Nov. 24, 1936. F. KLAUS 2,062,181

MEASURING AND FILLING MACHINE

Filed June 12, 1935 3 Sheets-Sheet 1

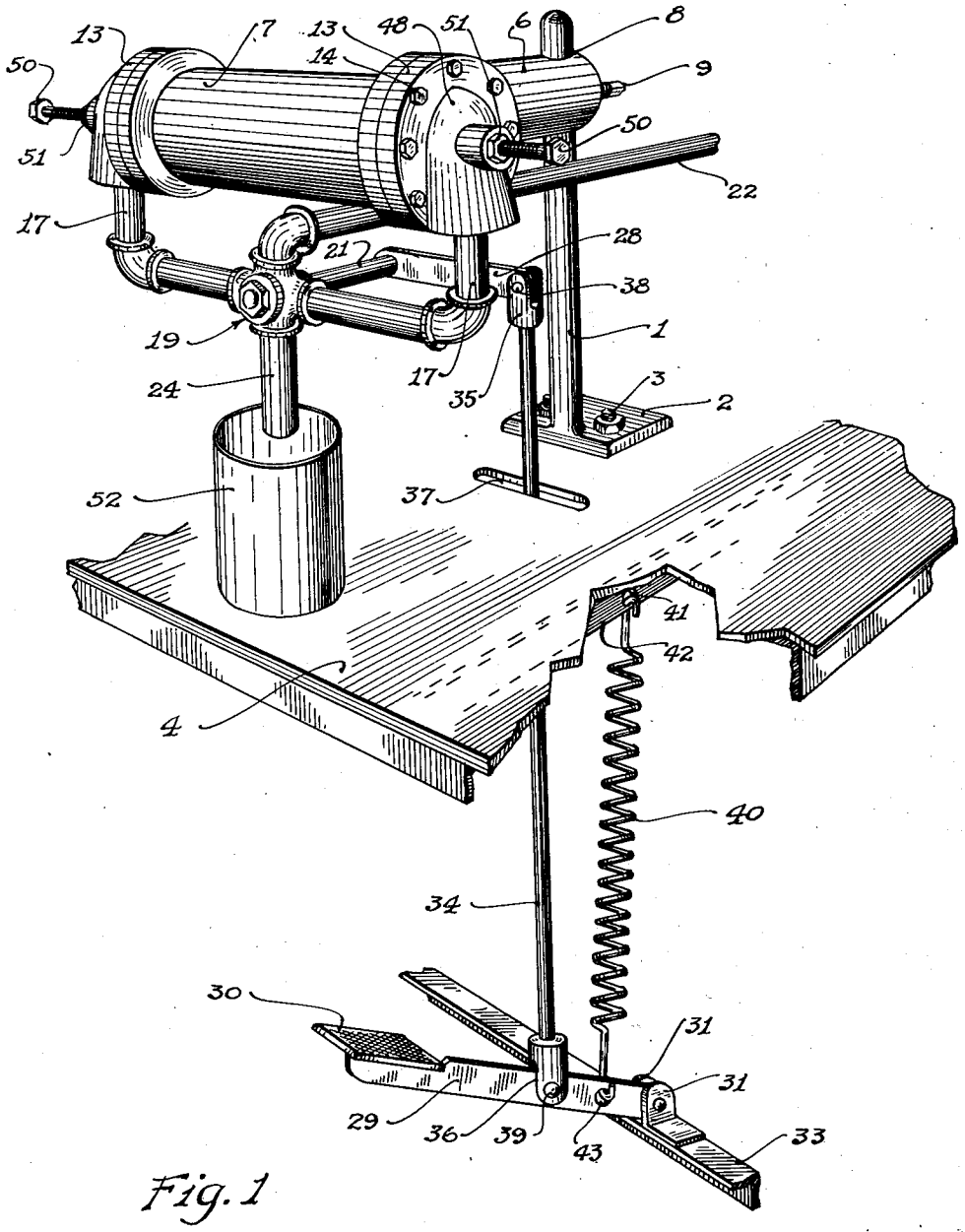


Fig. 1

WITNESS
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Filed June 12, 1935 3 Sheets-Sheet 2

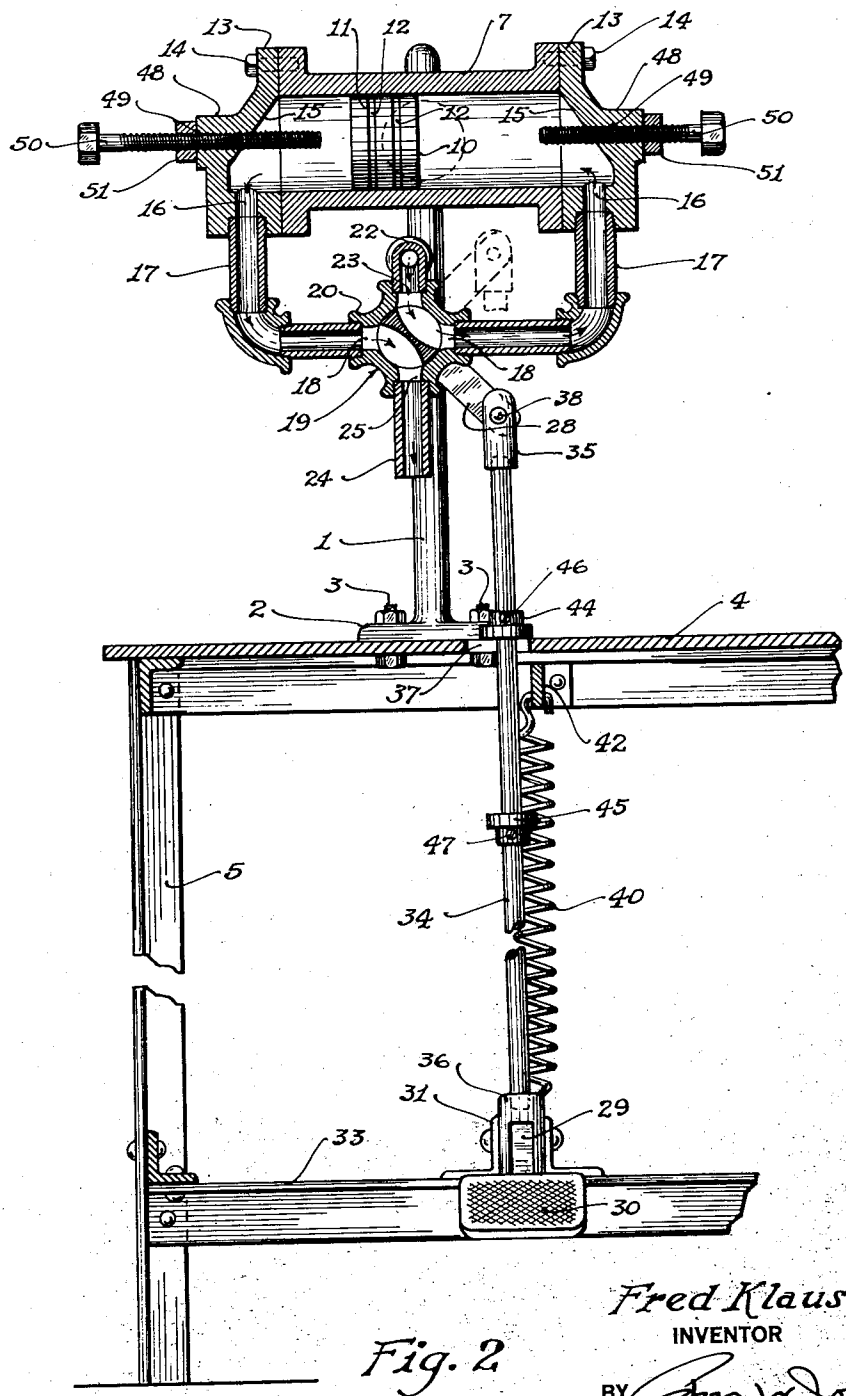


Fig. 2

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Filed June 12, 1935 3 Sheets-Sheet 3

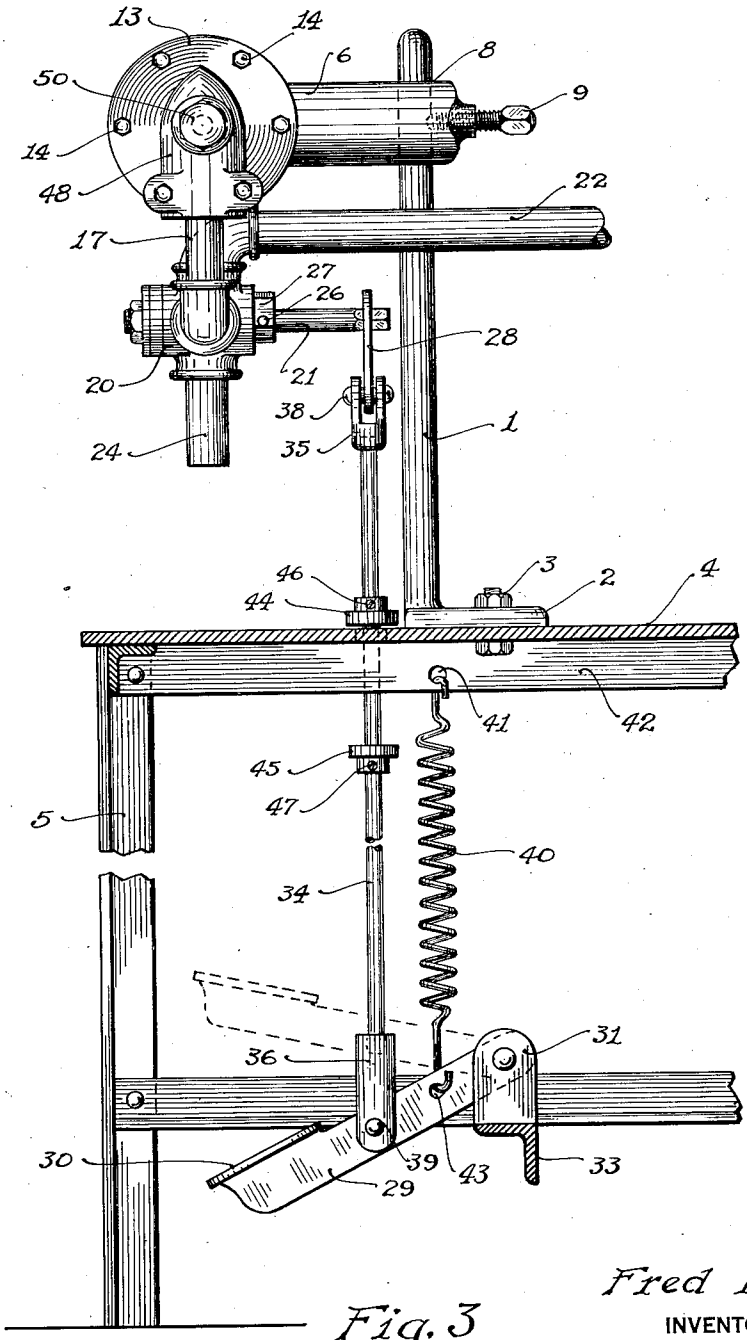


Fig. 3

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UNITED STATES PATENT OFFICE

2,062,181

MEASURING AND FILLING MACHINE

Fred Klaus, Chicago, Ill., assignor to Industrial Patents Corporation, Chicago, Ill., a corporation of Delaware

Application June 12, 1935, Serial No. 26,208

4 Claims. (Cl. 221—102)

The present invention relates to a measuring and filling apparatus for dispensing predetermined amounts of liquid and semi-liquid materials such as oils and greases.

One of the objects of the invention is to provide a new and improved device for dispensing predetermined amounts of such materials as oils and greases.

Another object of the invention is to provide a measuring and filling machine in which a complete operation may be performed by a single movement of a foot pedal.

Another object of the invention is to provide a device of this type which is inexpensive to operate and maintain by reason of a small number of moving or wearing parts.

Another object of the invention is to provide a device of this class which is simple in construction, economical to manufacture and easy to operate.

Other objects of the invention will be apparent from the description and claims which follow.

One embodiment of the present invention is disclosed in the accompanying drawings, in which similar reference characters in the several figures designate similar parts.

Figure 1 is a perspective view with the table or supporting means partly broken away.

Figure 2 is a vertical view, partly in section, of the device shown in Figure 1. In this figure the lever arm for operating the valve is shown in solid lines in the position it assumes when the pedal is depressed, and in dotted lines in the position it assumes when the pedal is not depressed.

Figure 3 is a side view of the device in which the pedal is shown in solid lines in the depressed position and in dotted lines in the normal position.

Standard 1 having a base plate 2 is rigidly affixed by bolts 3 to table or bench 4 mounted upon a suitable framework 5.

Bracket 6 carries horizontal cylinder 7 and is provided with opening 8, by which it is vertically adjustable on standard 1 and securely held in position thereon by set screw 9.

Floating piston 10 having annular peripheral grooves 11 to accommodate compression rings 12, snugly engages the inner wall of cylinder 7, the compression rings 12 being expanded against the inner wall of cylinder 7 to compensate for normal wearing of the cylinder wall and to insure against leakage of the fluid from either side of piston 10.

Cylinder 7 is provided at each end with a fixed head 13 rigidly secured thereto by bolt members 14. Heads 13 are shaped outwardly and downwardly to provide angular inner end walls 15, having vertical ports 16 through the base thereof. The angularly shaped walls 15 assure a smooth flow of fluid as it is dispensed from cylinder 7.

Pipe lines 17 lead from ports 16 and enter opposite openings 18 of four-way valve 19 comprising a casing 20 and valve stem 21. Delivery pipe 22, extending from a source of fluid supply not shown, enters valve 19 at opening 23. Pipe member 24 extends from opening 25 of valve 19 and serves as a dispensing nozzle for fluid forced from cylinder 7 to receptacle 52 shown in Figure 1. Pipe 24, if desired, may be equipped with a strainer or an antidrip nozzle of any suitable type.

The rotation of stem 21 is confined by the movement of pin 26 within the cut-out portion 27 of casing 20. Valve stem 21 is actuated by lever 28 rigidly secured thereto.

Lever 29, provided with pedal 30, is pivotally secured between brackets 31 rigidly affixed to cross member 33 of framework 5. Bar 34 extends through elongated slot 37 in table 4 and is pivotally connected between levers 28 and 29 by shackle couplings 35 and 36, and bolts 38 and 39, respectively. The lever 29 is normally maintained in an upward position by coil spring 40 extending from opening 41 in cross member 42 to opening 43 in lever 29.

As shown in Figure 3, the thrust on pin 26 may be relieved by collars 44 and 45 secured by set screws 46 and 47, respectively, on bar 34 above and below the table 4 to govern the vertical movement of bar 34 in relation to the movement of pin 26.

Heads 13 are provided on their outer face with a boss 48 having a threaded opening 49 for the reception of threaded spindles 50, which spindles may be adjusted to confine the movement of piston 10 within cylinder 7 and thereby govern the quantity of fluid to be dispensed by each stroke. Spindles 50 are maintained in a fixed position by lock nuts 51. If desired, suitable indicia may be extended from the heads 13 relative to the movement of spindles 50, by which the precise movement of spindles 50 for dispensing a particular amount of fluid may be quickly determined.

Referring now particularly to Figure 2, it will be seen that lever 29, when depressed to its lowermost position, will, by means of bar 34 and lever 28, rotate valve stem 21 whereby fluid under pressure in delivery line 22 will be directed through one pipe line 17 and its respective port 16 into cylinder 7. The inflowing fluid will fill cylinder 7 from one end and simultaneously urge

floating piston 10 to the limit permitted by the opposite spindle 50. Piston 10, as it is urged toward the opposite end of cylinder 7, will force fluid previously contained therein through opposite pipe line 17 to be directed by stem 21 through pipe 24 and dispensed into a portable receptacle placed thereunder. Upon the release of pressure, lever 29 will be returned to its uppermost position by the action of coil spring 40, thereby rotating valve stem 21 in a counterclockwise movement of 45 degrees and causing the flow of fluid entering and leaving cylinder 7 to be reversed.

I claim:

1. In a measuring and filling machine including a horizontal measuring cylinder in combination with a floating piston, vertical outlets at opposite ends of said cylinder, angular inner end walls in said cylinder sloping outwardly and downwardly in the direction of said outlets to facilitate discharge of material from said cylinder through said outlets and conduits leading from said outlets and communicating with a downwardly directed discharge opening.

2. In a measuring and filling machine including a horizontal measuring cylinder in combination with a floating piston, vertical outlets at opposite ends of said cylinder, angular inner end walls in said cylinder sloping outwardly and downwardly in the direction of said outlets to facilitate discharge of material from said cylinder through said outlets.

3. In a measuring and filling machine including a horizontal measuring cylinder in combination with a floating piston, vertical outlets at opposite ends of said cylinder, angular inner end walls in said cylinder sloping outwardly and downwardly in the direction of said outlets to facilitate discharge of material from said cylinder through said outlets and conduits leading from said outlets and communicating with a downwardly directed discharge spout.

4. In a measuring and filling machine including a horizontal measuring cylinder having fixed heads secured at the ends thereof in combination with a floating piston, said fixed heads being characterized in that they are provided with outwardly extending bosses providing horizontal base portions having vertical outlets therein, and angular inner end walls sloping outwardly and downwardly in the direction of said outlets to facilitate discharge of material from said cylinder through said outlets and conduits leading from said outlets and communicating with a downwardly directed discharge opening.

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