

No. 710,330.

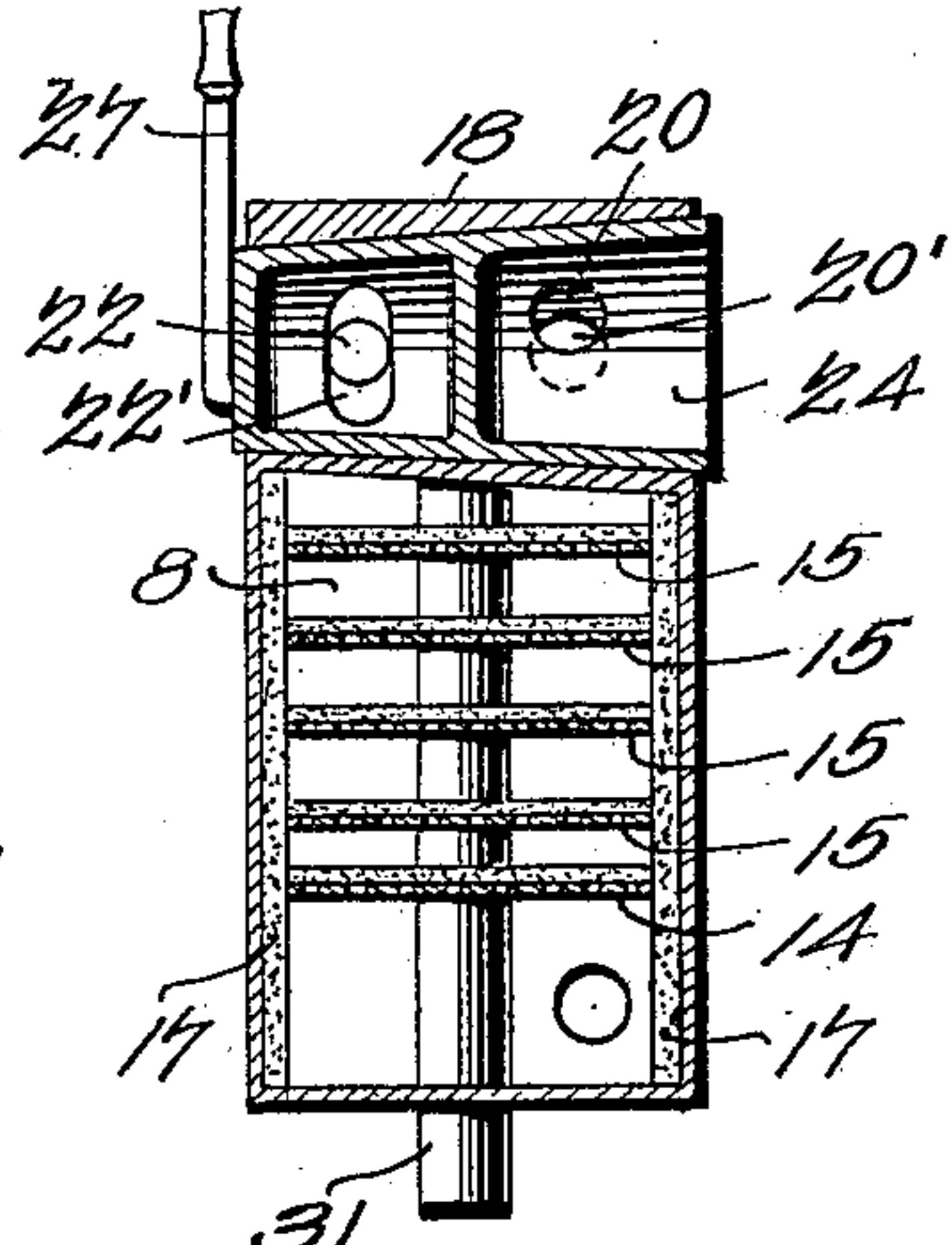
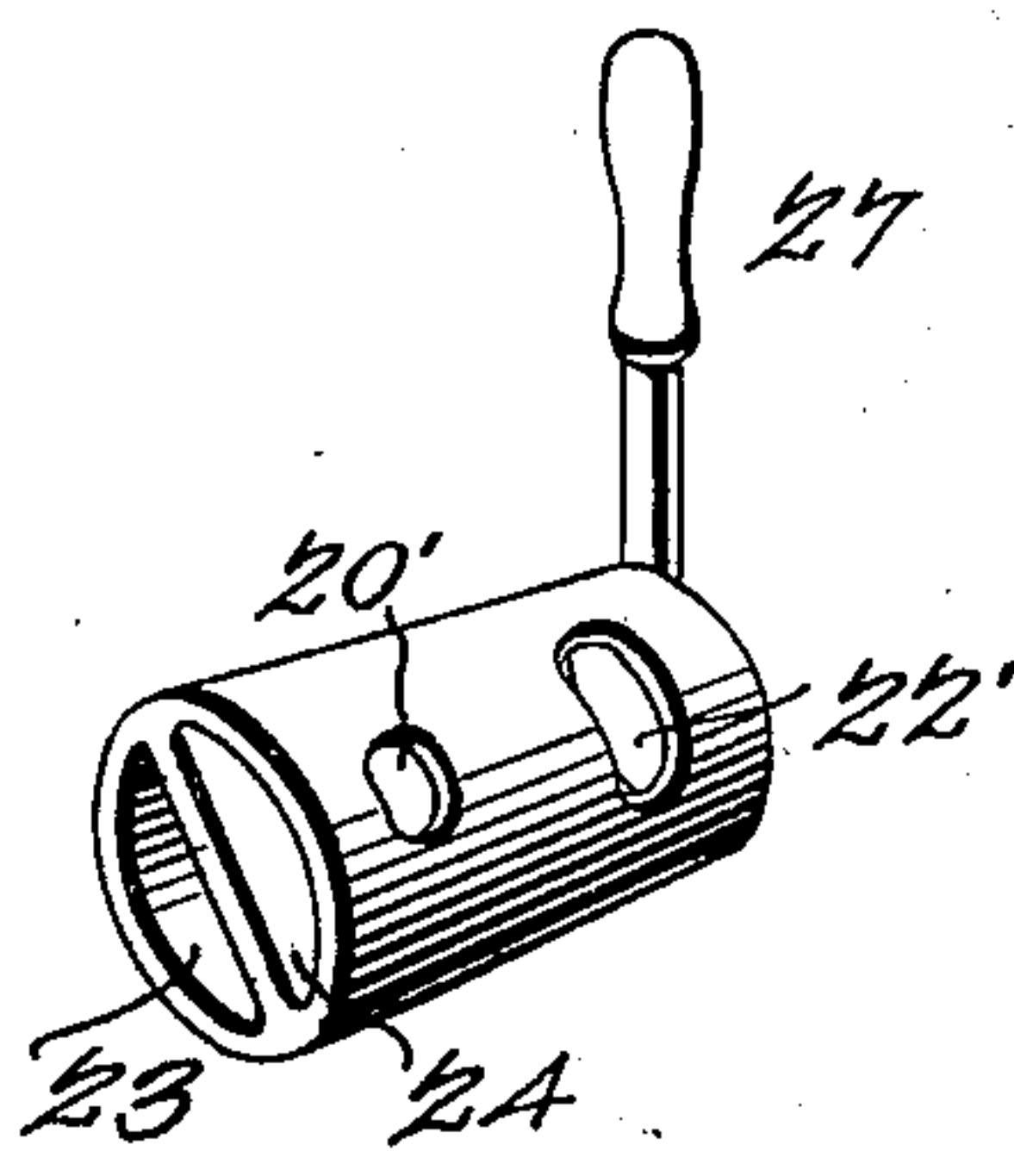
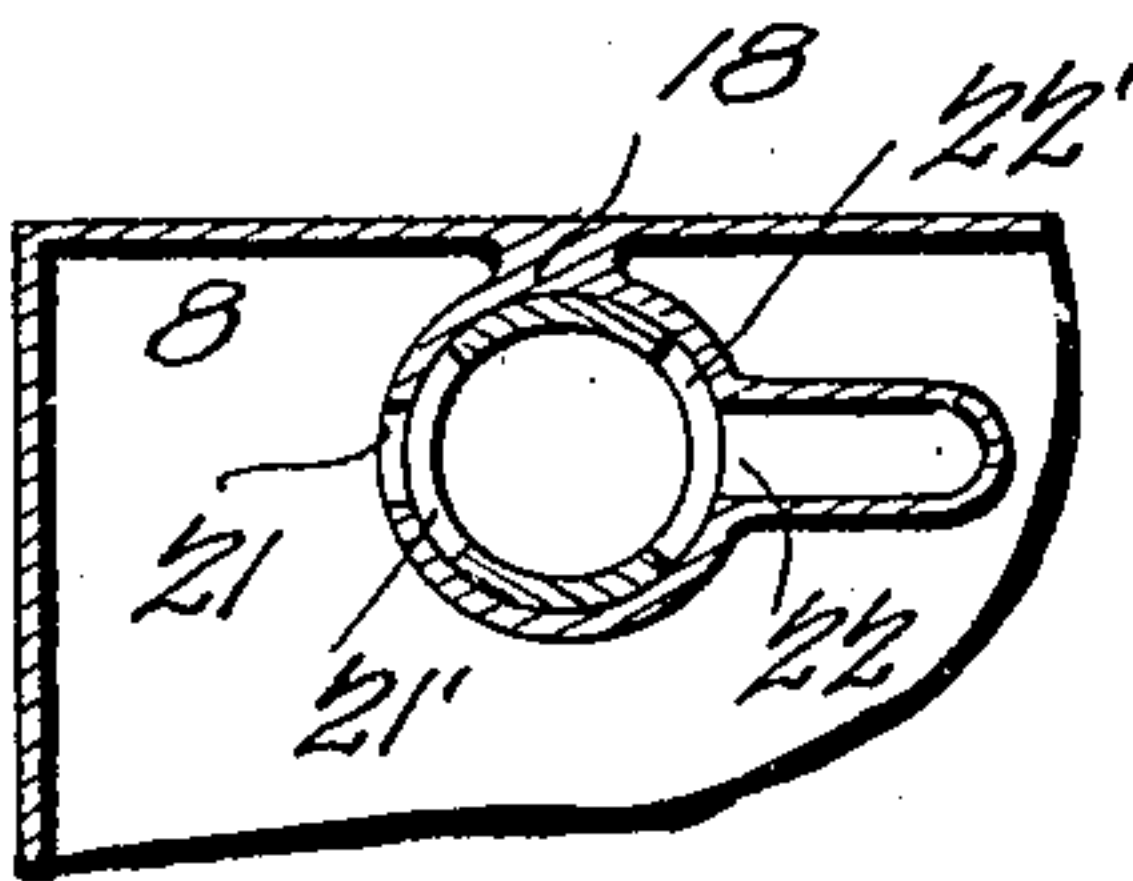
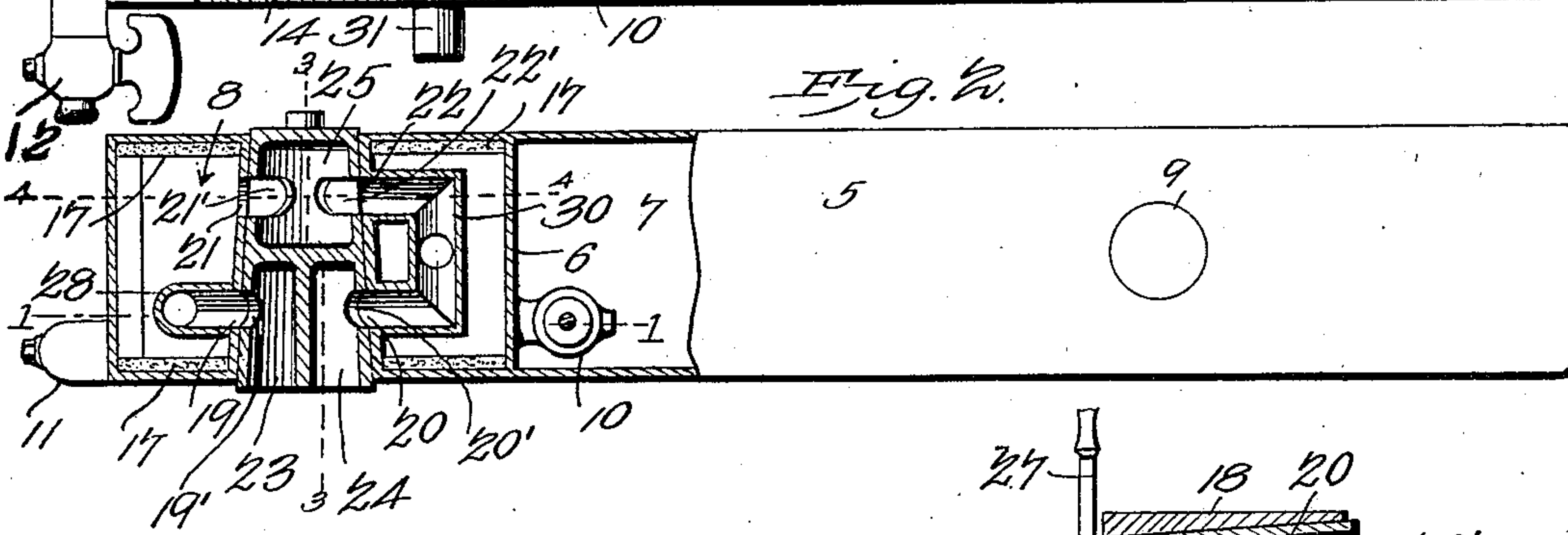
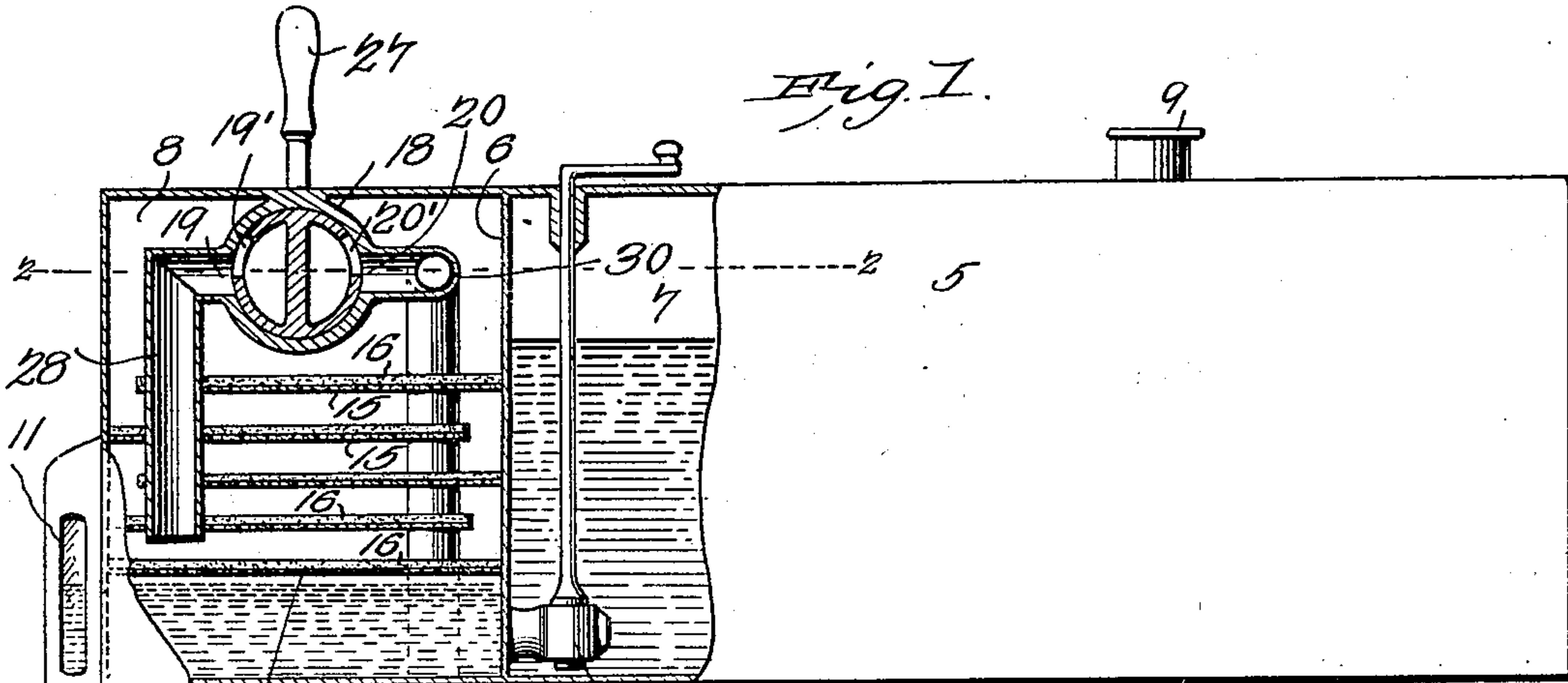
Patented Sept. 30, 1902.

R. C. MARKS.

CARBURETER FOR EXPLOSIVE ENGINES.

(Application filed Jan. 2, 1902.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

ROY CLIFTON MARKS, OF SAN FRANCISCO, CALIFORNIA.

CARBURETER FOR EXPLOSIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 710,330, dated September 30, 1902.

Application filed January 2, 1902. Serial No. 88,236. (No model.)

To all whom it may concern:

Be it known that I, ROY CLIFTON MARKS, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Carbureter, of which the following is a specification.

My invention relates to certain improvements in carbureters, and has for its principal object to provide a carbureter of simple construction and compact form especially adapted for carbureting air for use on bicycles or vehicles of similar character propelled by explosive-engines.

A further object of my invention is to provide for the control of the quantity of air admitted to the carbureter and the quantity of air admitted for admixture with the gas by means of a single controlling-valve.

A still further object of the invention is to so construct the carbureting-chamber as to prevent the splashing of the gasoline or other hydrocarbons on the wicking or other absorbent material and avoid all danger of the gasoline being conveyed in liquid form to the engine.

With these and other objects in view the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a sectional elevation on the line 1 1 of Fig. 2 of a carbureter constructed in accordance with my invention. Fig. 2 is a sectional plan view of the same on the line 2 2 of Fig. 1. Fig. 3 is a transverse sectional elevation of the carbureter on the line 3 3 of Fig. 2. Fig. 4 is a longitudinal sectional elevation of a portion of the carbureter on the line 4 4 of Fig. 2. Fig. 5 is a detail perspective view of the controlling-valve.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

5 indicates a suitable tank or casing of a size proportionate to the quantity of gas to be made. The tank is divided by a vertical partition 6 into two compartments, the larger of

which, 7, forms a reservoir, from which small quantities of oil may be fed to the carbureting-chamber 8. The reservoir is provided with a suitable filling-opening closed by a cap or cover 9, and said reservoir is connected by a suitable opening or passage under the control of the valve 10 with the lower portion of the carbureting-chamber 8. At the front of the carbureting-chamber is a glass gage-tube 11, by which the level of the gasoline may be ascertained, and at the lower portion of said tube is a discharge-opening having a valve 12, the opening permitting the withdrawal of the contents of the carbureting-chamber and reservoir when necessary.

Extending across the lower portion of the carbureting-chamber is a division-plate 14, arranged, preferably, at a point slightly above the liquid-level and acting to prevent the splashing of the gasoline through the main portion of the carbureting-chamber in the event of jolting or falling of the vehicle by which the carbureter is carried, and thus preventing the current of air from carrying the gasoline in liquid form to the engine. Extending alternately from the opposite ends of the carbureting-chamber are a series of shelves 15, which may be formed of perforated metal or of wire-gauze and arranged to form a tortuous passage for the air to be carbureted. All of the shelves 15 and the lower division-plate 14 are covered with felt or other suitable absorbent material 16, and the side walls of the carbureter are covered with wicking 17, which extends down into the body of gasoline and conveys the latter by capillary attraction to the absorbent material on the various shelves.

Extending transversely across the upper portion of the carbureting-chamber is a valve-casing 18, having a number of openings 19, 20, 21, and 22, and fitting in said casing is a plug-valve having a hollow central portion divided into three chambers 23, 24, and 25 by suitable transverse and longitudinally-disposed partitions, as shown. In the walls of the valve are formed a number of openings 19', 20', 21', and 22', which communicate with the similarly-marked openings in the valve-casing, and at one end of said valve is a hand-

lever 27, by which the valve may be rotated to govern the flow of air and gas through said opening.

The air entering the chamber 23 of the valve passes through the alining openings 19' and 19 and downward through a pipe 28, connected with the latter opening, to a point below the lowermost shelf in the carbureting-chamber, and thence passing through the tortuous passage made by the shelves to the upper portion of the chamber, becoming saturated with hydrocarbon and forming a gas which accumulates at the top of the chamber and thence passes through the alining openings 21 and 21' to the chamber 25 of the valve and from thence through the openings 22' and 22 to a pipe 30, the latter communicating with a discharge-pipe, which leads to the engine or other point where the gas is to be used.

In order to supply a proper quantity of air to dilute the gas, air is permitted to enter the chamber 24 of the valve and thence to pass through the alining openings 20' and 20 to the pipe 30, where it meets and mingles with the gas and passes with said gas out through the discharge-pipe 31.

It will be noted that while the air-passages 19 and 20 of the valve-casing are in horizontal alinement the corresponding passages 19' and 20' are arranged at such an angle with respect to each other that when one is fully opened the other is fully closed, and the movement of the valve may be regulated through any angle to admit a greater or less quantity of air to be carbureted and a correspondingly less or greater quantity of pure air to be mixed with the gas. The movement of the valve in governing the supply of air will not interfere in any manner with the free discharge of the gas in the carbureting-chamber, the valve-openings 21' and 22' being elongated, as shown more clearly in Figs. 4 and 5, in order to prevent any closing movement except when the valve is turned at right angles to the position shown in Fig. 1, at which time all of the openings will be closed.

The device, as herein shown and described, is intended to be used principally on bicycles or other like vehicles driven by gas-engines; but its size and arrangement may be altered in order to permit its use in connection with engines of larger size or for the production of gas for lighting or heating purposes.

Having thus described my invention, what I claim is—

1. The combination in a carbureter, of an oil tank or reservoir having at one end a carbureting-chamber, a valve for controlling the flow of hydrocarbon from the reservoir to the chamber, a gage-glass arranged on one side of said chamber, a series of superposed shelves in the carbureting-chamber, absorbent material on said shelves, side wicks for conveying hydrocarbon from the lower portion of the chamber to the absorbent material, and a ported air-valve arranged in the upper portion of said carbureting-chamber.

2. In a device of the class specified, a tank or reservoir having at one end a carbureting-chamber, a valve for controlling the flow of hydrocarbon from the tank to the chamber, a horizontally-disposed partition extending across the lower portion of the chamber at a point above the liquid-level, a series of superposed shelves arranged within said chamber, absorbent material disposed on said shelves and at the sides of the chamber, and a valve situated in the upper portion of said chamber for controlling the supply of air to the carbureter.

3. In a device of the class specified, a tank or reservoir having a vertical partition dividing the same into two compartments one of which forms a reservoir, and the other a carbureting-chamber, a valve for controlling the flow of hydrocarbon from the reservoir to the chamber, a horizontally-disposed partition extending across the lower portion of the chamber at a point above the liquid-level, a gage-glass communicating with said chamber and having a discharge-cock, a series of superposed shelves arranged within said chamber, absorbent material disposed on said shelves and at the sides of the chamber, and a ported valve arranged in the upper portion of the chamber for controlling the supply of air to the carbureter.

4. The combination in a carbureter, of the chamber having a horizontally-disposed partition situated above the liquid-level and adapted to prevent the splashing of the liquid into the upper portion of the chamber, a series of superposed shelves arranged within said chamber, absorbent material carried by the shelves and disposed on opposite sides of the chamber, and a valve arranged in the upper portion of said chamber for controlling the supply of air thereto.

5. The combination in a carbureter, of the casing forming a carbureting-chamber and provided with absorbent material for effecting the saturation of the air, a valve-casing disposed within the chamber and having two pairs of alining ports or passages, a valve-body having its central portion divided into three chambers and ports or passages arranged in the valve and movable into alinement with the ports of the casing to govern the admittance of air to be carbureted and the admittance of pure air for admixture with the gas, substantially as specified.

6. The combination in a carbureter, of a casing forming a carbureting-chamber and provided with absorbent material for effecting the saturation of the air, a valve-casing disposed within the chamber and having ports or passages 19, 20, 21 and 22, a conducting-pipe leading from the port 19 to the lower portion of the carbureting-chamber, a pipe or passage 30 extending between the ports 20 and 22, a discharge-pipe 31 leading from said pipe 30, a hollow valve having chambers 23, 24 and 25, elongated ports 21' and 22' in alinement with the ports 21 and 22, and ports 19'

and 20' disposed at an angle to each other and
movable into alinement with the casing-ports
19 and 20 to govern the supply of air to be
carbureted and the admittance of air to be
5 admixed and discharged with the gas, sub-
stantially as specified.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in
the presence of two witnesses.

ROY CLIFTON MARKS.

Witnesses:

LOUIS H. BILL,
ADOLPH R. THERSEN.