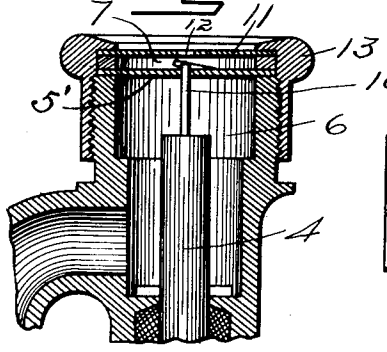
No. 836,931. PATENTED NOV. 27, 1906.

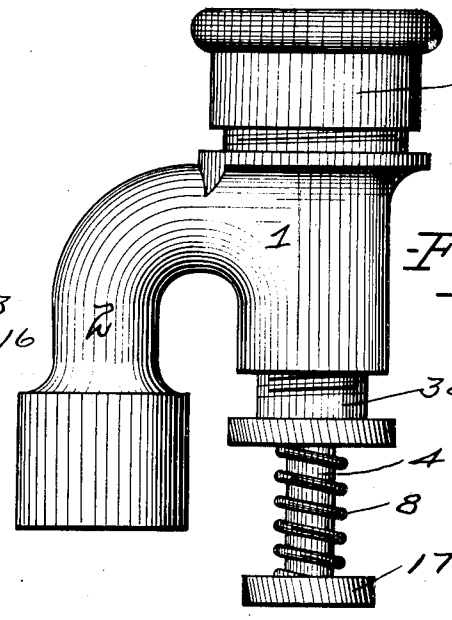
C. A. KOEPNICK.

SPRAYING NOZZLE.

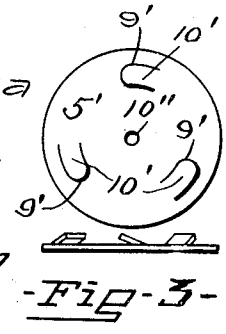
APPLICATION FILED FEB. 19, 1906

-Fig-2-





-Fig-1-



-Fig-3-

Witnesses:
Matthew Sibler
E. M. Theobald.

Inventor
C. A. Koepnick
By- R. J. McCarty
his
Attorney

UNITED STATES PATENT OFFICE.

CHARLES A. KOEPNICK, OF DAYTON, OHIO, ASSIGNOR TO F. J. McCORMICK, OF DAYTON, OHIO.

SPRAYING-NOZZLE.

No. 836,931. Specification of Letters Patent. Patented Nov. 27, 1906.

Application filed February 19, 1906. Serial No. 301,734.

To all whom it may concern:

Be it known that I, CHARLES A. KOEPNICK, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Spraying-Nozzles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in spraying-nozzles, and possesses the novel characteristics and the advantages hereinafter described and claimed.

In the drawings annexed hereto, Figure 1 is a side elevation of the improved nozzle detached. Fig. 2 is a sectional view of the same with parts broken away. Fig. 3 is a detached plan view and side elevation of the inner diaphragm.

In a detail description of the invention similar reference characters indicate corresponding parts.

The nozzle-casing 1 has a branch 2, by which it is united to a hose or other medium of inlet for the liquid to be introduced to said nozzle. Passing upwardly through an end of said casing and a suitable stuffing-box located therein is a stem 4, the end of which has a flange 17, between which and the end of the nozzle a spiral spring 8 is placed around the exposed end of the stem to normally hold said stem in the position shown in the drawings. The stem has upon its inner end a needle 16, to be again referred to. The end of the nozzle is closed by a screw-threaded plug 3^a, through which the stem passes.

At the discharge end of the nozzle there is a thin metallic disk or diaphragm 5′, which has a central orifice 10″ and a series of radial orifices 9′, which are formed by providing a series of tapered tongues 10′, which are stamped from the diaphragm and which provide a series of deflecting-surfaces to cause the liquid entering the orifices to be thrown laterally against an outer diaphragm 11. These two diaphragms 5′ and 11 provide a vortex-chamber 7, into which the liquid is thus discharged to impact with the diaphragm 11. These two diaphragms are maintained in position in the mouth of the nozzle by means of a cap 13, which screws onto the exterior of the nozzle and is open to expose the diaphragm 11. The said diaphragm has a central orifice 12, which is in alinement with the orifice 10″ of the inner diaphragm 5′. The needle 16 is movable through the orifice 10″ and the orifice 12, the latter orifice being the spraying-outlet through the diaphragm 11. The orifices are thus kept open and free from any accumulations which may tend to close the spraying-orifice 12.

I claim—

In a spraying-nozzle, a casing, a spraying disk or diaphragm having a central orifice and located in the discharge end of the nozzle, a disk or diaphragm located adjacent to said spraying-disk and providing a vortex-chamber between the two disks or diaphragms, said last-named disk or diaphragm having a series of radial apertures concentric to the central orifice, said radial apertures having overlying portions on their outer sides which deflect the outgoing liquid in planes tangential to the plane of the disk.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES A. KOEPNICK.

Witnesses:

CAROLYN M. THEOBALD,

MATTHEW SIEBLER.