

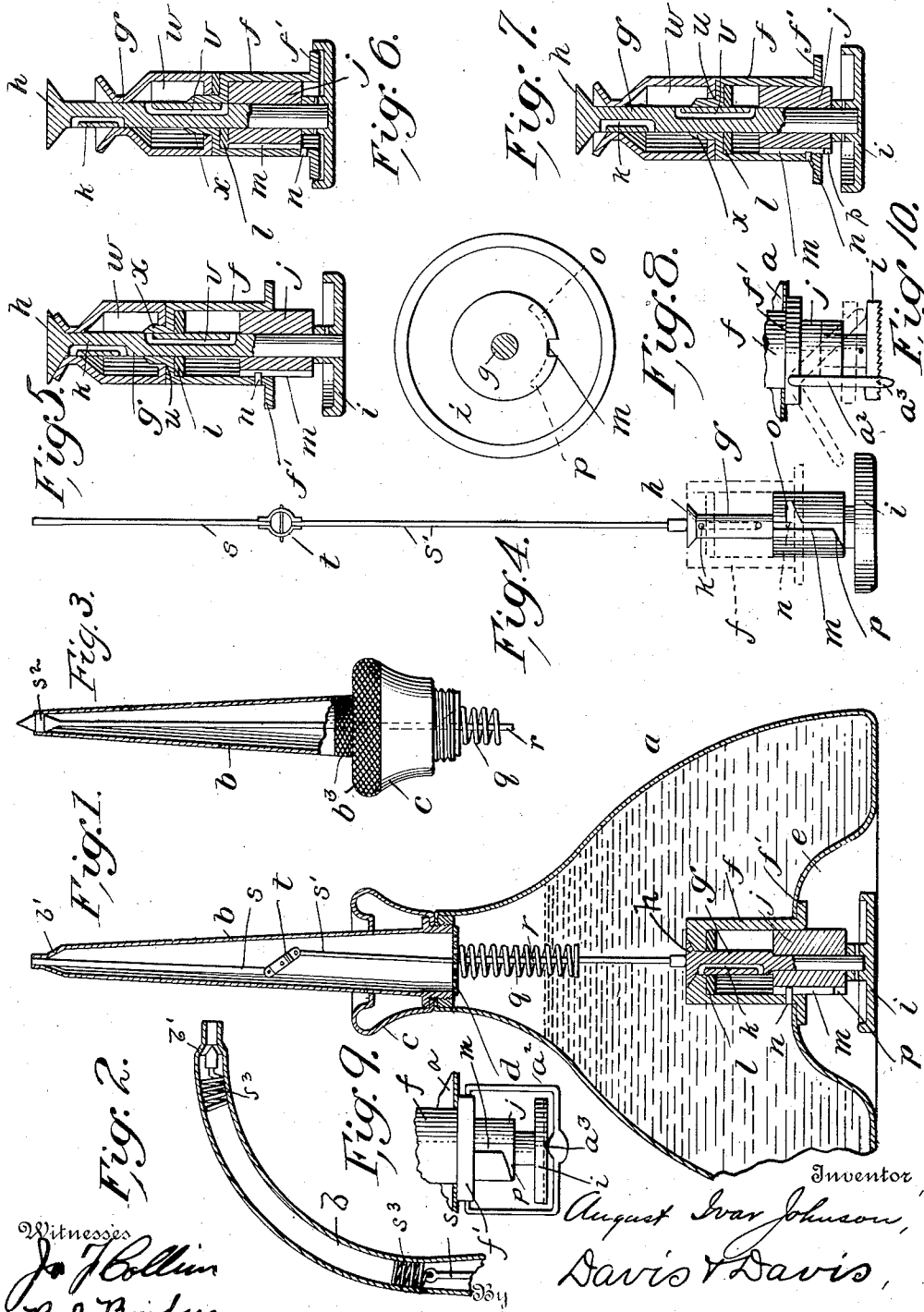
A. I. JOHNSON.

OIL CAN.

APPLICATION FILED DEC. 19, 1910.

1,002,995.

Patented Sept. 12, 1911.



Witnesses
Jo Hollim
B. O. Bridges.

Inventor
August Ivar Johnson,
Davis & Davis,

Attorneys

UNITED STATES PATENT OFFICE.

AUGUST IVAR JOHNSON, OF CONCORD, NEW HAMPSHIRE.

OIL-CAN.

1,002,995.

Specification of Letters Patent. Patented Sept. 12, 1911.

Application filed December 19, 1910. Serial No. 598,006.

To all whom it may concern:

Be it known that I, AUGUST IVAR JOHNSON, a citizen of the United States of America, and a resident of Concord, county of Merrimack, and State of New Hampshire, have invented certain new and useful Improvements in Oil-Cans, of which the following is a full and clear specification, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical sectional view of an oil can embodying one form of my invention, showing the parts in a closed position; Fig. 2 a detail view of the invention applied to a curved-spout can; Fig. 3 a detail view showing a modified form of the regulator rod; Fig. 4 a detail side elevation of the inlet valve and regulator rod; Figs. 5, 6 and 7 detail vertical sectional views of another form of the air inlet valve showing the same in various positions; Fig. 8 a transverse section through the stem of the air inlet valve, looking downwardly; and Figs. 9 and 10 are detail side elevations, partly in section, showing a device for holding the air valve adjustably open.

My invention relates to that class of hand-oolers in which means are provided for regulating the flow of oil from the can.

One of the objects of my invention is to provide an oil-can with a simple and efficient attachment for regulating the flow of oil from the can and for preventing waste of oil and clogging of the oil-outlet; and a further object of my invention is to so construct a can of this type that it may (if desired) be used as an ordinary oil can in which oil is ejected by pressure upon the bottom of the can.

A further object is to provide against leakage of oil at the air inlet valve.

Referring to the drawing by reference letters, *a* designates the oil can, *b* the spout attached thereto, *c* a drip cup, and *d* a strainer fastened in place over the opening in the spout; these parts may be constructed in any usual or improved manner.

The bottom of the can is bulged inwardly to form a central cavity *e*, and in the center of this cavity is formed a hole up through which projects a cylindrical valve casing *f* whose lower end is permanently attached to the bottom by a flange *f'*. The lower end of this valve casing is open but its upper end is closed except for a central passage through which the stem *g* of the air valve *h*

works, said valve *h* being adapted to seat against a seat formed on top of the valve casing. The stem *g* projects downwardly out of the valve casing and has rigidly secured to it a thumb disk *i*, the position of this disk being slightly above the bottom of the can so as to permit the can to stand flat on its bottom. Attached to the stem *g* above the plate *i* is a cylindrical head *j* which is in effect an enlargement of the valve stem and is adapted to nicely fit the valve casing, though this fit need not be an air tight one. The valve stem is provided with an air duct *k* running from a point just below the valve disk *h* to a point near the enlargement *j*, and against the under side of the top wall of the valve casing is secured a packing ring *l*. At one side of the head *j* is formed a vertical groove *m* into which projects a pin *n* extending inwardly from the lower end of the valve casing *f*. At the upper end of this groove *m* is formed a lateral off-set *o* and at this lower end and projecting in the opposite direction is formed another off-set or cut-away portion *p*.

Resting upon the valve disk *g* and pressed normally thereagainst by a spring *q* is the lower end of a regulator rod *r* which extends up into the spout and normally closes its exit, this rod being made, as shown in Figs. 1 and 4, of two sections *s* and *s'* jointed pivotally together at a point in the spout by a link *t* pivoted mid-way its length to the spout walls.

It will be observed that when the air valve is forced away from its seat by pressure of the thumb on the plate *i*, the spout section *s* of the regulator rod will be drawn inwardly sufficiently to open the exit and permit the oil to flow out, sufficient air to take the place of the discharged oil entering through groove *m*, port *k* and past the valve seat. Should it be desired to use this device as an ordinary squirt can, the inlet air valve is forced open as far as it will go, whereupon the inner end of the head *j* will press against the packing *l* and form an oil tight joint, and then the valve stem is rotated to bring the pin *n* against the inclined face of the shoulder *p*, which locks the valve in open position and holds the head *j* tightly against the packing *l*; in this position the stopper section *s* of the regulator rod will be withdrawn into the spout and the flexible bottom of the can may be operated in the usual way by pressure to expel the oil.

To lock both valves closed, in order to prevent accidental discharge of oil from the spout, the air valve may be rotated to bring the pin n into the off-set o , thereby locking the valve against movement in either direction. This device may be readily used in a can with a goose-neck spout by making the stopper or valve section s flexible a portion of its length, as shown at s^3 in Fig. 2.

As shown in Fig. 3 the regulator may be made of a single unjointed rod provided with an enlargement or stopper s^2 to close the end of the spout, this stopper being preferably tapered toward its point to assist in directing the oil to the place it is desired to drop it; in this form of the device it will be observed the regulator rod is pushed outwardly its entire length when the air valve is opened, instead of having its outer section drawn inwardly as in Fig. 1.

In Figs. 5, 6 and 7, I show the cylindrical valve chamber as being divided by a horizontal partition u through which works in an air tight manner the stem g of the air valve, said stem being provided with an air port v in addition to the air port k heretofore described. This partition forms a trap chamber w between it and the valve seat to catch any oil that might leak past the air valve h , this trap chamber being provided with an annular upstanding flange x surrounding the valve stem. It will be observed that should any oil leak down into this trap, it will be forced back into the can by the in-rushing air when the valve is opened, the oil passing in through the port k with the air that passes there-through. The port v permits air to pass through the partition u when the valve is open.

It will be observed from Fig. 1 that the end of the spout is sharply or abruptly reduced in diameter toward its extremity, which extreme end of the spout fits the stopper section s closely. This reduced portion forms a beveled shoulder b' , which serves to direct the stopper section into the orifice during the closing action. The quick reduction in the diameter of the spout close to the exit end thereof insures a quick opening with a short travel of the stopper section and an ample supply of oil.

It will be observed that my improvements may be employed with that type of engineer's oil can in which the spout projects laterally from one of the side walls of the can. It will be observed also that I may knurl or roughen the spout or the oil cup at b^3 as shown in Fig. 3, to enable the spout to be grasped in screwing and unscrewing it. It will be observed further that if desired I may provide means for holding the air valve partly open, one such device I illustrate in Figs. 9 and 10, in which views the device is shown as consisting of a bail

a^2 pivotally depending from the flange f' and adapted to swing under the thumb plate i , this bail being swung at a point to the left of the center of the air valve structure and being provided with an upper extending sharpened edge a^3 adapted to engage any one of a series of serrations formed on the under face of the thumb disk i . It will be observed that when the valve is forced inwardly from its seat this bail a^2 may be swung under the disk i into engagement with one of the serrations therein, and the farther to the right this bail is swung the greater will be the distance of the air valve from its seat and consequently the greater will be the feed. This device will enable the can to be hung or supported above the bearing or other part to be lubricated and the valve so adjusted that the oil will be fed drop-by-drop without manual manipulation.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. An oil can comprising an oil receptacle and a spout, a spout-closing valve seated in the end of the spout, a valve for admitting air to the oil-receptacle, means for opening both of said valves simultaneously, means for normally closing both of said valves, and means for locking the valves in closed position.

2. An oil-can comprising an oil receptacle and a spout, a spout-closing valve seated in the end of the spout, a valve for admitting air to the oil receptacle, means for opening both of said valves, means for locking the valves in open position, and means for preventing leakage of oil through the air-inlet when the valves are locked in raised position.

3. An oil can comprising an oil receptacle and a spout, a valve-casing mounted in an opening recess in the bottom of the oil receptacle, a valve seated in said casing and adapted to admit air into the oil receptacle, a rod extending through the can and carrying a spout-closing valve at one end, the other end of said rod resting on the upper face of the air-inlet valve whereby when the air-inlet valve is raised from its seat the rod will be operated to move the spout-closing valve from its seat, means for raising the air-inlet valve from its seat, means to normally close both of said valves, and means for guiding said rod.

4. In an oil can, the combination of a valve casing projecting up through the bottom of the can, an air valve therein adapted to open inwardly, a regulator consisting of two rod sections and a part pivoted in the spout and pivotally connected to the adjacent ends of said rod sections, the outer rod section forming a stopper or valve for the discharge end of the spout, for the purpose set forth.

5. In an oil can, the combination of a valve casing attached to the can bottom, and provided with a valve seat at its inner end and with a partition intermediate its ends, a valve seated on said seat and having its stem working through said partition, said valve stem being provided with ports, and a spout closure device adapted to be operated by said valve.

6. An oil can provided with a spout, a flow regulator consisting of a link pivoted between its ends on a horizontal pivot within the spout, a rod pivotally connected with one end of said link and serving as a valve or closure device for the spout, another rod pivoted to the other end of said link and extending down into the body of the can, a spring for normally forcing the latter rod downwardly and the other rod upwardly to a closed position, and means for pressing upwardly the lower rod against the action of said spring.

7. An oil can provided with a spout, a flow regulator extending into said spout and having its inner end extending into the can, a tubular valve casing mounted in one wall of the can and having a valve seat at its inner end and a partition intermediate of its ends, an air valve adapted to seat against said seat and having a stem extending outwardly through said partition and provided with air ports, and means attached

to the outer end of said valve stem for operating the valve.

8. In an oil can provided with a spout and with a flexible bottom, a flow regulator extending into the spout from the interior of the can, a tubular valve casing affixed to the bottom of the can and provided with a valve seat and an inwardly projecting pin, a valve adapted to seat against said seat and provided with a stem extending downwardly through said valve casing, said valve stem being provided with an air port, and an enlargement or head upon the valve stem provided with a longitudinal exterior groove engaging the aforesaid pin, said groove having oppositely extending off-sets at its opposite ends, for the purpose set forth.

9. In an oil can, the combination of a flow regulator in the spout, an air valve at the bottom of the can and means whereby the movement of this air valve opens the flow regulator, and means for locking this air valve and the flow regulator partially open to obtain an automatic drop-by-drop feed.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 17 day of December 1910.

AUGUST IVAR JOHNSON.

Witnesses:

MARTHA G. BURROUGHS,
OTIS G. HAMMOND.