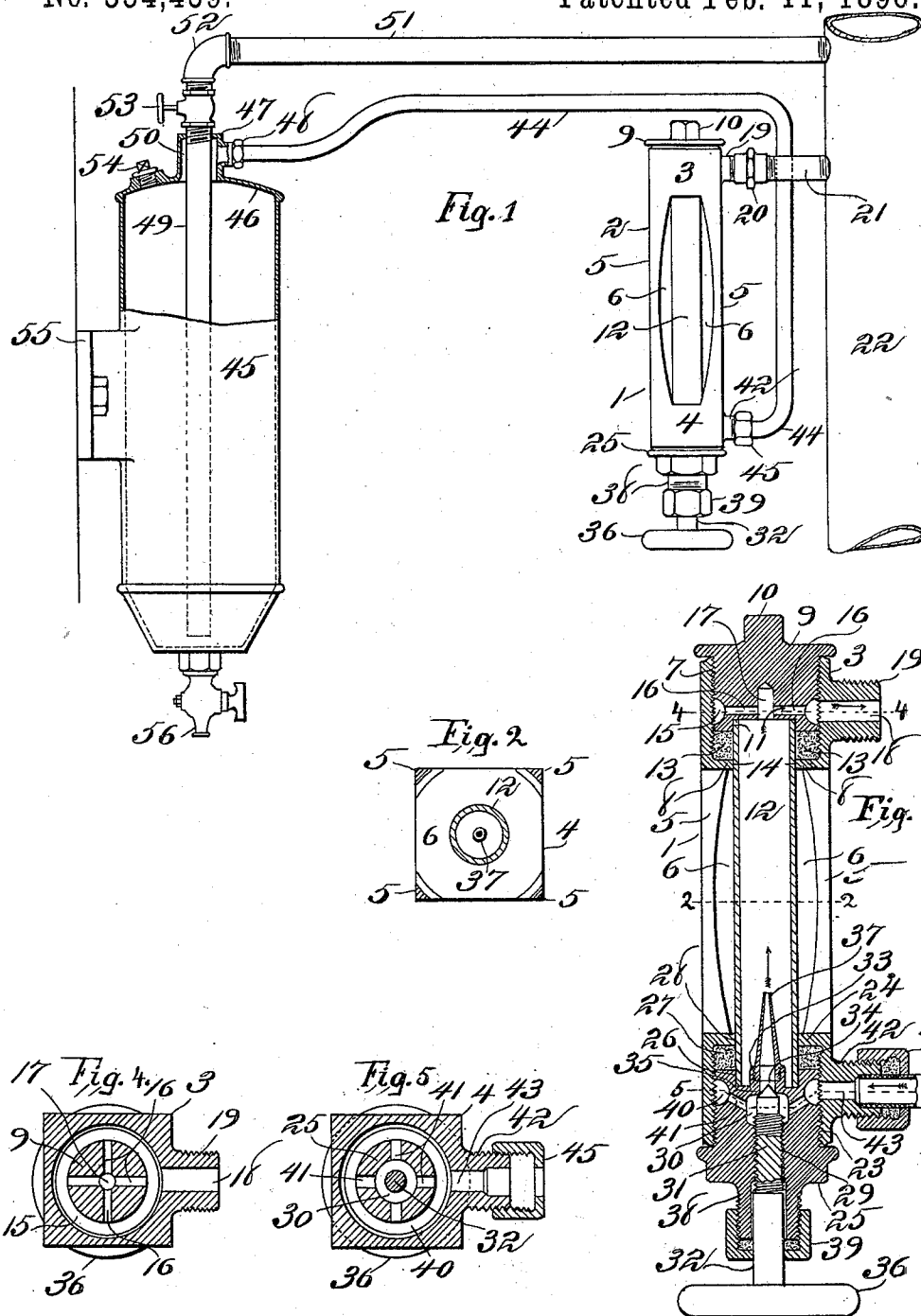


(No Model.)

H. G. BROWN.  
LUBRICATOR.

No. 554,439.

Patented Feb. 11, 1896.



Witnesses

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# UNITED STATES PATENT OFFICE.

HAVILAH G. BROWN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE BROWN  
SIGHT FEED LUBRICATOR COMPANY, OF SAME PLACE.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 554,439, dated February 11, 1896.

Application filed January 15, 1894. Renewed July 19, 1895. Serial No. 556,520. (No model.)

*To all whom it may concern:*

Be it known that I, HAVILAH G. BROWN, of St. Louis, State of Missouri, have invented certain new and useful Improvements in Sight-Feed Lubricators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved sight-feed lubricator; and it consists in the novel construction, combination, and arrangement of parts, hereinafter described and designated in the claim, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved invention, the same being connected to a steam-pipe leading to the cylinder of an ordinary engine, and also showing said invention connected to an oil-tank, a portion of said tank being in section to more clearly show the connections of the steam-pipes therewith. Fig. 2 is a transverse section of the improved lubricator, said section being taken on the line 2 2 of Fig. 3. Fig. 3 is a vertical longitudinal central section of the improved lubricator, more clearly showing the construction of same. Fig. 4 is a transverse section of the improved lubricator, taken on the line 4 4 of Fig. 3. Fig. 5 is a like section taken on the line 5 5 of Fig. 3.

The object of my invention is to construct a lubricator of the class known as "sight-feed" that will be simple in construction, durable, and not likely to get out of order. They are features which are somewhat lacking in the present lubricator.

Referring to the drawings, the numeral 1 designates the lubricator, which is constructed in the manner now to be described.

2 designates the frame, which is constructed of a single piece of cast metal. The upper end, 3, and the lower end, 4, of said casting are rectangular in form, and they are held together by four curvilinear strips 5. By the construction of these curvilinear strips there will be a space 6 formed between the ends 2 and 3 of said casting. A screw-threaded bore 7 is formed in the upper side of the end piece 3, which projects into said end and terminates a suitable distance above the lower end of said end piece 3, so as to form a seat 8

therein. Located in this screw-threaded bore 7 is a screw-threaded plug 9, which is of suitable size as to fit in said bore, and a square projection 10 is formed in the upper end thereof to be engaged by a wrench of ordinary construction for screwing said plug into said bore. Said plug is not as long as the bore 7 is deep, so that a space will be formed between the seat 8 and the lower end of the plug when said plug is screwed into position. (See Fig. 3 for illustration.)

A round depression 11 is formed in the center of the lower end of the plug 9, the same in circumference as the sight-tube 12. The purpose of this depression is to fit over the adjacent end of said sight-tube and aid in making a steam-tight joint, said sight-tube being constructed of glass or other suitable transparent material.

A ring of suitable packing 13 is placed between the adjacent end of the plug 9 and the seat 8, which also aids in making a steam-tight joint when said plug is screwed in position, as illustrated in Fig. 3.

A suitable opening 14 is formed in the seat 8 to allow the adjacent end of the sight-tube 12 to pass within the bore 7.

An annular groove or depression 15 is formed in the outer periphery of the plug 9 adjacent its lower end, and a series of radial openings 16 project inward from said annular depression or groove and register with a bore 17 formed in the center of said plug, the bore 17 terminating within the plug a short distance above the radial openings.

Cast integral with one side of the end piece 3 in such a position that the bore 18 therein will register with the annular groove or depression 15 is a boss 19, which is screw-threaded on its outer periphery to allow a coupling 20 to be connected thereto, said coupling connecting the pipe 21, which leads from the steam-pipe 22, to the boss 19, the steam-pipe 22 leading to the cylinder of an engine or any other device that is desired to be lubricated.

Formed in the lower end of the end piece 4 of the lubricator is a screw-threaded bore 23, which terminates a suitable distance from the upper end of said casting to form a seat 24 therein.

25 indicates a plug, which is screw-threaded

a suitable distance on its outer periphery and of such size as to fit within the screw-threaded bore 23, and of such length that when placed within said bore, as illustrated in Fig. 3, the upper end thereof will terminate a suitable distance back from the seat 24 so as to form a space between the adjacent end of said plug and the adjacent side of said seat. A round depression 26 is formed in the upper end of the plug 25, the same in circumference as the sight-tube 12 and constructed to be engaged by the adjacent end of said sight-tube. The purpose of this depression is to allow said sight-tube to project within said plug and thus aid in making a steam-tight joint at this point. Suitable packing 27 is placed within the annular space between the end of the plug and the adjacent side of said seat 24, so that when said plug is in the position illustrated in Fig. 3 said packing will aid in making a steam-tight joint, a suitable opening 28 being formed within the seat 24 to allow said sight-tube to pass through into the bore 23.

A vertical central bore 29 is formed in the plug 25, which terminates adjacent the upper end of said plug 25, and an annular depression 30 is formed within the plug around the upper end of said bore. The upper portion of said bore 29 is screw-threaded to admit the screw-threaded portion 31 of the valve-stem 32.

Formed on the upper end of the plug 25 within the depression 26 is a projection 33, and a vertical bore 34 is formed in said projection, which terminates within the bore 29, it being a suitable amount smaller than said bore 29 so as to form a seat 35 thereon, which is engaged by the conical end of the valve-stem 32. The lower end of said stem is provided with a hand-wheel 36 for manipulating said stem.

37 indicates a conical-shaped nozzle, the lower end of which is screw-threaded on its outer periphery and is engaged by the screw-threads within the screw-threaded portion of the bore 34, said bore 34 being a suitable amount larger at its upper screw-threaded end, so that when said nozzle is placed therein the bore within the nozzle will be in alignment with the lower end of the bore 34.

A boss 38 is formed on the lower end of the plug 25, the outer periphery of which is screw-threaded to allow a stuffing-box, such as 39, to be connected thereto. The purpose of this stuffing-box is to make a steam-tight joint where the valve-stem 32 projects from the boss 38 to prevent leakage of oil and steam through the bore 29.

40 indicates an annular groove or depression formed in the outer periphery of the plug 25, adjacent the upper end thereof, and a series of radial openings 41 extend from said annular groove into the annular depression 30 around the upper end of the valve-stem 32.

Formed on the end 4 of the lubricator so as to be parallel with the boss 19 is a boss 42. This boss is constructed with a bore 43, which

registers with the annular groove or depression 40 formed in the plug 25 when said plug is in the position illustrated in Fig. 3. The outer end of the bore 43 is enlarged somewhat and screw-threaded to allow a pipe 44 to be connected thereto.

The outer periphery of the boss 42 is screw-threaded to allow a stuffing-box, such as 45, to be connected thereto, so as to form a steam-tight joint between said boss and the pipe 44.

For connecting the lubricator with a steam-pipe, the upper end thereof is connected by a pipe 21, in the manner hereinbefore stated, and the opposite end of the pipe 44 from the lubricator is connected to an oil-tank 45 in the manner now to be described. Said oil-tank can be of any ordinary construction and size, and the upper end 46 thereof is provided with a cylindrical projection 47 adjacent its center and extending upward therefrom a suitable distance to allow said pipe 44 to be connected by means of a stuffing-box 48, the interior of said pipe registering with the interior of said cylindrical projection.

A suitable opening is formed in the upper end of the cylindrical projection 47 to allow a steam-pipe 49 to pass through it, said cylindrical projection being a suitable size larger than the pipe 49 so there will be an annular space 50 around said pipe within said cylindrical projection, the lower portion of said annular space registering with the interior of the tank 45. The pipe 49 extends down within the tank 45 and terminates a short distance above the lower end of said tank.

The pipe 49 is connected to a pipe 51 which leads to and is connected to the steam-pipe 22 by a coupling 52, and a stop-cock 53 is located between the upper end of the pipe 49 and the coupling 52 for shutting off the flow of steam into the tank 45.

A suitable opening is formed in the cover 46 of the tank 45 to allow said tank to be filled with oil, said opening being closed by a suitable plug 54.

As the tank 45 is stationary, it is provided with a suitable bracket 55, so that it can be connected to any suitable stationary object. 56 indicates a petcock, which is connected to the lower end of the tank 45 immediately beneath the lower end of the pipe 49, so that sediment that may collect within the tank can be drawn off.

In the practical operation of my invention, assuming the tank 45 is filled with oil and the steam-pipe 22 is connected to an ordinary steam-supply, and the valve-stem 32 is screwed down so as to allow a space between the upper end thereof and the valve-seat 35, steam passing through the pipes 51 and 49 will carry the oil through the pipe 44 into the annular depression 40 in the plug 25, and thence through the radial openings 41 into the annular space around the upper end of the valve-stem, and thence through the nozzle 37 into the sight-tube 12 (it being filled with water) through the bore 17 and the radial openings 16 into

the pipe 21, and thence into the steam-pipe 22 which leads to the cylinder or other object which is desired to be lubricated. The flow of oil and condensed steam through the lubricator is regulated by the stop-cock 53 and the valve-stem 32.

What I claim is—

An improved sight-feed lubricator, comprising a rectangular frame having sight-spaces 10 in the sides thereof and vertical bores centrally located in the end portions thereof, a sight-tube fitted within said bores and connecting the same, plugs having central bores, annular depressions, and radial ports leading 15 from the annular depressions to the said central bores, mounted in the vertical bores of the frame, ports of communication leading outwardly from said annular depressions to

the exterior of the frame, a pipe communicating with one of said ports of communication and the steam-cylinder, and a pipe leading from the other of said ports of communication to an oil-tank, a valve-stem located in, and adapted to close, the bore in the lower end of the said frame, and a nozzle leading 25 from the bore in the lower end of the said frame into the interior of the said tube, substantially as shown and described, and for the purposes stated.

In testimony whereof I affix my signature 30 in presence of two witnesses.

HAVILAH G. BROWN.

Witnesses:

E. E. LONGAN,  
JNO. C. HIGDON.