

J. S. THURMAN.
 SUCTION HEAD FOR VACUUM CLEANING SYSTEMS.
 APPLICATION FILED MAR. 8, 1909.

956,451.

Patented Apr. 26, 1910.

FIG. 1.

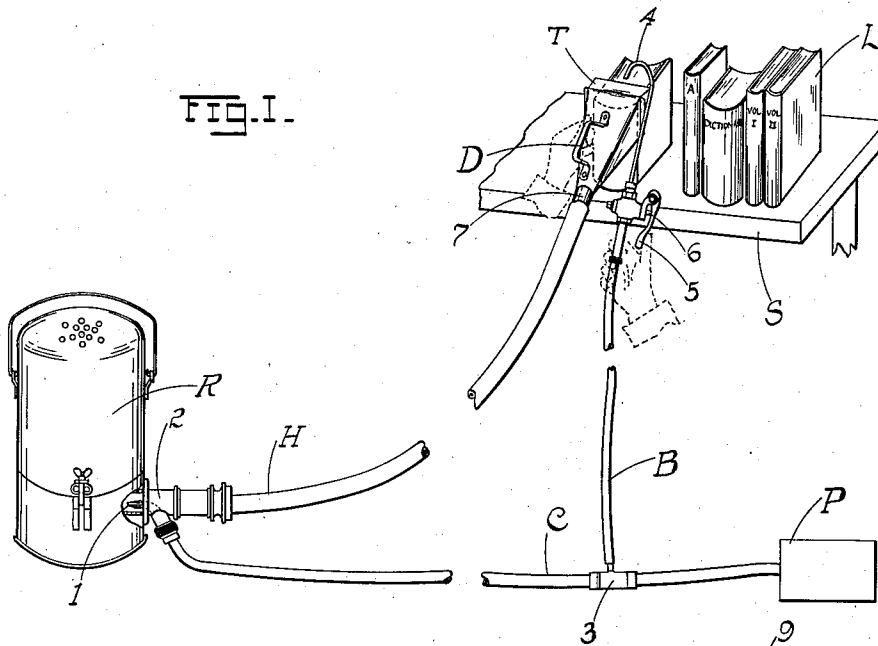


FIG. 2.

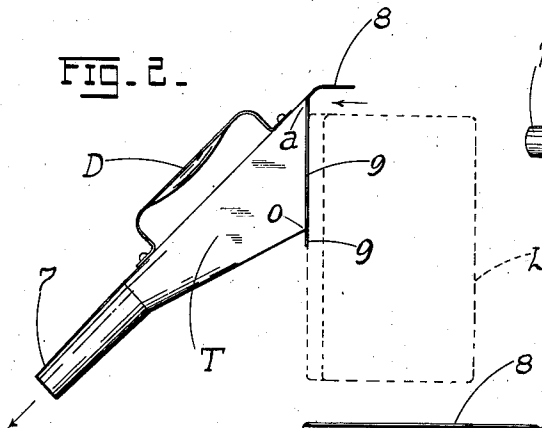


FIG. 3.

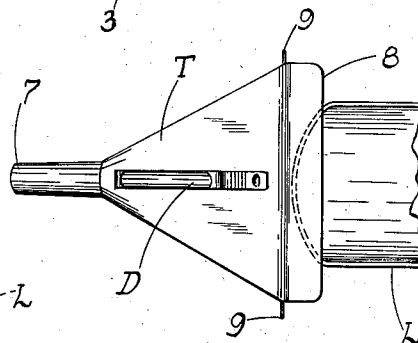
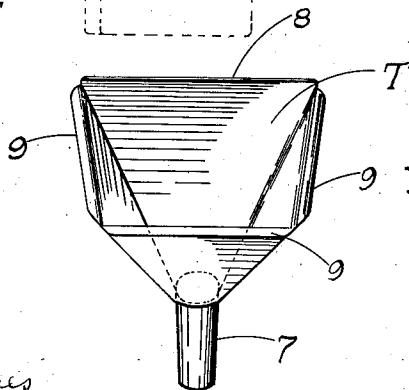


FIG. 4.



WITNESSES:

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SUCTION-HEAD FOR VACUUM CLEANING SYSTEMS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN S. THURMAN, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Suction-Heads for Vacuum Cleaning Systems, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in suction heads or renovating tools for vacuum cleaning systems; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a perspective showing an application of my invention; Fig. 2 is a side elevation of the suction head; Fig. 3 is a top plan thereof, shown in connection with a book; and Fig. 4 is an elevation of the tool looking into the open intake mouth of the same.

The present invention finds special application in libraries where occasion arises to remove the dust which has accumulated on the edges of the leaves collectively forming the top of the book in the position usually occupied by the latter on a shelf or in a bookcase, the suction head being necessarily supplemented by reason of the character of work performed, by an air blast nozzle which, projecting as it does a jet of compressed air against the surface to be cleaned, at first dislodges the dust and dirt, after which the latter is in the main drawn into the head by a suction current induced by a jet deriving its compressed air from the same source as does the air-blast nozzle referred to.

The advantages of the suction head, and the adjuncts with which it is used, will be best apparent from the detailed description of the invention which follows, it being understood that the primary (though not the only) object thereof is to provide specially constructed devices for removing dust from books, shelving, and the like, where the dust has not penetrated to any extent, the surface from which it is dislodged.

Referring to the drawings, C, represents a hose leading from any suitable air compressor P and conducting a current of compressed air to the jet nozzle 1 forming an ad-

55 junct of the induction leg 2 of a Y-connection secured to the wall of a dust-receptacle R which collects the dust removed from the articles cleaned in the operation of the system. The leg of the Y from which the nozzle 1 leads is coupled directly to the hose C, 60 the induction leg 2 being coupled to the vacuum hose or air-line H to the free end of which is secured my improved suction head or renovating tool T. At a convenient point along the compressed air hose C is 65 a tee 3, to the lateral leg of which is secured a branch hose B which conducts a current of compressed air to a suitably curved nozzle 4, the passage through which is normally closed by a spring valve which may be un- 70 seated by depressing a lever 5 against the valve stem 6, this being accomplished by the thumb of the operator holding the shank of the nozzle in the right hand. No claim is made herein to the details of construction 75 of this tool as they have no direct bearing on the specific functions performed by the suction-head, but the nozzle 4 is here illustrated showing as it does the conditions under which the suction head serves its purpose, and under which only the head can be 80 utilized to any advantage.

As previously stated, the suction-head T is attached to the free or outer end of the vacuum hose or air-line H, and being specially serviceable for gathering dust dis- 85 lodged by the nozzle 4 from the surfaces of books, shelves and the like, it follows that a special form of head must be provided to properly direct this dust into the 90 hose H through which it ultimately reaches the dust receptacle R. The details of the head may therefore be described as follows:—The body of the tool T is in the form of a funnel preferably pyramidal as 95 shown, the top and bottom walls being considerably wider than the side walls so as to give the funnel an enlarged lateral dimension, that is to say, a dimension in a plane parallel to the direction in which the 100 tool is generally passed over the surface being cleaned. The funnel has a nozzle extension 7 which slips into the hose H, or the connection may be made in any other suitable manner. The front edges of the side 105 walls of the funnel make an acute angle α with the plane of disposition of the top wall, and an obtuse angle ϕ with the plane of dis-

position of the bottom wall, whereby the tool may be held with its mouth substantially parallel with the outer vertical face of a series of books L standing upright on a shelf S (the "face" referred to being the backs of the series of books) and yet permit the outwardly deflected lip or guard 8 forming an extension of the upper wall to overhang the tops of the books, and thus prevent the dust dislodged by the air blast from the nozzle 4 from scattering, before it is drawn in by the suction or induced current flowing into the funnel in response to the jet issuing from the nozzle 1. The outer edges of the side walls of the nozzle are provided with outwardly deflected flanges 9, 9, which bear against the backs of the books, or the face of any article being cleaned, the flanges affording a smooth bearing and preventing scratching of the surface passed over. The bottom wall is likewise provided with a similar flange 9, and for the same purpose. The back of the tool, or top wall has secured thereto a U-shaped handle D by which the tool may be manipulated as described.

The compressor being started, the operator passes the nozzle 4 over the surface to be cleaned, the compressed-air jet dislodging the dust, and with the nozzle 4 in one hand, and the suction-head T in the other, the dust dislodged is drawn in at the mouth of the head T, and conducted to the receptacle R from which it may be emptied from time to time as well understood in the art.

Having described my invention, what I claim is:—

1. A vacuum suction-head having an intake mouth, in combination with a nozzle movable across the mouth and projecting a jet under pressure thereinto.

2. A pyramidal vacuum suction-head or tool having an intake mouth, the edges of the side walls at the mouth being disposed at different angles to the planes of disposition of the contiguous walls, and a lip or guard formed with the top wall and projecting beyond the intake mouth of the tool.

3. A pyramidal vacuum suction-head or tool having broad top and bottom walls, and narrow side walls terminating in edges disposed respectively at acute and obtuse angles to the general planes of disposition of the top and bottom walls, an overhanging lip or guard forming an extension of the top wall beyond the mouth of the tool, the side and bottom walls having outwardly turned marginal flanges.

4. An outwardly flaring vacuum suction-head having an intake mouth adapted to operate in conjunction with a jet directed toward it, and provided with an upper guard projecting beyond the edges of the walls defining said intake mouth.

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

JOHN S. THURMAN:

Witnesses:

EMIL STAREK,
M. L. BURNS.