

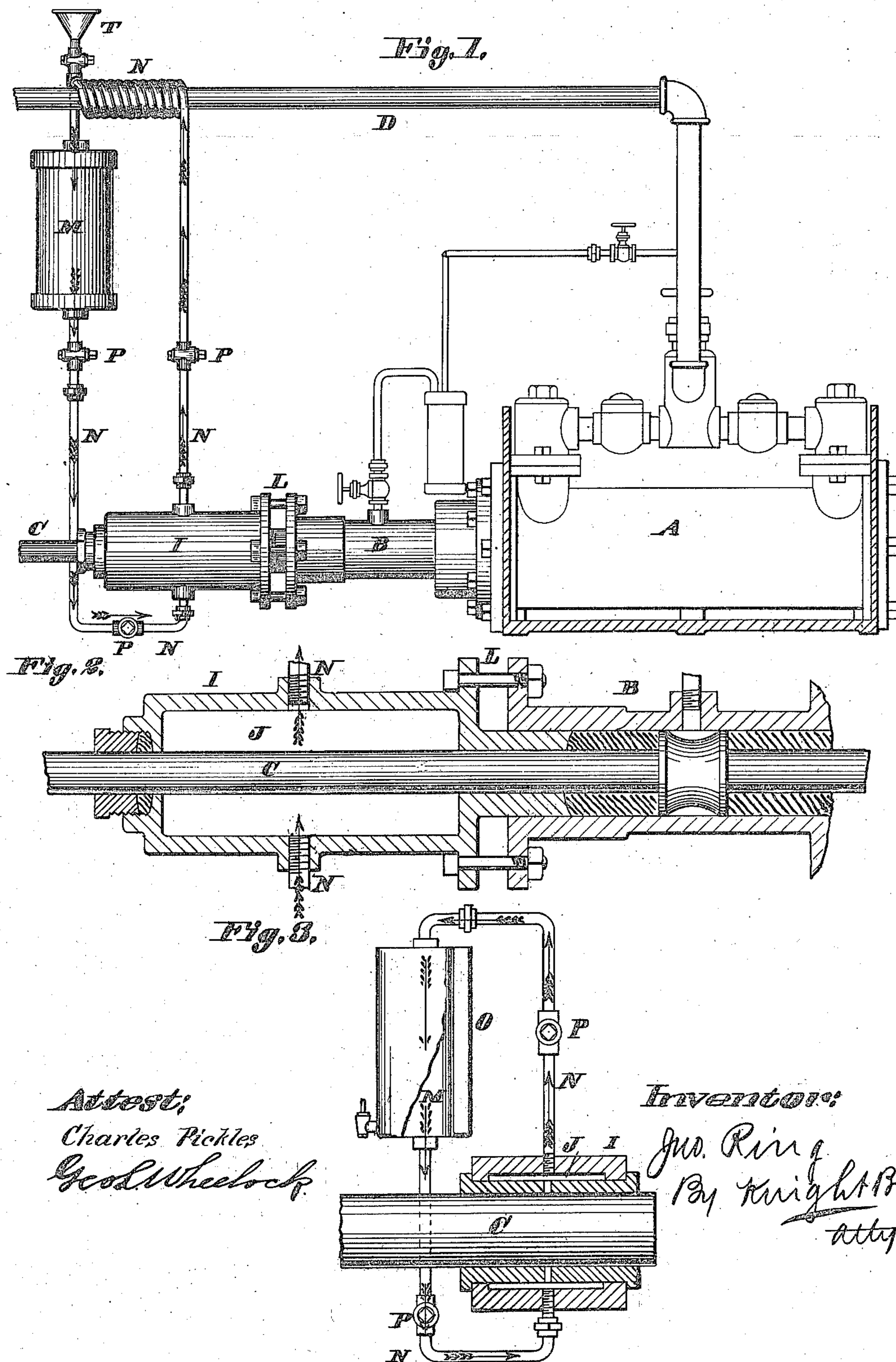
(No Model.)

J. RING.

COOLING ATTACHMENT FOR GAS AND OTHER MACHINES.

No. 310,616.

Patented Jan. 13, 1885.



UNITED STATES PATENT OFFICE.

JOHN RING, OF ST. LOUIS, MISSOURI.

COOLING ATTACHMENT FOR GAS AND OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 310,616, dated January 13, 1885.

Application filed October 13, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN RING, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Cooling Attachments for Gas and other Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side elevation of a gas-pump with my attachment applied. Fig. 2 is a vertical section of the stuffing-box of the machine and the oil-chamber of my attachment. Fig. 3 illustrates a modification.

My present invention relates to an apparatus for cooling the piston-rods of gas pumps or machines; and it consists in features of novelty hereinafter fully described, and pointed out in the claims.

I have illustrated my improvement on the machine shown and described in Letters Patent of the United States No. 267,653, issued to me November 14, 1882; but it may be applied to all kinds of gas machines or pumps.

Referring to the drawings, A represents the pump, B the stuffing-box, C the piston-rod, and D the return or condenser pipe, all of which are shown and described in my patent mentioned, and all of which are common to gas-machines. Surrounding the piston, at the outer end of the stuffing-box, is a cylinder or box, I, forming an oil-chamber, J. The boxes are preferably connected by a gland, L, as shown.

M represents an oil-tank connected to the oil chamber or box J I by a circulating-pipe, N. The tank M, chamber J, and pipe N being filled with oil, a circulation in the direction indicated by the arrows will be caused by the oil being heated in the chamber by the hot piston-rod. After leaving the chamber, and before reaching it again, the oil is cooled by some suitable means. My preferred means is to coil the pipe N around the return-pipe D, which is kept very cold by the return gas, and will thoroughly chill the oil as it passes through the coil. Another means for cooling the oil is shown in Fig. 3, where a box, O, for containing cooling-liquid or ice surrounds the tank M. The pipe N is provided with

valves or cocks P, which may be closed if it is desired at any time to clean the chamber J of any sediment that might settle therein. The tank, chamber, and pipe must be kept well filled with oil, in order to keep up the circulation, and the oil may be supplied through a funnel, T. By my improved attachment the piston-rod is kept cool, and at the same time well lubricated, much more effectually than by pouring cold water over it, as is the practice with these gas-machines, which not only poorly serves to cool it, but also causes it to wear away rapidly, owing to the sediment and lime being deposited thereon from the water, which is frequently a cause of breakage, and, moreover, the lime and sediment are carried by the piston into the packing, tearing and destroying it. The tank M could be dispensed with, though I prefer to use it. A flexible connection can be made between the pipe N and box I, to allow the endwise movement of the box when the gland L is tightened or loosened. This flexible connection can be made by means of short pieces of hose lined with some substance impervious to oil.

My invention can be applied to advantage to all kinds of fast-running machinery where pistons or journals are liable to become heated.

I claim as my invention—

1. In combination with a gas or other machine, the oil chamber, tank, and circulating-pipe, the chamber surrounding the piston-rod of the machine, substantially as set forth.

2. In combination with a gas or other machine, an oil-chamber surrounding the piston-rod of the machine, and a circulating-pipe, with means for cooling the oil as it passes through the pipe, substantially as and for the purpose set forth.

3. In combination with a gas or other machine, an oil chamber, tank, and circulating-pipe, the chamber surrounding the piston-rod and the pipe being coiled around the return-pipe of the machine, substantially as and for the purpose set forth.

JOHN RING.

In presence of—

GEO. H. KNIGHT,
SAML. KNIGHT.