To all whom it may concern:

Be it known that I, ERNEST E. CLEVELAND, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Hydraulic Air-Ejectors, of which the following is a specification.

The present invention provides means for creating a positive circulation of air and utilizing liquid as the motive agent, the device being primarily intended for use in vacuum cleaners, but which may be used to advantage on water cooling condensers or other devices requiring an ejector or device of the twyer type.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawing, and pointed out in the appended claim.

Referring to the drawing, forming a part of the specification, Figure 1 is a vertical section of an ejector embodying the invention. Fig. 2 is a top plan view thereof. Fig. 3 is a horizontal section, on the line $a-a$ of Fig. 1. Fig. 4 is an elevation of the device having the spud or coupling end on the near side.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawing, by the same reference characters.

The body of the device is indicated at 1 and is hollow consisting of a cylindrical casing. A spud or coupling end 2 is formed upon one side of the body near an end thereof and is designed to have the hose pipe or flexible tube connected thereto. A ring 3 is fitted to the lower end of the body and forms a nozzle. A threaded opening 4 is formed in the upper end of the body and affords means for connecting the same to a hydrant or other water fixture. A shell 5 is arranged within the body 1 and has connection with the end thereof in which the threaded opening 4 is formed. The shell 5 terminates within the body a distance from the discharge end of the ring or nozzle 3 and has an opening 6 formed therein. The inner portion of the opening 6 is of uniform diameter, whereas the outer portion flares. A spreader 7 of conical form has a threaded stem 8, which is mounted in an opening formed in a cross piece 9 supported within the lower end of the shell 5. The taper of the spreader 7 corresponds with the flare of the opening 6. The spreader may be adjusted to regulate the effective size of the annular space formed between the spreader and the outer wall of the opening 6.

In practice a hose pipe or rubber tube is fitted to the spud or coupling end 2 and has the vacuum cleaning appliance of any kind 65 connected thereto. The body or shell 1 is coupled to a hydrant or other water fixture and the water passing through the shell 5 and through the annular space 6 is spread outwardly and discharging through the 70 nozzle or ring 3 creates a suction through the body 1, spud 2 and hose pipe coupled thereto. It is noted that the air entering the body through the spud or coupling end 2 travels through said body in a direction 75 parallel with the flow of the water through the shell 5, thereby offering a small amount of resistance. When the water and air escape from the nozzle or ring 3 the friction is relieved. This is made possible because the device may be attached to the spigot of a kitchen sink, or to the spigot of a wash basin or bath tub. The water escaping from the device passes off through the waste attached to the sink or to the toilet fixture, 85 thereby avoiding the necessity of piping the water to a sewer drain. When used in connection with vacuum cleaning apparatus the device provides a simple and effective means for creating a positive circulation to carry off the dust and other foreign matter. It is obvious that the construction provides an appliance which may be used for a variety of purposes where a positive circulation is desired.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claim appended hereto.

In practice the nozzle 3 may be formed...
integral with the body or casing 1, or may be provided in any manner as found most convenient and advantageous.

Having thus described the invention what is claimed as new, is:

A device of the character stated comprising concentric shells having connection at one end, said end having a threaded opening in line with the inner shell and the outer shell having a spud at the end connecting the two shells, the inner shell having its opposite end formed with a flared opening and provided near its extremity with a cross bar, a nozzle fitted to the delivery end of the outer shell, and conical spreader having screwthread connection with the cross bar of the inner shell.

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

ERNEST E. CLEVELAND.

Witnesses:
E. A. ATKINSON,
H. S. TREWORY.