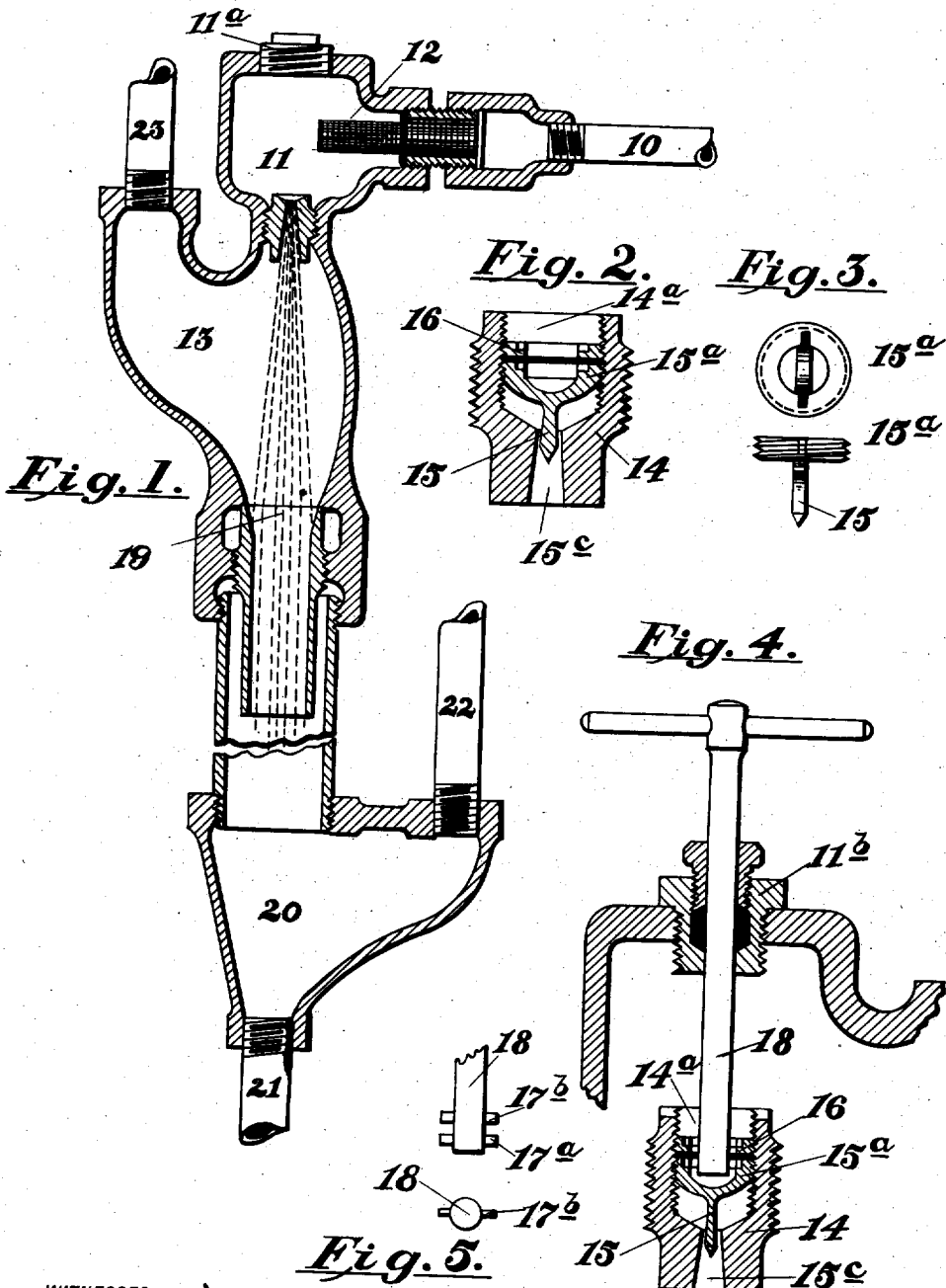


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VACUUM CREATOR.
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1,017,691.

Patented Feb. 20, 1912.



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FRED B. SAUNDERS, OF ORANGE, MASSACHUSETTS.

VACUUM-CREATOR.

1,017,691.

Specification of Letters Patent.

Patented Feb. 20, 1912.

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To all whom it may concern:

Be it known that I, FRED B. SAUNDERS, a citizen of the United States, residing at Orange, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Vacuum-Creators, of which the following is a specification.

The object of this invention is to provide a simple, convenient and cheap power for use with vacuum cleaners of the class now commonly used for removing dirt from dwelling houses, and public buildings, and my present invention consists chiefly in an improved form of vacuum creator that may be attached to an ordinary faucet, or to special bibs or stand-pipes located at convenient points throughout a house.

In order to explain my said invention clearly, I have provided the annexed drawings, in which—

Figure 1 is a longitudinal sectional view of my improved form of vacuum creator showing the same connected to a water service pipe. Fig. 2 is a relatively enlarged, detached, central, vertical, sectional, view of a novel form of sprayer which forms one of the improved features of my said vacuum creator and in Fig. 3 I have shown top and side views of an adjustable plug by means of which I am able to regulate the volume of water passing through said sprayer, according to the pressure of said water, as I shall explain more fully hereinafter. Fig. 4 is provided particularly to explain the manner of adjusting the said plug, and Fig. 5 shows side and end views of the operative end portion of the wrench shown in said Fig. 4.

Referring to these drawings, the numeral 10 indicates a portion of a pipe through which water may be delivered, under pressure, into my improved vacuum creator. Said pipe may be connected with an ordinary faucet located in a kitchen or bathroom or, by preference, it is connected with a stand-pipe extending from cellar to garret and located in some convenient but obscure place, like a closet or clothes-press; such a stand-pipe being provided at each floor with suitable cocks, or other means, whereby my improved vacuum creator may be readily connected with the said stand-pipe. The in-flowing water passes from the pipe 10 into an equalizing chamber 11 and I, preferably, provide a strainer 12 between said pipe and

chamber. Immediately below the chamber 11, as here shown, is the vacuum chamber 13 into which the in-flowing water is introduced, in the form of a spray, by means of an adjustable sprayer which is illustrated in section in Figs. 2 and 4. Said sprayer consists essentially of a centrally bored screw-plug 14 (adapted to be mounted between the chambers 11 and 13) and an adjustable pin 15 by means of which the central passage in the plug 14 may be restricted, or enlarged, in order that the volume of water passing therethrough may be properly regulated to obtain the best spraying effect, according to the pressure of the in-flowing water.

The pin 15 depends from the central portion of a nut 15^a that is fitted to screw into a correspondingly threaded chamber 14^a in the upper portion of the plug 14; the lower portion of said plug being provided with a central opening 15^c whose upper end is slightly larger than the pin 15. From its upper end to its lower end, however, said opening 15^c increases somewhat its area so that, when the pin 15 is screwed downward into said opening, the opening between the pin and the plug 14 increases in area, and thus allows the water to pass therethrough in greater volume. Above the nut 15^a is a check-nut 16 and, by preference, I interpose a non-rotatable separator ring 17 although such a ring is not absolutely essential. The nuts 15^a and 16 are notched internally as at 15^d and 16^a in order to receive the bits 17^a—17^b respectively of a wrench 18 by means of which the nut 15^a may first be adjusted to properly regulate the flow of water through the opening 15^c and the check nut 16 may then be screwed home to prevent the accidental disarrangement of the said pin.

Ordinarily, the chamber 11 is closed by a screw-plug 11^a but when installing my described device and adjusting the pin 15 to obtain the desired spray, I remove the plug 11^a and substitute a temporary plug 11^b having a stuffing box 11^c in which is mounted the wrench 18. After having turned on the flow of water the nut 15^a may be properly adjusted, so as to obtain the best spraying results and the check nut 16 screwed home. The water is then shut off, the temporary plug 11^b is removed and the permanent closure 11^a returned to place, as seen in Fig. 1. At the lower end of the vacuum chamber

13, in opposition to the lower end of the opening 15^c, is a throat 19 into which the sprayed water is discharged; the relative areas of the said opening and throat and the pitch of said opening being such that the major portion of said spray will be discharged directly into the said throat instead of being dissipated against the adjacent (surrounding) wall of the vacuum chamber. By thus regulating the passage of the spray into, and through, the throat I find that I am able to induce and maintain a stronger vacuum in the chamber 13 than if an excessive spray should be discharged into said chamber and partially fill and clog it with water. The throat 19 discharges the sprayed water into a separating chamber 20 from which it (together with any dirt or other foreign matter carried by said water) passes downward to a sewer through a discharge pipe 21 while the air carried by said spray may pass outward through a relief pipe 22. The numeral 23 indicates a nipple to which may be connected a flexible tube or pipe of such length that it may reach to all the rooms that it is desired to clean. When the device is in operation the vacuum maintained in the chamber 13 provides a degree of suction in pipe 23 sufficient to draw in all dirt and other loose foreign matter that comes within the influence of such suction;

the said dirt etc., being then carried downward by the spray, through throat 19, and thence to the sewer, as above described.

I find by actual tests, that my described device creates a sufficient vacuum and suction, when used with a water pressure of 30 pounds or more, to take up all ordinary accumulation of dirt, etc.

The cost of manufacturing and installing said device is reasonably small; it is always ready for immediate service and it may be easily operated by one person.

Having thus described my invention I claim as new and wish to secure by Letters Patent:—

In a vacuum-creator, a suction-chamber, and a sprayer communicating therewith and comprising: a centrally-bored screw-plug, an exteriorly-threaded nut screwed into said plug and carrying a depending pin governing passage through said plug, and an exteriorly-threaded check-nut screwed into said plug above said first mentioned nut and engaging the latter, said nuts being internally notched for engagement with an adjusting-tool.

FRED B. SAUNDERS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."