

April 24, 1951

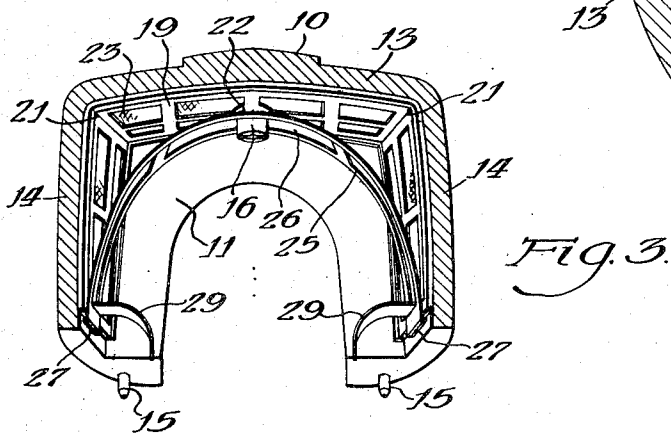
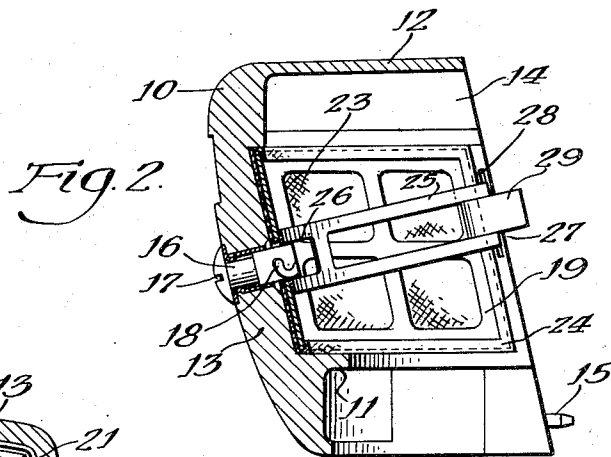
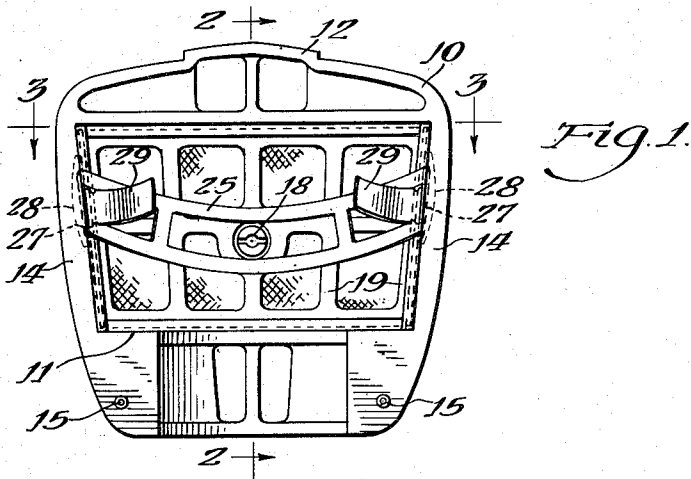
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2,550,319

AIR FILTER HEAD FOR PORTABLE ABRADING MACHINES

Filed Feb. 7, 1949

2 Sheets-Sheet 1



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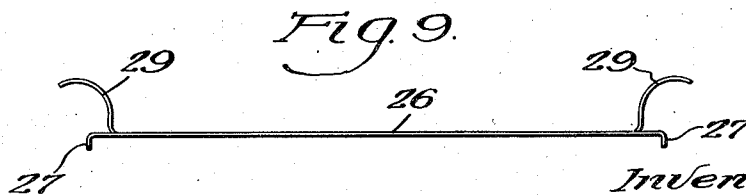
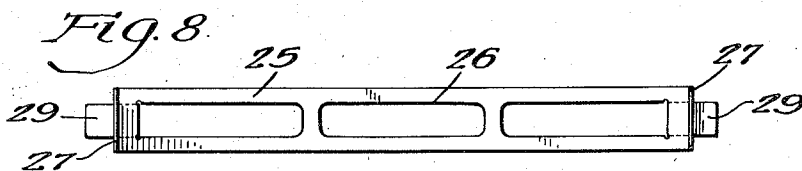
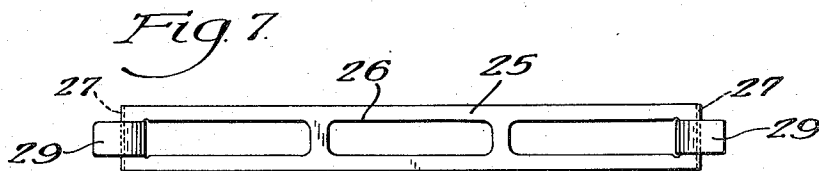
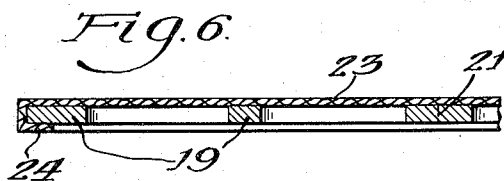
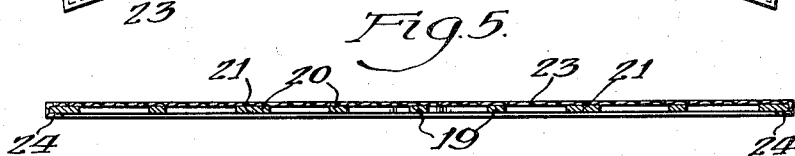
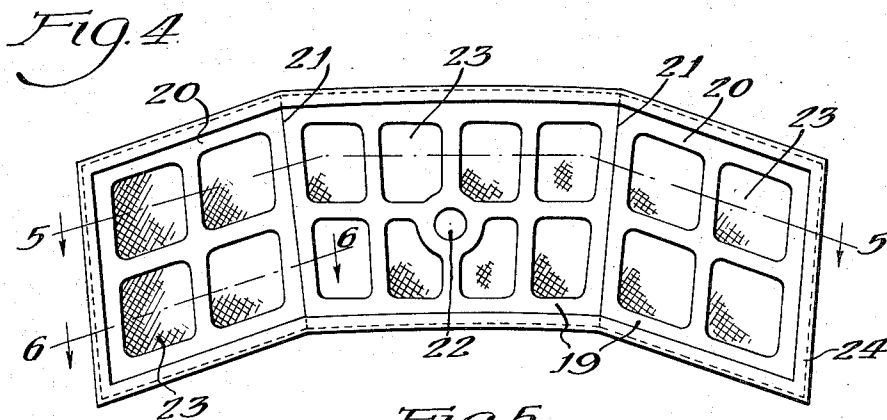
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AIR FILTER HEAD FOR PORTABLE ABRADING MACHINES

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,550,319

AIR FILTER HEAD FOR PORTABLE
ABRADING MACHINES

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3 Claims. (Cl. 183—51)

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This invention relates to air filter heads having removable filter screens of the type used on portable sanding machines, and the like, and more particularly to an improved head construction and clip for holding the filter screen in operative position.

The primary object of the invention is to provide an air inlet head with a screen which may readily be cleaned or replaced.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

Figure 1 is a rear elevational view of a filter head with a filter screen held by a spring clip; Fig. 2 is a sectional view, taken as indicated at line 2—2 of Fig. 1; Fig. 3 is a plan sectional view, taken as indicated at line 3—3 of Fig. 1; Fig. 4 is an elevational view of the filter screen; Fig. 5, a sectional view, taken as indicated at line 5—5 of Fig. 4; Fig. 6, an enlarged sectional view, taken as indicated at line 6—6 of Fig. 4; Fig. 7, a rear elevational view of the spring clip; Fig. 8, a front elevational view of the same; and Fig. 9, a plan view of the spring clip.

In the embodiment illustrated, a rigid metal housing head 10 has a base portion 11 adapted to make a substantially air-tight fit with the base of a portable sanding machine, not shown, and has a closed top 12, a perforate front wall 13, and rearwardly extending perforate side walls 14. The head is adapted to make a substantially air-tight connection with the air inlet through which a suction fan may draw air through the front and side walls into the machine. The head is provided with positioning studs 15, and the front wall is provided with a fastening 16 having a slotted head 17 and a slotted rear portion 18, to engage a wire bail projecting from the main housing of the machine. The fastening device is of well known construction.

The filter screen comprises a stiff flexible perforate frame 19, preferably of cardboard, and has a pair of wings 20 adapted to be bent along the fold lines 21 to fit snugly along the inner walls of the head. The frame has an opening 22, to fit snugly around the fastener 16, and the outer side of the frame is covered with a thin sheet of foraminous material 23, adapted to remove dust from air drawn therethrough. The edges of the sheet are cemented to the front of the frame. They may be turned inwardly around the edges of the frame and cemented in position, as indicated at 24, if preferred.

A spring clip 25, in the form of a skeletonized spring metal strip, is provided for holding the

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frame 19 in position. The strip has a central opening 26 which fits around the fastening device 16, and the outer ends of the clip have outwardly directed fingers 27, adapted to be snapped into slots 28 provided near the rear of the walls 14. The clip is also provided with a pair of inwardly directed bow-shaped arms 29, which may be grasped between the fingers of the operator to facilitate bowing the clip when inserting it into the head.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for some modifications will be obvious to those skilled in the art.

I claim:

1. An air inlet filter head for a portable abrading machine, comprising, a hollow, rigid, box-like housing head having a base, a top, and perforate front and side walls connecting the base and top, and through which perforate walls air may be drawn through the back of said head, a filter screen having an open-work frame and a foraminous sheet secured thereover, said screen following the transverse contour of the inside faces of said front and side walls and covering the perforations therein, and a U-shaped spring clip for holding said filter screen snugly and removably against said inside faces.

2. An air inlet filter head adapted to be mounted on the main housing of an abrading machine, comprising, a hollow, rigid, box-like housing head having a base, a top, and perforate upwardly extending front and side walls connecting the base and top, and through which perforate walls air may be drawn, a screen member having an open-work slightly flexible frame provided with a front section and a pair of side sections bent rearwardly at substantial angles with relation to the front section, said front and side sections following the transverse contour of said front and side walls over the perforations therein, a foraminous sheet positioned between said front and side sections and front and side walls and covering said perforations, and a bowed spring clip having its longitudinal center pressed against the central portion of said front section, and being spaced away from said frame except at said longitudinal center and at its rear ends, said side walls on their inner faces adjacent their rear edges being formed with upwardly and downwardly extending slots into which projections on the rear ends of the bowed spring are snapped and held, to firmly and removably hold the screen member in the head.

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3. An air inlet filter head adapted to be mounted on the main housing of an abrading machine, comprising, a hollow, rigid, housing head having a base, a top, and perforate front and side walls through which air may be drawn, said front wall being of substantial width, and said side walls being fixed to the side edges of the front wall and extending rearwardly therefrom in approximately parallel relation to each other and at approximately right angles to the front wall and the top to form a box-like structure, a screen member having an open-work slightly flexible frame provided with a front member following the contour of the front wall laterally thereacross and a pair of foldable wings following the contour of the side walls, said screen member having a foraminous sheet fixed to the outer face of the frame to extend across

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the openings therein, said foraminous sheet being gripped between the frame and said front and side walls, and a bowed spring clip having its longitudinal center pressed against the central portion of the front member of the frame and having its rear ends detachably connected with the rear portions of the side walls.

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The following references are of record in the file of this patent:

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