No. 762,764. PATENTED JUNE 14, 1904.

J. F. SCHIEDT.

HAND OILER.

APPLICATION FILED OCT. 22, 1903.

NO MODEL.

FIG. 1.

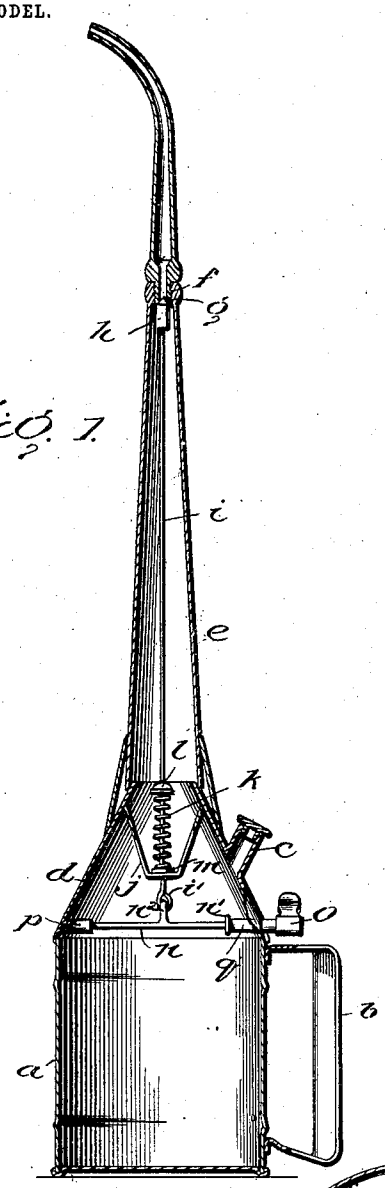


FIG. 2.

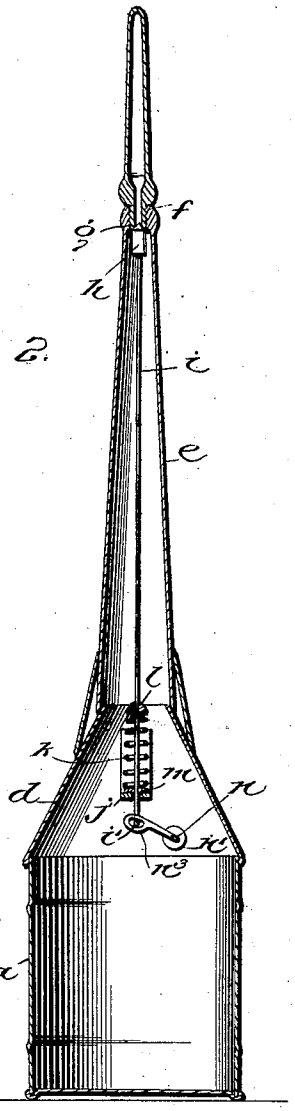
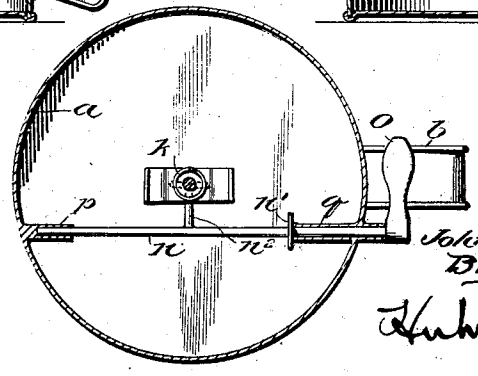


FIG. 3.



Witnesses
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No. 762,764. Patented June 14, 1904.

UNITED STATES PATENT OFFICE.

JOHN F. SCHIEDT, OF ZANESVILLE, OHIO, ASSIGNOR TO THE VERMONT SLATE COMPANY.

HAND-OILER.

SPECIFICATION forming part of Letters Patent No. 762,764, dated June 14, 1904.

Application filed October 22, 1903. Serial No. 178,138. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. SCHIEDT, a citizen of the United States, residing at Zanesville, county of Muskingum, State of Ohio, have invented certain new and useful Improvements in Hand-Oilers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in hand-oilers or what are commonly known as "automatic" oil-cans for use in oiling all sorts of machinery, engines, and the like.

An object of the invention is to provide a hand-oiler with exceedingly simple, durable, and effective valve-operating mechanism of the thumb-lever and rock-shaft type, whereby the liability of displacement of and injury to the valve-operating parts will be reduced to a minimum and wherein the valve-rod and its expanding-spring will be so guided, held, and controlled as to cause effective seating of the valve when the parts are in their normal positions and will enable the operator to effectively control the discharge of oil.

The invention consists in certain novel features in construction and in combinations and arrangements of parts, as more fully and particularly pointed out and described hereinafter.

Referring to the accompanying drawings, Figure 1 is a longitudinal section through a portion of the spout and body of the oil-can, showing the valve and parts in their normal positions. Fig. 2 is a longitudinal section taken in a plane at right angles to the plane of the section of Fig. 1. Fig. 3 is a cross-section looking up.

In the drawings, *a* is the body of the can, having any suitable handle *b* and any suitably-arranged filling-opening and its closure *c*.

d is the upwardly-tapering breast of the can-body, at its upper end terminating and opening into the elongated spout *e*. This spout can be formed in sections, if so desired, and the spout-sections are detachably united by a screw-threaded joint or coupling *f*, the inner member of which is ground or concaved to form the valve-seat *g*, facing downwardly toward the can-body.

The spout is normally closed and tightly sealed against the passage or outflow of the oil or lubricant by the reciprocating or plunger valve *h*, formed at its upper end to fit up into said valve-seat and close the oil-passage therethrough. The valve is of such size as to afford ample space around the same for the outflow of oil through the spout when the valve is withdrawn from the seat.

The valve *h* is rigid with the upper end of a straight stiff valve-rod *i*, extending longitudinally and centrally through the spout and centrally into that portion of the can-body formed by the breast thereof. The lower end of said straight rod *i* is bent to form an eye *i'*, located within the plane of the longitudinal axis or length of the rod.

The valve-rod passes loosely through and is guided and held against material lateral movement or play by a rigid cross-bar or support *j*, arranged within said breast and above the eye *i'* of said rod. This support *j* is **U** or **V** shaped and consists of a stiff metal bar or plate having the central horizontal depressed seat with the central opening *j'* therethrough for said valve-rod, said bar being bent with its ends diverging upwardly from said horizontal seat and at their extremities rigidly soldered or otherwise secured to the inner face of said breast near the upper end thereof or adjacent to the junction between said breast and the can. The strongest and most rigid portion of the breast of the can is at the upper end thereof, and hence by securing said cross-bar to the can at said portion of the breast and depressing the central portion of the bar to form the bar of the arched or angular shape I produce a most durable and rigid construction of guide and support for the parts coöperating therewith.

k is a compression or expanding spring coiled around the valve-rod and at its upper end secured to and exerting upward pressure against the collar *l*, rigidly secured to or formed on the valve-rod. At its lower end said spring bears against a loose washer *m*, resting against the upper face of the central

depressed seat of said cross-bar and through which the valve-rod loosely reciprocates. This spring normally holds the valve to its seat, closing the spout against the overflow of oil.

The valve-rod is operated to compress said spring against its tension and to withdraw the valve and permit outflow of oil through the spout by a rock-shaft n, arranged horizontally or transversely within the breast portion of the can-body to one side of the lower end of the valve-rod. One end of this rock-shaft extends to the exterior of the can-body and over the handle b is provided with a laterally-projecting thumb-piece o, rigid with the shaft. The inner end of this shaft turns in a suitable bearing or journal-box p, rigid with the breast of the can-body and arranged in the interior thereof. The opposite portion of the shaft extends through and rocks in an elongated tube q, rigid with and extending through the breast of the can. The rock-shaft is provided with a flange or collar n', rigid therewith and fitting against and closing the inner end of said tube q to prevent leakage of oil through the tube. The diameter of this collar n' is greater than the external diameter of said tube to effectively close the same against leakage.

The rock-shaft is formed with, preferably integral with, a lateral normally about horizontal arm n^2 at its outer end bent to form a horizontally-elongated hook or loop n^3, through which the eye at the lower end of the valve-rod passes and to which it is confined, the arrangement and formation of this loose connection between the rock-shaft and valve-rod being designed to avoid lateral throw or play of the valve-rod and to require the valve-rod to reciprocate in a straight line—that is, in the line of its longitudinal axis.

To permit the outflow of oil through the spout, it is merely necessary for the operator to press down on the thumb-piece, which action rocks the rock-shaft and operates the valve-rod to withdraw the valve. The outflow of oil as to quantity discharged can be controlled to a nicety. The action of the parts is such that the valve responds quickly and easily and without friction or wedging of parts, and the instant the thumb-piece is released the valve is returned by the spring to its normal closing position.

Hand-oilers of this general type are subjected to hard usage, and consequently must be exceedingly simple and durable in construction in order to maintain the accurate quick responsive action of the valve which is required. It has been found through practical experience that valve-operating devices of the rock-shaft thumb-piece type are highly desirable in devices of this class, because of the durability thereof and the fact that such operating means are not liable to easy injury. It has also been found that retractive springs of the size necessarily employed in hand-oilers are objectionable and very soon stretch and become distorted to such an extent as not to properly perform their required functions. It has also been found to be highly essential that the valve-rod of such devices reciprocate in straight lines—that is, that the valve-rod should be preferably formed of a straight rod or wire and be held to reciprocate in the line of the longitudinal length or axis of the rod, so as to always properly seat the valve and maintain the same properly seated when in its normal position. It has also been found that where a compression or expansive spring is employed in such devices seated against a straight cross-bar around an opening therethrough the pressure of the spring against the cross-bar will soon cause the cross bar to sag at its center, thereby preventing the spring from properly seating the valve. It has also been found that the oil-passage through the spout should be left free of obstructions except at the valve-seat, for otherwise the sediment in the thick lubricant usually employed will soon so clog up the spout by gathering on obstructions therein as to prevent the passage of the lubricant therethrough.

By the combination of elements in my device I overcome these objections and meet the hereinbefore-mentioned requirements. My arched or depressed cross-bar effectively guides the valve-rod to reciprocation in the required straight line, and the connection between the lower end of the valve-rod and the rock-shaft is such as to permit the reciprocation of the valve-rod in the required straight line.

What I claim is—

1. In a hand-oiler, in combination, a can-body having the breast with the spout, a valve-seat in the spout, a reciprocating valve, the valve-rod at its lower end formed with an eye within said breast, a rigid cross-bar within said breast having an opening through which said rod passes, said rod held against lateral play by said bar and provided with a rigid collar above said bar, the coiled expansive spring encircling said rod and interposed between said bar and said collar and yieldingly holding said rod to maintain said valve seated, and the rock-shaft arranged within said breast and having the external thumb-piece and within said breast having the lateral arm with an elongated hook or loop through which said eye passes.

2. In a hand-oiler, in combination, the can-body having the spout provided with an internal valve-seat, the reciprocating valve therein normally held to said seat and provided with the depending straight valve-rod, a rigid guide through which said rod reciprocates and holding said rod to reciprocate in a straight line, a coiled expansive spring encircling said rod and secured thereto and seated on said guide and normally holding said valve to its seat, and a rock-shaft arranged trans-

versely through said body and having the external thumb-piece and loosely connected with the lower end of said rod to reciprocate the same against the compression of said spring.

3. In a hand-oiler, the combination of a can having a breast and elongated spout, a valve-seat in said spout, a rigid arched cross-bar within said breast having the central transverse lower portion or seat and the upwardly-extending diverging legs at their upper ends secured to the upper portion of said breast, a reciprocating valve-rod extending longitudinally within the spout and at its upper end provided with the valve to close said seat and at its lower portion passing through and held against lateral play by said seat and at its lower end provided with an eye, an expansive coiled spring on said stem and at its lower end upheld by said seat and forcing said stem to seat said valve, and the transverse rock-shaft mounted in the breast and provided with the exterior lateral thumb-piece and within the breast having the crank-arm loosely joined to the lower end of said rod to reciprocate the same without lateral play.

4. In a hand-oiler, in combination, the can-body having the spout provided with an internal valve-seat, the reciprocating valve-rod at its upper end provided with the valve and at its lower end provided with an eye, a rigid arched cross-bar having an opening through which the lower portion of said rod passes, said cross-bar holding said rod against lateral play, and the transverse rock-shaft mounted in the can-body and formed with a lateral arm at its outer end provided with an elongated loop receiving said eye and at its outer end provided with a thumb-piece at the exterior of the can-body.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN F. SCHIEDT.

Witnesses:
HENRY G. SCHIEDT,
KARL DIXON.