

(No Model.)

J. G. DONNENWERTH.

MEANS FOR OILING CYLINDERS OF STEAM ENGINES.

No. 288,037.

Patented Nov. 6, 1883.

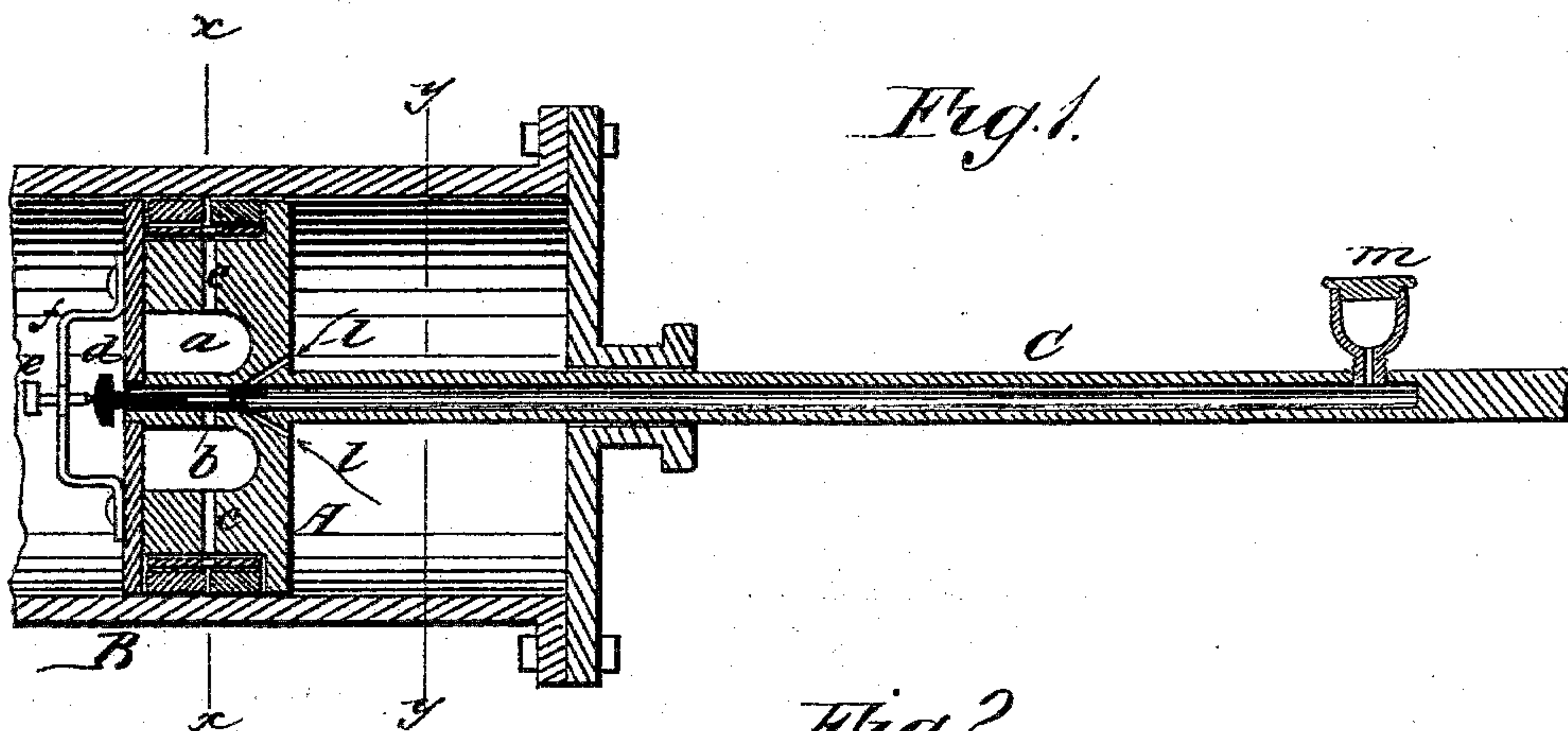


Fig. 2

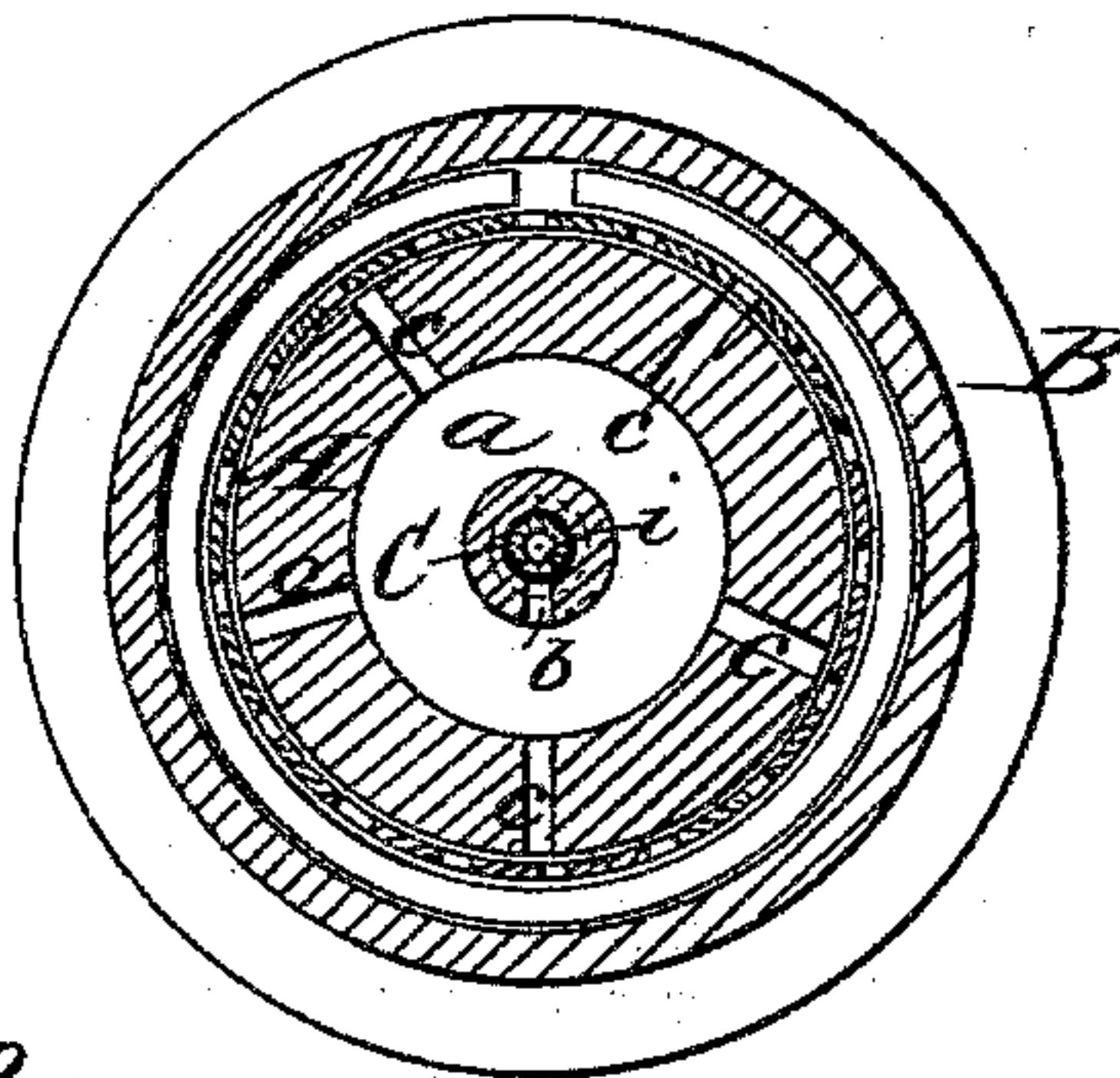


Fig. 3.

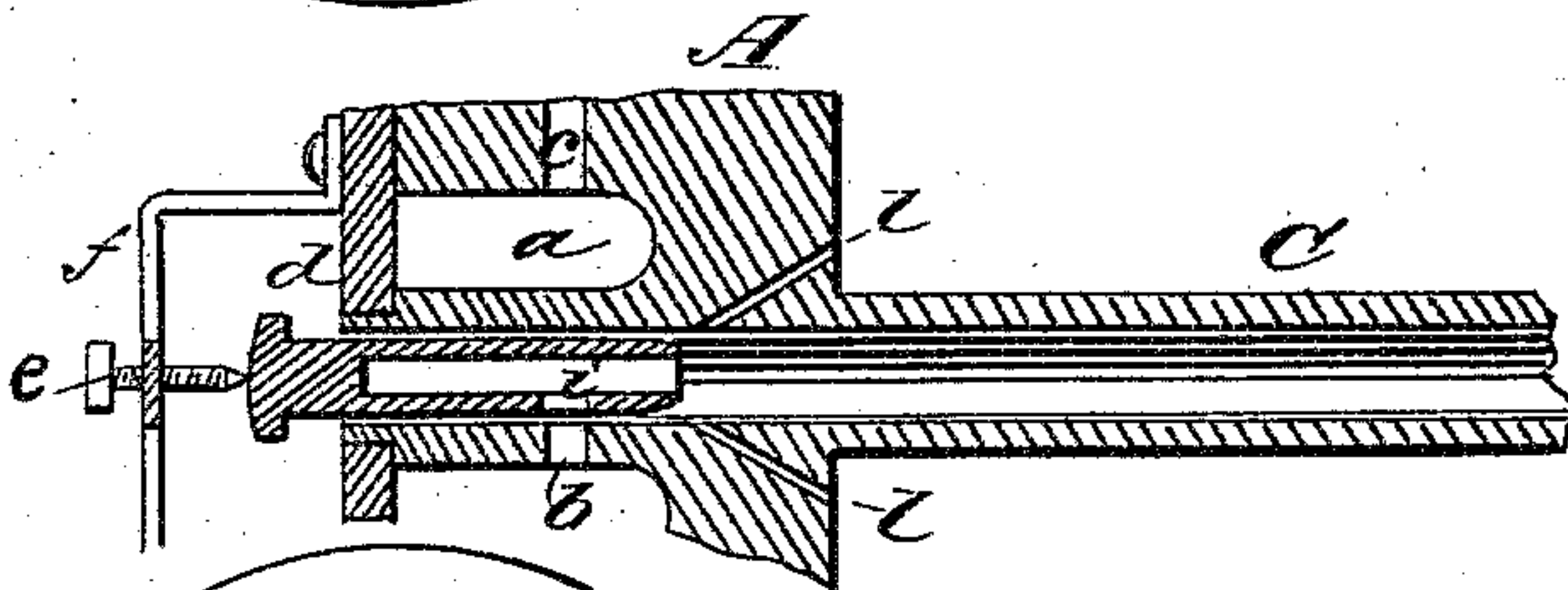


Fig. 4

WITNESSES:

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MEANS FOR OILING CYLINDERS OF STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 288,037, dated November 6, 1883.

Application filed April 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. DONNENWERTH, of Browning, in the county of Linn and State of Missouri, have invented a new and Improved Means for Oiling Cylinders of Steam-Engines, of which the following is a full, clear, and exact description.

With the means usually employed for oiling cylinders of steam-engines there is a great waste of oil on account of its being carried off by the steam, so that the cylinder is either imperfectly lubricated, or else an unnecessary amount of oil is used for the purpose.

The object of my invention is to obviate these difficulties; and it consists in the device hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of a steam-cylinder and piston with my improvements. Fig. 2 is a cross-section on line *xx*, Fig. 1. Fig. 3 is an enlarged detail section of the piston. Fig. 4 is a cross-section on the line *yy*, Fig. 1.

The piston-head *A* in the cylinder *B* is attached upon the end of a piston-rod, *C*, that is formed hollow for a considerable distance next to the piston-head. The head *A* is formed with an oil-cavity, *a*, communicating with the interior of the hollow rod *C* by an opening, *b*, and there are also radial passages *c*, extending from the cavity *a*, and terminating beneath the packing-rings of the piston-head.

d is a valve, made in the form of a plug, fitting through the piston-head into the outer end of the rod *C*, and having a movement limited by a screw, *e*, that is held in a bridge, *f*, so that the screw serves to prevent the valve from being forced out. The inner end of the plug-valve *d* is made hollow, and is also formed with a side opening, *i*, (shown most clearly in Fig. 3,) which registers with the opening *b*

into the oil-cavity *a* when the valve is moved outward. *l l* are steam-passages extending from the face of the piston-head to the interior of the rod *C*, and terminating in front of the inner end of the valve *d*. The rod *C* is fitted with an oil-cup, *m*, for supplying oil.

In operation, as the piston is moved in one direction by steam admitted at the end of the cylinder, the steam passing in by the openings *l* forces the valve *d* outward and causes the oil to pass from the hollow rod through the openings *i b* to the oil-cavity *a*, from whence it passes out radially by the radial openings *c*. On the return movement of the piston the valve *d* is forced inward, and the valve thus being given a back-and-forth movement, acts in the manner of a pump to supply the oil-cavity *a* with oil. The oil is thus supplied in a manner that prevents it being carried off by the steam passing out at the exhaust. By adjustment of the screw *e* to limit the movement of the valve the quantity of oil passing out is regulated.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A hollow piston, *A*, with radial openings *c*, oil-cavity *a*, steam-passages *l l*, and hollow rod *C*, in combination with plug-valve *d*, having side openings, *i*, and oil-cup attached to hollow piston-rod for supplying oil to cylinder, substantially as set forth.

2. The hollow plug-valve *d*, provided with a side opening, *i*, in combination with the piston-head *A*, having cavity *a*, and openings *b c l*, and the hollow piston-rod *C*, substantially as shown and described.

3. The bridge *f* and screw *e*, in combination with the valve *d* and piston-head *A*, substantially as and for the purpose specified.

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Witnesses:

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