No. 889,121. PATENTED MAY 26, 1908.

J. H. GREEN.

RENOVATOR.

APPLICATION FILED MAR. 22, 1905.

2 SHEETS—SHEET 1.

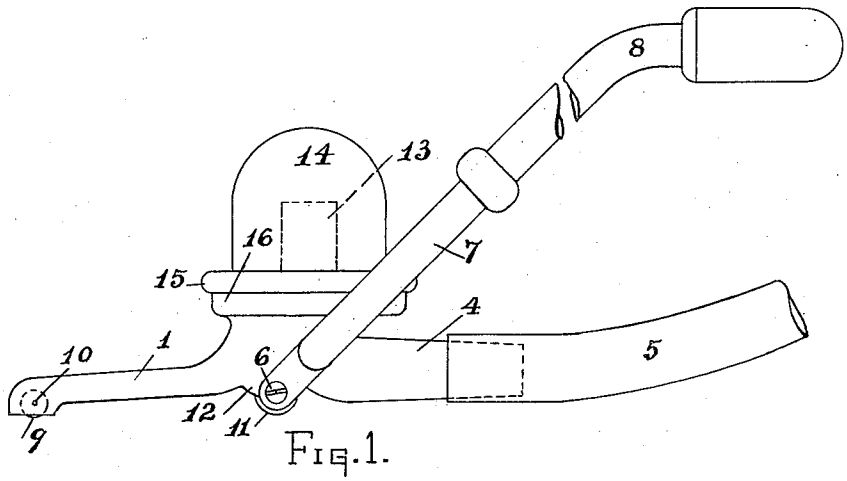



FIG. 1.

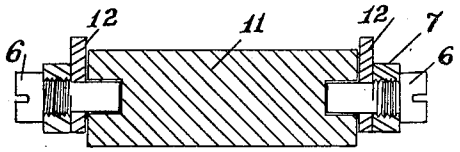



FIG. 5

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2 SHEETS—SHEET 2.

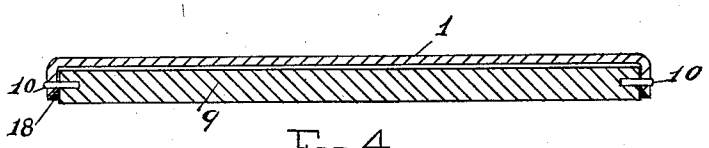



FIG. 4.

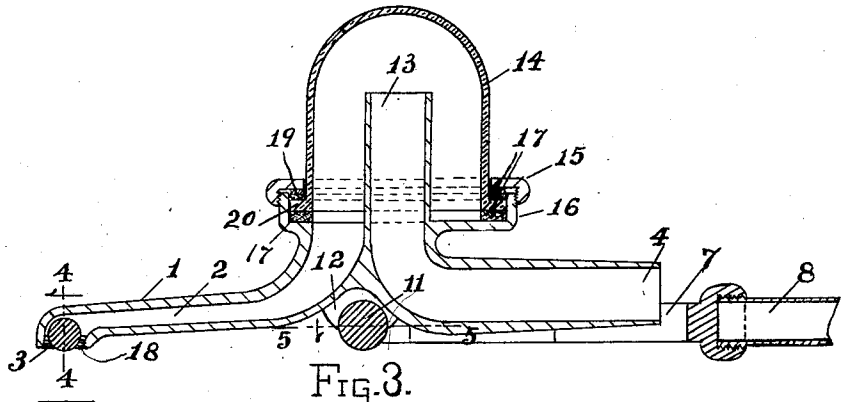



FIG. 3.

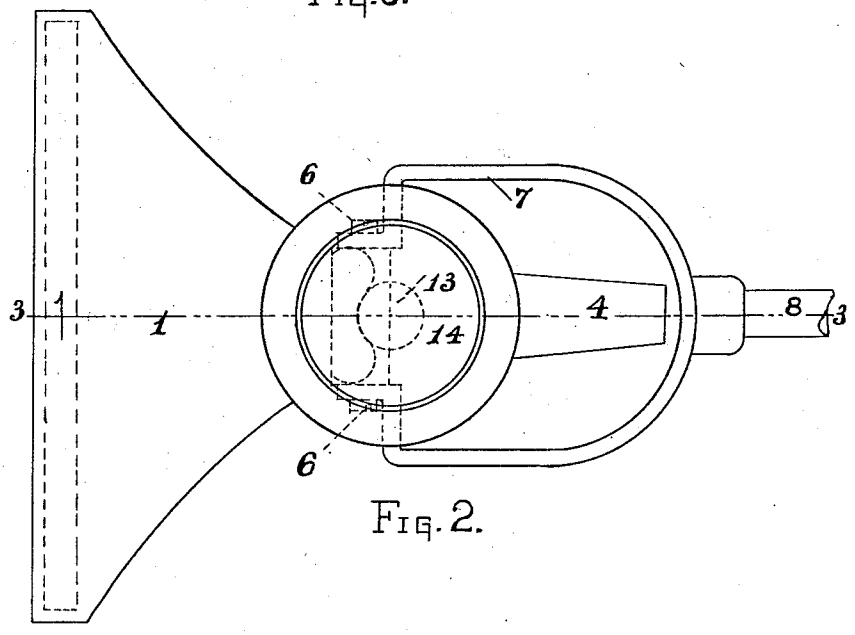



FIG. 2.

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# UNITED STATES PATENT OFFICE.

JOHN H. GREEN, OF SPRINGFIELD, ILLINOIS.

## RENOVATOR.

No. 889,121. Specification of Letters Patent. Patented May 26, 1908.

Application filed March 22, 1905. Serial No. 251,537.

*To all whom it may concern:*

Be it known that I, JOHN H. GREEN, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Renovators, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use my invention.

My invention relates to devices known as renovators and used for extracting and removing dirt by air suction from carpets or other articles of furniture.

The purposes of my invention are to provide a renovator movable on the article to be cleaned and having an inlet opening in close proximity to the article being cleaned and provided with means to prevent the article from obstructing the induction opening, to provide a handle of improved construction and means for connecting same with the body of the renovator so as to facilitate the introduction of the renovator into contracted spaces such as under stationary articles of furniture or the like; to provide means to enable the operator to observe the flow of dirt through the renovator and to provide other details contributing to simplicity of construction and effectiveness in operation.

With these ends in view my invention consists in the novel features of construction and combinations of parts shown in the annexed drawings to which reference is hereby made, and hereinafter particularly described and finally recited in the claims.

Referring to the drawings Figure 1. is a side elevation of the complete apparatus; Fig. 2. is an enlarged top plan; Fig. 3. is a vertical section on the line 3. 3. of Fig. 2. Fig. 4 is a vertical section on the line 4. 4 of Fig. 3 and Fig. 5 is an enlarged partial vertical section on the line 5. 5 of Fig. 3.

Similar reference numerals designate like parts in the several views.

The shell 1. is preferably of cast iron and has an internal chamber 2. and a flattened and expanded forward part, having an inlet opening 3. occupying practically the full width of the expanded part of the shell; and a contracted rear part the walls of which converge to form an externally tapering tube 4. The end walls of the opening 3 are inclined as shown at 18 so as to make the slit or opening 3 effective along the entire width of the shell. The tube 4 is tapering in order that it may be forced into a hose 5. fitting on the tube, so as to make an air tight connection of the hose with the shell and also for convenience in connecting and disconnecting the hose. Integral flanges 12. extend downward from the central part of the shell 1. Stud screws 6 screw into the sides of the bail 7 and extend through the flanges 12. and the roller 11. turns on the studs of the screws 6. A curved handle 8 is suitably connected with the bail 7. The curvature of the handle is such that when it is depressed the bail 7 will occupy an approximately horizontal position close to the tube 4 so as not to interfere with introducing the head into restricted spaces such for example as the space under a book case; and the upper part of the handle will be in convenient position for controlling the movement of the shell. A roller 9. preferably of steel, is mounted on pins 10 and turns in the opening 3. The periphery of the roller 9 preferably extends somewhat below the lower surface of the walls of the opening 3, as shown in Figs. 1, 3, and 4. One end of a hose 5 fits around the tapering tube 4 and its other end is connected to communicate with the vacuum chamber of any suitable vacuum producing device.

At the upper central part of the shell is an upwardly extending induction tube 13 communicating with the chamber 2. and the interior of the tube 4. A transparent dome 14 of glass or other suitable material having an integral annular flange 20 surrounds the tube 13 and is connected with the shell 1 by a screw ring 15 fitting on a screw threaded part 16 on the shell 1. Annular gaskets 17, of rubber or other yielding material, are situated above and below the flange 20. A follower-ring 19 is situated between the screw ring 15 and the upper gasket 17. The transparent dome on the renovator gives both the house-holder and the operator the same opportunity to observe the flow of the dirt and know whether or not the machine is operating effectively.

When the screw ring 15 is screwed down the follower 19 presses downward on the upper gasket so as to cause the gaskets 17 to make an air-tight joint around the flange 20.

In use the shell is supported on the rollers 9 and 11 and the user manipulates the handle 8 to move the machine forward or backward or turn it in any desired direction. A practically constant vacuum being maintained by the vacuum producing device not shown—

acting by suction through the hose 5, air rushes through the inlet opening 3, and the chamber 2 into and through the induction tube 13, and the outlet tube 4, and thence outward through the hose 5, and in doing so produces suction which sucks the dirt from the carpet or other article being cleaned and conveys it outward through the hose to the place of final disposition.

In practice the vacuum producing device is preferably situated outside of the building in which the renovator is used. In cleaning carpets or the like the air suction lifts the fabric so that if means were not provided to detach the fabric, it would completely cover the inlet opening 3 and adhere to the underside of the flared part of the shell with such force as to materially impede the movement of the renovator. Forward or rearward movement of the renovator causes the roller to roll upon the raised part of the fabric and the weight of the machine carried on the roller exerts downward pressure so as to continuously strip from the under side of the shell the carpet along the front edge of the inlet opening when the machine is pushed forward, and along the rear edge of the inlet opening when the machine is pulled rearward.

During the operation of the renovator the extracted dirt flows through the dome 14 to the tube 13, and by observing this flow of the dirt the operator may be fully informed whether or not the renovator is operating satisfactorily and if the operation is not satisfactory may discover and remove the cause of such unsatisfactory operation. The dome 14 also enables the operator or other observer to determine when the carpet or other thing being operated on is cleaned and this saves loss of time by unnecessary use of renovator.

Prior to my invention the practice has been to have a glass covered chamber apart from the renovator, the glass covered chamber remaining stationary while the renovator is in motion and the glass covered chamber serving to show the flow of the dirt after it leaves the renovator but not adapted to show the flow of the dirt actually within the renovator; the relation and connection of the parts being such that the renovator being in one part of an apartment and being in operation and relatively remote from the glass covered chamber in another part of the same apartment, or in another apartment, it is impossible for both the house-holder and the operator at the same time to inspect it and observe the flow of the dirt through the renovator itself while the renovator is in operation, because if the operator were to leave the renovator to inspect the glass covered chamber it would be necessary for him to suspend the operation of the renovator; and if the house-holder were inspecting the remote glass covered chamber he could not by such inspection be informed whether or not the operator was operating at the precise point in question or was operating at some other point.

I am the first to devise and use a renovator provided with a chamber having transparent walls through which the flow of dirt within the renovator itself may be observed by the operator while the renovator is in motion and in operation, said chamber being part of the renovator itself.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a renovator the combination of a shell having an internal chamber, also having a tubular part provided with an outlet opening and a flattened and expanded part provided with an inlet opening extending along the under side of said flattened and expanded part, a roller occupying the length of and mounted to turn in said inlet opening and extending below the under side of the expanded part of said shell, and a handle connected with and adapted to propel said shell.

2. In a renovator the combination of a shell having a chamber with a transparent wall, also having a tubular part provided with an outlet opening, and a flattened and expanded part provided with an inlet opening extending along the under side of said flattened and expanded part, a roller occupying the length of and mounted to turn in said inlet opening, and a handle connected with and adapted to propel said shell.

3. In a renovator the combination of a shell having a chamber, an inlet opening, an outlet opening, and downwardly extending flanges pierced by holes; a bail spanning the shell and having screw threaded holes matching the holes in said flanges, a handle connected with said bail, a roller fitting between said flanges and having holes matching the holes in the flanges, and screws screwing into the holes in the bail and having pins fitting loosely in the holes in the flanges and the holes in the roller.

In witness whereof I have hereunto subscribed my name at Springfield Illinois this 18th day of March 1905.

JOHN H. GREEN.

Witnesses:
MARGARET MCDONALD,
LYMAN L. BROWNE.