

(No Model.)

J. H. PORTER & T. J. HENNESSEY.
OILING DEVICE.

No. 587,272.

Patented July 27, 1897.

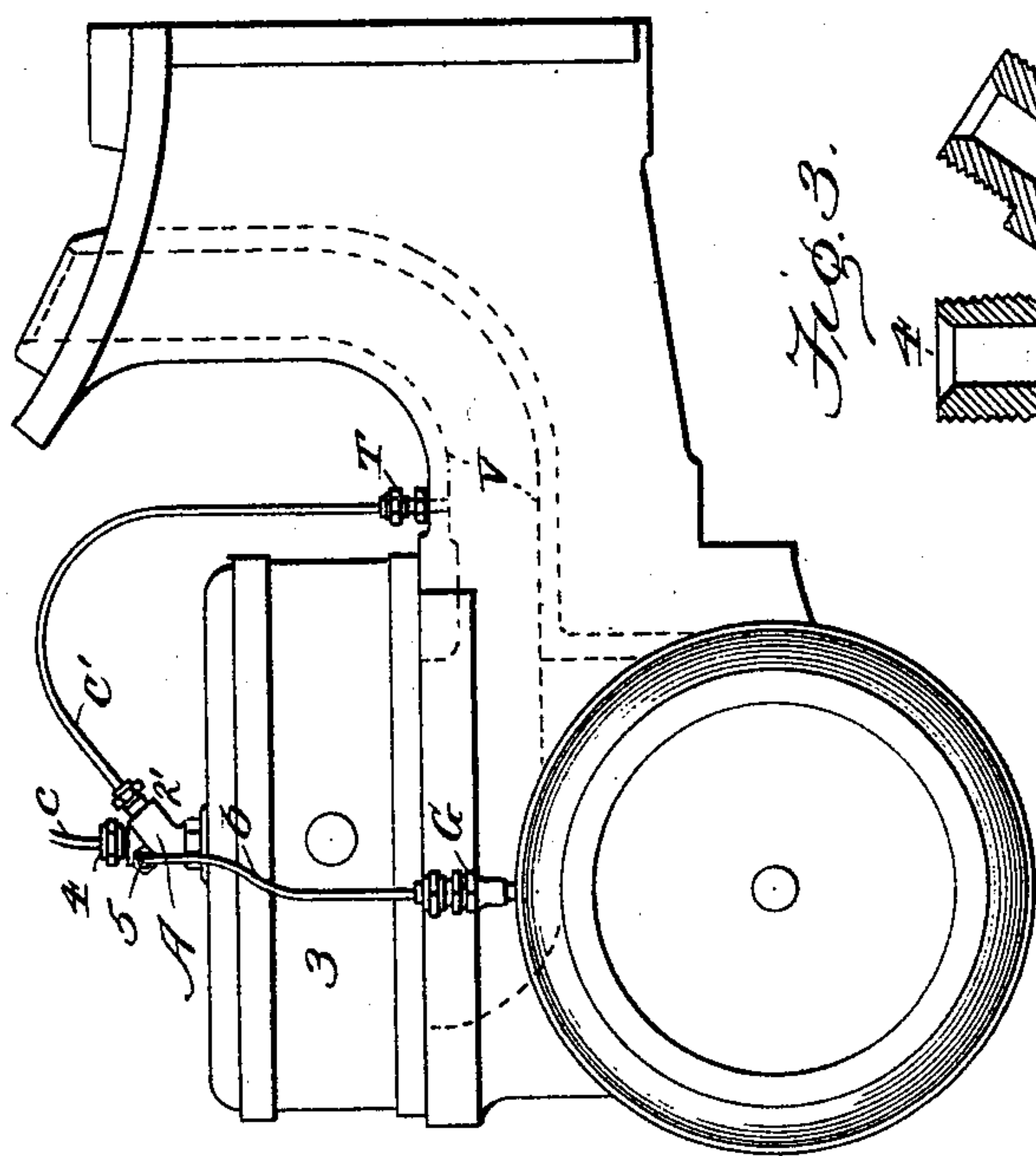


Fig. 3.

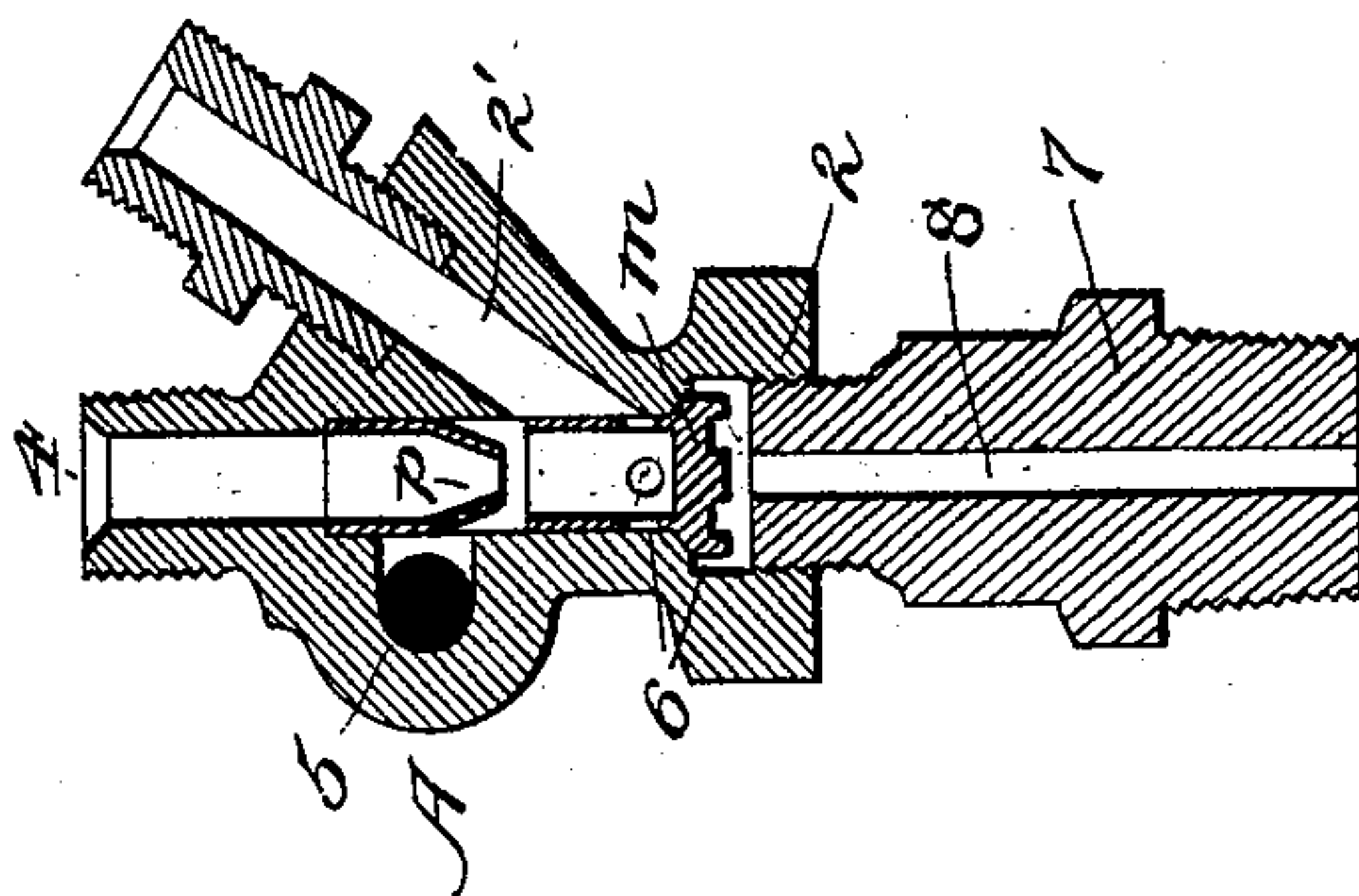


Fig. 1.

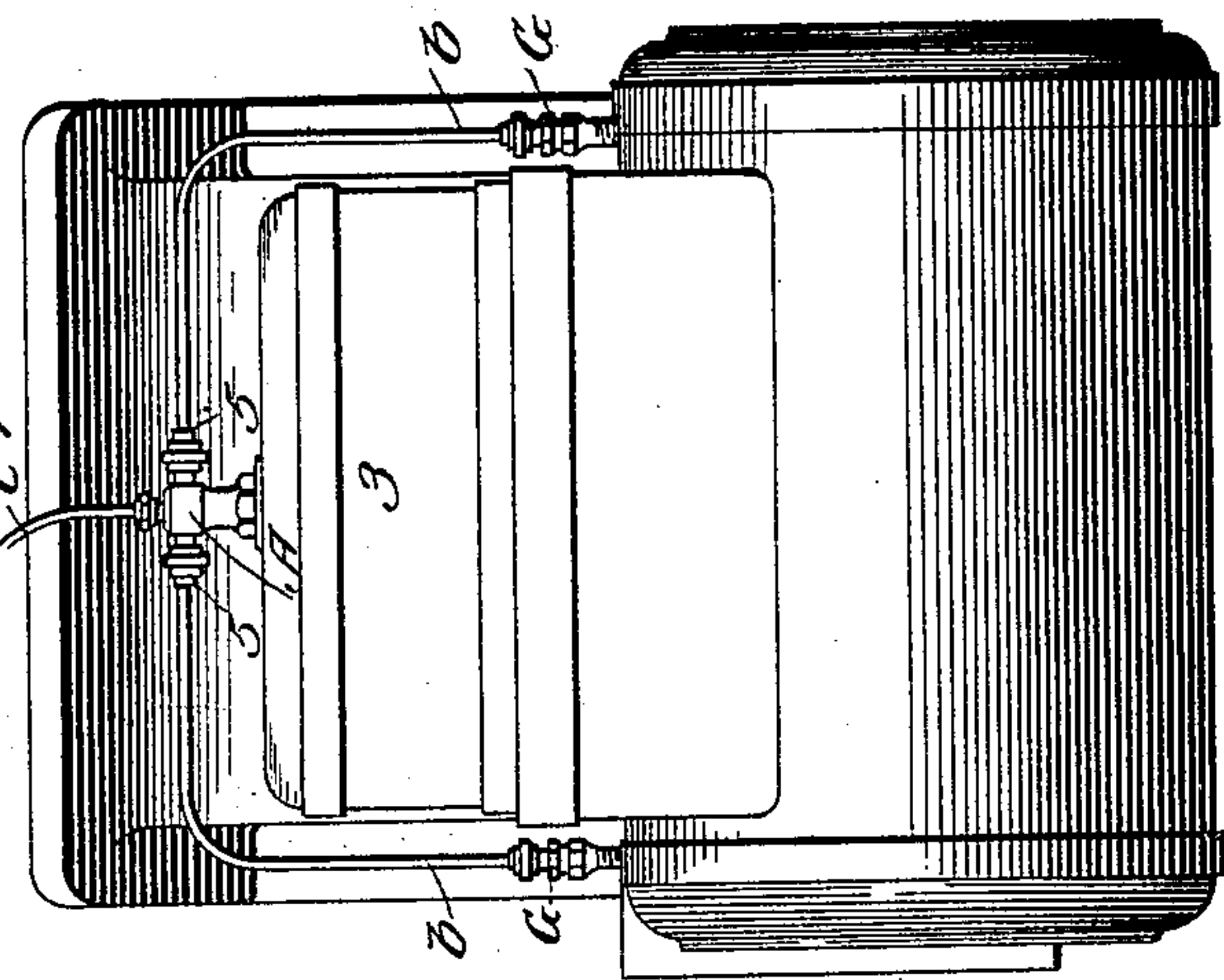
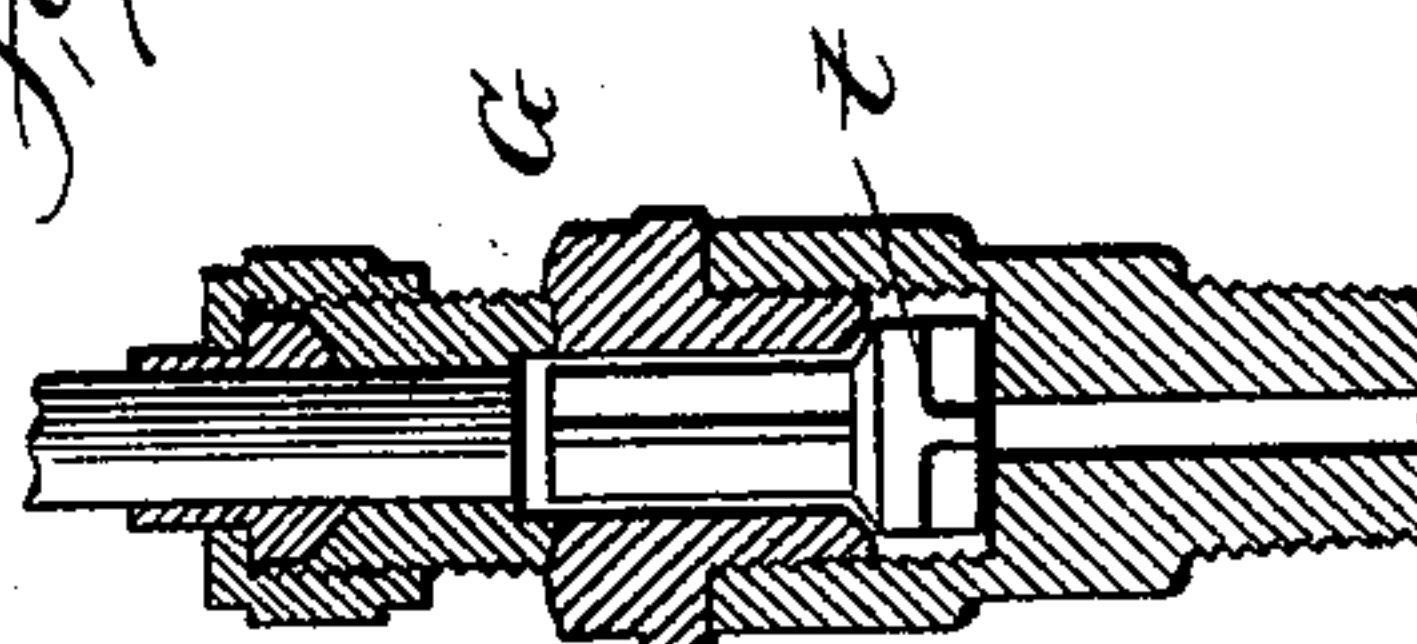


Fig. 4.



WITNESSES:

Edwin L. Bradford

Ralph Wormelle

INVENTORS

John H. Porter

Thomas J. Hennessey.

BY

R. A. O. Lamy

ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN H. PORTER AND THOMAS J. HENNESSEY, OF JACKSON, MICHIGAN.

OILING DEVICE.

SPECIFICATION forming part of Letters Patent No. 587,272, dated July 27, 1897.

Application filed October 19, 1896. Serial No. 609,360. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. PORTER and THOMAS J. HENNESSEY, citizens of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Oiling Devices for Steam-Engine Cylinders; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the reference-characters marked thereon, which form a part of this specification.

Our invention has relation to oiling devices for engine-cylinders, and more particularly to that class employed on locomotives in which a charge of oil or other lubricant is automatically fed to each end of the cylinder at each impulse of the piston; and the object is to provide a simple and effective device for this purpose.

To this end the novelty consists in the construction, combination, and arrangement of the same, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the accompanying drawings the same reference-characters indicate the same parts of the invention.

Figure 1 is a side elevation of our improved oiling device applied to a locomotive-cylinder. Fig. 2 is an end view of the same. Fig. 3 is a vertical section through the casting A, and Fig. 4 is a similar view of one of the plugs G.

A represents a cast-metal casting provided with a circular vertical passage 4, extending entirely through it, its lower end terminating in a valve-chamber 6, in which is located the downwardly-opening gravity check-valve *m*.

The lower end 2 of the valve-chamber 6 is screw-threaded to receive the threaded nipple 7, which is also provided with a central passage 8, extending vertically through it, and its lower end is externally threaded to secure it in the cover of the steam-chest 3.

A feed-pipe *c* connects the upper end of the passage 4 in the casting A with a closed oil-reservoir. (Not shown.) A stationary jet-nozzle *p* is located in the passage 4 of the

casting A, its office being to conduct the oil to the center of the passage.

5 5 represent horizontal passage-ways extending laterally from the passage 4 in the casting A, and *b b* represent pipes extending from the passages 5 5 to the screw-plugs G G, one of which connects with each end of the cylinder, as shown in Fig. 1. These plugs are each provided with a downwardly-opening gravity check-valve *t*, as shown in Fig. 4.

An auxiliary pipe *c'* connects with an inclined passage 2' in the casting A, and its lower end is provided with a plug T, communicating with the live-steam passage V, which connects the boiler with the engine.

The operation of the device is as follows: When the engine is working steam, the constant pressure of the steam from the steam-chest through the passage 8 closes the valve *m*, and consequently the oil flows through the passage 4, nozzle *p*, lateral orifices 5 5, and pipes *b b* to the plugs G G. When the piston is traveling from left to right, in Fig. 1, the steam-pressure on the left-hand side of the piston closes the valve *t* in the plug G at the end of the cylinder, while the corresponding valve in the plug G in the opposite end of the cylinder is open, owing to the steam exhausting from that end. When the piston has arrived at that end of its stroke and the steam is admitted, the pressure of the steam closes the valve and cuts off the oil, while the exhaust on the opposite side of the piston allows the valve in that end to open and feed. This intermittent action of the respective valves is continuous as long as the engine is working steam. When the steam is shut off and the engine is running by its own momentum, the pressure through the passage 8 is also cut off, which relieves the valve *m*, which then falls by gravity and allows the oil to pass through the passage 8 into the steam-chest and through the steam-ports of the cylinder.

In case an accident should happen to the pipes *b b* to throw them out of service, as occasionally happens by striking live stock or other obstructions on the track, it would then be necessary to blank or cut off the connection between the casting A and the plugs G G and remove the valve *m* to allow the oil to flow into the steam-chest. In this case the

live steam passing into the passage 4 through the auxiliary pipe *c'* acts somewhat on the principle of an injector to assist the oil into the steam-chest.

5 Having thus fully described our invention, what we claim as new and useful, and desire to secure by Letters Patent of the United States, is—

10 An oiling device for steam-engine cylinders, comprising the casting A, secured to and communicating with the steam-chest 3, and having the valve *m* therein, the oil-supply pipe *c* and the lateral feed-pipes *b b* attached thereto, the plugs G G secured to the outer

ends of the lateral feed-pipes and communi- 15
cating with the opposite ends of the cylinder, the valves *t t* located in said plugs G G, and the live-steam auxiliary pipe *c'* connecting the casting A with the steam-passage leading from the boiler to the engine, substantially as 20
shown and described.

In testimony whereof we affix our signatures in the presence of two witnesses.

JOHN H. PORTER.

THOMAS J. HENNESSEY.

Witnesses:

JENNIE E. ROOKH,

JAMES A. PARKINSON.