

No. 787,732.

PATENTED APR. 18, 1905.

H. L. DORT.
CLEANING APPARATUS.
APPLICATION FILED JULY 5, 1904.

2 SHEETS—SHEET 1.

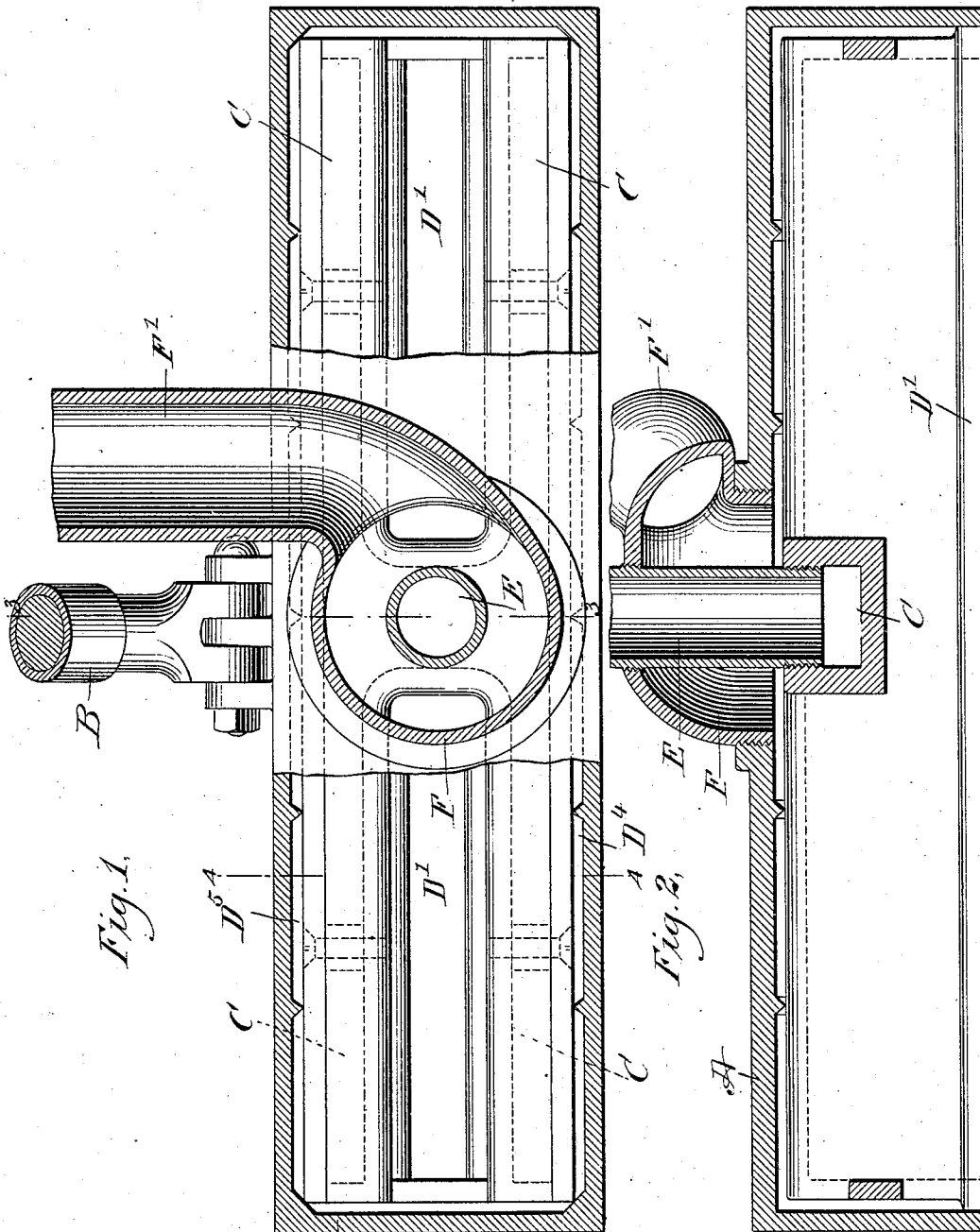


Fig. 1.

Fig. 2.

WITNESSES:

Edward Thorpe.
Reed W. Foster.

INVENTOR

Henry L. Dort

BY

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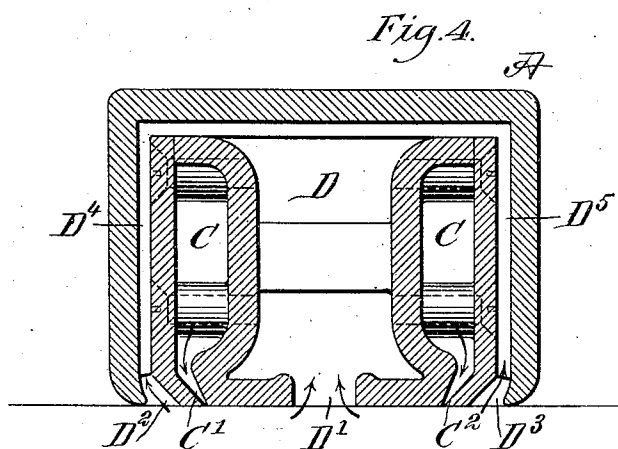
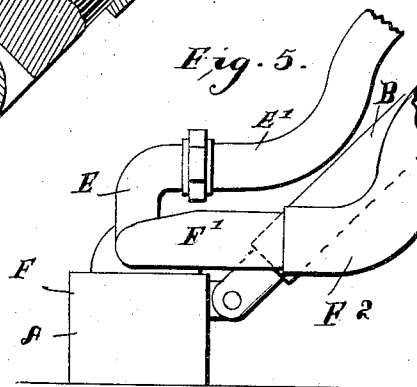
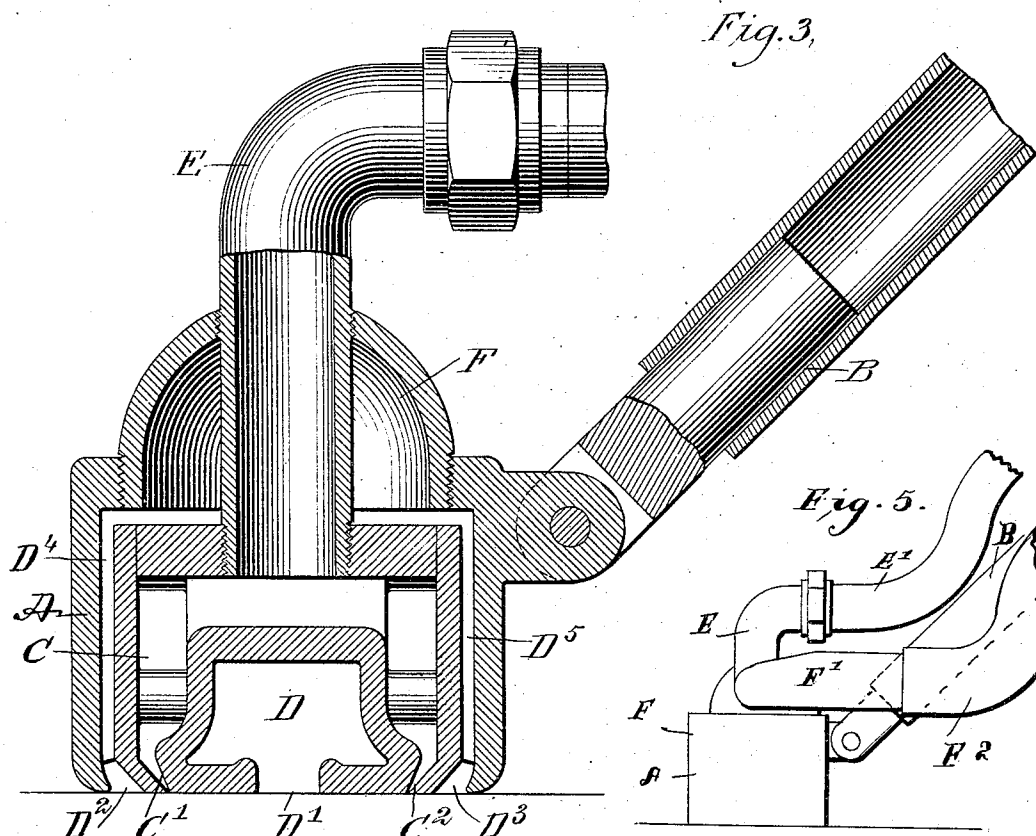
ATTORNEYS

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WITNESSES:

Edward Thorpe.
Rev. G. Woods.

Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY L. DORT, OF NEW YORK, N. Y.

CLEANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 787,732, dated April 18, 1905.

Application filed July 5, 1904. Serial No. 215,376.

To all whom it may concern:

Be it known that I, HENRY L. DORT, a citizen of the United States, and a resident of the city of New York, Flushing, borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Cleaning Apparatus, of which the following is a full, clear, and exact description.

The invention relates to apparatus for removing dust and other extraneous matter from carpets, rugs, matting, shelves, walls, and the like; and its object is to provide a new and improved cleaning apparatus arranged to readily loosen the dust in the carpet or other article, to suck the dust up and discharge it at a convenient place outside the room, and to permit using the apparatus on the carpet or other article without disturbing the position the article has while in regular use—as, for example, a carpet fastened to or a rug lying on a floor.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional plan view of the improvement. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is a sectional side elevation of the same on the line 3 3 of Fig. 1. Fig. 4 is a similar view of the same on the line 4 4 of Fig. 1. Fig. 5 is a reduced end elevation of the improvement, and Fig. 6 is a perspective view of one of the washers or packing-plates.

The head or casing A is open at the bottom and is provided at its rear side with a pivoted handle B, adapted to be taken hold of by the operator for conveniently moving the cleaning apparatus over the carpet or other article to be cleaned. Within the head A is arranged a blast-chamber C and a suction-chamber D, which latter is provided at the bottom with a longitudinally-extending main inlet-slot D', as plainly illustrated in Figs. 3 and 4. The top of the chamber C is screwed or otherwise secured to a blast-inlet pipe E, extend-

ing through and secured to a dome-shaped outlet F, attached to the top of the head A and opening into the top of the head, into which also opens the top of the suction-chamber D, so that the dust and other extraneous matter removed from the carpet or like article, as hereinafter described, passes from the suction-chamber D into the dome-shaped outlet F, from one side of which leads a pipe F' to carry off the dust and other extraneous matter to a suitable place of discharge, it being understood that usually flexible tubes F² and E' are connected with the pipes F' and E, of which the flexible tube F² for the pipe F' is connected with a suction-pump or other suction-producing apparatus, (not shown,) and the flexible tube E' for the pipe E is connected with an air-blast-producing apparatus (not shown) of any approved construction.

The blast-chamber C is arranged on opposite sides of the suction-chamber D, as plainly indicated in Figs. 3 and 4, and the said blast-chamber C is provided at its bottom with air-blast-discharge nozzles C' C², located on opposite sides of the main inlet-slot D' and somewhat spaced therefrom, and the said nozzles C' C² are converging, so that air-blasts passing through the nozzles C' C² in a downward direction are directed toward each other, so as to pass into the carpet on opposite sides of the main suction-slot D', and after penetrating the carpet (which the minute air-currents do to some extent under pressures of from twenty-five to one hundred pounds per square inch, the extent depending upon the character of the carpet) they are deflected by the carpet material or the floor, which directs them toward a common center beneath the suction-slot D'. Here the air-currents from opposite sides meet, and their forces are united in an upward movement, aided by suction, through the suction-slot D' to the suction-chamber D and its suction-discharge.

The blast-chamber C is constructed of parts fastened together by suitable screws, as indicated in dotted lines in Fig. 4, and by placing suitable washers or packing-plates (see Fig. 6) between the joints of the parts of the blast-chamber the openings of the nozzles C' and C² can be adjusted to any desired size.

Between the nozzles C' C² and the lower

edges of the sides of the head A are formed auxiliary suction-inlets $D^2 D^3$, leading to channels $D^4 D^5$, formed between the sides of the blast-chamber C and the sides of the head A, the said channels $D^4 D^5$ opening at their upper ends into the space between the top of the suction-chamber C and the top of the head A, so that any dust or other extraneous matter that is sucked up through the inlets $D^2 D^3$ and up the channels $D^4 D^5$ passes into the dome-shaped outlet F and through the pipe F and its flexible tube toward the suction apparatus.

It is understood that by the action of the two air-blasts directed by the nozzles $C' C^2$ toward each other the dust is dislodged from the fibers of the carpet and impelled toward the slot D' , and by the aid of the suction apparatus connected with the suction-chamber D the dislodged dust is quickly sucked into the chamber D by way of the main inlet-slot D' . By the arrangement described the two air-blasts after leaving the nozzles $C' C^2$ travel toward each other and tend to meet directly below the main inlet D' , and as the air-blasts cannot travel in a downward direction farther than the impermeable flooring it is evident that the air-blasts will be deflected by the carpet material and the flooring until they meet, and then they will unite and travel upward and carry the dust along through the inlet-slot D' into the suction-chamber D, from which the dust is immediately withdrawn by the action of the suction apparatus.

In the drawings the bottoms of the head A and the chambers C and D are arranged in the same horizontal plane to permit of conveniently moving the apparatus over the face of the carpet to be cleaned and without loss of air and dust stirred up by the converging air-blasts, it being understood that any dust raised and not passing into the central suction-chamber is drawn in at the mouth $D^2 D^3$. As shown in the drawings, the side walls of the suction-chamber D also form the inner walls of the blast-chamber C; but it is distinctly understood that I do not limit myself to the particular construction shown and the shape given to the head or casing, the suction-chamber D, and the blast-chamber C, as the same may be varied without deviating from the invention.

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

1. A cleaning apparatus provided with a suction-chamber having an inlet-slot, and a blast-

chamber having discharge-nozzles on opposite sides of the said suction-chamber inlet-slot, the nozzles converging at an angle, the apex of which is in vertical alinement with the said inlet-slot and the said nozzles being spaced from the sides of the said inlet-slot, the terminals of the nozzles lying approximately in a plane containing the said inlet-slot.

2. A cleaning apparatus provided with a suction-chamber having a main inlet-slot and auxiliary inlet-slots spaced from and located on opposite sides of the main inlet-slot, and a blast-chamber having discharge-nozzles located on opposite sides of the main inlet-slot and between the latter and the auxiliary inlet-slots, the said nozzles being spaced from the said main slot and the said auxiliary slots, the said nozzles being converging and the mouths of the auxiliary inlet-slots being approximately parallel to the said nozzles.

3. A cleaning apparatus comprising a head open at the bottom and provided at the top with a suction-discharge, a blast-chamber within the said head and having an inlet-pipe extending through the suction-discharge, the said blast-chamber terminating at its bottom in converging discharge-nozzles, and a suction-chamber within the said head and provided at its bottom with a main inlet-slot located between the said nozzles, the upper end of the said suction-chamber opening into the head, and the said main inlet-slot being spaced from the said converging discharge-nozzles.

4. A cleaning apparatus comprising a head open at the bottom and provided at the top with a suction-discharge, a blast-chamber within the said head and spaced from the walls thereof to form with the latter auxiliary suction inlet-slots, the blast-chamber having at its top an inlet-pipe extending through the said suction-discharge, and the said blast-chamber terminating at its bottom in spaced converging discharge-nozzles, and a suction-chamber within the said head, provided at its bottom with a main inlet-slot located between the said nozzles, the upper end of the suction-chamber opening into the head at the top thereof.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY L. DORT.

Witnesses:

THEO. G. HOSTER,

EVERARD BOLTON MARSHALL.