

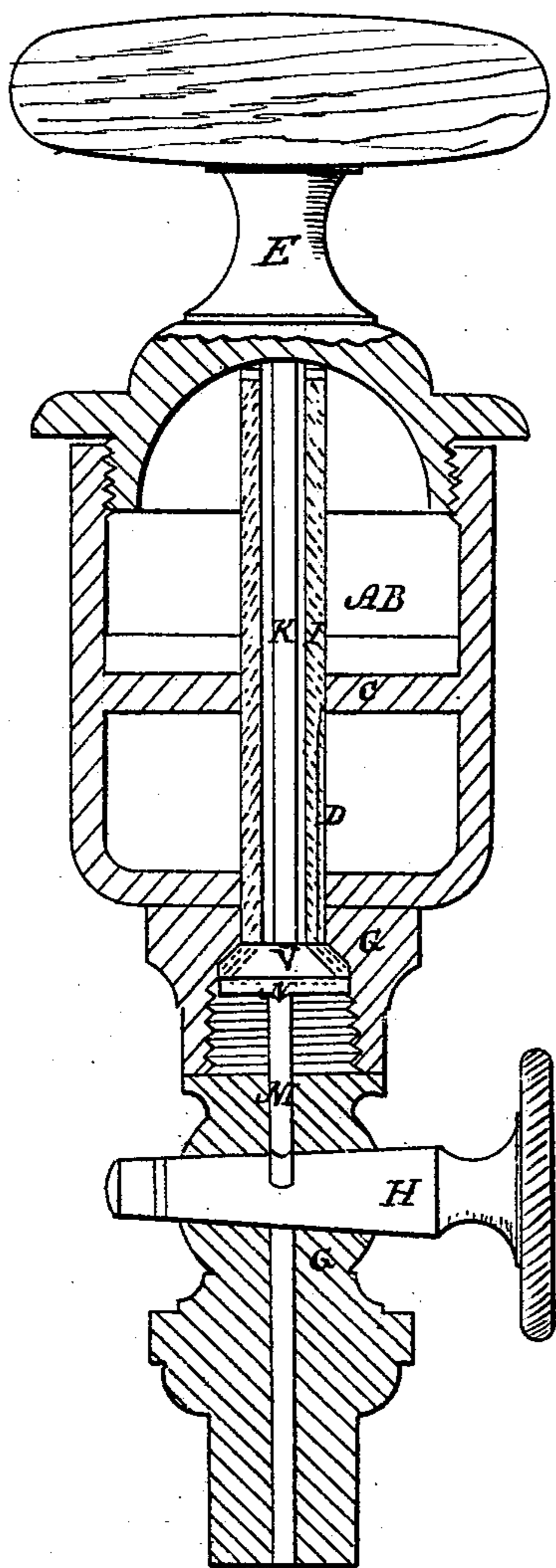
*I. Church, Jr.*

*Steam Engine Lubricator.*

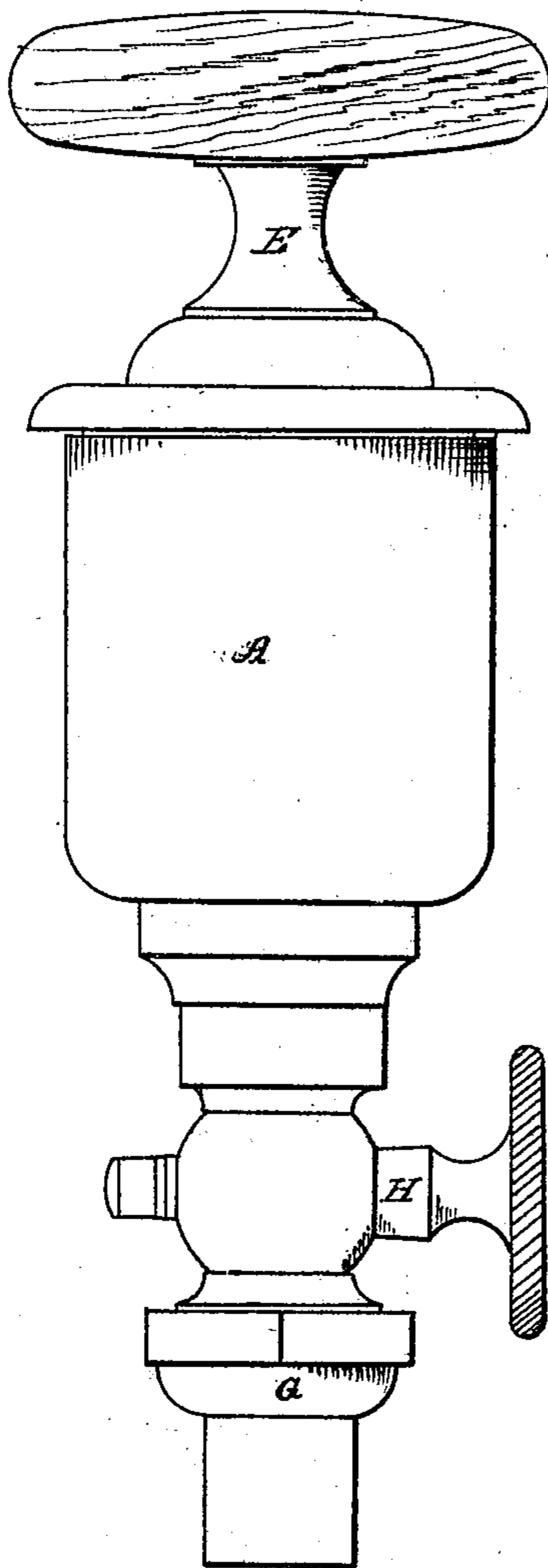
*N<sup>o</sup> 90,728.*

*Patented Jun. 1, 1869.*

*Fig. 2.*



*Fig. 1.*



*Witnesses.*

*Wm. Vine  
a Solicitor*

*Inventor.*

*Isaac Church Jr*

# United States Patent Office.

ISAAC CHURCH, JR., OF NORWALK, CONNECTICUT.

Letters Patent No. 90,728, dated June 1, 1869.

## IMPROVEMENT IN STEAM-ENGINE LUBRICATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, ISAAC CHURCH, Jr., of the town of Norwalk, county of Fairfield, and State of Connecticut, have invented certain new and useful Improvements in the Construction of Lubricators; and I do hereby declare that the following is a full and correct description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The nature of my invention consists in the arrangement of a cylindrical stem-valve, with a vertical stem poppet-valve operating within the same.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same.

The drawing—

Figure 1 is an external view of my lubricator.

Figure 2, a vertical section of the same.

A is the oil-reservoir.

B, the interior and oil.

C, horizontal cross-piece, as a guide to the stem-valves.

E, the screw-top or cover to the reservoir.

G, the lower part, containing the valve-chamber and seats, with stop-cock H.

I, the vertical cylindrical valve.

K, the stem poppet-valve.

M, the steam-passage or way.

N, the steam-chamber.

The drawing represents substantially my lubricator, in form and arrangements, of the oil-reservoir, the stem-valves, and the attaching part, with the steam and oil-passages, the double stem-valves and seats, the inner one having its seat at the bottom of the outer cylindrical one.

These stems are made to smoothly fit their supporting-passages, so that they will fall downwards by their own gravity.

The screw-top, or cap E, regulates the opening and closing of the valve-seats V.

On the side of the poppet-valve stem K is a flattened space, made the whole length up from the lower valve-end, to allow the passage of, or flow, of the steam from the steam-way M, into the chamber N, through the valve-seat V, and up the flattened space on the stem into the oil-reservoir A B.

Also, on the side of the outer cylindrical vertical

stem-valve I, is a flattened space, extending up about an inch from the valve-end, as shown in drawing, to allow the flow or passage of the oil from the reservoir down into the chamber N, and into the steam-way M, down to the lower or discharging end of the same, on to the article to be lubricated.

The operation is as follows:

The lubricator being attached to its position, fill the reservoir A B with a proper quantity of oil, unscrew the cap E a small distance, and the pressure of the steam issuing up through the steam-way M into the chamber N, will, by pressing against the valve-bottoms V, close up both valves and make all tight.

It will be observed that the inner stem is a trifle the longest, and both will reach up to the under side of the crown of the screw-cap E; the inner one being a trifle the longest, will touch first.

Screw down gently the cap E. It will first open the inner valve and admit a flow of steam up the flattened part of the stem K, into the reservoir A B, which will cause an equilibrium of pressure in the reservoir of the steam and oil.

Then screw down the cap E a little more, and it will press down the outer stem and open the outer valve V, to allow the oil in the reservoir to ooze down through the flattened part on the outer stem into the chamber N, and pass down the steam-way M on to the article to be lubricated, caused by the increasing pressure of the steam on the oil in the reservoir A B.

There are small notches on the upper end of the outer stem, to allow a free passage of the steam into the reservoir when the cap E touches both ends of the stems I K.

The screw-cap E by this means regulates the opening of the valves in the chamber N, for more or less emission from the reservoir.

The stop-cock H regulates the flow of steam and passage of the oil.

What I do claim as my invention, and desire to secure by Letters Patent, is—

The arrangement of the two vertical stem-valves I K, substantially as herein set forth.

ISAAC CHURCH, JR.

Witnesses:

WM. VINE,

A. SELLECK.