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PARTICLE REMOVAL DEVICE FOR PORTABLE POWER GRINDERS AND THE LIKE

Filed July 17, 1963

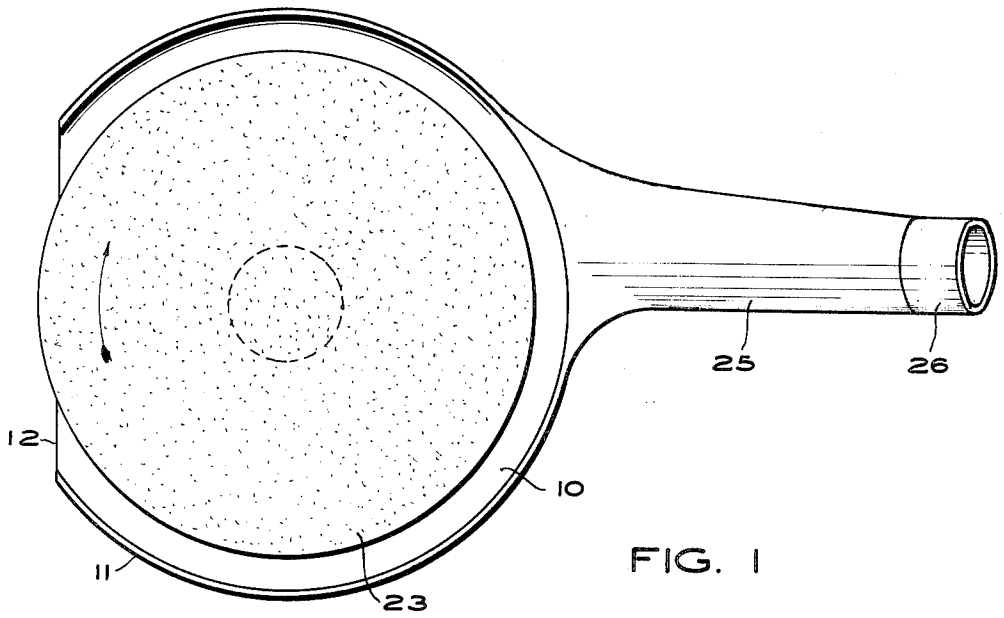


FIG. 1

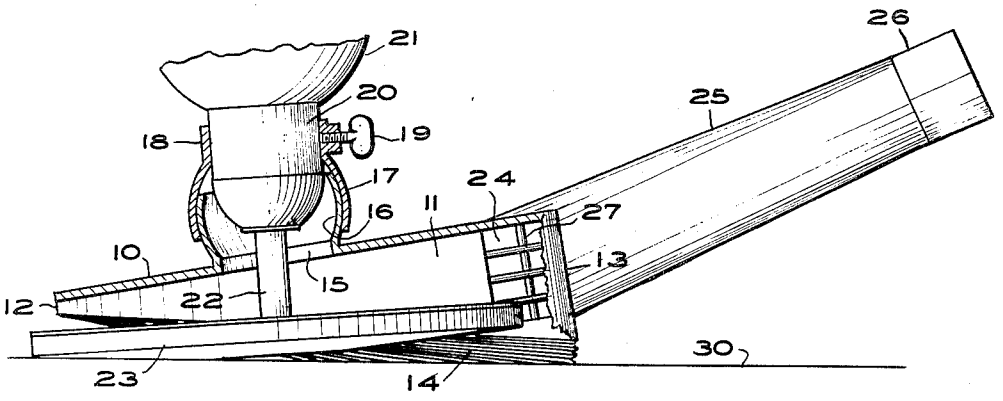


FIG. 2

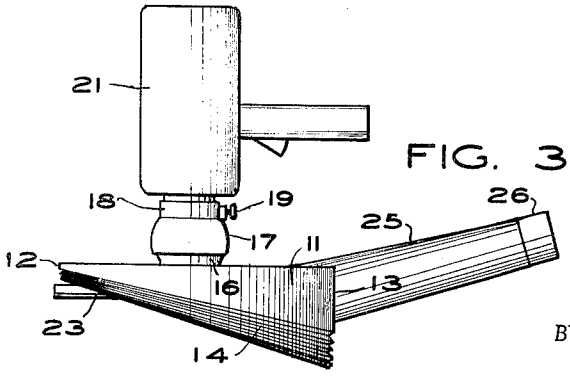


FIG. 3

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PARTICLE REMOVAL DEVICE FOR PORTABLE POWER GRINDERS AND THE LIKE

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4 Claims. (Cl. 51—273)

The present invention relates to a dust collecting attachment for portable sanders and the like and it consists in the combinations, constructions and arrangements of parts hereinafter to be described and claimed.

Generally there is provided a device which may be quickly and easily attached to a conventional sander, grinder or the like. It consists of a hood or housing having a circular top and a dependent side wall the forward portion of which is relatively shallow and the rearward portion of which is relatively deep. Extending downwardly from the lower edge of the side wall is an accordion pleated skirt of flexible material. A fitting extends substantially radially and upwardly from the larger portion of the side wall and its entrance is guarded by a coarse screen or the like. The fitting is adapted to connect to the hose of a conventional vacuum cleaner or the like. A novel ball and socket connecting means is provided for attaching the device to the motor of the grinder, sander or the like. The device is such that it will quickly and easily and constantly remove dust and other particles formed by the operation of the sander, grinder, or like instrument upon which it is used.

It is accordingly an obejct of the invention to provide a novel dust collecting attachment for portable sanders and the like.

Still another object of the invention is to provide a device of the character set forth which is simple in construction, inexpensive to manufacture and yet effective and desirably efficient in use.

A further object of the invention is to provide, in a device of the character set forth, a novel universal mounting forming a part of the invention.

Still another object of the invention is to provide, in a device of the character set forth, a novel flexible skirt forming a part of the invention.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawing, in which:

FIGURE 1 is a fragmentary bottom plan view of an embodiment of the invention,

FIGURE 2 is a side elevational view, partly broken away, of the device shown in operative position upon a sander, and

FIGURE 3 is a reduced side elevational view showing the device in inoperative position upon a sander.

Referring more particularly to the drawing, there is shown therein a dust collecting attachment for portable sanders and the like comprising a housing having a circular top **10** provided with a dependent side wall structure **11** of cylindrical shape having its forward portion cut away as indicated at **12**, the wall **11** becoming gradually deeper as it reaches its rearmost portion **13**.

Extending downwardly from the lower edges of the wall **11** is an accordion pleated skirt **14** of flexible material such as rubber, leather, plastic material or the like.

The top **10** is centrally provided with an opening **15** from which upwardly extends a hollow partial ball **16** mounted for movement within a socket **17** the upper end of which is integrally connected with a collar **18** into

which extends a set screw **19**, the collar **18** being positioned upon a reduced portion **20** of a motor **21**.

The motor **21** is provided with a drive shaft **22** upon the lower end of which is shown a circular sander **23**.

An opening **24** is provided in the rear portion of the wall **11** and a fitting **25** encompasses the same and extends upwardly and substantially radially therefrom. The fitting **25** terminates in a circular pipe section **26** which is adapted to be connected to the hose (not shown) of a vacuum cleaner. The opening **24** is provided with a guard **27** of coarse screen or the like.

In operation, it will be apparent that the device may be quickly and easily mounted upon the motor by placing the collar **18** over the reduced portion **20** thereof and thereafter tightening the set screw **19**. It will be seen that the housing **10** will now substantially cover the sanding tool **23** and that the skirt **14** will come to bear, when the sander **23** is being applied, for example, to a floor **30** or the like to likewise bear against the floor **30** or other work and that the housing will move along with the skirt to accommodate curvular work pieces and the like. It will be understood that when the motor **21** is operated to revolve the sander **23** that the vacuum device (not shown) will also be operated to provide a partial vacuum through the pipe section **26** and fitting **25** to withdraw air from within the housing **10** through the guard **27** thereby withdrawing all loose particles caused by the action of the sander **23**, it being understood that fresh air will enter through the cut away portion **12** of the housing during this operation. It will also be apparent that any large pieces of material dislodged by the sander **23** or pieces of sanding paper torn therefrom will be prevented from passing through the fitting **25** into the vacuum device by the action of the guard member **27**.

While but one form of the invention has been shown and described herein, it will be readily apparent to those skilled in the art that many minor modifications may be made without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. In combination with a portable tool having a motor, a shaft extending therefrom and a tool carried by said shaft; the provision of a dust collecting attachment for said tool comprising an open bottom housing surrounding said tool and shaft, said housing including a portion being formed of flexible material; means for attaching said housing around said shaft comprising a socket, a collar affixed to said socket and surrounding a portion of said motor, a set screw extending through said collar to bear against said motor; a hollow partial ball affixed to said housing around said motor shaft and positioned in said socket and means for connecting said housing to a vacuum device on one side of said housing, and a window cut in said housing on a side remote from said connecting means.

2. A device as claimed in claim **1** including an accordion pleated skirt portion on said housing and a vacuum attachment fitting extending from one side of said housing.

3. A device as defined in claim **2** wherein a screen is mounted in said housing at the entrance to said fitting.

4. In combination with a portable tool having a motor, a shaft extending therefrom and a tool carried by said shaft; the provision of a dust collecting attachment for said tool comprising an open bottom housing surrounding said tool and shaft; said housing including a portion being formed of flexible material; releasable means for attaching said housing around said shaft; manually operable locking means extending through said releasable

means for locking same in position; a hollow partial spherical socket affixed to said releasable means and a hollow partial ball affixed to said housing and fitting within said socket for sliding engagement therewith.

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