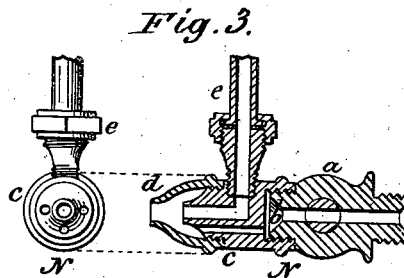
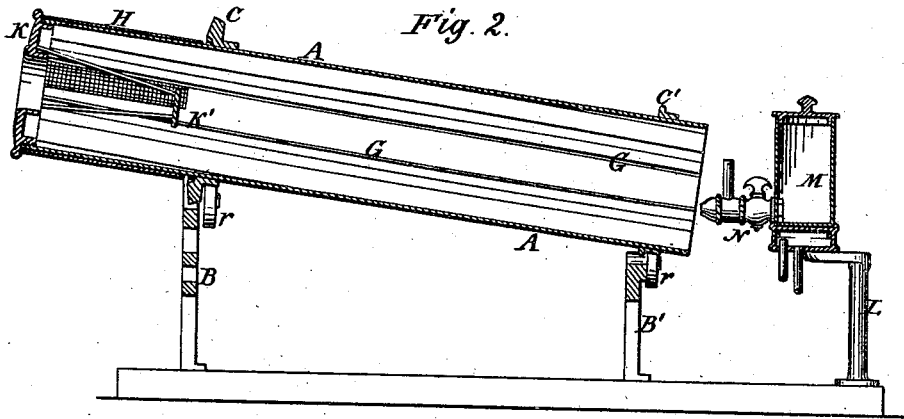
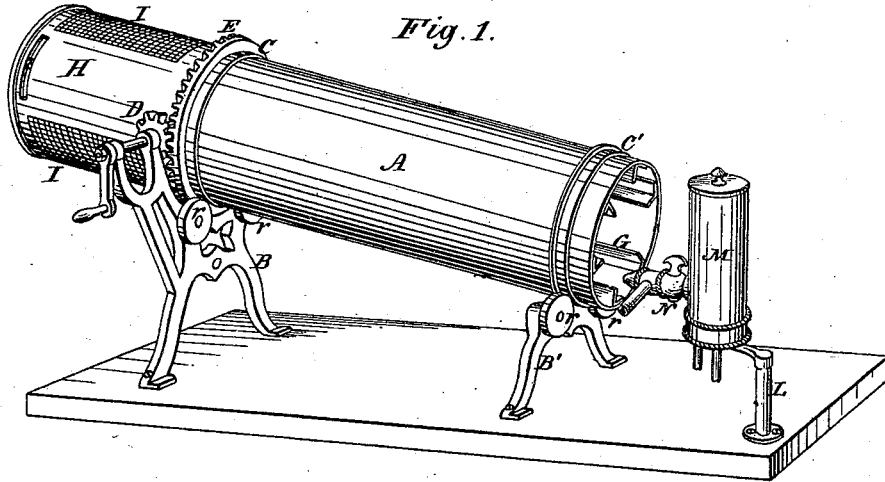


J. SMITH & C. R. MESSINGER.
TOBACCO SPRAYING APPARATUS.

No. 187,187.

Patented Feb. 6, 1877.



Attest:
Oswell A. Dick
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Inventors
Jonathan Smith & Charles R. Messinger
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UNITED STATES PATENT OFFICE.

JONATHAN SMITH AND CHARLES R. MESSINGER, OF TOLEDO, OHIO.

IMPROVEMENT IN TOBACCO-SPRAYING APPARATUS.

Specification forming part of Letters Patent No. **187,187**, dated February 6, 1877; application filed January 8, 1877.

To whom it may concern :

Be it known that we, JONATHAN SMITH and CHARLES R. MESSINGER, both of Toledo, Ohio, have invented certain new and useful improvements in apparatus for distributing liquids through tobacco, of which the following is a specification :

Letters Patent of the United States were heretofore issued to us on the 25th of January, 1876, No. 172,666, (reissue No. 7,195), for a method of atomizing or spraying liquids, for the purpose of moistening tobacco. In said patent the apparatus then proposed to be used is indicated, but actual use disclosed and experience showed certain imperfections or defects in the operation, which it is the object of our present invention to avoid and remedy.

The general object of the apparatus herein shown will be understood by reference to said patent. It is therefore only necessary here to give a full, clear, and exact description of the manner in which the said machine is constructed and operated. The main part of the machine consists of a cylinder, A, of suitable dimension, held and supported in an inclined position, as shown in Figures 1 and 2, by means of a frame or standards, B B'. The cylinder, being intended to be revolved, is provided with flanged hoops or rings C C', which rest upon the tread or periphery of friction-rollers *r*, which freely revolve in or on the standards B B'. Revolution is imparted to the cylinder by means of the pinion D, which meshes in with a gear-wheel or hoop, E, fast on the cylinder. The said toothed hoop may be formed upon the rear end of the flange of the hoop C, as shown in the drawings. Internally the cylinder is provided with several flanges, G G, preferably twisted or spiral, the object of which is to properly agitate, dress, and loosen the tobacco, thus rendering it more susceptible to the action of the sprayer as it is conveyed from the upper to the lower or delivering end of the cylinder. The upper or receiving end of the cylinder is slotted in that portion which is in rear of or above the flanged hoop C. Over this end of the cylinder fits—to be capable of sliding upon it—a cap, H, composed, first, of a closely-fitting cylinder similarly and correspondingly slotted with the

main cylinder A, but having the slots or openings covered with wire-gauze, I, of suitable mesh; secondly, of a head-piece, K, having an opening in the center through which the tobacco is to be fed into the cylinder; and, thirdly, of a second head, K', held by means of rods at suitable distance from and in the axis of the head K, of such diameter as to properly deflect the tobacco and to pass it upon the flanges of the cylinder. By this arrangement, and by simply turning the outer cylinder, the openings in the upper cylinder may be closed or opened, or the openings may be regulated at will, to control and regulate the quantity of shorts, or fine dust, which is to be separated from the fine-cut tobacco while passing through the cylinder.

At the lower or discharge end of the cylinder is held, at the proper height upon a standard, L, a vessel or can, M, which contains the glycerine or other liquid material desired to be embodied with the tobacco, for the purpose of sweetening, moistening, or flavoring the same.

Into the lower end of the can M is screwed or otherwise secured a combined faucet steam or air atomizer, N, of a peculiar construction. (Shown on an enlarged scale in Fig. 3, in two views, being a longitudinal section and a front end view of the atomizer with the nozzle removed.) This combined faucet and atomizer is composed of four parts, viz :

First, the faucet proper, *a*, having two screw-threaded ends, one of which fits into the can, while the other fits into the body of the atomizer. It is centrally bored through, so as to form a channel, and a (one or two way) cock is applied to establish or intercept the flow of liquid through it. A small chamber, *b*, is also formed in the forward end around the channel or bore.

Second, the body of the atomizer *c*. This is pierced throughout its length by small channels, which communicate with the chamber *b*, in the faucet *a*. It is also centrally perforated to a certain depth, to communicate with another perforation or channel at right angles to it.

Third, the nozzle-piece *d*, which forms a chamber around the forward end of the body of the atomizer *c*, is screwed onto it, so that

it shall be concentric with it, its opening corresponding or being in line with the opening in the body of the atomizer; and,

Fourth, the steam or air pipe connection *e*, which is screwed into the body of the atomizer so that its opening shall be in line with the perforation or channel in the atomizer, which is at a right angle to its main or central perforation.

From this description the operation will be understood: that, upon turning the cock, the liquid in the can will pass into the chamber *b* in front of the part *a*, and is, by means of the several small channels in the body of the atomizer, permitted to trickle through into the recess or chamber formed in the nozzle-piece *d*, where it comes in contact with the steam or air which is admitted through the pipe *e*, between the first and second recesses or chambers in center of the cylinder, and is forced into the conical-shaped nozzle, from the mouth of which it is sprayed in a fine mist and in requisite quantity upon the tobacco.

The vessel or can containing the liquid is supported on a stand, and to this stand is attached a hollow steam-pan, to which are connected two steam-pipes at the bottom, one to admit the steam and the other to permit the condensed water to pass away. The object of this steam-pan is to heat or warm the liquid material used.

The apparatus we have described, it will be seen, accomplishes one great end, and that is, the body of the liquid does not come in contact with the steam or air except in such reduced quantity and at such a point as will insure its being constantly and perfectly taken up by and diffused through the gaseous or aeriform fluid, and therefore not capable of condensation or being conveyed in quantities to unduly humectate the tobacco to be operated upon.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with an atomizing apparatus, of a cylinder revolving upon an inclined axis, through which the tobacco to be treated is passed, substantially as shown and described.

2. The construction of the revolving cylinder, as shown and described—that is to say, provided with internal flanges and a central deflector for the purpose of properly agitating the tobacco while being fed through the cylinder.

3. The construction of the cylinder with a feed-head, having adjustable openings to regulate the separation of shorts from fine-cut tobacco, substantially as set forth.

4. The apparatus for supplying liquid to be atomized in quantities and at a point or points relatively to the air or steam jet, so that the same may be taken up and diffused in requisite quantities, substantially as herein shown and described.

5. The combination in one apparatus of the following elements: first, the faucet to regulate the quantity of liquid delivered to the atomizer; second, the atomizer provided with channels to convey the liquid supplied by the faucet; and, third, a chamber to hold the liquid to be atomized; the whole being constructed and arranged for joint operation, substantially as shown and described.

In testimony whereof we have hereunto signed our names this 19th day of December, A. D. 1876.

JONA. SMITH.
C. R. MESSINGER.

Witnesses:

J. J. GRAHAM,
O. K. SLOVER.