

No. 661,172.

Patented Nov. 6, 1900.

P. F. GILLETTE.
AUTOMATIC TIRE INFLATER.

(Application filed Feb. 23, 1899.)

(No Model.)

3 Sheets—Sheet 1.

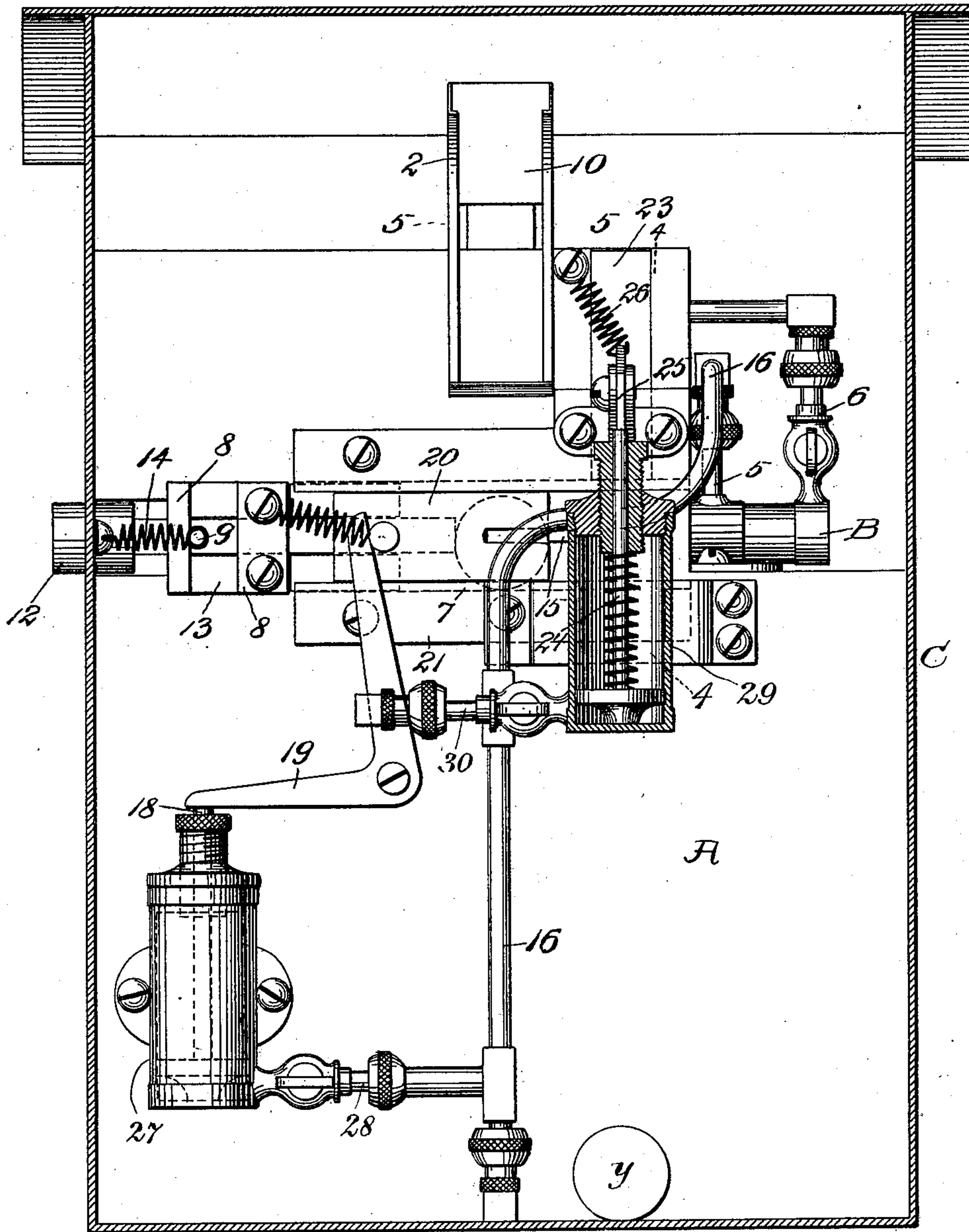


Fig. 1.

Witnesses
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His attorney.

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3 Sheets—Sheet 2.

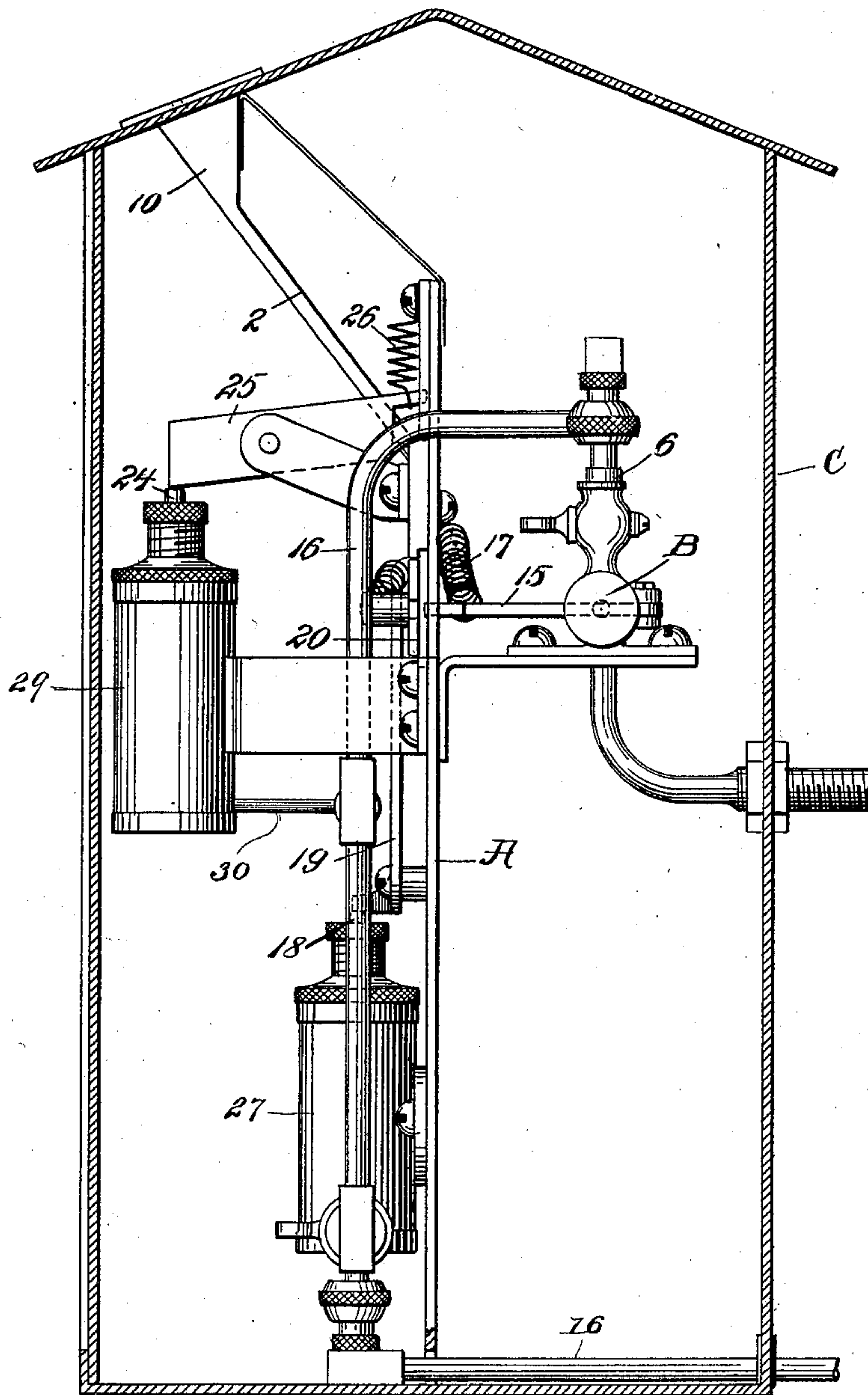


Fig. 2.

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3 Sheets—Sheet 3.

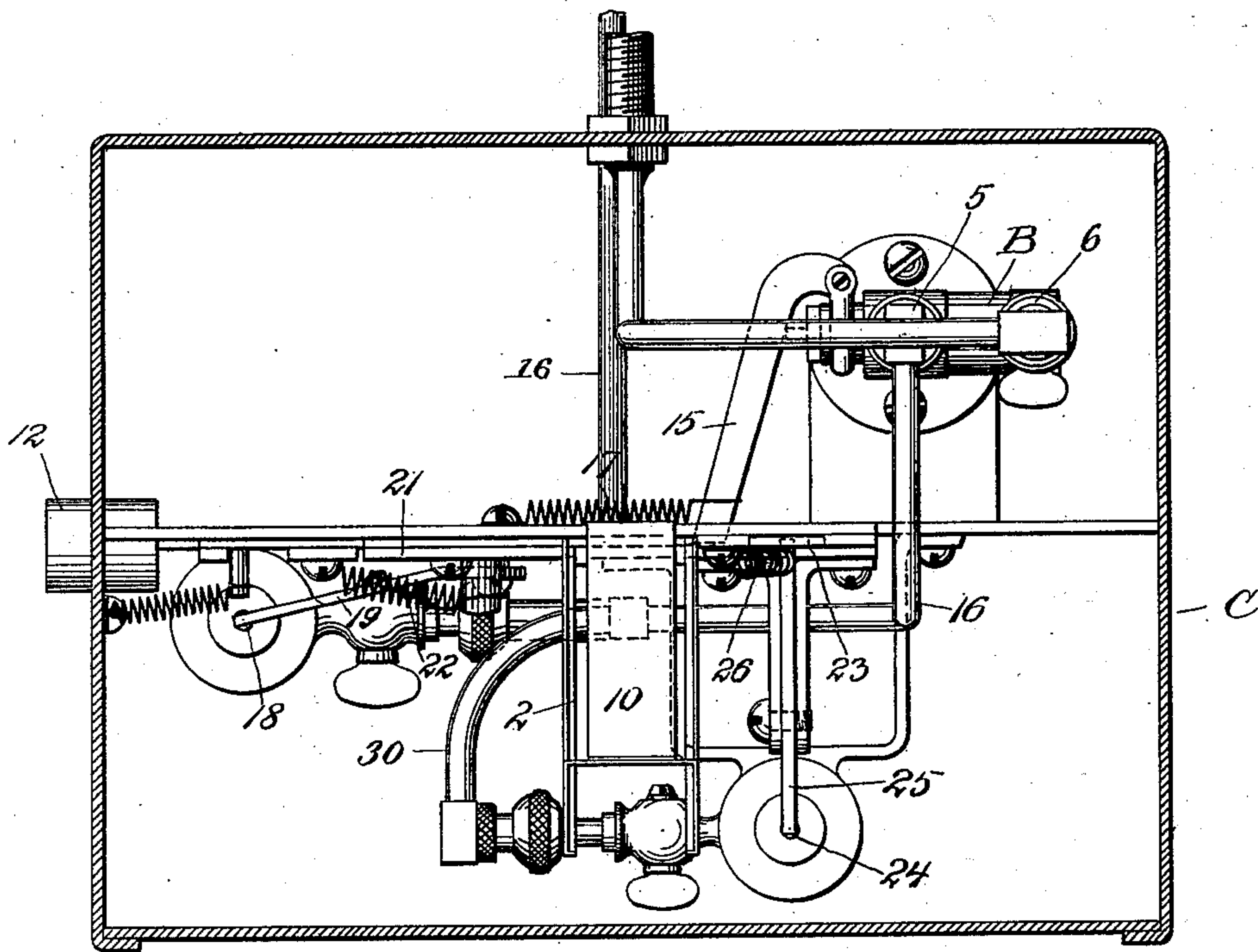


Fig. 3.

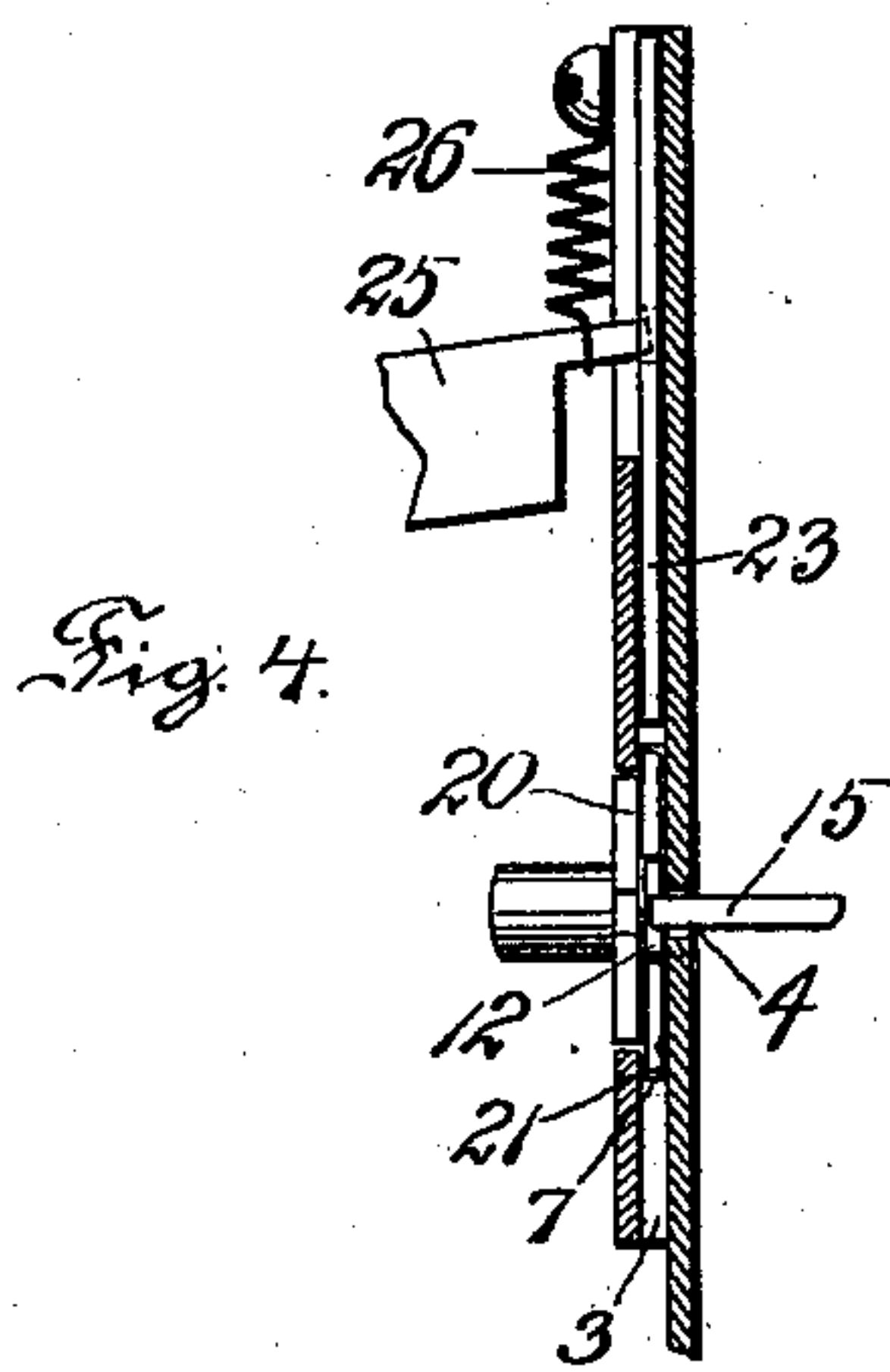


Fig. 4.

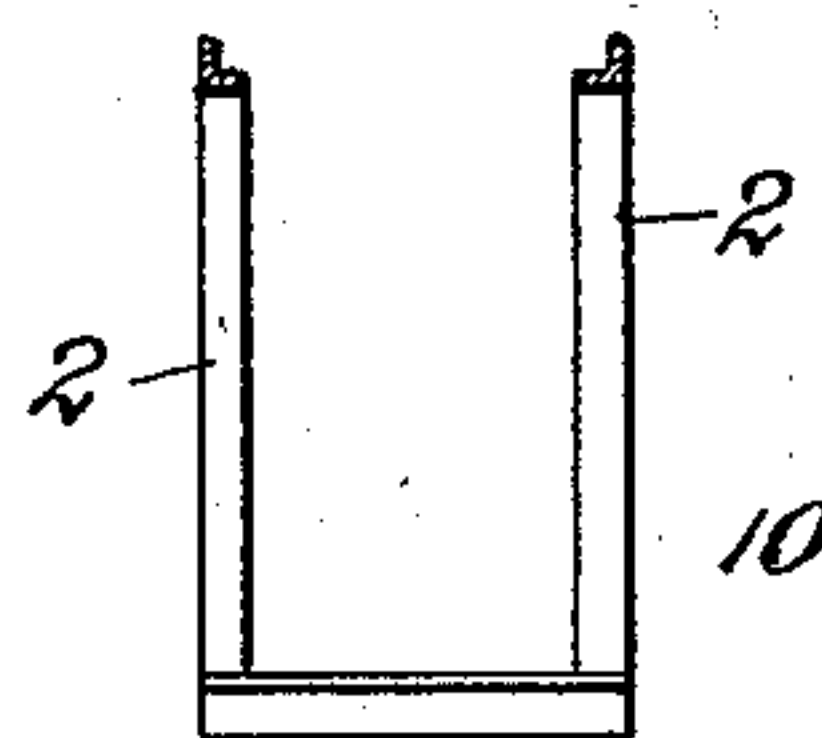


Fig. 5.

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UNITED STATES PATENT OFFICE.

PAUL F. GILLETTE, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE UNITED SPECIALTY COMPANY, OF SAME PLACE.

AUTOMATIC TIRE-INFLATER.

SPECIFICATION forming part of Letters Patent No. 661,172, dated November 6, 1900.

Application filed February 23, 1899. Serial No. 706,629. (No model.)

To all whom it may concern:

Be it known that I, PAUL F. GILLETTE, a citizen of the United States, and a resident of the city, county, and State of New York, have
5 invented certain new and useful Improvements in Automatic Tire-Inflaters, of which the following is a specification.

The present invention relates generally to coin-operated tire-inflaters wherein the deposit of a coin of the proper value will permit the operator to fill a bicycle-tire or the like with a predetermined pressure of air or gas, which pressure when reached will be automatically cut off, preventing waste, where-
15 upon the apparatus will be restored to its normal position, ready to supply a further quantity of air or gas upon the deposit of another proper coin.

Briefly considered, the improved apparatus
20 consists of an air or gas valve controlling the admission of air or gas to the tire, a hand-operated device which, in conjunction with the proper coin, opens or starts the opening of the air or gas valve, an air or gas or automatically-
25 operated device which, in conjunction with said proper coin, holds the valve open until the desired pressure of air or gas has been admitted to the tire, and, finally, an air or gas or automatically operated coin-discharger
30 which when the desired pressure has been reached in the tire will operate to discharge the coin into a closed receptacle, allow the air or gas valve to close, shutting off further supply of air, and generally to allow the parts
35 to return to their normal positions. The education-orifice of the air or gas valve, the air or gas operated device, the coin-discharger, and the conduit for attachment to the tire are connected together by a single properly-commu-
40 nicating pipe or tubing, so that when the hand-operated device, with the interposed coin, opens the valve the air or gas will be simultaneously admitted to the automatically-operated device, to the tire, and to the coin-discharger. The automatically-operated de-
45 vice acts to hold the air or gas valve open until the desired pressure is reached in the tire, whereupon such pressure being also contained by the connecting-tubing will automatically
50 cause the coin-discharger to remove the coin from its operative position, allowing the air

or gas valve to close. The apparatus will preferably be provided with a coin-chute of such character that proper-sized coins will be directed into operative position, but will al-
55 low all smaller-sized coins and refuse matter, such as pieces of stick or the like, to fall out, and thus avoid clogging the apparatus.

With this general understanding of the improvements a detailed description thereof
60 will now be given, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the improved apparatus in its normal or idle position, the usual inclosing case being shown in section
65 and parts being broken away to disclose interior constructions. Fig. 2 is an end elevation thereof with the case in section. Fig. 3 is a plan view with the case in section. Fig. 4 is a detail vertical section on the line 4 4 of Fig.
70 1, showing the coin-discharging slide or ejector and the ends of the hand and automatically operated coin-pushers. Fig. 5 is a cross-section of the coin-chute on the line 5 5
75 of Fig. 1.

Referring to said drawings, the several
75 parts of the apparatus are supported by a frame or plate A, preferably mounted in a vertical position on edge in a suitable sealed inclosing case C, having, as usual in coin-op-
80 erated machines, a receptacle under lock and key for the coins taken by the machine, an opening for the entrance of the proper coin to the coin-directing chute 10, and an open-
85 ing for the protrusion of the hand-operated device or plunger 12. The hand-operated device 12 is a simple straight plunger or push-rod mounted to slide in a suitable guide 13
90 against the pull of a spring 14, the motion of the device being limited by a stud 9, working between stops 8. The inner end of this de-
95 vice is in position to meet the edge of a coin delivered by the coin-chute onto a ledge 7 and to move said coin inwardly a short distance along said ledge and against the outer
100 face of the plate A.

Immediately in the path of the coin on the ledge 7 a projection of the valve-stem, such as the end of a lever 15, extends to be rocked
when the coin is moved, and thus operate the
100 air-valve B, mounted in this instance on the rear side of the plate A. The casing of this

air-valve has an admission-pipe 6 for connection with the air or gas supply tank or other receptacle (not shown) and an eduction-pipe 5, connected to one end of the air or gas conduit 16, the valve itself controlling the communication between said two orifices being of any ordinary construction, arranged to normally hold the communication closed and the air or gas supply cut off from the supply-conduit 16. The valve-operating lever has its end projecting through a slot 4 in the plate A, and the lever is rocked by the movement of the coin against it against the pull of a spring 17. The limited movement of the hand-operated device 12, with the coin, is simply sufficient to cause the valve to open communication between the inlet and outlet orifices 6 5 of the valve-casing, so that air or gas is admitted to the conduit 16, all further or continued operations of the apparatus being effected and controlled automatically by the pressure of the fluid admitted to said supply-conduit 16, as will presently appear.

In addition to the hand-operated device 12 there is provided an automatically-operated device or coin-pusher, consisting in this instance of an air-operated plunger 18, carried in a casing 27, and connected—say through a bell-crank lever 19—to operate or move a coin-pusher 20, mounted in a guide 21 on the face of the plate A in vertical alinement with the end of the device 12, (see Fig. 4,) the movement of the pusher against the coin being had against the pull of a spring 22. The air or gas conduit 16 communicates with the casing 27 of the plunger 18 by a pipe 28, so that as soon as the air-valve is opened by the movement of the hand-operated device 12 the pressure will be admitted to said casing to raise the plunger vertically, rocking the bell-crank and sliding the pusher 20 along its guide to thus move the coin still farther away from its original position on the ledge 7 and bring it into alinement over a discharge-slot 3, ready at the proper moment to fall into the cash-receptacle before referred to or into the bottom of the inclosing case, as indicated at y. This further and automatic movement of the coin rocks the air-valve lever 15 still further, to the end that the valve shall be held open so long as the coin holds it so. To cause the shutting off of a further supply of air or gas as soon as the predetermined pressure has been admitted to the tire or other device to be filled, there is provided means for automatically closing the air-valve in the form of a coin-discharger operated by the pressure of the air admitted to the tire and then in the conduit 16. This discharger in this instance consists, preferably, of an ejecting-slide 23, mounted in a guide on the face of the plate A directly over the coin when in position over the discharge-slot 3. This slide is moved downwardly against the coin by an air-pressure-operated plunger 24, carried in a casing 29 and rocking a lever 25, whose one end engages said slide 23, the several parts being

moved against the pull of a spring 26. When the air or gas pressure in the tire and conduit 16, which communicates with the casing 29 by a pipe 30, has reached the predetermined pressure, the plunger 24 will be forced upwardly, rocking the lever 25 and moving the slide 23 downwardly against the coin, forcing it a sufficient distance beyond the frictional hold of the end of the automatically-operated pusher and the air-valve lever 15, so that it will fall by gravity through the slot 3 to be caught and retained by the cash-receptacle.

The conduit 16 terminates in a suitable valved nipple (not shown) adapted to be connected to inlet-orifice of a bicycle-tire or other device in a manner well known.

When the nipple end of the conduit 16 is removed from the tire, the plungers 18 and 24 and their connected parts will quickly return to their normal inoperative position by leakage of the air from the plunger-casings, the pistons of the plungers not fitting their respective casings sufficiently tight to prevent gradual leakage.

While any proper coin-chute may be employed, the one preferred consists, as shown, of a pair of inclined L-shaped guides 2, situated and held by stays 31 a suitable distance apart to accommodate, hold, and guide the proper coin, the space between the guides providing ample room for the escape of any smaller-sized coin or refuse matter that may enter the coin-slot with the attempt to clog the machine.

While I have particularly referred to the improvements being adapted to tire inflation, it is of course obvious that they may be adapted to other uses.

No air or gas supply is deemed necessary to be shown or particularly described, as any well-known means, device, or fluid-pressure supply may be used.

What I claim is—

1. The combination, in a tire-inflater, of a fluid-pressure-controlling valve, hand and automatically operative means for controlling in conjunction with the proper coin the opening of said valve, and means for discharging the coin upon the supply of the desired pressure, as set forth.

2. The combination, in a coin-operated inflator, of a fluid-pressure-controlling valve, a hand-operated device acting in conjunction with the coin for opening said valve, another device for automatically holding said valve open for the proper time, and an automatically-operative coin-discharger permitting the closing of the valve, as set forth.

3. The combination, in a coin-operated inflator, of a fluid-pressure-controlling valve, a lever connected to operate the valve, a coin-moving device confining the coin between itself and the valve-lever, and an independent coin-discharger for releasing said lever and permitting the valve to close, as set forth.

4. The combination, in a coin-operated inflator, of a fluid-pressure-controlling valve, a

lever connected to operate the valve, a hand-operated device for moving the coin against the lever to open the valve, an automatically-operative device for continuing the holding of the coin against the moved lever, and a coin-discharger for removing the coin and releasing said lever, as set forth.

5. In a coin-operated inflater, the combination of a fluid-pressure-controlling valve having a lever projecting into the path of the coin, a hand-operated device for moving said lever in conjunction with said coin, a fluid-pressure-operated device for continuing the movement of the coin and lever, and a fluid-pressure-operated coin-discharger for removing the coin and releasing the lever, as set forth.

6. In a coin-operated inflater, the combination of a fluid-pressure-controlling valve having a lever projecting into the path of the coin, a hand-operated coin-pusher for moving the coin against the lever to open the valve, another coin-pusher automatically operative upon the opening of said valve, and a coin-discharger automatically operative upon the accumulation of the desired pressure in the device being filled with the fluid-pressure, as set forth.

7. In a coin-operated inflater, the combination of a fluid-pressure-controlling valve, a fluid-pressure-operated coin-pusher, a fluid-pressure-operated coin-discharger and a single pipe connection leading from the valve-casing to the device to be supplied with fluid-pressure and to said pusher and discharger, as set forth.

8. In a coin-controlled inflater, the combination of a fluid-pressure-controlling valve, means for moving the coin to open the valve, and means for automatically discharging the

coin governed by the degree of inflation obtained, as set forth.

9. In a coin-controlled inflater, the combination of a fluid-pressure-controlling valve, means for moving the coin to open the valve and means for causing the coin to hold the valve open until the desired degree of inflation is obtained, as set forth.

10. In a coin-operated tire-inflater, the combination of a valve for controlling the supply of fluid to the tire, coin-operated means permitting the opening of said valve, means for temporarily holding the said valve open and a valve-liberating device other than said holding means operating upon the release of the holding means to allow the valve to close, as set forth.

11. In a coin-operated tire-inflater, the combination of a valve controlling the supply of fluid to a tire, coin-operated means for opening the said valve, a device for holding the valve open until the desired pressure is obtained and means independent of the holding device for liberating the said valve, as described.

12. The combination, in a tire-inflater, of a fluid-pressure-controlling valve, hand and automatically operative means for controlling the opening of the said valve, and means independent of the said automatic means for liberating the said valve, as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 6th day of September, 1898.

PAUL F. GILLETTE.

Witnesses:

GEO. F. WILSON,
RUFUS W. FROST.