

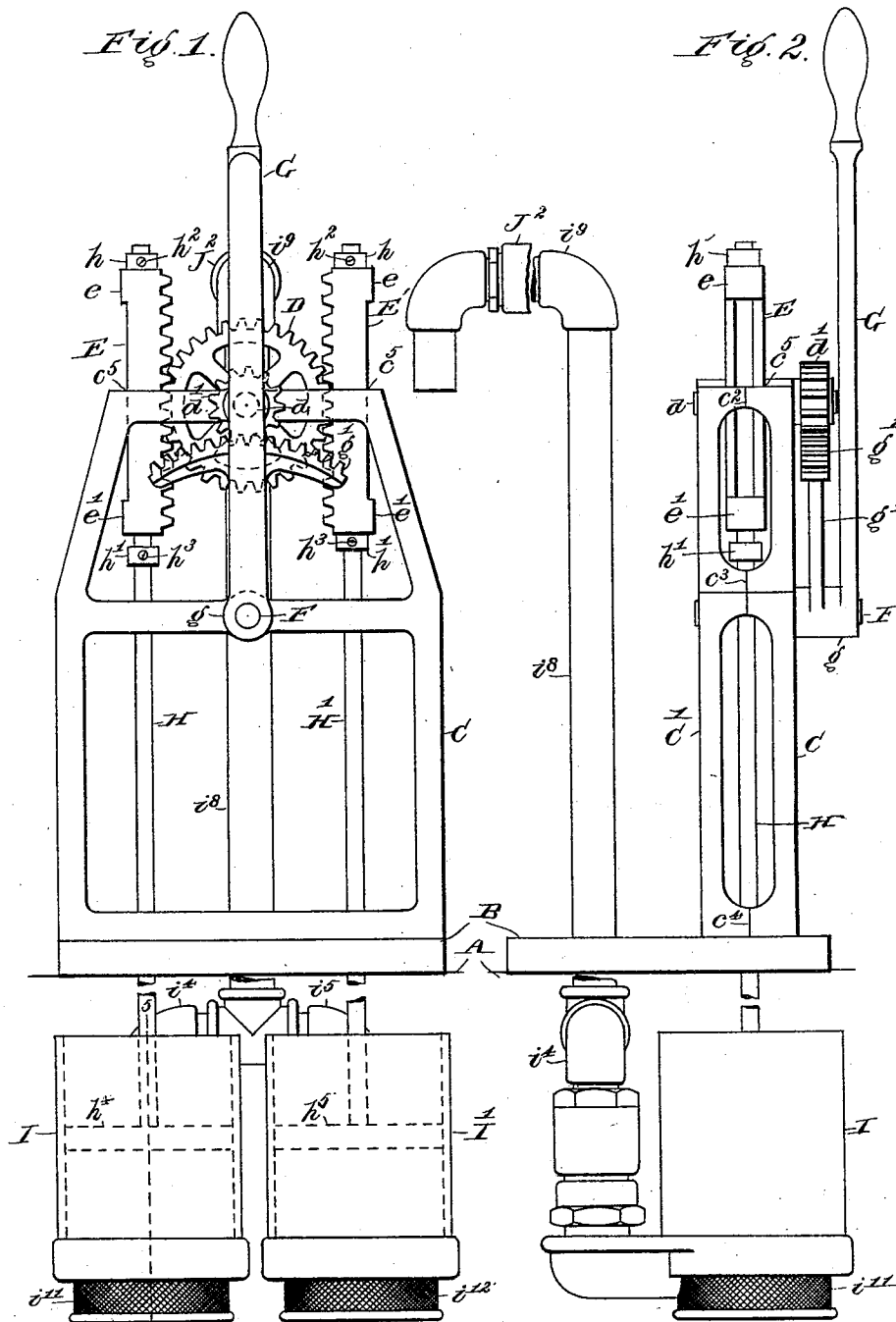
(No Model.)

2 Sheets—Sheet 1.

W. G. KENDALL.
MEASURING PUMP.

No. 543,872.

Patented Aug. 6, 1895.



WITNESSES.

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Lillian E. Burr

INVENTOR

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His ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

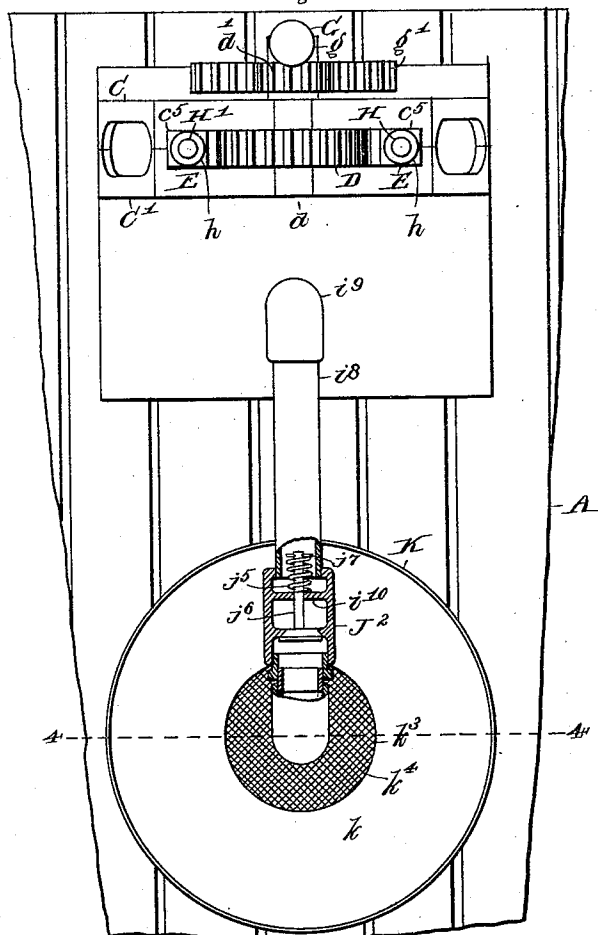


Fig. 4.

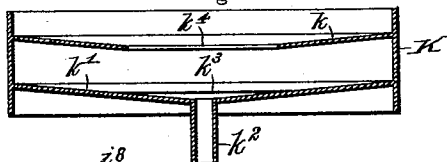
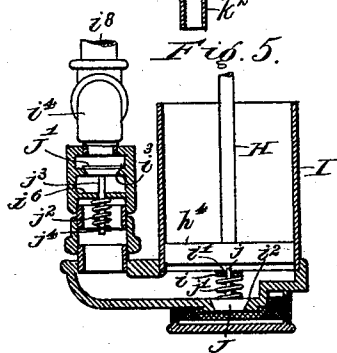


Fig. 5.



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UNITED STATES PATENT OFFICE.

WEBBER G. KENDALL, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO
THE KENDALL AUTOMATIC OIL PUMP COMPANY, OF NASHUA, NEW
HAMPSHIRE.

MEASURING-PUMP.

SPECIFICATION forming part of Letters Patent No. 543,872, dated August 6, 1895.

Application filed March 28, 1895. Serial No. 543,456. (No model.)

To all whom it may concern:

Be it known that I, WEBBER G. KENDALL, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Measuring-Pumps, of which the following is a specification.

My invention relates to measuring-pumps; and it consists in the devices and combinations which are hereinafter described and claimed, and which have for their objects to regulate the amount of oil delivered at a single stroke of the pump and to prevent the spattering of oil on the floor or other surface on which the pump stands.

In the accompanying drawings, on two sheets, Figure 1 is a front elevation of a measuring-pump provided with my improvement; Fig. 2, a side elevation of the same; Fig. 3, a plan of the same; Fig. 4, a central vertical section, on the line 4 4 in Fig. 3, of the drip-pan; Fig. 5, a central vertical section, on the line 5 5 in Fig. 1, of one cylinder and its discharge-pipe.

A represents the floor of a grocery-store or other room in which oil is sold or the top of a tank containing oil. B is a base-plate resting on said floor or tank and supporting the frame C of the pump. The frame C, Figs. 1, 2, and 3, consists of two like sides c c' , having inward projections c^2 c^3 c^4 at the corners of the frame, which keep said sides apart and form in effect a rectangular slot c^5 at the top of said frame to receive the gear D and the racks E E' and to hold said racks in mesh with said gear.

The gear D is fast on a horizontal shaft d , and a pinion d' is also fast on said shaft outside of said frame. Another horizontal shaft F is supported in the frame C and projects from the front of the machine and is the fulcrum on which turns the lever or handle G, the lower end of which is provided with a sleeve g , which surrounds said shaft F and on which is cast or otherwise secured an arc-shaped rack g' or segment of a gear, said segment g' being concentric with said shaft F and engaging said pinion d' , so that a reciprocation of the handle G gives a reciprocating motion to the racks E E'.

The racks E E' are cast or made with grooved backs e and at the ends are provided with bridge-pieces e' , which extend across said grooves and project from said backs, and the plunger-rods H H' pass loosely through these grooves and are caused to rise and fall with said racks by collars h h' , arranged on said rods H H' above and below said racks and held at any desired point by set-screws h^2 h^3 , which turn radially in said collars and thrust against said rods, the movement of said racks being limited by the striking of said bridge-pieces e' against the upper and lower faces of the top of the frame.

To the lower ends of the rods H H' are secured the plungers h^4 h^5 , which work in the cylinders I I', said plungers and cylinders being of ordinary construction, each cylinder having a horizontal cross-bar i , Fig. 5, through a hole i' in which the stem j of the inlet-valve J is passed to guide said valve. Said valve J is pressed into its seat i^2 by a spiral spring j' , surrounding said valve-stem and compressed between said valve and said cross-bar i .

An outlet-valve J' is arranged in the discharge-pipe i^4 i^5 of each cylinder and is held to its seat i^3 by a spiral spring j^2 , surrounding the stem j^3 of said valve J' and compressed between a stationary cross-bar i^6 in said discharge-pipe, and a collar or pin j^4 secured to said stem j^3 .

The oil before entering the cylinders passes through screens i^{11} i^{12} , which surround the inlet-valves in an obvious manner.

The discharge-pipes of the two cylinders I I' are united above their outlet-valves in a single pipe i^8 , which after rising to a convenient height is bent at i^9 to discharge downwardly and near its nose contains a drip-controlling valve J², Fig. 3, substantially like the valve J' and similarly operated, being held to its seat by a spiral spring j^5 , which surrounds the valve stem j^6 and is compressed between a cross-bar i^{10} , fixed in said pipe i^8 , and a collar or pin j^7 , projecting from said stem j^6 .

The object of the valve J² is to prevent the oil from dripping from the nose of the pipe i^8 upon the vessel into which the oil is measured or requiring the attendant to waste his time in waiting until the oil has ceased to drip before removing said vessel from under said

nose. It is impossible to prevent an occasional drop of oil from falling from the nose of the discharge-pipe, and I therefore place a drip-receiver K below said nose, Figs. 3 and 4, said receiver having a cover k and a drain k' , arranged one above the other and each inclining downward from its circumference toward its center.

The drain k' has a central outlet-pipe k^2 , which runs through the floor A or top of the tank to return the drippings to the tank, and the outlet k^2 is covered by a wire-cloth strainer k^3 in the usual manner. The cover k has a central orifice k^4 large enough to allow the drippings to fall through said cover without striking the same, and said cover prevents said drippings from spattering over the sides of said receiver onto the floor A by catching the rebounding drops on the under surface of said cover.

The cylinders I I' are each intended to have a definite capacity, say about a quart; but it is very difficult to make them of exactly the right capacity or of exactly equal capacity, and therefore the stroke of the pistons is made variable by means of the adjustable collars h h' . Thus, by lowering the lower collar on the rod H, Fig. 1, the rack E will have a lost motion on said rod and will force less oil from the corresponding cylinder I on the downstroke and will draw less oil into said cylinder on the upstroke. In this way the amount of oil delivered from each cylinder may be accurately gaged.

The springs j' j^2 may be omitted and the valves J J' returned to their seats by gravity.

I claim as my invention—

1. The combination of the frame, a pump-cylinder, a plunger arranged therein and having a plunger-rod, a rack loose thereon and

having stops to limit the movement thereof on said rod, and a gear, to engage said rack and impart a reciprocating movement thereto, as and for the purpose specified.

2. The combination of the frame, a pump-cylinder, a plunger arranged therein and having a plunger-rod, a rack loose thereon, a gear, to engage said rack and impart a reciprocating movement thereto, and stop collars, adjustably secured on said plunger-rod beyond the ends of said rack, to limit the movement of said rack on said rod, as and for the purpose specified.

3. The combination of the frame, two pump-cylinders, a discharge-pipe, common to both said cylinders, plungers, arranged in said cylinders and having plunger-rods, racks, loose on said plunger-rods, adjustable stops to limit the movement of said racks on said rods, a gear, engaging said racks, a pinion, concentric with said gear and rotary therewith, a lever, having its fulcrum on said frame, and a segment of a gear, secured on said lever and concentric with said fulcrum and engaging said pinion, as and for the purpose specified.

4. The drip-pan having a drain and outlet pipe and having a cover, arranged above said drain and having a central orifice, to receive drippings and adapted to catch on its under surface drops spattered upon said drain and rebounding therefrom, as and for the purpose specified.

In witness whereof I have signed this specification, in the presence of two attesting witnesses, this 5th day of March, A. D. 1895.

WEBBER G. KENDALL.

Witnesses:

ALBERT M. MOORE,
LILIAN E. OWEN.