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F. W. BOYER  
NONCLOGGING SPRAY NOZZLE  
Filed Sept. 22, 1923

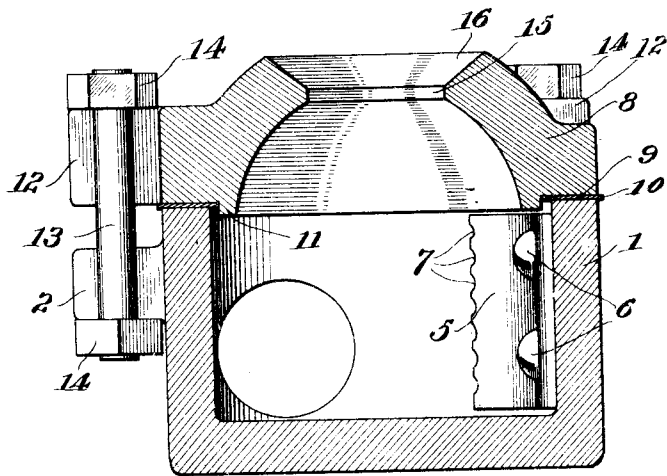
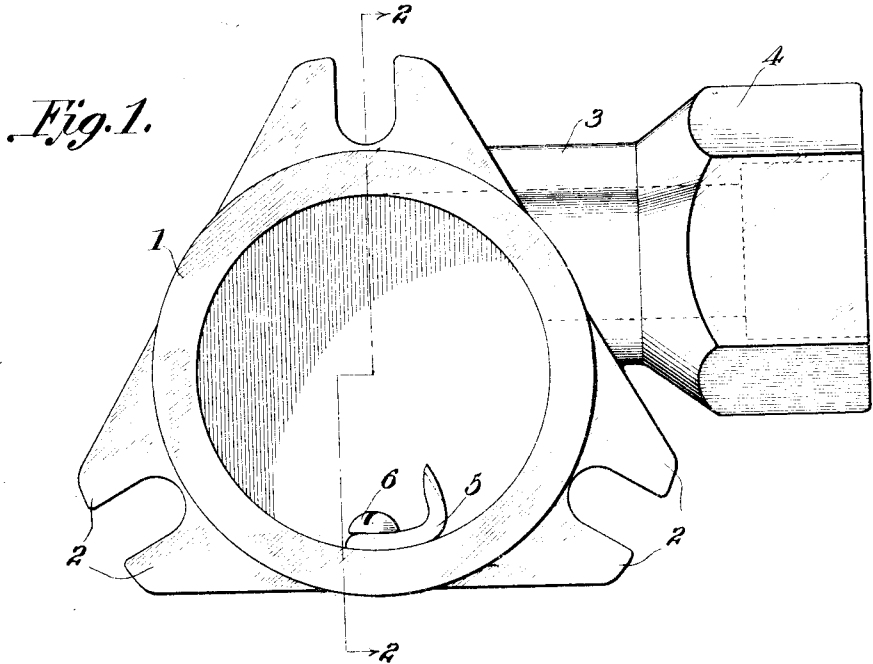


*Fig. 2.*

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## UNITED STATES PATENT OFFICE.

F. WALTER BOYER, OF WADSWORTH, OHIO.

## NONCLOGGING SPRAY NOZZLE.

Application filed September 22, 1923. Serial No. 664,304.

*To all whom it may concern:*

Be it known that Dr. F. WALTER BOYER, citizen of the United States, residing at Wadsworth, in the county of Medina and State of Ohio, has invented certain new and useful Improvements in Nonclogging Spray Nozzles; and he does hereby 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.

This invention relates to improvements in non-clogging spray nozzles and more particularly to a centrifugal form of nozzle, which will be used for handling sewerage and disposing of the same by spraying in process of aeration.

An object of the invention is to provide a two-piece non-clogging spray nozzle which will preferably be used for handling sewerage and disposing of the same by spraying in the process of aeration, but which also may be used efficiently in connection with cooling hot water from condensers, breaking up deep well water into fine spray to liberate the iron therefrom by bringing the same into contact with the oxygen of the air, and many other purposes.

Another object of the invention is to provide a non-clogging spray nozzle for use in handling sewerage and disposing of the same by spraying in the process of aeration, and providing a removable knife or baffle having a serrated edge within said nozzle for breaking up any particles in the liquid so that the same will readily be discharged through the orifice in the nozzle.

A still further object of the invention is to provide a suitable two piece nozzle for use in disposing of sewerage by the aeration process, which will be highly efficient in operation and quite inexpensive to manufacture.

Other objects will appear as the description proceeds.

In the accompanying drawings which form a part of my application,

Fig. 1 is a plan view of my improved nozzle with the top or cap member removed therefrom.

Fig. 2 is a sectional view taken on the line 2-2 of Fig. 1, and showing the top or cap member in section and in its operative position.

Like characters of reference are used throughout the following specification and

the accompanying drawings to designate corresponding parts.

The main body portion 1 of the nozzle is substantially cup shaped and is provided with spaced laterally extending bifurcated ears and an integrally formed water inlet tube or pipe 3 which is attached to the body portion at a tangent. The outer end of the tube or pipe 3 is provided with a coupling 4 to be attached to the supply line through which the sewerage will be discharged.

A curved inwardly projecting knife or baffle 5 is attached to the inner wall of the main body portion 1 and is securely held in position by means of the screws 6. The forward edge of the knife 5 is serrated as at 7 so as to provide a plurality of teeth for more efficiently breaking up the sewerage.

A detachable dome shaped cap member 8 is provided at its lower edge with an annular seat 9 which is adapted to engage and seat upon a washer 10 on the upper annular surface of the body portion 1. The cap member 8 is also provided at its inner portion with a downwardly extending annular rim 11 which is adapted to seat down on the inside of the annular wall of the body 1 so as to properly position the cap member with respect thereto. The cap member 8 is provided with a plurality of integrally formed radially extending spaced bifurcated ears 12, which are adapted to be aligned with the bifurcated ears 2 and to be held in that position by means of the bolts 13 which extend into and between the bifurcations, and the locking nuts 14.

A restricted orifice 15 is formed adjacent the upper end of the cap member 8. The wall of the cap member is flared outwardly as at 16 from the orifice 15 to the outer edge of said cap member to allow the spray to spread out as it passes through the nozzle.

From the foregoing description it will be apparent that when the nozzle is attached to the discharge pipe line, the sewerage will enter the nozzle at a tangent and sweep around the curved inner wall until it impinges against the serrated edge 7 of the knife or baffle 5 which will break up any particles of the sewerage so that the same will readily pass up and through the orifice due to the centrifugal whirl of the said sewerage.

The dome shaped formation of the inside of the wall of the cap member 8 and the flared wall on the outside of the orifice 15

provides for the wide spraying of the sewerage to be aerated in a highly efficient manner.

Many minor changes in detail of construction may be resorted to without departure from the spirit of the invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

10 1. A spray nozzle for disintegrating sewerage and the like comprising a cylindrical body part having a tangential inlet connection, a serrated blade inwardly directed from its inner wall, and a plurality of outwardly  
15 directed lugs arranged in pairs, and a dome-shaped cover member having a restricted

discharge orifice and a plurality of outwardly directed lugs arranged in pairs and adapted to seat over the similar lugs on the body part with bolts adapted to seat between  
20 said lugs to secure said top to the body part.

2. A spray nozzle comprising a chamber having a restricted discharge orifice and an inlet orifice transversely thereto, and a baffle within said chamber against which the  
25 incoming fluid will impinge, said baffle comprising a vertically disposed serrated blade arranged radially at one side of the inlet orifice.

In testimony whereof I affix my signature.

DR. F. WALTER BOYER.