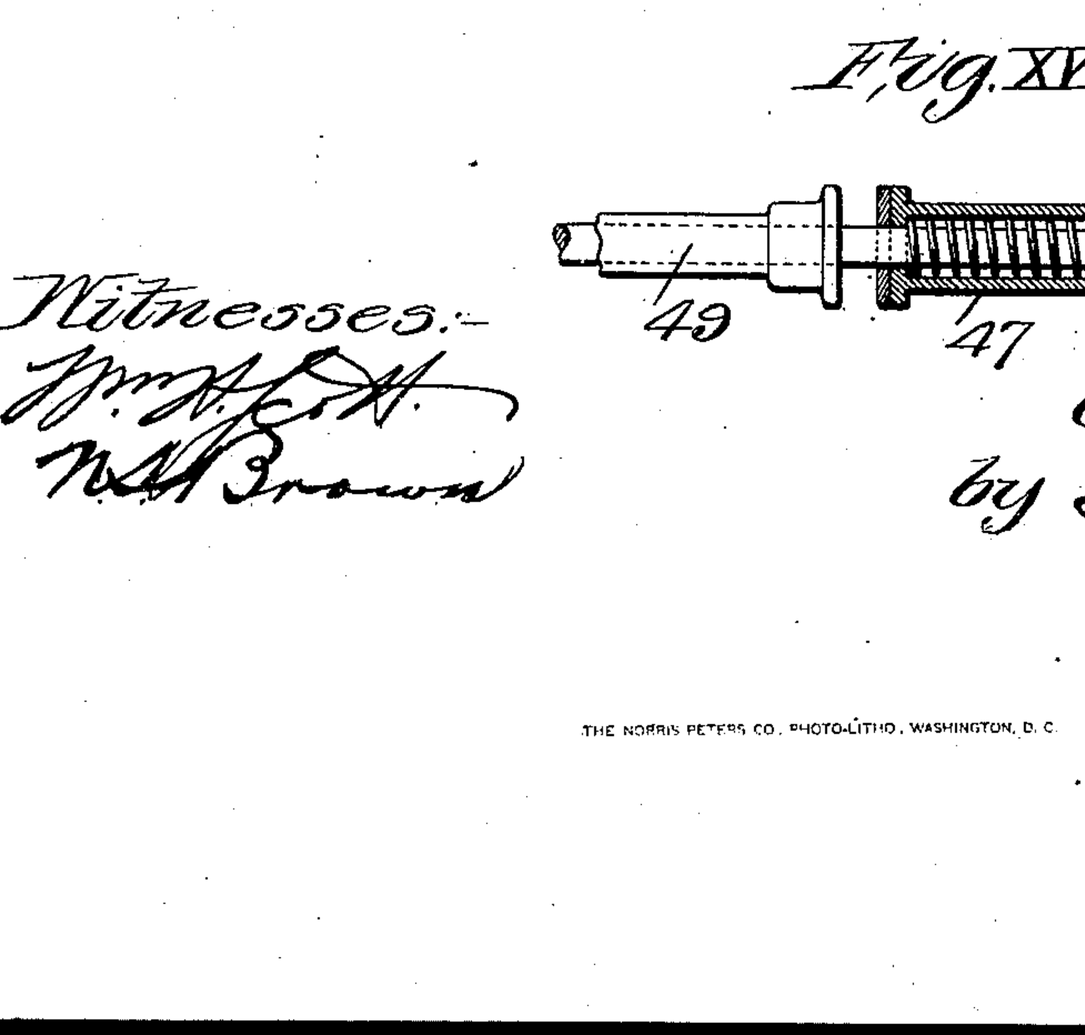

Fig. XIV.

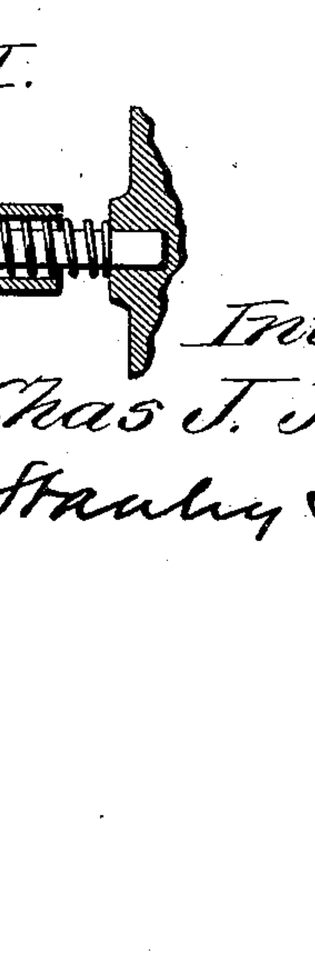

Fig. XV.

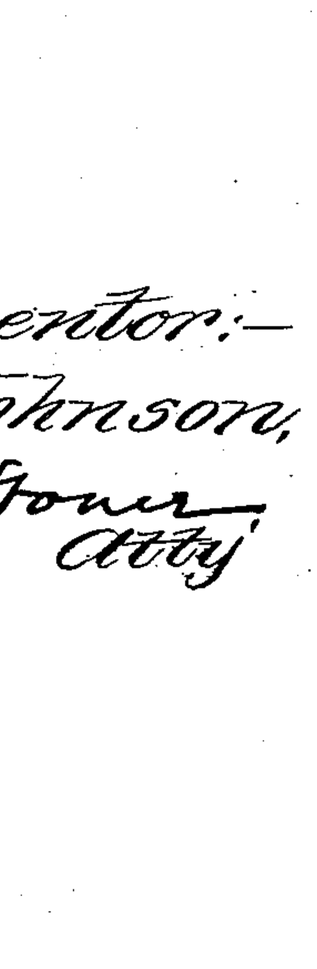

Fig. XVI.

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N. A. Brown

Inventor:—
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by Stanley Stoner
Atty

UNITED STATES PATENT OFFICE.

CHARLES J. JOHNSON, OF ST. LOUIS, MISSOURI, ASSIGNOR TO CLIMAX NUT LOCK & MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 712,803, dated November 4, 1902.

Application filed December 3, 1901. Renewed September 18, 1902. Serial No. 123,922. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. JOHNSON, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Gas-Machines, of which the following is a specification.

My invention relates to an improved construction of apparatus for manufacturing gas from gasolene, and is an improvement on the device described in United States Patent No. 673,542, issued to my assignee and myself on May 7, 1901.

The novel features are hereinafter specifically pointed out and claimed.

Referring to the drawings, which form a part of this specification, Figure I shows a vertical section taken through the tank with the other parts in elevation. Fig. II shows a vertical section through the device used to regulate the flow of gasolene and which is made the subject of an independent application. Fig. III shows, partly in vertical section, the pump used to force the gasolene from the source of supply into the said regulator and thence to the tank. Fig. IV is a front elevation of the entire device, showing also the underground reservoir. Fig. V is a top view of the crank-arms, which are secured to the side of the tank. Fig. VI is a vertical section thereof. Fig. VII is a detail of the clutch and bracket on which said cranks pivot. Fig. VIII is a vertical section of the box through which the reservoir is filled. Fig. IX is a top plan view of the entire apparatus. Fig. X is a horizontal section of the water-motor. Fig. XI is a vertical section thereof through the line XI XI of Fig. X. Fig. XII is a top view of the piston and guide which operate the pumps. Fig. XIII is a side view thereof, taken along the line XIII XIII of Fig. XII. Fig. XIV is a detail view of the roller of said guide. Fig. XV is a detail view of the standard which supports the counteracting-springs; and Fig. XVI is a detail view, partly in section, of the buffer to cushion the sleeve 49.

The same numbers indicate the same parts throughout the several drawings.

1 is the main tank or reservoir, within which is placed a perforated partition 2, which supports the excelsior or other material 3.

4 is the piston-rod of a water-motor 5, and 6 and 6′ are the two pipes leading to the ends of said motor from a pipe 7 in connection with a source of supply. An arm 8 operates a valve x^4 in said pipe 7, which in turn connects with a lever 9. The diaphragm 10, controlled by the pressure in the tank 1, operates the lever 9, thus automatically controlling the action of the water-motor.

11 is the reservoir for gasolene, preferably placed underground and some distance away and which is filled through the box 12.

13 is the pipe through which the gasolene is pumped for consumption, and 14 is an overflow-pipe, through which any excess flows back into the reservoir. It extends into a depression 15, forming a seal.

The piston-rod 4 of the motor 5 connects with an air-pump or compression-cylinder 16, whose action forces air through the pipe 17 into the reservoir 1 below the partition 2. The pressure of this air against the diaphragm 10 operates the lever 9 and in turn controls the pressure allowed through the motor. This is similar to the construction of my Patent No. 673,542, above referred to.

Secured to the piston-rod 4 by means of a pin and slot is an arm 18, which is pivoted at 19 to a bracket 20, attached to the reservoir 1. Rigid therewith is a bell-crank 21, to which is pivoted the piston-rod 22. This piston-rod operates the gasolene-pump 23, which draws gasolene from the reservoir 11 through the pipe 13. Said pipe 13 is furnished with a valve 24 to prevent a return flow, and the downstroke of the piston 22 forces the gasolene out through the passage 25 into the pipe 26, also supplied with a valve 27, into the regulator 28. This regulator has an excess or overflow pipe 14, which carries the excess gasolene back into the reservoir 11. The regulator 28 has an exit-pipe 29, which carries the necessary amount of gasolene into the tank 1 and which escapes through the perforations 30 and flows over a distributer or deflector 31 and drips down into the excelsior 3. 32 is the outlet for the gas from the tank 1.

An auxiliary crank-arm 33 is pivoted at 19 and is held tightly against the arm 21 by means of the bolts 34 and springs 35. At 36 this arm is pivoted to a rod 37, provided with lugs 38 and 39, which strike a fixed bracket 40. This rod 37 is attached to the stem of the valve 41 in the regulator 28, and thus the action of the arm 33, limited in movement by the lugs 38 and 39, controls the outflow of gasolene through the pipe 29. It will be observed that on the movement of the arm 18, that sends the piston 22 down into the pump 23, and thus forces gasolene up through pipe 26, will close the valve 41, and that the reverse motion will open said valve when the regulator 28 is full, thus insuring a steady and regular flow of gasolene into the tank 1.

Secured to the bed-plate 42 (on which the whole device is supported) are two bearings 43, which support the ends of the rod 44. Movable on this rod are two lugs 45, whose adjustment limits the movement of the arm 46, which is secured by a bolt or clamp 48 to the sleeve 49. The end of the rod 44 is attached to the bar 50, which is linked at 51 to the valves which operate and control the flow into the water-motor 5.

A standard 52 is furnished with two openings, through which pass rods 53 and 54. These rods are surrounded with coil-springs 55 and 56, bearing in opposite directions. Rod 54 is pivoted at 57 to the sleeve 49 directly opposite the double incline 58. Linked to a pivoted roller 59 by hook 60 and eye 61 is the rod 53, which serves to pull the roller 59 tightly against the incline 58 and which counteracts the effect of the spring 56. Thus when the apex of the double incline 58 passes the roller 59 it will be carried quickly and surely past the center, taking with it the arm 46, which strikes the lugs 45, thus quickly operating the arm 50 and links 51, which control the water-motor.

The piston-rod 4, operated by the water-motor and which also operates the air-compression cylinder 16, has secured to it an arm 62, which is adapted to strike the stops 63, which in turn are rigid with the sleeve 49, which carries the sleeve 49 slowly to the point where the roller 59 is at the apex of incline 58. Then the pull of the spring 55 hurries the sleeve onward. This takes with it the arm 46, which strikes the lugs 45 and in turn controls the rod 50 (as described) which opens and closes the ports into the said water-motor.

The arm 46 is moved from one side to the other by the lugs 45 and carries the incline thereon under the roller 59. The movement of the sleeve 49 after it passes the apex of the incline 58 is sudden and quick. To lessen the jar, I place a buffer 47, bearing on a coil-spring, at either end of the said sleeve 49.

While I have described the motor as operated by water-pressure, I do not limit myself to this means, as steam or any other fluid under pressure may be used.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a gas apparatus, the combination of a reservoir, a motor, an air-pump operated by said motor, an oil-regulator adapted to control the supply of gasolene in relation to the supply of air, and a regulating-valve controlled by the pressure within said reservoir and which is adapted to regulate the said motor and an overflow for the excess of the gasolene from the regulator to the reservoir; substantially as described.

2. In a gas apparatus, the combination of a motor, an air-pump operated by said motor, a reservoir, a source of supply of gasolene, a pump for said gasolene, an oil-regulator, and a regulating-valve operated by the pressure within said reservoir, and a mechanism operated by said motor and controlling said regulator whereby a constant pressure of gas is maintained in said reservoir and a deflector disposed beneath the discharge end of the exit-pipe from the regulator, substantially as described.

3. In a gas apparatus, the combination of a motor, a carbureting device, an oil-regulator, an air-pump operated by said motor, an arm secured to the piston-rod of said pump, a bell-crank, rigid with said arm, a gasolene-pump operated by said bell-crank, a second bell-crank operated by friction, and a regulator-arm attached to said second bell-crank, said oil-regulator arm adapted to open and close the valve of said regulator and hold the same in position while said motor-piston makes a complete stroke.

4. In a gas-machine, the combination of an air-pump, a pump for the gasolene, a carbureter, a motor, and a means of controlling the flow therein consisting of arms adapted to open and close the ports of said motor, a rod to which said arms are pivoted, lugs attached to said rod, a second arm secured to a sleeve and which is adapted to strike said lugs, reciprocating springs adapted to impart motion to said sleeve, a double-incline cam, a roller adapted to give said sleeve motion independent of the movement of the piston-rod when the apex of said cam is passed, substantially as described.

CHAS. J. JOHNSON.

In presence of—
JOHN H. DOERING,
STANLEY STONER.