

G. E. LEDGERWOOD.
LUBRICATOR.
APPLICATION FILED FEB. 23, 1910.

964,032.

Patented July 12, 1910.

Fig. 1.

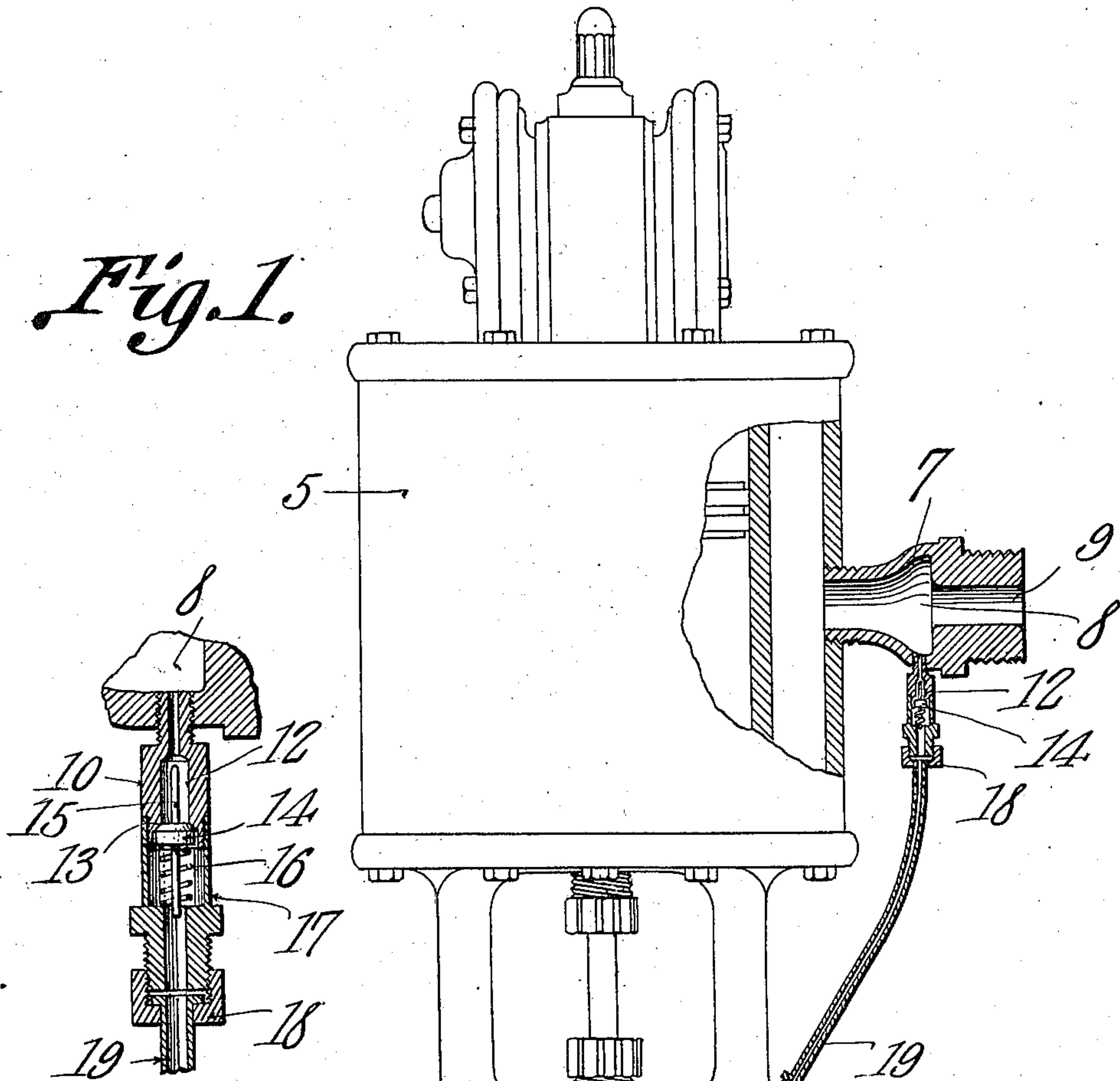
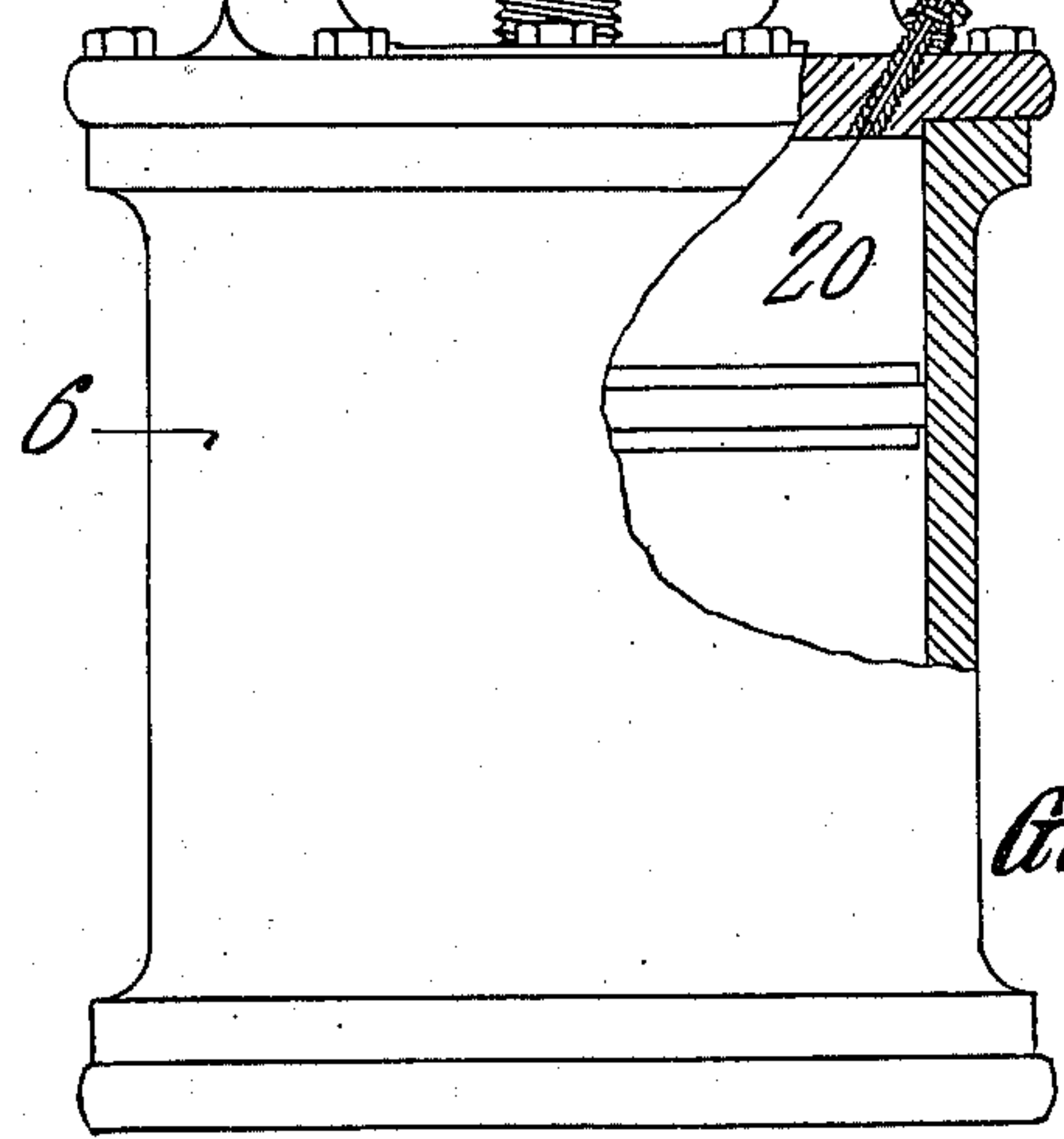


Fig. 2.



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UNITED STATES PATENT OFFICE.

GUY E. LEDGERWOOD, OF HANNIBAL, MISSOURI.

LUBRICATOR.

964,032.

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Application filed February 23, 1910. Serial No. 545,462.

To all whom it may concern:

Be it known that I, GUY E. LEDGERWOOD, a citizen of the United States, residing at Hannibal, in the county of Marion and State of Missouri, have invented a new and useful Lubricator, of which the following is a specification.

The lubricator which is the subject of the present invention is designed more particularly for use in connection with the air pump of automatic air brake systems, and its object is to separate the oil from the exhaust of the steam cylinder, and to deliver the same to the air cylinder.

Another object of the invention is to provide a lubricator of the kind stated which is simple in construction, and easily applied, and also entirely automatic in its operation, a valve being provided which opens on the suction stroke of the pump, and permits the oil to flow into the air cylinder.

Other objects and advantages of the invention will be apparent from the following detailed description of the apparatus, and in order that the same may be better understood, reference is had to the accompanying drawing forming a part of this specification, in which drawing,—

Figure 1 is an elevation of the steam and air cylinders of the pump showing the application of the invention, the latter being shown in section. Fig. 2 is an enlarged section of the valve of the device.

Referring to the drawing, 5 denotes the steam cylinder, and 6 the air cylinder of a pump used in connection with an automatic air brake apparatus, the parts being carried on the locomotive as is usual. Into steam cylinder is screwed a nipple 7 through which the exhaust steam leaves said cylinder, a pipe being connected to the nipple which carries the exhaust steam to the stack. The bore of the nipple is formed with an enlargement 8, and beyond this enlargement the bore of the nipple is contracted as indicated at 9. This contracted portion of the nipple is the outlet end of the nipple, and the pipe which carries the steam to the stack is attached to this portion of the nipple. The enlargement 8 forms a pocket or trap in which the oil entrained in the steam collects. The contracted portion 9 of the nipple serves to retard the flow of the steam through the nipple sufficiently to allow the oil to settle in the pocket.

On the nipple 7 is mounted a valve casing 10, said casing screwing into the nipple, so as to communicate with the lowermost portion of the pocket 8. The valve casing contains a passage 12 which is contracted at one of its ends to form a minute passage opening into the pocket 8. The other end is flared as indicated at 13 to form a valve seat which is engageable by a valve 14, having a guide stem 15 working loosely in the passage 12 so as to permit the flow of oil therethrough. The valve is held on its seat by a spring 16 located in the bore of a nipple 17 screwing on the valve casing over the valve seat. To the nipple 17 is connected, by means of a suitable coupling nut 18, a delivery pipe 19 which is coupled to a nipple 20 screwed into the head of the air cylinder 6, and communicating with the interior of said cylinder above the plunger working therein. When the valve 15 is open, the oil flows from the pocket 8 through the passage in the valve casing, and through the nipple 17 into the pipe 19, and said pipe carries the oil to the nipple 20, the latter discharging the oil into the air cylinder.

The oil entrained in the exhaust steam upon passing through the nipple 7 is separated from the steam and trapped in the pocket 8 in which it collects. At each suction stroke of the pump, the valve 17 opens, and a small quantity of oil is sucked into the air cylinder, the amount of oil thus passing to the air cylinder being sufficient to properly lubricate it.

The apparatus herein described is very simple in construction, and can be readily applied to the pump. It is entirely automatic in operation, and is not liable to get out of order.

The apparatus requires no vent opening, in view of which there is no danger of grit and dirt getting into the oil. The oil is also kept hot, and it will therefore flow freely through the apparatus without danger of clogging up the same.

A further advantage of the apparatus is that no expense is attached to its maintenance, the oil which is usually allowed to go to waste being used. The minute passage 12 prevents steam and water from being sucked into the air cylinder.

What is claimed is:—

In a steam driven air pump, the combination with the exhaust outlet of the steam

cylinder; of a nipple connected to said outlet, the bore of the nipple being formed with an enlargement, and said bore being contracted beyond the enlargement, a valve
5 casing connected to the enlarged portion of the bore of the nipple, a valve in the casing controlling the passage of oil from said bore to the pump cylinder, the enlarged portion of the bore forming an oil trap, and the
10 valve opening to the suction of the pump,

and yielding means for holding the valve closed.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GUY E. LEDGERWOOD.

Witnesses:

C. H. F. BANGERT,
JOSEPH BASSEN.