W. G. BURNS.

DISPENSING PUMP.

APPLICATION FILED OCT. 23, 1918.

1,344,985.

Patented June 29, 1920.

Fig. 1.

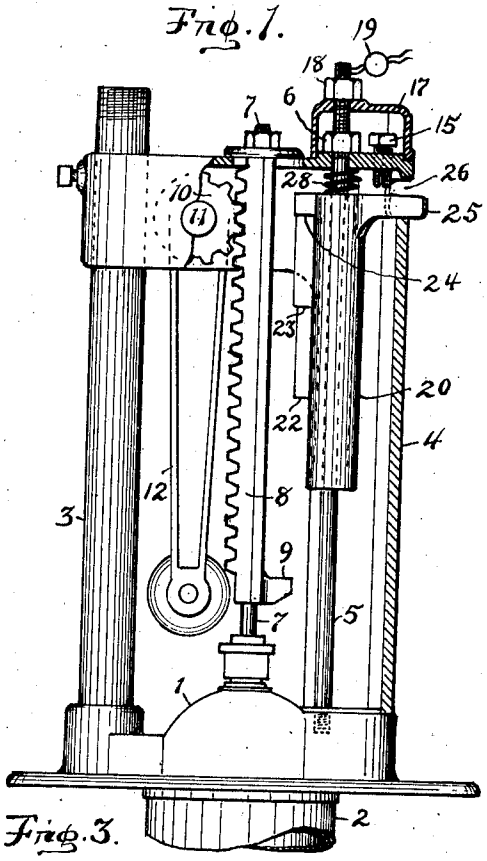


Fig. 2.

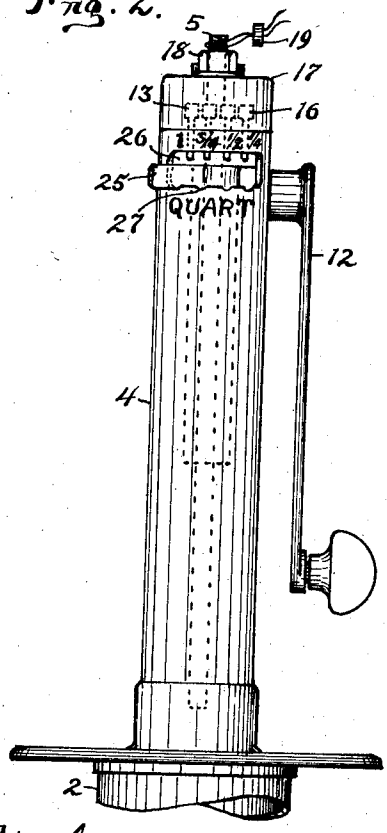


Fig. 3.

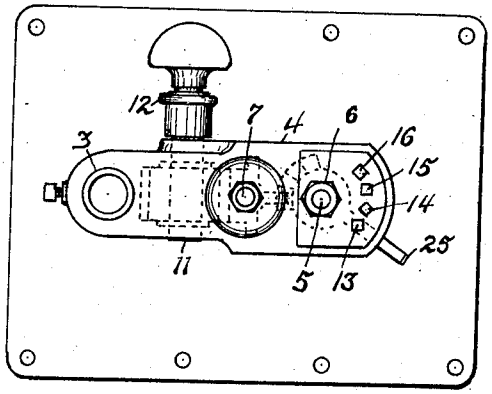


Fig. 4.

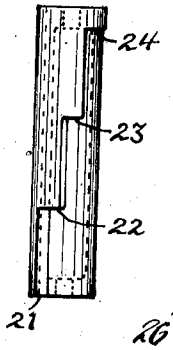


Fig. 5.

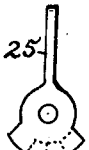
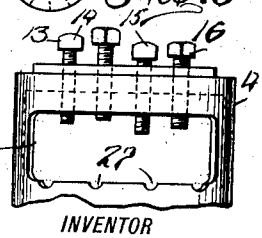


Fig. 6.



WITNESSES:

Sophia Heins,

Matilda Mettler

INVENTOR

Walter G. Burns

UNITED STATES PATENT OFFICE.

WALTER G. BURNS, OF FORT WAYNE, INDIANA, ASSIGNOR TO TOKHEIM OIL TANK AND PUMP COMPANY, A CORPORATION OF INDIANA.

DISPENSING-PUMP.

1,344,985. Specification of Letters Patent. Patented June 29, 1920.

Application filed October 23, 1918. Serial No. 259,334.

To all whom it may concern:

Be it known that I, WALTER G. BURNS, a citizen of the United States of America, and resident of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Dispensing-Pumps, of which the following is a specification.

This invention relates to improvements in dispensing pumps of that class employed for discharging various predetermined quantities of liquid and in which mechanism is provided for arresting the discharge stroke of the pump at various stages according to the quantity of liquid to be discharged.

The objects of the invention are to afford a construction of extreme simplicity and of few parts, that it may be readily understood, and easily manufactured and operated.

The foregoing objects are accomplished by the construction illustrated in the accompanying drawings in which:—

Figure 1 is a side elevation of a pumping mechanism embodying the invention, shown partly in central section;

Fig. 2 is a front elevation projected from Fig. 1;

Fig. 3 is a plan view projected from Fig. 1, the cover for the adjustable stops being omitted;

Fig. 4 is a detail view showing an elevation of the adjustable engaging member;

Fig. 5 is a plan view of Fig. 4.

Fig. 6 is a detail front view of the top of the standard including the series of adjustable stops.

Similar characters of reference indicate corresponding parts throughout the several views, and referring now to the same;—

1 is the head of a pump-cylinder 2 from which projects a discharge-pipe 3, and 4 is a standard which is seated at its lower end upon the head 1 and is secured thereon by a post 5. The standard also receives support at its upper end from the discharge-pipe 3 which extends therethrough. The lower end of the post 5 has threaded connection in the head 1, and the upper end of the post extends through the top of the standard 4 and is threaded also, there being a nut 6 thereon which bears against the top of the standard and holds the latter in fixed position. 7 is a pump-rod having a rack 8 fixed thereon, and the latter has an integral projecting lug 9 at its lower end. 10 is a pinion arranged in driving relation with the rack 8 and in fixed position on a drive-shaft 11 which is rotatably mounted in the standard. A crank 12 is also fixed on the shaft 11 for actuating the same.

A series of set screws or adjustable stops 13, 14, 15 and 16 extend through the top of the standard in which they have threaded relation, and a cover 17 is arranged upon the top of the standard and is so formed as to inclose the projecting heads of the adjustable stops. The projecting end of the post 5 extends through the top of the cover, and a nut 18 on the post bears upon the cover and holds it fixedly in position. The post 5 is perforated at a point above the nut 18, and a seal 19 is secured in the projecting perforated end of the post to prevent unauthorized removal of the nut 18 and the cover 17, the purpose being to prevent tampering with the adjustable stops.

Upon the post 5 is movably mounted an adjustable engaging member 20 having a series of shoulders 21, 22, 23 and 24, arranged successively in different horizontal planes and also successively in different vertical paths. The engaging member has also a horizontally disposed operating handle 25 that projects through a horizontally elongated slot 26 in the standard. A series of depressions 27 is made in the standard along the lower edge of the slot 26, and the handle 25 is adapted to be shifted laterally so as to rest in any one of the various depressions so that it will accordingly be positioned beneath the corresponding adjustable stop. A spring 28 on the post 5 and between the engaging member and the top of the standard bears downwardly upon the engaging member so that the handle 25 projecting therefrom is held in the position to which it is adjusted.

The lug 9 on the rack is so proportioned, and the engaging member is so positioned, that when the rack is raised by the action of the crank and pinion, the lug will engage one or the other of the shoulders on the engaging member, accordingly as the latter is positioned, and the engaging member is thereby raised so that the handle 25 is carried into contact with the corresponding ad-

justable stop, thus preventing further upward movement of the rack.

In the operation of the invention, the engaging member is turned upon the post by manipulating the handle 25 to one of its various operating positions beneath the adjustable stops according to the amount of fluid to be discharged when the pump is operated. For instance: When the pump is to be operated to the full extent of its discharge stroke the handle 25 is shifted to the position beneath the stop 13 as shown in Fig. 3, and the shoulder 24 thereby is positioned in the path of the projecting lug 9 on the rack so as to be engaged thereby when the rack is raised. The upward movement of the rack and the engagement of the lug 9 with the shoulder 24 causes the engaging member to slide upward on the post until its handle impinges against the lower end of the adjustable stop 13, thus obstructing the upward stroke of the pump. It is the intention that the pump proper shall be so proportioned as to discharge, upon its upward stroke, a definite unit quantity of liquid, such for example, one quart, and lesser or fractional amounts. By manipulating the adjustable stop 13 the stroke of the pump may be adjustably limited so that the quantity of liquid discharged upon its operation may be adjustably varied. When it is desired to discharge a fraction of a unit quantity of liquid, the engaging member is turned on the post by manipulating the handle to position beneath one of the other adjustable stops 14, 15 or 16, dependent upon the fractional quantity of liquid to be discharged. For instance; when the handle 25 is shifted to position beneath the stop 14, the shoulder 23 then extends in the path of the lug 9 on the rack and is engaged thereby when the rack is raised and the engaging member becomes raised on the post so that the handle comes into contact with the stop 14 thus arresting the discharge stroke of the pump. By manipulating the set-screw 14 the extent of the discharge stroke may be adjustably varied. Or, when the handle is shifted to position beneath the stop 15, the shoulder 22 is moved into the path of the lug 9, and the engaging member is lifted thereby so that the handle comes into contact with the stop 15 thus limiting the stroke of the pump at an earlier stage than in the former instance. By manipulating the stop 15 the partial stroke may be adjustably varied in extent, and when shifted to position beneath the stop 16 the shoulder 21 is moved into the path of the lug 9 so as to become engaged thereby. The shoulders being located at various elevations results in the obstruction of the pumping mechanism at corresponding various stages of its discharge stroke. The stops being independently adjustable admits of separate and accurate adjustment of the complete stroke of the pump as well as each of its fractional strokes without interference with each other.

What I claim is:—

1. In a dispensing pump, a pumping mechanism having a reciprocating member including a projecting lug; a standard; a series of stationary adjustable stops; and a movable engaging member adapted to be adjustably positioned for engagement severally with the stops, and having also a series of differently located shoulders adapted to be engaged severally by the said lug accordingly as the engaging member is positioned.

2. In a dispensing pump, a pumping mechanism including a reciprocating member having a projecting lug; a movable engaging member having a series of shoulders arranged in different vertical and horizontal planes, adapted to be moved severally into the path of the projecting lug and to be engaged thereby; and a corresponding series of stationary adjustable stops adapted to be severally engaged by the movable engaging member accordingly as the shoulders of the latter are positioned for engagement with the projecting lug.

3. In a dispensing pump, a pumping mechanism including a reciprocating member; a series of stationary adjustable stops; a movable engaging member adapted to engage the stops severally accordingly as positioned, and being formed so as to become engaged by the reciprocating member at different stages of the stroke of the latter accordingly as the same is positioned; a cover for the stops; and a seal for securing the cover in place.

4. In a dispensing pump, a pumping mechanism including a reciprocating member and cylinder-head; a standard; a post fixed in the cylinder-head and having means for securing the standard in fixed position thereon; a series of stationary adjustable stops; and an engaging member movably mounted on the post and being adapted to interrupt the stroke of the reciprocating member at different stages thereof by co-engagement with the reciprocating member and one or the other of the stops, accordingly as the engaging member is adjustably positioned.

5. In a dispensing pump, a pumping mechanism including a reciprocating member; a standard having an elongated opening with a series of notches in one edge thereof; a series of stationary adjustable stops; and a movable engaging member having an operating handle extending through the slot and adapted to rest selectively in said notches and being formed so as to become engaged by the reciprocating member at different stages of the stroke of the latter, accordingly as the engaging member is ad-

justably positioned, and to be lifted thereby correspondingly into contact with said stops.

6. In a dispensing pump, a pumping mechanism including a standard and reciprocating member; a series of stationary adjustable stops in the standard; an engaging member movably mounted in the standard and being adapted to selectively engage the stops accordingly as the engaging member is adjustably positioned, and being also adapted to be engaged accordingly by the reciprocating member at different stages of the stroke of the latter; and a spring bearing against the engaging member and tending to hold it in adjusted positions.

7. In a dispensing pump, a pumping mechanism including a reciprocating member; a series of stationary independently adjustable stops; and a movable engaging member having a series of differently located shoulders adapted to be selectively engaged by the reciprocating member accordingly as the engaging member is adjustably positioned, and also to engage selectively the corresponding stops.

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

WALTER G. BURNS.

Witnesses:
MATILDA METTLER,
SOPHIA HEINE.