

H. A. JEFFERY.
VACUUM PRODUCER.
APPLICATION FILED AUG. 11, 1911.

1,035,880.

Patented Aug. 20, 1912.

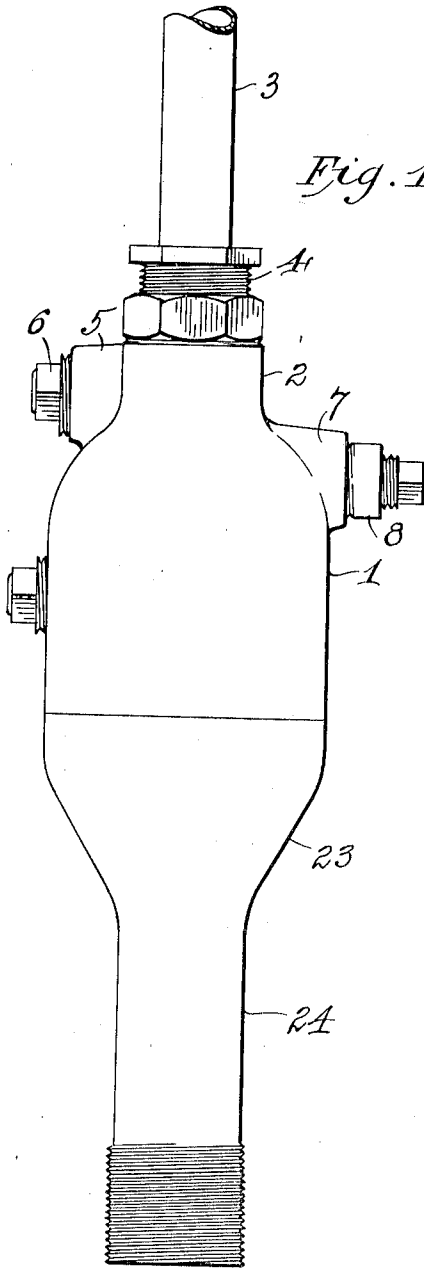


Fig. 1.

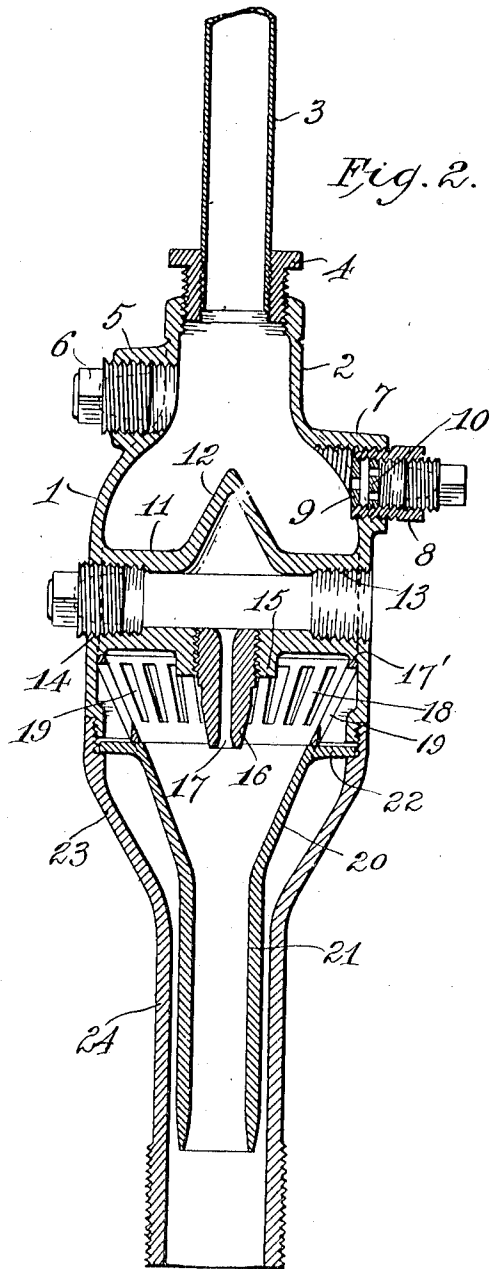


Fig. 2.

Witnesses:
A. L. Lord.
C. H. Trench

Inventor.
Harry A. Jeffery
By B. W. Brockitt.
Att'y.

UNITED STATES PATENT OFFICE.

HARRY A. JEFFERY, OF CLEVELAND, OHIO.

VACUUM-PRODUCER.

1,035,880.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed August 11, 1911. Serial No. 643,524.

To all whom it may concern:

Be it known that I, HARRY A. JEFFERY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vacuum-Prod-
5 ucers, of which the following is a specification.

This invention relates broadly to vacuum
10 producing devices and is particularly designed for use for cleaning purposes.

More specifically the invention relates to a vacuum producing device comprising a
15 suitable casing provided with a water jet or nozzle which coöperates with a down tube and a second down tube surrounding the first mentioned down tube and adapted to draw air through a suitable air pipe and deliver the same to any desired point of dis-
20 charge.

The invention may be further briefly summarized as consisting in the construction and combination of parts hereinafter set forth in the following description, drawings
25 and claims.

Referring to the drawings, Figure 1 represents a side elevation of the device; and Fig. 2 is a vertical section.

In carrying out the invention any preferred form and construction of parts may be employed so long as they possess the necessary characteristics, but I have shown one form in the drawings which is highly effective in operation, and in such embodiment,
30 1 represents a main casing member having an upwardly extending shank 2 which is adapted to be connected with a suitable air pipe 3, a bushing 4 being arranged between the two. This casing is also provided with
35 a hollow internally threaded nipple 5 which may be closed by a suitable plug 6 but which furnishes means for obtaining access to the inner part of the casing 1. The casing 1 is still further provided with a nipple 7 which
40 receives any suitable water spraying device comprising in this instance a casing 8 adapted to be threaded into the nipple 7 and provided with a plug 9 having a central orifice and another plug 10 spaced therefrom, and
45 within the casing and provided with two openings converging toward the orifice but which discharge against the flat face of the plug 9. This spraying device is connected to a source of water supply, not shown, and
50 is utilized for cleaning the inner part of the casing 1.

Mounted within the main casing 1 and preferably forming a part thereof is a transverse water supply member 11 having
55 an upwardly extending point 12 for spreading the incoming stream of air. This member opens out at both ends through the sides of the casing and is internally threaded at 13 and 14, as shown, for water connections. This member is still further provided with
60 a downwardly extending nipple 15 adapted to receive a jet or nozzle 16 provided with a suitable orifice 17. The inner wall of the casing 1 below the transverse water supply member 11 is provided with an annular
65 shoulder 17' against which a separating cone 18 is seated. This cone is provided with air openings 19 permitting the air from the upper part of the casing 1 to pass out around the separating cone, for a purpose to be de-
70 scribed. This separating cone is held in place upon its seat by means of a main air and water discharge member comprising a conical portion 20 forming substantially a continuation of the separating cone 18 and
75 merging into a down pipe 21 of a suitable length to create a suction in the main casing 1 by the action of the discharge of water in the tube from the nozzle 16. This main water and air discharge member is held in
80 place by ears 22, preferably three in number, adapted to be engaged by a conical shaped lower casing member 23 which screws upon the outside of the main casing
85 1. This conical casing member 23 merges into a down pipe portion 24 which surrounds the down pipe portion 21 and is spaced therefrom. The down pipe portion 24 is preferably longer than the portion 21 and the action of the device is such that the
90 downward movement of the air and water through the down pipe 21 creates a suction on the outside of this down pipe portion 21 and into the down pipe portion 24, thus drawing the air which passed through the
95 opening 19 of the separator cone 18, out through the down pipe 24.

By the use of the double down pipe construction with the separator the device produces a very effective degree of vacuum and
100 with a large air volume displacement.

Having described my invention, I claim:—

1. In a vacuum producer, a casing split transversely forming upper and lower por-
110 tions, means for securing said portions together, an annular shoulder carried by each

portion, an internal down pipe member mounted within the lower portion and having a conical upper portion provided with a projecting part engaging upon the annular shoulder of the lower portion, a perforated conical member forming a continuation of the conical portion of the down pipe member and engaging the edge of the same, said cone engaging at its upper edge under the shoulder carried by the upper portion, a liquid inlet extending inward from the side of the upper member and provided with a nozzle extending into the perforated conical member, and a suitable air inlet member connected to the upper portion of the casing.

2. In a vacuum producer, a casing split transversely, forming upper and lower portions, means for securing said portions together, an annular shoulder carried by each portion, an internal down pipe member mounted within the lower portion and having a conical upper portion provided with a projecting part engaging upon the annular shoulder of the lower portion, a perforated

conical member forming a continuation of the conical portion of the down pipe member and engaging the edge of the same, said cone engaging at its upper edge under the shoulder carried by the upper portion, a liquid inlet extending inward from the side of the upper member and provided with a nozzle extending into the perforated conical member, a conical projection extending upward from the liquid inlet member for deflecting the incoming air from impinging directly against the liquid inlet member, thereby preventing the collection of dust and dirt upon the same, and a suitable air inlet connected to the upper portion of the casing.

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

HARRY A. JEFFERY.

Witnesses:

A. L. LORD,

C. H. TRESCH.