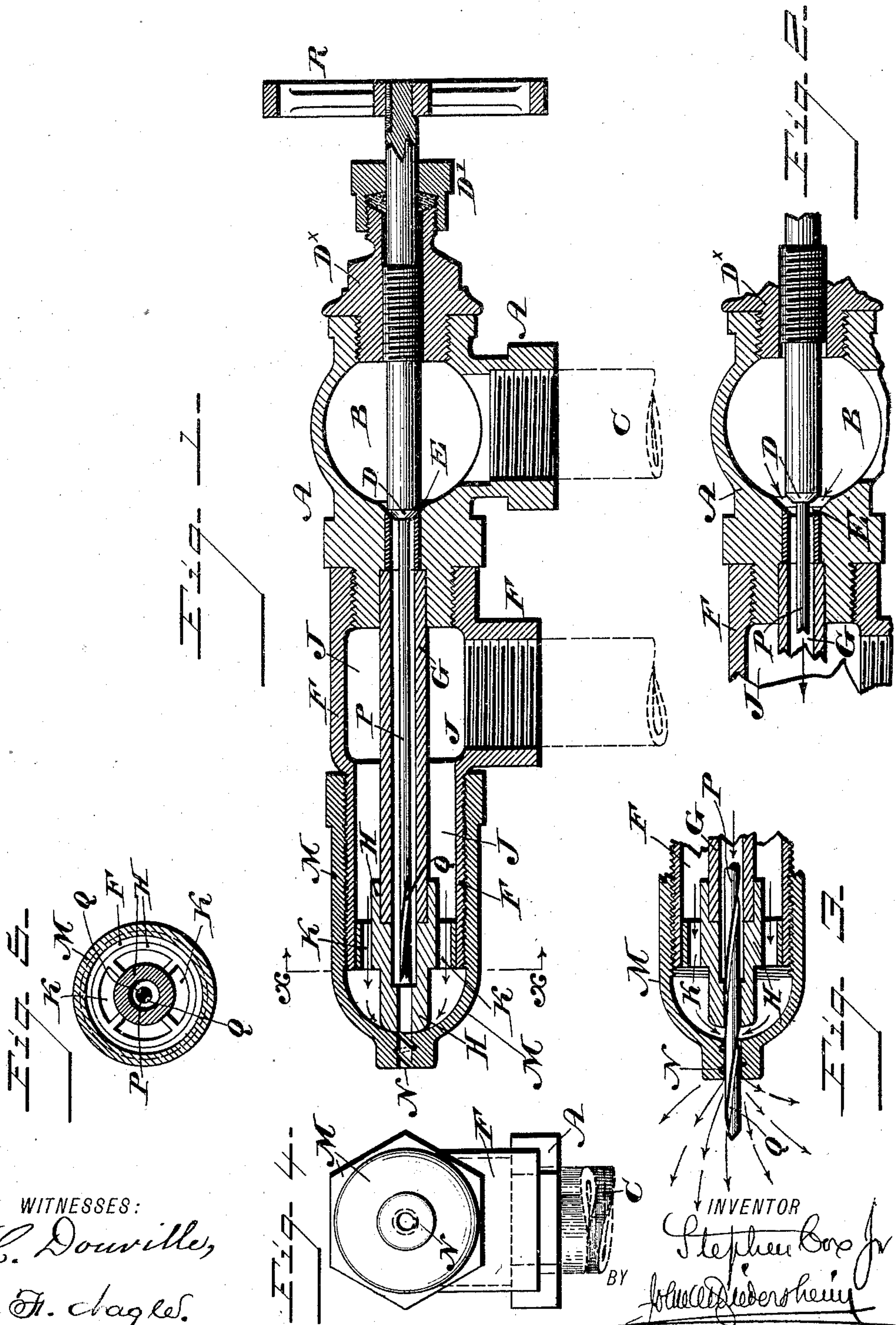


(No Model.)

S. COX, Jr.
ATOMIZER FOR LIQUID FUEL.

No. 477,624.

Patented June 21, 1892.



WITNESSES:
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STEPHEN COX, JR., OF BRIDGETON, NEW JERSEY, ASSIGNOR TO THE COX & SONS COMPANY, OF NEW JERSEY.

ATOMIZER FOR LIQUID FUEL.

SPECIFICATION forming part of Letters Patent No. 477,624, dated June 21, 1892.

Application filed July 13, 1891. Serial No. 399,335. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN COX, Jr., a citizen of the United States, residing at Bridgeton, in the county of Cumberland, State of New Jersey, have invented a new and useful Improvement in Atomizers for Liquid Fuel, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in atomizers for liquid fuel; and it consists of a device having means for imparting a rotary motion to the liquid projected therefrom.

It further consists of a device having a rifled nozzle adjustable upon an inner nozzle.

It further consists of the combination and arrangement of parts hereinafter set forth.

Figure 1 represents a longitudinal section of an atomizer embodying my invention. Figs. 2 and 3 represent longitudinal sections of portions of the device, the parts shown being in different relative positions than shown in Fig. 1. Fig. 4 represents an end view of the device. Fig. 5 represents a section on line $x x$, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a shell or casing having a chamber B therein, which receives the oil or other liquid fuel under pressure from any suitable receptacle by means of the pipe C, connected with said casing. A valve D, having a stem passing through a cap D^x and stuffing-box D', controls the discharge passage or outlet E of said chamber B.

Connected with the casing A is a casing or shell F, in which is located a tube G, communicating with the passage E and supported at one end by a nozzle H, held within one end of said casing F. Within the said casing and surrounding the tube G is a chamber J, which receives air or steam under pressure from any suitable source of supply by means of a pipe leading into said chamber. The nozzle H is provided with the openings K in its rim for the escape of the air or

steam from the chamber J. Adjustably secured to the casing F by screw-threads or otherwise is a nozzle M, having a rifled bore or outlet N, which communicates with the bore of the nozzle H. Connected with the end of the valve D and located in the tube G and nozzle H is a spindle or stem P, having a groove or grooves Q in its sides.

In operating the device the oil or other liquid fuel is admitted to the chamber B and the valve D opened by rotating the hand-wheel R on its stem, so as to permit the flow of the oil into the tube G and nozzle H. As the oil leaves the nozzle H the air or steam which has been admitted to the chamber J and has passed through the openings K mingles with the same and the mixture is forced through the rifled bore of the nozzle M, when, owing to the rotary motion thus imparted to it, the jet is separated into minute particles, whereby it is adapted for the purpose intended.

Rotary motion may be imparted to the spindle by rotating the same during the passage or flow of the oil, thereby adding to the efficiency of the device, in that it acts as a cleaner for the bore of the tube S and nozzle H, preventing deposits or collections therein and also imparting rotary motion to the oil, so that the centrifugal force scatters the oil and thereby better accomplishes the atomizing.

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

1. An atomizer consisting of a casing having a nozzle at one end and provided with a chamber having means to secure an inlet-pipe thereto, a tube in said casing forming a passage from said chamber to said nozzle, a chamber in said casing surrounding said tube and having an inlet thereto, and a valve controlling the outlet of the first-mentioned chamber and having a grooved stem in said tube extending through said nozzle, said parts being combined substantially as described.

2. An atomizer consisting of a casing with

an oil-chamber having a discharge-passage, a stem having a groove in its side, a valve controlling said passage, a shell connected with said casing, a tube communicating with
5 said discharge-passage, an inner nozzle supporting said tube within said shell and having openings in its rim, and an outer nozzle

adjustably secured to said shell, said parts being combined substantially as described.

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Witnesses:

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