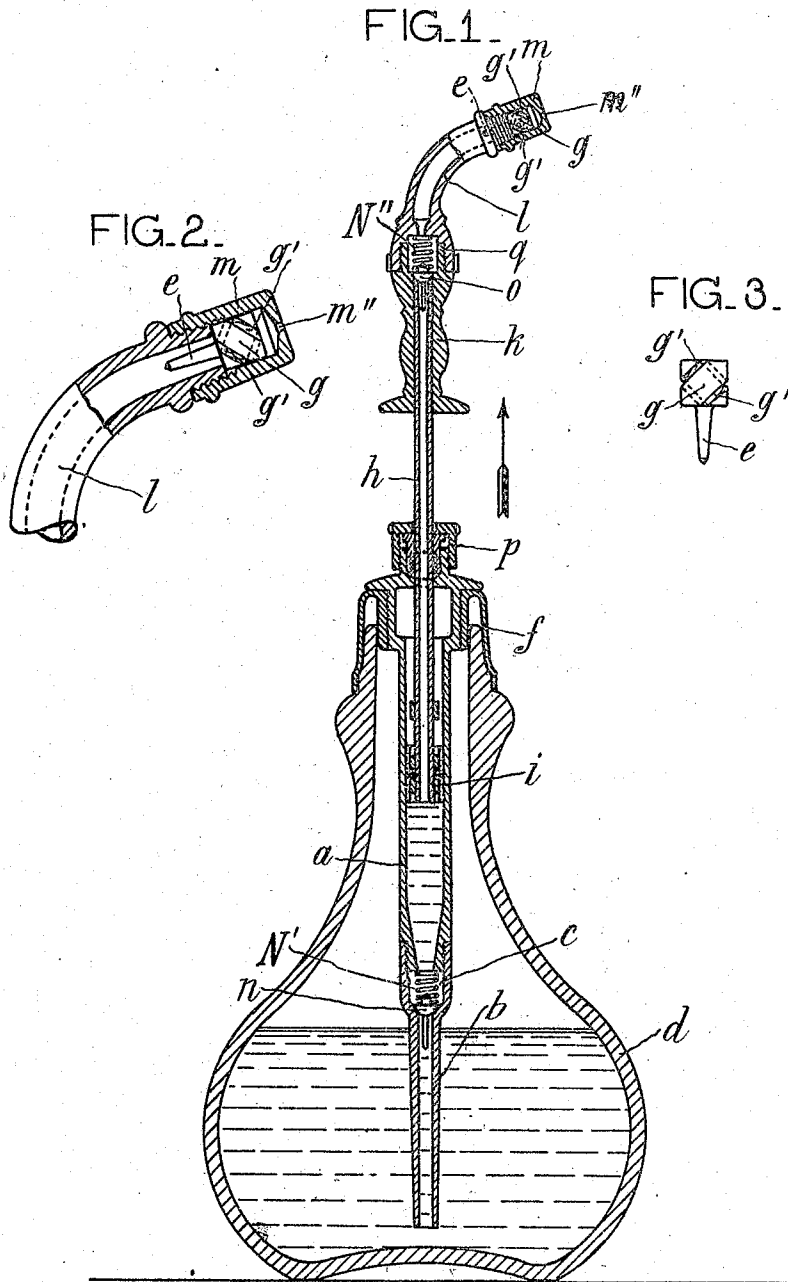


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 ATOMIZER FOR PERFUMES AND OTHER LIQUIDS.
 APPLICATION FILED NOV. 22, 1907.

932,718.

Patented Aug. 31, 1909.



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UNITED STATES PATENT OFFICE.

HARRY RACHMANN, OF HAIDA, AUSTRIA-HUNGARY.

ATOMIZER FOR PERFUMES AND OTHER LIQUIDS.

932,718.

Specification of Letters Patent. Patented Aug. 31, 1909.

Application filed November 22, 1907. Serial No. 403,344.

To all whom it may concern:

Be it known that I, HARRY RACHMANN, a subject of the Emperor of Austria-Hungary, residing at Haida, in the Kingdom of Bohemia and Empire of Austria-Hungary, have invented new and useful Improvements in Atomizers for Perfumes and other Liquids, of which the following is a specification.

My invention relates to improvements in atomizers for perfumes and other liquids, whereby a most thorough division and an exceedingly fine atomization of the liquid jet leaving the mouthpiece can be attained with certainty.

The invention consists of an atomizing device which comprises a cylindrical mouthpiece closing the delivery tube and provided with a central hole, and a cylindrical rotary distributor mounted in the mouthpiece to turn and to longitudinally shift and provided with one or several spiral grooves, so that it can be put into a rapid rotation by the longitudinal pressure of the liquid passing through the delivery tube and the said spiral grooves.

I will now proceed to describe my invention with reference to the accompanying drawing, in which—

Figure 1 is a vertical longitudinal section through an atomizer of a known construction and provided with the new atomizing device, Fig. 2 is a vertical longitudinal section on an enlarged scale through the atomizing device, part of the bent delivery tube being shown in elevation, and Fig. 3 is an elevation of the rotary distributor alone.

Similar letters of reference refer to similar parts throughout the several views.

The known atomizer shown comprises a vessel *d* with a sucking-and-forcing pump of the following construction. On the neck of the vessel *d* is fastened in any known manner an annular metallic piece *f* in which a cylinder *a* can engage by means of a screw-thread or the like. The lower end of the cylinder *a* is shown as connected with a suction tube *b* by means of a screw-thread, a valve-chamber *c* being provided between them for a suction valve *n*, which is normally pressed on its seat by a helical spring *N*¹. A hollow piston *i* reciprocating in the cylinder *a* is rigidly connected with a hollow piston-rod *h*, which passes through a suitable stuffing-box *p* and has on its upper end a metallic handle *k* fastened by soldering or the like. The handle *k* is adapted to be

connected with a bent delivery tube *l* by means of a screw-thread and a valve-chamber *q* is provided between them for a delivery valve *o* which is normally pressed on its seat by a helical spring *N*¹. The upper end of the bent delivery tube *l* is connected by means of a screw-thread with a cylindrical mouthpiece *m* which is provided with a central hole *m*¹. A rotatory cylindrical distributor *g* (see Fig. 3) is mounted in the cylindrical mouthpiece *m* to turn and to shift a little in the longitudinal-direction. It is shown as provided with two spiral grooves *g*¹ *g*¹ which extend from one end to the other end. Preferably the distributor *g* is provided with a needle *e* which extends into the end of the bent tube *l* and leaves an annular space for the liquid, so that the latter is pushed to the periphery of the area of the tube *l*. The bottom of the mouthpiece *m* is made conical to enable the liquid to get through and to escape from the central hole *m*¹. It is the rotatory distributor *g* by means of which the division and the exceedingly fine atomization of the liquid is attained, as will be hereinafter explained.

The atomizer described operates as follows: The cylinder *a* is unscrewed and the vessel *d* is filled with a perfume or other liquid, after which the cylinder *a* is replaced. By moving the handle *k* upward in the direction of the arrow in Fig. 1 the piston *i* is drawn so that it sucks liquid through the suction tube *b* and the opened suction-valve *n* into the cylinder *a*, while the delivery-valve *o* remains closed under the pressure of its spring *N*¹. By pushing the handle *k* downward the piston *i* is caused to force the liquid out of the cylinder *a* through the hollow piston rod *h*, the opened delivery valve *o*, the bent delivery tube *l* and the mouthpiece *m*. The liquid passing through the spiral grooves *g*¹ *g*¹ of the distributor *g* will by reason of its axial pressure put the distributor *g* into a rapid rotation, which motion is then transmitted to the jet leaving the central hole *m*¹, so that thereby an exceedingly fine and hitherto not attained atomization of the liquid is obtained.

As will be seen from the drawing the front and rear faces of the distributor *g*, are made flat, while the inner surface of the end of the mouth piece immediately surrounding the central delivery hole *m*¹ is concave, and the liquid sent whirling into this cavity will cause the distributor to be

balanced in the liquid so as to rotate without other than liquid friction.

The atomizing device described may be varied in many respects without departing from the spirit of my invention. The number of the spiral grooves g^1 in the rotatory distributor g may be increased or reduced.

I claim:

1. An atomizer comprising a delivery tube, a mouthpiece closing the end of said delivery tube and provided with a central delivery hole, and a rotatory distributor mounted in said mouthpiece provided with a central needle extending back into the end of the delivery tube, said distributor having on its outside spiral grooves which extend from one end to the other end.

2. An atomizer comprising a delivery tube, a cylindrical mouthpiece closing the end of said delivery tube and provided with a central delivery hole, and a cylindrical distributor mounted in said cylindrical mouthpiece adapted to longitudinally shift and to rotate and provided with a central needle extending into the end of said deliv-

ery tube, said distributor having on its periphery spiral grooves which extend from one end to the other end.

3. An atomizer comprising a delivery tube, a cylindrical mouth-piece closing the end of said delivery tube and provided with a central delivery hole, and a cylindrical distributor mounted in said cylindrical mouth-piece adapted to longitudinally shift and to rotate and provided with a central needle extending into the end of said delivery tube, said distributor having on its periphery spiral grooves which extend from one end to the other end, the inner surface of the outer end of the mouth-piece being concaved, and the abutting face of the distributor being flat-faced.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY RACHMANN.

Witnesses:

FRANZ SIMON,

CHARLES JEDITSCHER