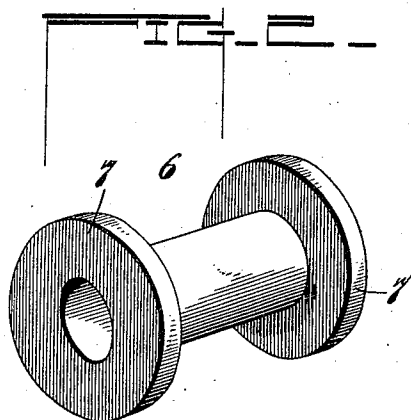
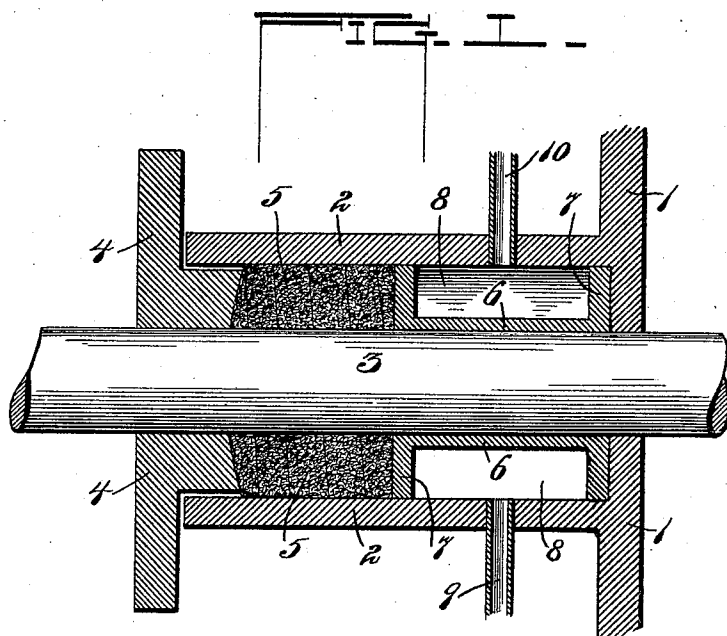


(No Model.)

M. L. MERY.
COOLING DEVICE FOR PISTON RODS.

No. 581,360.

Patented Apr. 27, 1897.



Inventor

Witnesses

Milton O'Connell,
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By his Attorneys,

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UNITED STATES PATENT OFFICE.

MICHAEL LAWRENCE MERY, OF CHICO, CALIFORNIA.

COOLING DEVICE FOR PISTON-RODS.

SPECIFICATION forming part of Letters Patent No. 581,360, dated April 27, 1897.

Application filed September 26, 1896. Serial No. 607,069. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL LAWRENCE MERY, a citizen of the United States, residing at Chico, in the county of Butte and State of California, have invented a new and useful Cooling Device for Piston-Rods, of which the following is a specification.

This invention relates to cooling devices for piston-rods; and it has for its object to provide a new and useful device of this character adapted for use in a stuffing-box to provide simple and positive means for absorbing the heat of the rod without allowing water to enter the cylinder of the engine and thereby destroy the efficiency thereof. To this end the device is especially available for use in connection with the piston-rod of a double-acting gas-engine or air-compressor and is intended to overcome the objection to the old style of water-jacketing piston-rods of similar engines, which involves the operation of letting the water come in direct contact with the rod, but which operation is decidedly objectionable, for the reason that in allowing the piston-rod to travel through a chamber of water for cooling the same it is practically impossible to prevent the water from entering the cylinder, under which circumstances, in a gas-engine, the efficiency of the engine is immediately destroyed. These objections are overcome by the use of the present device, which at the same time maintains the piston-rod at a normal temperature and obviates overheating thereof.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel combination, construction, and arrangement of parts hereinafter more particularly described, illustrated, and claimed.

In the drawings, Figure 1 is a sectional view of a stuffing-box equipped with the piston-rod-cooling device constructed in accordance with this invention. Fig. 2 is a detail in perspective of the jacket-sleeve forming the subject-matter of the present invention.

In the accompanying drawings the numeral 1 designates the cylinder-head of an engine, for instance, of the type disclosed in my former patent, No. 543,157, in which construction of engine the cylinder, as well as the sparking-box, are provided with water-jackets for

the circulation of cold water therethrough, and the said cylinder-head 1 carries at its outer side the usual cylindrical stuffing-box 2, in which works the reciprocating piston-rod 3 of the engine. The outer end of the stuffing-box 2 is inclosed by the usual packing-gland 4, which compresses within the box around the rod 3 the usual piston-rod packing 5, of any suitable material, and interposed between the packing 5 and the cylinder-head 1 is the cooling device contemplated by the present invention and which essentially comprises a cylindrical metallic jacket-sleeve 6.

The cylindrical metallic sleeve 6 is preferably made of copper, composition metal, or of other metal that is a good absorber of heat, and said cylindrical metallic jacket-sleeve 6 is of any suitable length, according to the length of the stuffing-box in which it is arranged. The jacket-sleeve 6 is truly cylindrical from end to end and closely or neatly fits the piston-rod 3, so as to have a direct contact therewith as it slides through the sleeve, and said sleeve is also made sufficiently thin so as to readily absorb the heat from the rod.

The cylindrical jacket-sleeve 6 is imperforate and is provided at its opposite ends with the annular head-flanges 7, which have a pressed or tight fit in the stuffing-box and inclose therebetween an annular water-circulating space 8 entirely surrounding the body of the sleeve. In connection with the annular water-space 8 of the jacket-sleeve 6 the stuffing-box 2 is provided with oppositely-arranged water inlet and outlet openings 9 and 10, respectively, which have water-pipe connections therewith to provide for a constant circulation of cold water in the space 8 around the body of the sleeve 6, and when the invention is used in conjunction with the piston-rod of a double-acting gas-engine the water-pipe connections are in communication with the water-jackets of the sparking-box and cylinder.

The construction of the sleeve 6 is such that water is positively prevented from working into the cylinder, while at the same time providing for readily absorbing the heat of the piston-rod and maintaining the same at such a normal temperature to prevent overheating.

Changes in the form, proportion, and the

minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

- 5 Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

10 A cooling device for piston-rods comprising an imperforate cylindrical metallic jacket-sleeve adapted to closely fit a reciprocating piston-rod, and provided at its ends with annular head-flanges adapted to snugly fit in the

stuffing-box for the rod and inclosing therebetween an annular water-circulating space entirely surrounding the body of the sleeve, 15 substantially as set forth.

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

MICHAEL LAWRENCE MERY.

Witnesses:

J. W. ROPER,

A. L. NEUBARTH.