H. S. Phillips.

Filing Barrels.

No. 96,833. Patented Nov. 16, 1869.

Fig. 1.

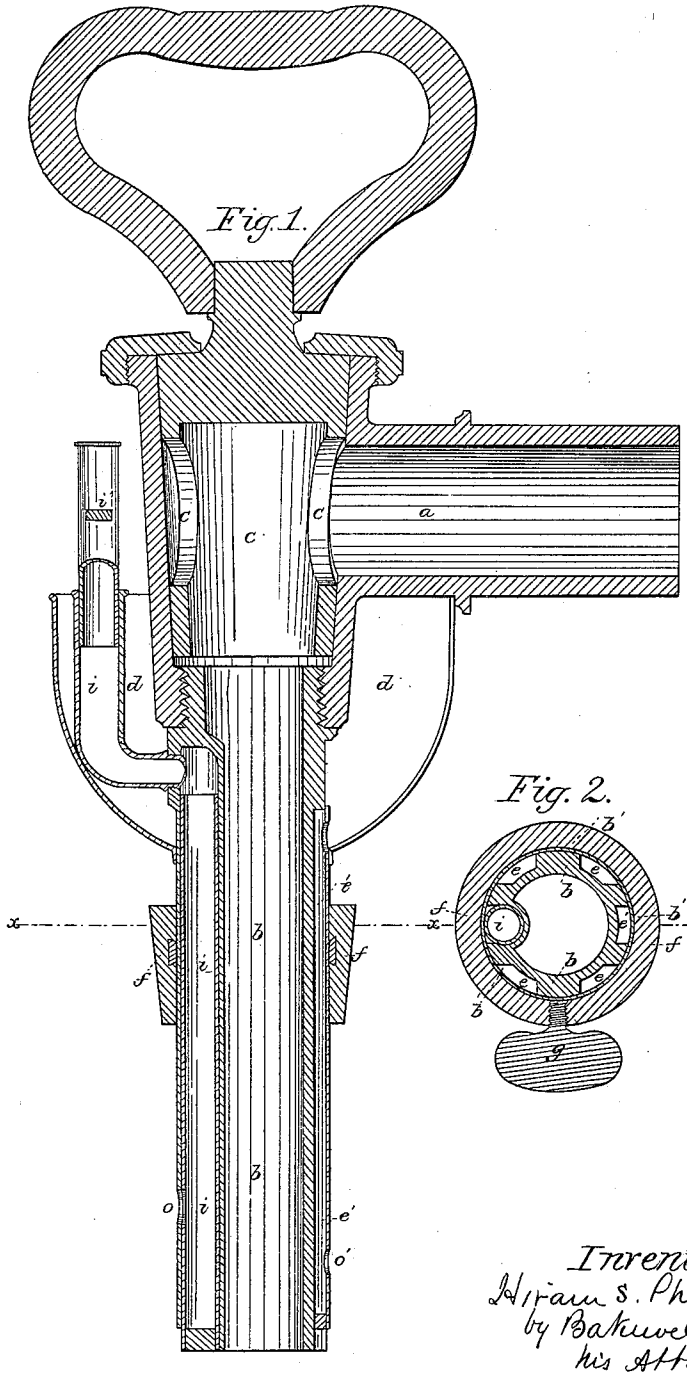

Fig. 2.

Witnesses.
Thos. B. Kerr
R. C. Marshall

Inventor:
Wm. S. Phillips
by Bakewell Mahnsly
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United States Patent Office.

HIRAM S. PHILLIPS, OF SEWICKLEY, PENNSYLVANIA.

Letters Patent No. 96,833, *dated November* 16, 1869.

IMPROVEMENT IN BARREL-FILLING APPARATUS WITH WHISTLING INDICATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HIRAM S. PHILLIPS, of the borough of Sewickley, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Indicating Barrel-Filler; and I do hereby declare the following to be a full, clear, and exact description thereof.

In carrying on the trade in petroleum-oils, considerable quantities of the crude material are stored in tanks, or transported in bulk, in bulk-oil boats, or in large tanks mounted on cars, or built into ocean or river-vessels.

It is usually necessary, at some point between the well and refinery, to barrel the oil, in doing which, a considerable quantity of oil, in the aggregate, is lost, from the fact that it is not easy to ascertain just when each barrel is full, so as to check or stop the flow at the right moment.

Various whistling contrivances have been invented and used in connection with a funnel, for indicating when the barrel was full, none of which, it is believed, are free from objections.

My invention relates to the construction of devices for this purpose; and the nature of it consists in the construction of an indicating barrel-filler, having air-passages up through the discharge-pipe of the funnel, one of which has a whistle or other like alarm-attachment, the lower openings of such air-passages being so arranged that the escaping air will give no alarm till the barrel is nearly full, and at that point the current of air will be cut off from all or nearly all the tubes except the whistling-tube, and when the barrel is entirely full, or as full as may be desired, the whistling-tube will be closed, and thus give notice to the person in charge to cut off the supply.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and mode of operation, referring, for that purpose, to the accompanying drawing, in which—

Figure 1 is a vertical section of my improved barrel-filler, and

Figure 2 is a cross-section through the line $x\,x$, fig. 1.

Like letters of reference indicate like parts in each.

The supply-pipe *a* is connected, by a cock, pump, or otherwise, with the receptacle containing the fluid in bulk, and opens directly or indirectly into a discharging or funnel-pipe, *b*, a cock, *c*, being arranged in connection with either, to cut off or stop the flow at any time.

The main part or body of the pipe *b*, I prefer to make of cast-metal, with a number of grooves or flutings, *e e' i*, in its outer face, and over these slips a close-fitting sleeve or casing, *b'*, whereby I secure a number of air-passages through the substance or body of the pipe *b*.

Attached to the upper part of the pipe *b* is a basin or funnel, *d*, of such dimensions as may be desired, open at the top, and making a tight joint below with the outer casing *b'* of the pipe *b*, just below the upper open ends of the air-passages *e e'*.

Below the basin *d*, an adjustable collar *f* is fitted on to the pipe *b*. This I make preferably of taper form, and of about the size of the bung-hole of the barrels to be filled, so that it will rest snugly therein. By a set-screw, *g*, it may be adjusted higher or lower on the pipe *b*, at pleasure.

The lower open ends of the air-passages *e* are arranged at such points that they will not be closed by the oil in the barrel till the barrel is nearly full. The lower end of the whistling-tube *i*, (which may be arranged in one of the flutings, or itself be one of the flutings above described,) opens at a point, *o*, a little above the lower open ends of the air-passages *e*, and at any suitable point above, a whistle, *i'*, or other suitable alarm-device operated by a strong current of escaping air, is inserted or attached.

While the barrel is being filled, the air escapes readily through all the pipes or passages *e e' i*, but on account of the freedom of its exit, it does not escape with sufficient force to give any alarm; but as soon as the oil rises sufficiently high to close the lower ends of the air-passages *e*, the entire current of escaping air is turned into the whistling-tube *i*, through the whistle *i*, by which alarm, the attention of the workman in charge is called to the fact that the barrel is nearly full.

As the oil continues to flow in, it soon rises so as to close the lower orifice *o* of the whistling-tube *i*, when the whistling ceases, by which notice is given that the barrel is full, and that the cock *c* should be turned so as to cut off the supply.

It is desirable, of course, that the barrel should not be filled entirely full, and the block or collar *f* should be adjusted at such distance above the lower orifice *o* of the whistling-tube *i*, that with the manner of use above described, the desired amount of space should be left unfilled.

The several parts named are fitted together in any manner known to the art.

If it be desired to introduce an alarm intermediate between the closing of the lower orifices of the tubes *e* and of the whistling-tube *i*, it may be done by making the lower orifice *o'* of one of the air-passages *e'* at an intermediate point, as shown. Then, with the closing of the air-passages *e*, so much of the force of the escaping air as goes through the tube *i*, will cause the whistle *e'* to sound but moderately, and when the passage *e'* is closed, the sound of the whistle will be intensified, and the person in charge will act accordingly.

The object of the basin *d* is to catch any oil which

is forced up the passages *e e'* by the pressure of the air confined in the barrel at the closing of the air-passages, since the sudden stoppage of the outflow of the air, while the inflow of oil continues, will effect that result. When the cock *c* is closed, the oil in the basin *d* flows back into the barrel through the passages *e e'*.

I do not limit myself to any particular construction of the pipe *b*, it being only necessary, aside from the arrangement of the orifices of the air-passages, that separate pipes, tubes, or passages be provided for the inflow of the oil, and the outflow of air.

The grooves or flutings *e e' i* may be made on the inner face of the pipe *b*, instead of the outer face, and an inner casing be provided to cover them, or one pipe may be arranged within another, so as to leave an annular space between, which may be divided up by longitudinal diaphragms, or other modes of constructing the same may be adopted.

The whistle *i'* may be arranged at any point in the tube *i'* above the orifice *o*, and any other like alarm, operated by the action of a current of air, may be substituted for the whistle with like effect.

The invention described is applicable to the barrelling of other fluids than petroleum, and all such I include within the scope of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement, in connection with a barrel-filling inlet-pipe, of a whistling-tube, *i*, the lower orifice *o* of which is a little above the lower orifices of the air-passages *e e'*, substantially as and for the purposes set forth.

2. The arrangement of a tube, *e'*, with its lower orifice *o'* intermediate between the orifice *o* of the whistling-tube, and the orifices of the air-passages *e*, substantially as and for the purposes set forth.

3. The basin *d*, in combination with air-passages *e e'*, arranged substantially in the manner and for the purposes set forth.

In testimony whereof, I, the said HIRAM S. PHILLIPS, have hereunto set my hand.

HIRAM S. PHILLIPS.

Witnesses:

CHAS. C. TAYLOR,

G. H. CHRISTY.