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ATTACHMENT FOR VACUUM SWEEPERS.

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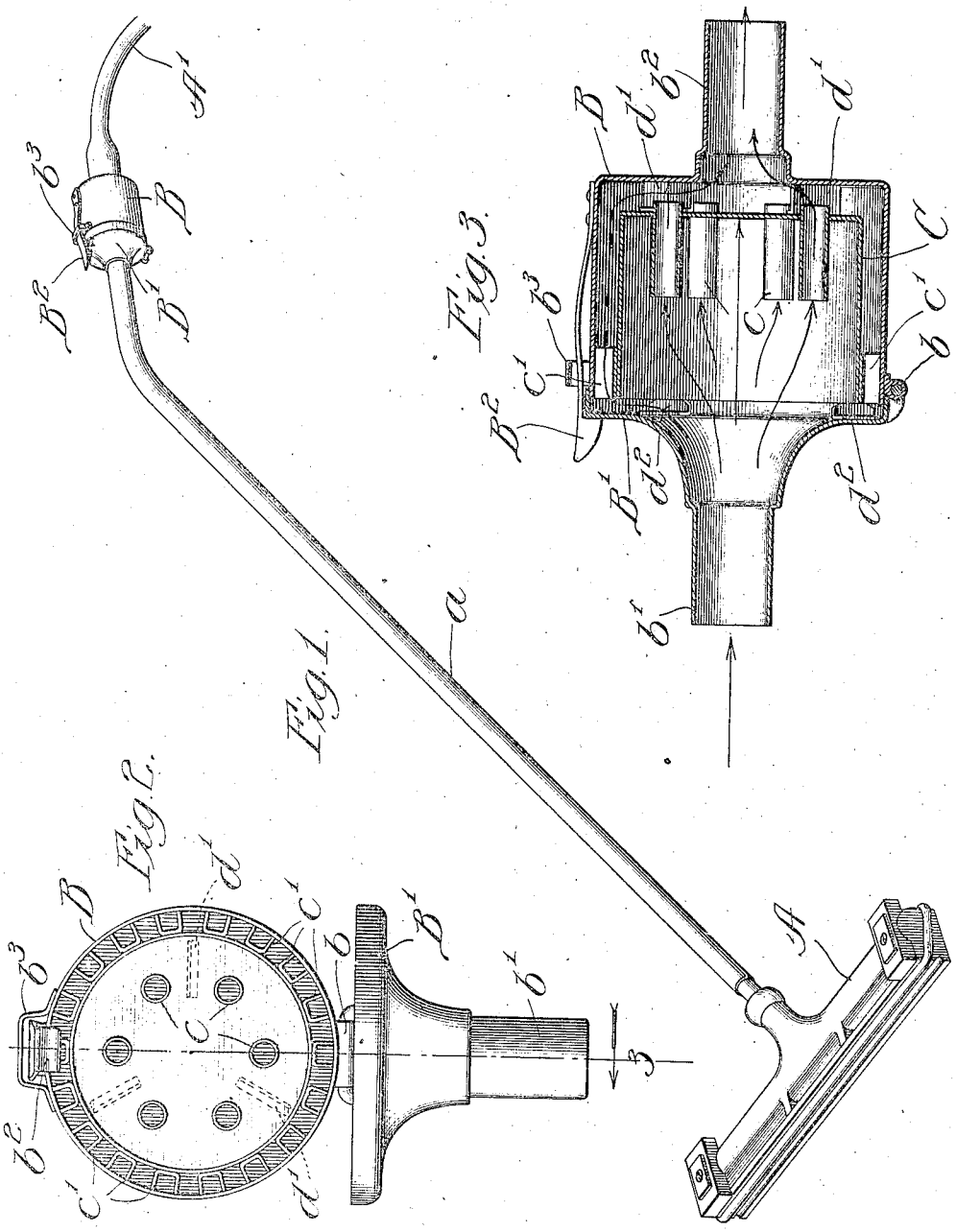

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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR VACUUM-SWEEPERS.

954,164. Specification of Letters Patent. Patented Apr. 5, 1910.

Application filed July 18, 1908. Serial No. 444,249.

To all whom it may concern:

Be it known that I, JOHN BROEKEMA, a citizen of the United States, residing at Rogers Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Attachments for Vacuum-Sweepers, of which the following is a specification.

My invention relates in general to pneumatic carpet sweepers, and more particularly to an attachment for trapping pins, needles, hair pins &c.

In the usual pneumatic carpet cleaning systems, sweeping instruments adapted to pass over the carpet are connected by sections of flexible hose with riser pipes connected with exhausting mechanism located in the basement of a building or at any other convenient point. In the operations of such systems, considerable difficulty and inconvenience has been experienced by reason of needles, pins, hair pins, tacks, and other similar articles, which are picked up by the sweepers and passed into the sections of hose where their sharp points stick into the material of the hose and form projections in the hose upon which collect lint, threads and other refuse from the carpet. The passageway through the sections of hose is consequently obstructed so as to prevent the operation of the floor sweepers. In order to remove such obstructions, the sweeper must be detached from the hose and a rod or similar device forced into the hose to forcibly dislodge the pins &c. This practice causes the pins and such articles to rupture the hose so that it is destroyed by reason of leakage.

The primary object of my invention is to provide a device through which the refuse passes from the sweeper to the hose, which will collect pins, needles, tacks, hair pins and similar articles, and prevent their passing into the hose, but which will not interfere with the free passage of air and dust through the hose.

A further object of my invention is to provide an attachment for pneumatic carpet sweepers for trapping pins or other like articles which will be simple in construction, inexpensive to manufacture and efficient in use.

My invention will be more fully described hereinafter with reference to the accompanying drawing, in which the same is illustrated in a convenient and practical form, and in which—

Figure 1 is a perspective view of a vacuum sweeper of any suitable construction having attached thereto my improvement; Fig. 2, an elevational view of my improved attachment with the cover open; and Fig. 3, a central longitudinal section through my improved attachment, on line 3, Fig. 2.

The same reference characters are used to designate the same parts in the several figures of the drawing.

Reference letter A indicates a vacuum sweeper of any suitable or usual construction, adapted to pass over the carpet or other surface to be cleaned.

a indicates the handle of the sweeper which is hollow and communicates with a flexible conduit A′ through which air is exhausted. It is usual to connect the flexible conduits with riser pipes extending vertically in a building, such riser pipes communicating with exhaust mechanism. My invention does not relate to the riser pipes and exhaust mechanism, and hence it is unnecessary to illustrate the same in order that a clear and full understanding may be had of my improvement.

My improved attachment is adapted to be supported upon the end of the handle *a* of a sweeper and to communicate with the end of the hose or flexible conduit A′, as clearly shown in Fig. 1 of the drawing.

The construction of the specific form of attachment in which I have shown my invention embodied, will be readily understood by reference to Figs. 2 and 3. B designates a chamber provided with a removable cover B′. The cover B′ is preferably hinged to the chamber, as indicated at *b*, and is retained in closed position by any suitable fastening device, as, for instance, a spring catch B^2 secured to the chamber and passing through a guide loop b^3. The cover B′ is provided with a tubular extension *b*′

which is adapted to be inserted within the end of the handle a of the sweeper. A similar tubular coupling b^2 projects from the end wall of the chamber B and is adapted to be inserted within the end of the hose A'. Located within the chamber B is a removable cup-shaped diaphragm C. The diaphragm is spaced axially away from the end wall of the chamber B by means of the lugs or brackets d' secured to the outer surface of the end of the diaphragm. Similar lugs or brackets d^2 serve to space the cup-shaped diaphragm axially away from the cover B' of the chamber, such lugs being shown as secured to the inner surface of the cover B'. The cup-shaped diaphragm is spaced within the cylindrical wall of the chamber B by means of U-shaped brackets or channels c' secured around the cylindrical portion of the diaphragm. Extending through the end wall of the diaphragm are short tubes c arranged axially and spaced suitable distances apart.

The operation of my improved attachment is as follows: When in position for use, as shown in Fig. 1, the air and refuse from the surface over which the sweeper moves passes through the coupling b' and thence either around the cup-shaped diaphragm or through the tubes c into the coupling b^2, and thence to the hose A'. Needles, pins, and similar devices, entering the coupling b', whether they pass around the diaphragm or through the tubes extending therethrough, are retained within the chamber B, owing to the arrangement of the passages. It will be observed that the tubes c extend within a short distance of the end wall of the chamber B so that pins &c. passing into the tubes will remain therein, while the location of the open end of the cup-shaped diaphragm adjacent the cover B' of the chamber is so close that pins and such devices cannot readily pass to the space between the cylindrical walls of the diaphragm and chamber, and even if they should pass to such space the sharp turns leading therefrom to the space between the circular walls of the diaphragm and chamber prevent them from passing to the coupling b^2. Threads and other refuse which pass into the chamber will be retained therein, but the air and dust pass freely through the chamber, so that the operation of the vacuum system is in no wise impeded. When pins, needles, refuse &c. have accumulated within the chamber, the cover B' thereof is opened and the cup-shaped diaphragm removed, after which the refuse, needles, pins &c. may be readily removed and the diaphragm again placed within the chamber and the cover closed.

From the foregoing description, it will be observed that I have invented an improved attachment for use in connection with pneumatic cleaning systems, by means of which the usual sections of hose are protected from injury by needles, pins and similar articles, but which does not in any way interfere with the operation of the systems.

While I have described more or less in detail the specific form in which I have illustrated my invention as embodied, yet I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, proportion of parts, and substitution of equivalents, as circumstances may require, or as may be deemed expedient.

I claim:

1. In a pneumatic carpet cleaner, the combination with a sweeper, of a conduit communicating therewith, and means comprising a diaphragm having tubes communicating with openings therethrough for preventing needles, pins and similar devices from passing from said sweeper to said conduit.

2. In a pneumatic carpet cleaner, the combination with a sweeper comprising a member to engage the carpet and a hollow handle, of a flexible conduit with which the hollow handle communicates, a trap interposed between said hollow handle and said conduit for collecting needles, pins, and similar articles, and means for detachably supporting said trap upon the exterior of the hollow handle.

3. In a pneumatic carpet cleaner, the combination with a sweeper, of a flexible conduit, and an attachment interposed between and removably connected to said sweeper and conduit, said attachment comprising a chamber and a removable diaphragm therein through which the refuse laden air passes.

4. In an attachment for pneumatic carpet cleaners, the combination with a chamber having relatively small inlet and outlet openings, of a removable cup-shaped diaphragm within said chamber having an open head adjacent the inlet opening of the chamber, and means for spacing said diaphragm within said chamber to form angular passages between the adjacent side and end walls of the diaphragm and chamber.

5. In an attachment for pneumatic carpet cleaners, the combination with a chamber having couplings adapted to communicate with the sweeper and with the vacuum producing mechanism, of a removable cup-shaped diaphragm located within said chamber, means for spacing said diaphragm within said chamber to form an annular passageway between the cylindrical walls of the diaphragm and chamber, and tubes extending through the circular wall of the diaphragm and extending adjacent the end wall of the chamber.

6. In a pneumatic carpet cleaner system, the combination with a sweeper, of a conduit communicating with said sweeper, a chamber through which refuse laden air passes from said sweeper to said conduit, a diaphragm having holes therethrough and located in said chamber adjacent a wall thereof, toward which the air passes after passing through the diaphragm, whereby needles, pins and similar devices contact said wall before passing entirely through said diaphragm.

In testimony whereof, I have subscribed my name.

JOHN BROEKEMA.

Witnesses:
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