

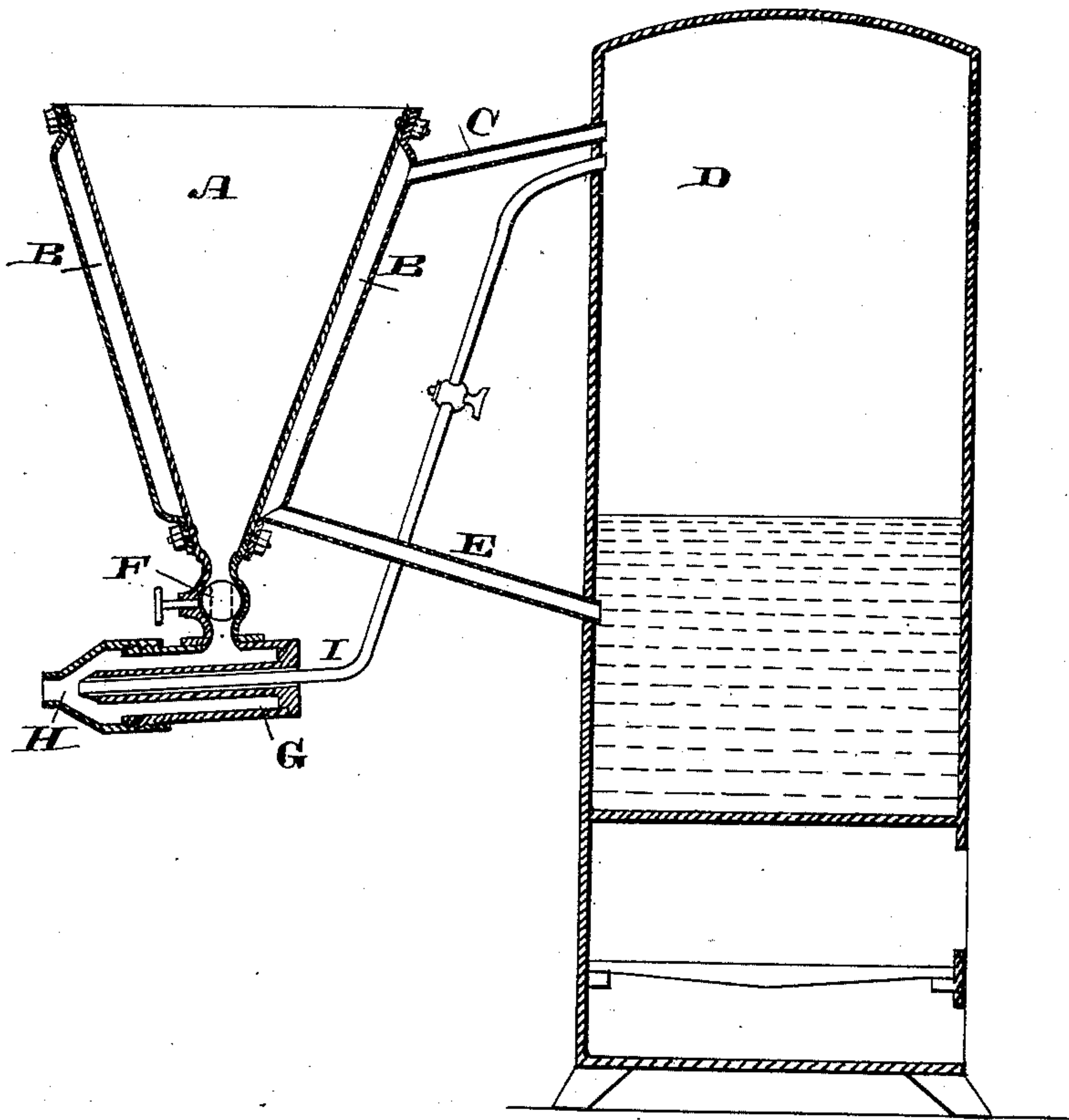
(No Model.)

H. L. LIGHTNER.

APPARATUS FOR ATOMIZING SULPHUR.

No. 359,164.

Patented Mar. 8, 1887.



Witnesses,
Geo. H. Strong.
J. H. House.

Inventor,
H. L. Lightner
By Dewey & Co.
attys

UNITED STATES PATENT OFFICE.

HENRY L. LIGHTNER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF
ONE-HALF TO FRANK A. HUNTINGTON, OF SAME PLACE.

APPARATUS FOR ATOMIZING SULPHUR.

SPECIFICATION forming part of Letters Patent No. 359,164, dated March 8, 1887.

Application filed June 16, 1886. Serial No. 205,376. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. LIGHTNER, of the city and county of San Francisco, State of California, have invented an Improvement in Sulphur-Atomizers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device for reducing and atomizing sulphur by the application of steam or heated air.

It consists of a receiver into which the sulphur is placed, a surrounding jacket into which steam or hot air is introduced and circulated, by means of which the sulphur is melted and reduced to a certain temperature, so that it will flow downward, and, in connection with this, of a jet apparatus by which this melted sulphur is forcibly discharged through the suitable nozzle, being thereby reduced to an impalpable powder or dust.

Referring to the accompanying drawing for a more complete explanation of my invention, the figure is a vertical section of an apparatus suitable for the purpose.

A represents a funnel-shaped hopper or receiver, into which sulphur may be placed in the crude or any suitable form, and around the exterior of this receiver is fitted a jacket, B, into which steam is admitted through a pipe, C, from the boiler D. The steam is preferably admitted at the upper end of the jacket, and the lower end of the jacket may be connected with the boiler by pipe E, so that the water of condensation will be returned through this pipe to the boiler without other mechanism.

The lower end of the cone or receiver has a passage and a valve, F, by which the flow of the material from the receiver is regulated. A horizontal tubular chamber, G, is fixed to the bottom of the discharge-tube, and upon one end is a conical or contracted nozzle, H, through which the material passing from the receiver into the chamber G may be discharged. In the opposite end of this chamber a tube, I, is led from the boiler, and the tube or connecting-nozzle extends forward to a point near the discharge-nozzle H of the outer chamber, before described.

The steam from the boiler entering the chamber around the receiver melts the sul-

phur placed within it, and at a pressure of about sixty pounds of steam the temperature will be sufficient to reduce the sulphur to a liquid and easily-flowing condition. It passes downward from the receiver through the regulating-cock F into the exterior chamber, G, and from this is blown out by a jet of steam or hot air, in the manner of an injector, being reduced by this action to an excessively fine and impalpable powder, which is at the same time chemically pure.

I do not wish to limit myself to the particular form of apparatus here described, as it may be made in various ways, the atomizing of the sulphur by a blast being the essential feature of my invention. If desired, it may be applied directly to the vines or plants where it is necessary to use sulphur as a dressing or application by having a small boiler and apparatus which can be carried around through the field for the purpose.

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

1. The means herein described for atomizing sulphur or reducing it to an impalpable powder without change of condition, consisting of a receptacle or chamber wherein the sulphur may be first reduced to a liquid form, and a discharge-passage with a cock through which the sulphur is allowed to escape therefrom, in combination with a jet, whereby the sulphur may be blown out, atomized, and deposited, substantially as herein described.

2. The sulphur-receiving chamber or receptacle and the surrounding steam-chamber, in combination with a boiler having pipes opening into the upper and lower portion of the steam-chamber of the receiver, a discharge-cock from the receiver, and the chamber with the nozzle, into which the sulphur is received, together with the hot-air or steam pipe passing through said chamber, substantially as herein described.

In witness whereof I have hereunto set my hand.

HENRY L. LIGHTNER.

Witnesses:

S. H. NOURSE,
H. C. LEE.