Nov. 15, 1955 B. K. SLONNEGER 2,723,513

DUST COLLECTOR FOR GRINDING WHEEL

Filed Oct. 21, 1953 4 Sheets-Sheet 1

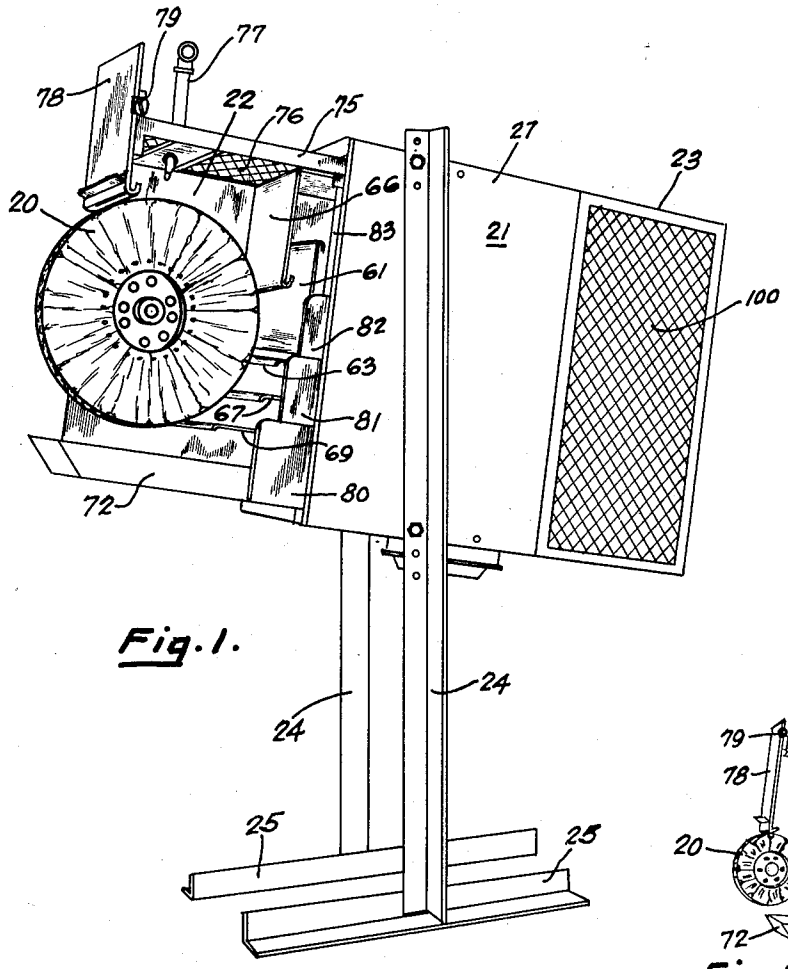


Fig. 1.

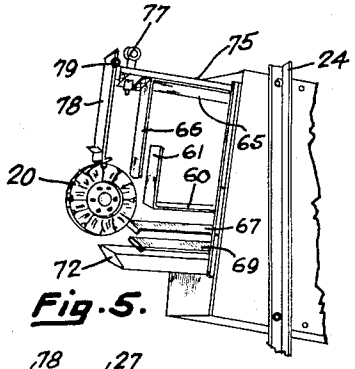


Fig. 5.

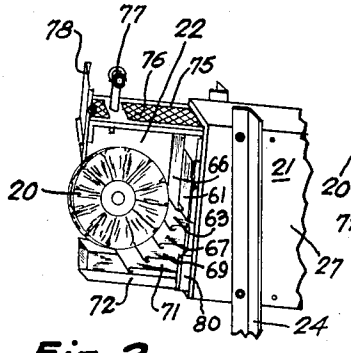


Fig. 2.

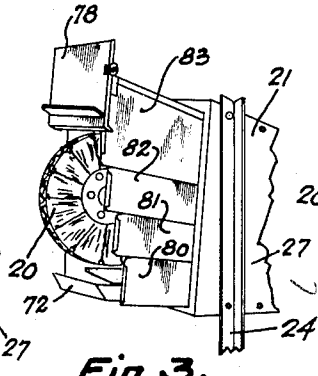


Fig. 3.

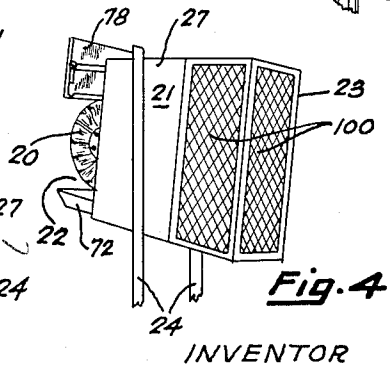


Fig. 4.

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Nov. 15, 1955 B. K. SLONNEGER 2,723,513

DUST COLLECTOR FOR GRINDING WHEEL

Filed Oct. 21, 1953 4 Sheets-Sheet 2

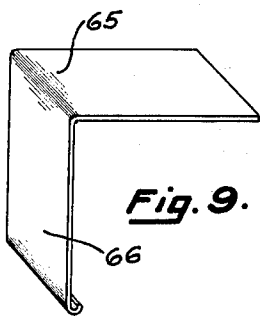


Fig. 9.

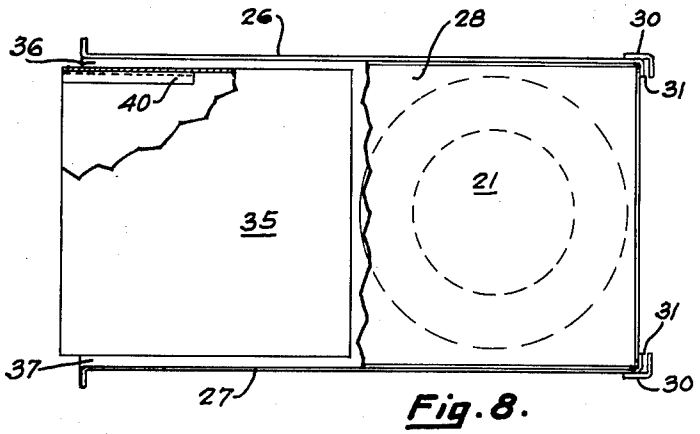


Fig. 8.

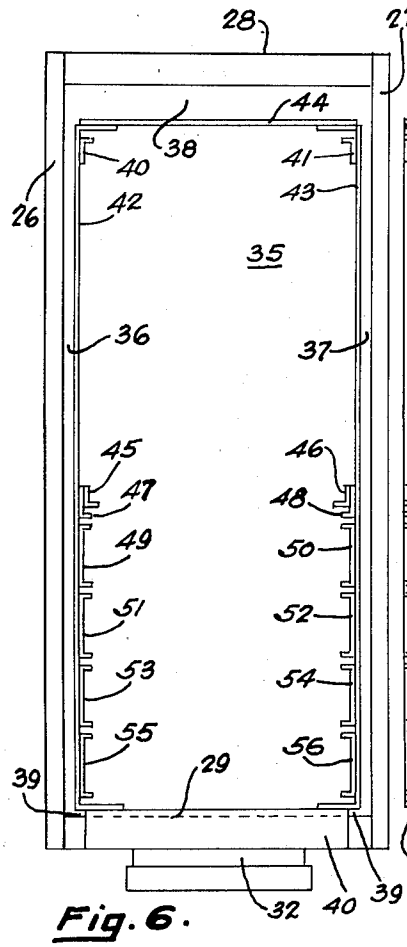


Fig. 6.

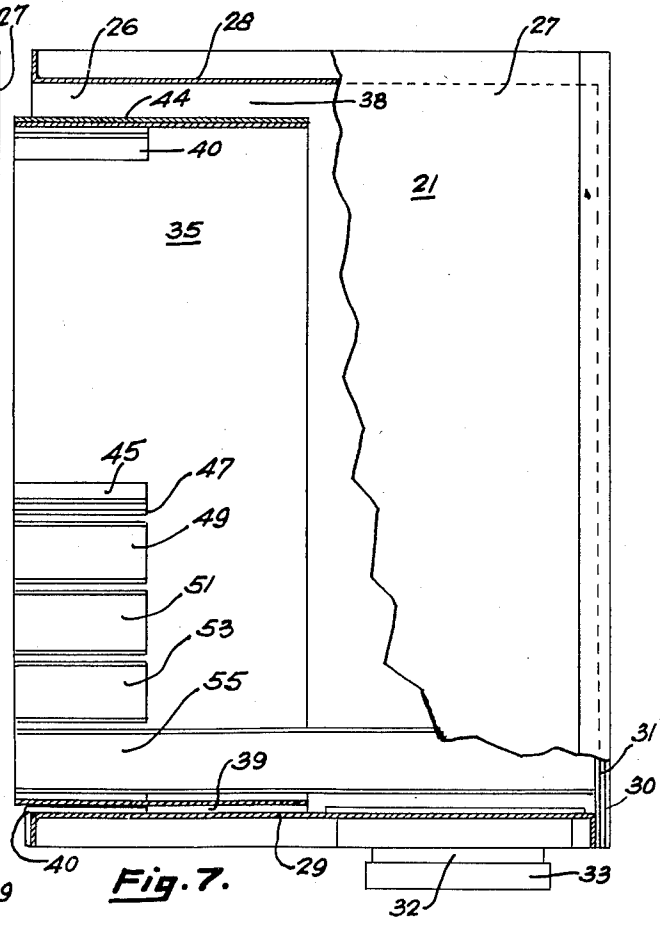


Fig. 7.

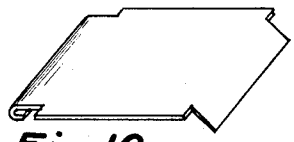


Fig. 10.

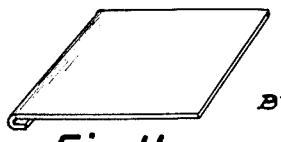


Fig. 11.

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DUST COLLECTOR FOR GRINDING WHEEL

Filed Oct. 21, 1953 4 Sheets-Sheet 3

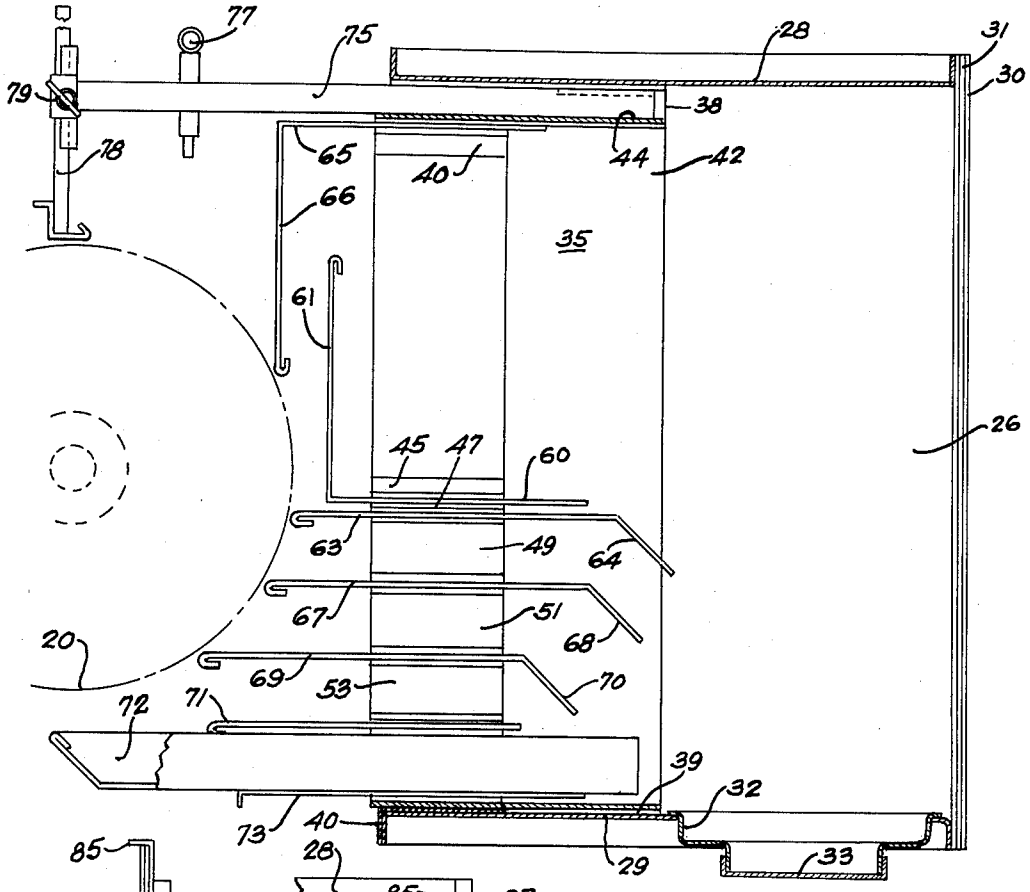


Fig. 12.

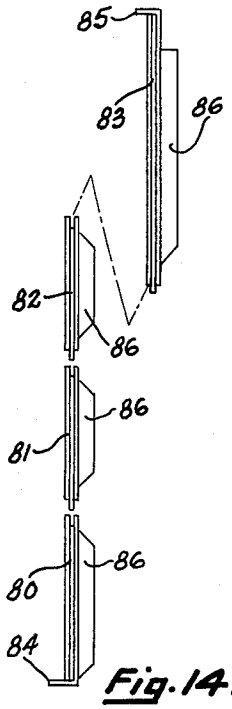


Fig. 14.

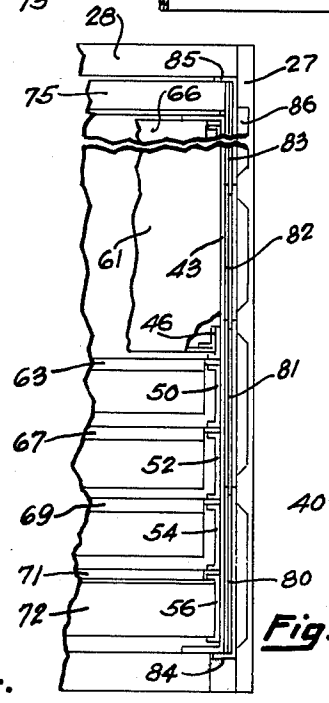


Fig. 13.

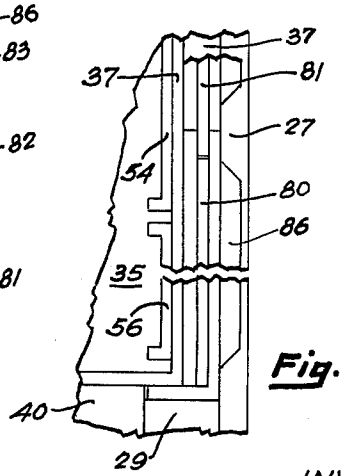


Fig. 15.

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DUST COLLECTOR FOR GRINDING WHEEL

Filed Oct. 21, 1953 4 Sheets-Sheet 4

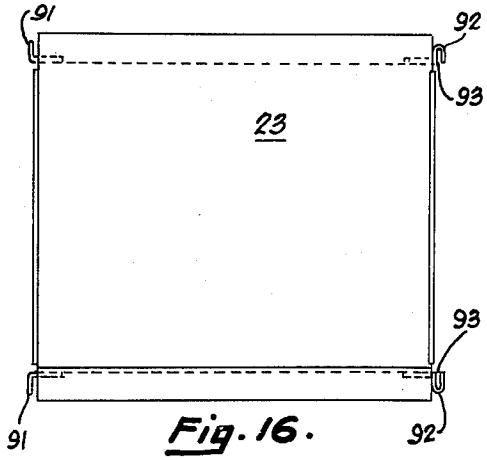


Fig. 16.

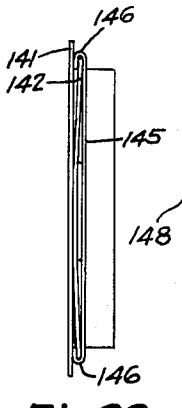


Fig. 22.

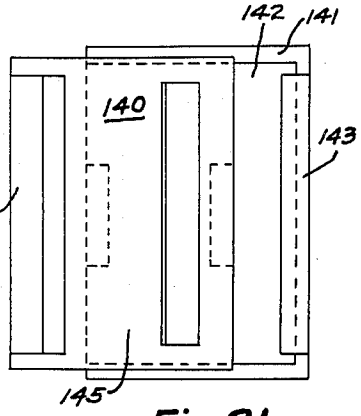


Fig. 21.

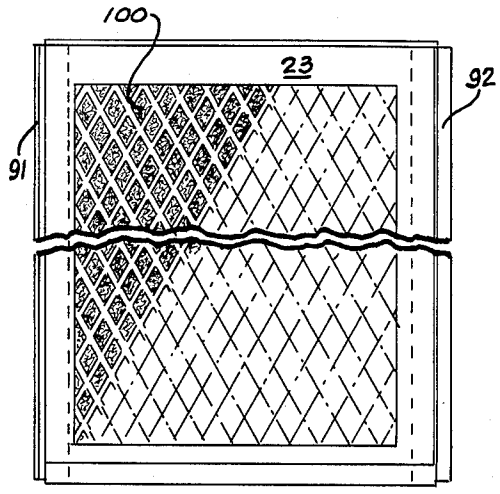


Fig. 17.

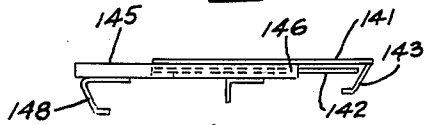


Fig. 23.

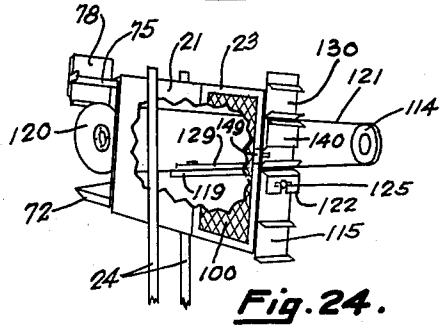


Fig. 24.

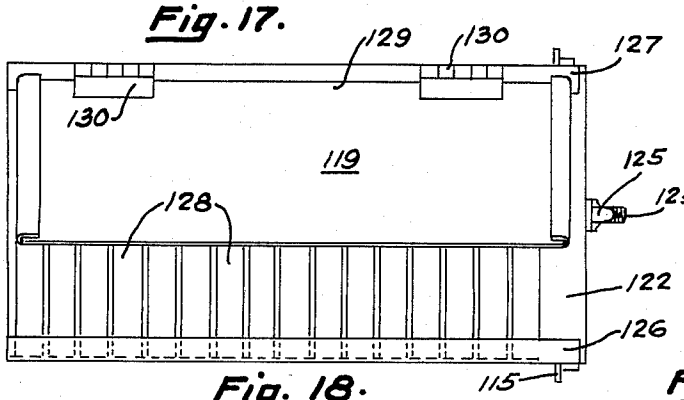


Fig. 18.

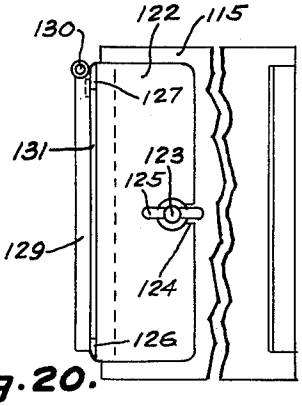


Fig. 20.

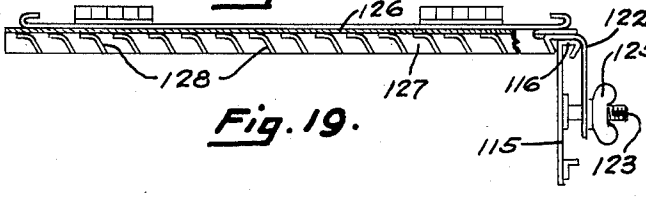


Fig. 19.

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United States Patent Office 2,723,513 Patented Nov. 15, 1955

2,723,513

DUST COLLECTOR FOR GRINDING WHEEL

Bruce K. Slonneger, Dayton, Ohio

Application October 21, 1953, Serial No. 387,366

17 Claims. (Cl. 51—268)

This invention relates to an improved dust collecting hood for buffing or polishing wheels and belts.

It is among the objects of the present invention to provide a dust collecting hood for a buffing or polishing wheel or belt which utilizes the wind created by the rotating wheel or belt to accomplish dust collection with greater efficiency than can be obtained with the well known exhaust system, thereby reducing maintenance costs and obtaining more healthful working conditions.

Another object of the present invention is to provide a dust collecting hood for a polishing wheel or belt which may easily be adjusted for use with any size wheel or belt and to enclose substantially the entire wheel or belt or to expose any desirable portion of said wheel or belt for working purposes.

A further object of the present invention is to provide a dust collecting hood equipped with filters which permit the air flow, set up by the hood enclosed, rotating wheel or belt, to be discharged into the room in which the hood is used, the filters, however, retaining substantially all of the dust within the hood. This eliminates the discharge of dust laden air which may become an extremely dangerous fire hazard as well as being detrimental to the health of the operator. A dust collecting hood of this type is also highly economical for it completely eliminates the discharge of heated air from the workshop to an outside sump, an unavoidable waste associated with the use of the well known and commonly used exhaust systems.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred embodiment of the present invention is clearly shown.

In the drawings:

Fig. 1 is a perspective view of the filter equipped dust collecting hood applied to a polishing wheel.

Fig. 2 is a perspective view of the hood, at reduced size, taken at an angle differing from that of Fig. 1.

Fig. 3 is a view showing certain parts of the device in positions differing from Fig. 1.

Fig. 4 is a perspective taken at still a different angle.

Fig. 5 shows the device applied to a smaller wheel than that shown in Fig. 1.

Fig. 6 is a detail front view of the main housing of the device.

Fig. 7 is a side view of the housing shown in Fig. 6. A portion of the housing is broken away to show interior construction.

Fig. 8 is a plan view of the housing partly broken away.

Fig. 9 is a view of one of the baffle plates of the device.

Fig. 10 is a view of one of the air foils of the device.

Fig. 11 is a view of another type of air foil used in the device.

Fig. 12 is a sectional view of the main housing with

baffle plates and air foils in position relatively to the polishing wheel shown in dot and dash lines.

Fig. 13 is a fragmentary front view of the main housing shown in Fig. 12.

Fig. 14 is a detail end view of the four shrouds which form a side of the wheel containing portion of the hood.

Fig. 15 is an enlarged detail view of the lower right hand corner of the device shown in Fig. 13.

Fig. 16 is a top plan view of the filter carrying frame portion of the device.

Fig. 17 is a side view of the frame shown in Fig. 16.

Fig. 18 is a top plan view of the louvered frame for guiding the belt when the unit is applied to a belt polishing or sanding device.

Fig. 19 is a broken away, side view of the frame shown in Fig. 18.

Fig. 20 is a front view of the frame shown in Fig. 18.

Fig. 21 is a front view of the expandable closure member for the belt equipped device.

Fig. 22 is an end view of the member shown in Fig. 21.

Fig. 23 is a side view of the expandable member, and

Fig. 24 is a perspective view of the dust collecting unit as applied to a sanding or polishing belt.

Referring to the drawings, the Fig. 1 clearly shows the dust collecting unit as consisting of a main housing portion 21, a hood portion 22 which encloses the polishing wheel 20 and a filter carrying frame portion 23. The entire unit is carried by two standards 24, each adjustably attachable to the main housing 21 in such a manner as to permit the unit to be set in accordance with the height of the pedestal in which the drive shaft of the wheel 20 is journalled.

The drawings illustrate the unit as equipped with the filter carrying frame 23, which permits dust free air to be discharged from the unit by the blower action of the high speed, rotating wheel. This eliminates the necessity of the commonly used and expensive exhaust system which conveys the dust laden air from the polishing wheel to a collector sump usually located outside the work-shop. However, where such an exhaust system is already installed, the filter frame may be removed and a closure plate attached to the main housing in its stead. Now the unit may be connected to a conduit of the exhaust system, the blower action of the wheel boosting the exhaust system.

The drawings, and particularly Figs. 1 to 8, show the main housing 21 to be rectangular in shape having closed side, top and bottom walls 26, 27 and 28 and 29 respectively. The front and rear ends of the housing are completely open. The top and bottom members 28 and 29 respectively are attached to the respective side members 26 and 27 in any suitable manner preferably by welding. At the vertical rear end edges of the housing 21, L-shaped members are attached to the housing, one leg of said members extending inwardly of the housing and being spaced from the housing edge to form a slide-way along each vertical rear end edge of said housing. These slide-ways are designated by the numeral 31. The bottom 29 of housing 21 has an opening in which a dust sump 32 is secured, said sump having a removable cover 33. When the unit is used with an exhaust system this cover 33 is removed and the sump 32 is connected with a conduit of the exhaust system.

As particularly shown in Figs. 6 to 8 and 12 to 15, the main housing has a secondary housing 35 rigidly secured therein, said secondary housing being of lesser height and width than the main housing 21 so as to provide spaces between the inner walls of the main housing 21 adjacent the corresponding outer walls of the secondary housing 35. The spaces between the respective side walls of these two housings are designated by the nu-

merals 36 and 37. The space 38 is provided between the top ends of the two housings. Space 39 is formed by a spacer plate 40 interposed between the bottom members of the main and secondary housings both of which are welded to said plate. Plate 40 is narrower than the secondary housing thus space 39 is formed along each side of said secondary housing, see Fig. 6.

The spaces 36, 37, 38 and 39 between the main and secondary housings provide slide-ways for the various elements which form the wheel containing hood portion 22 of the unit as will later be described.

The secondary housing has the means provided therein for slidably supporting the several baffle plates and air foils of the unit. These means include two identical but oppositely disposed supports 40 and 41 attached to the respective side members 42 and 43 of the secondary housing 35, in spaced relation to the top member 44 thereof so as to form a slide-way for the baffle plate 65, which has a depending, right angle skirt portion 66, the lower edge of which may be brought into juxtaposition with the wheel 20 by sliding the baffle plate 65 in the secondary housing 35. Other similar, oppositely disposed supports 45—46, 47—48, 49—50, 51—52, 53—54 and 55—56 are attached to the respective sides 36—37 of the secondary housing, adjacent supports on each housing side forming slide-ways for baffle plates and air foils. Fig. 7 shows that all of the supports excepting 55—56 extend substantially half way from the front edge of the secondary housing to the rear edge thereof, the supports 55—56 extend to the rear edge of the main housing 21. Supports 45—46 and 47—48 slidably support the baffle plate 60 which has a vertical riser portion 61 substantially parallel to and normally spaced from the skirt portion 66 of baffle plate 65 when the unit is to be used, so that an air flow passage is formed between said riser 61 and skirt 66. The skirt portion of baffle plate 65 overlaps the riser 61 of baffle plate 60, the slide-way in which baffle plate 60 is supported being in a horizontal plane passing beneath the axial center of the wheel 20 as shown in Fig. 12. The lower edge of skirt 66 is below the upper edge of riser 61 and above the axial plane passing through the wheel 20. Supports 47—48 slidably carry the air foil 63 with a downwardly extending, angular air deflecting tail portion 64 at its inner end. A similar air foil 67 with an air deflecting tail portion 68 is slidably carried by the supports 49—50 and 51—52. Still another air foil 69, with an angular tail portion 70 is slidably carried by supports 51—52 and 53—54. The supports 53—54 and 55—56 slidably carry the air foil 71 and an air scoop in the form of an open end pan 72 may be inserted between any two adjacent air foils, Fig. 12 showing the pan between air foil 71 and a supporting plate 73 which slidably rests upon the bottom of the secondary housing. All foils 63, 67, 69 and 71 are movable to bring their forward edges into juxtaposition with the peripheral edge of the wheel 20 as shown in Fig. 12. The scoop-pan 72 is movable so that it may be positioned beneath the wheel 20 to form the bottom of the wheel hood 22.

The space 38 between the tops of the main and secondary housings 21 and 35 respectively slidably receives the top slide assembly which consists of the frame 75 which, when slidably resting upon the top plate 44 of the secondary housing 35, is spaced from the inner wall of the top 28 of main housing 21. This frame 75 carries a filter element 76 and also an injector 77 through which dressing or dope is directed to the polishing wheel 20. A baffle plate 78 is adjustably secured to the outer end of frame 75 so as to be substantially at right angles thereto. A clamping screw 79 secures the plate 78 in the selected adjusted position on frame 75 so that the lower edge of plate 78 is proximate to the peripheral edge of the wheel 20. By the adjustment of frame 75 relatively to the main housing and the baffle plate 78 relatively to the said frame, this top side of the wheel containing hood may be made to accommodate various size wheels or a sanding belt as will be described hereinafter.

Space 36 between the sides 26 and 42 of the main and secondary housings, and space 37 between the sides 27 and 43 of said housings each provide a slide-way for shrouds which may be manipulated to form the side enclosures for the wheel encasing hood portion of the unit. Inasmuch as the shrouds in each space 36 and 37 are identical, only one set of shrouds will be described. Referring particularly to Figs. 13, 14 and 15, four shrouds 80, 81, 82 and 83 are shown, each shroud consisting of three flatly engaging plates which slidably fit in the space 37 or 36. The lower edge of the shroud 80, more specifically its outer plate is bent inwardly to form flange 84 which slidably fits in space 39 provided between the bottom walls of the main and secondary housings by the spacer plate 40. The upper edge of the intermediate plate of the shroud 80 lies beneath the upper edges of the two outer plates thus forming a longitudinal channel in which the extending lower edge of the intermediate plate of the adjacent shroud slidably fits so that shrouds 80 and 81 are relatively slidable in the space 37. Shroud 82 slidably interfits with shroud 81 in a like manner and likewise shroud 83 slidably interfits with shroud 82. The outer plate of shroud 83 is bent inwardly at its upper edge to form a flange 85 which slidably fits in the space between the top of main housing 21 and the top of slide frame 75 as shown in Fig. 13. An angular ear 86 at the outer end of each shroud forms a handle by means of which the respective shrouds may be moved relatively to each other and to the housings 21 and 35, whereby the sides of the wheel 20 may either be entirely enclosed or partially or fully exposed as is desired.

When only the front portion of the polishing wheel is to be used, the top slide member 75 and its baffle plate 78 as well as scoop-pan 72 are adjusted as illustrated in Figs. 1 and 2. The shrouds 80, 81, 82 and 83 at each side of housing 21 are drawn outwardly so that their ends aline with the baffle plate 78. Now the entire wheel excepting its front peripheral edge is enclosed by the hood 22 of the unit. As the wheel is rotated at the substantially high polishing speed, it will create an air flow within the hood, the air from the outer portion of the wheel being directed into the scoop-pan 72 through the inner open end thereof into the main housing 21 and the filter frame 23. Other strata of air flow from the wheel will enter between the adjacent air foils 71—69, 69—67, and 67—63, the angular tail portions of certain of these foils deflecting the dust laden air flow downwardly within the housing 21 toward the dust sump 32 therein, as well as into the filter frame 23. The air flow from the wheel within its axial center area will be directed against the riser portion 61 of baffle plate 60 and will pass through the space between said riser 61 and the skirt portion 66 of baffle plate 65 on its way into the main housing and the filter frame. Skirt 66 having its lower edge in close proximity to the peripheral edge of the wheel 20, will reduce to a minimum if not prevent any carry-over of air flow from the hood into the face of the operator. Air pressure which might be generated within the chamber defined by the baffles 66 and 78 and the frame 75 equipped with a filter element will be exhausted through said filter element, the air at this area carrying a minimum of lighter dust, the heavier dust particles being discharged through the lower ducts defined by the scoop-pan 72, the foils 71—69, 69—67 and 67—63 and the baffle plates 61—66 into the main housing 21.

The unit may be adjusted to accommodate various size wheels 20 by the manipulation of any or all of the movable members constituting the hood portion 22 of the unit. Either side of the wheel in its entirety or selected portions thereof may be exposed for use by the adjustment of the several shrouds. The scoop-pan may be moved to expose the bottom edge of the wheel if it is to be used for polishing purposes. The filters in frames

having proved satisfactory in exhaustive tests. Fibre glass removes down to .02 micron particle size and smaller particles which pass through the filters are considered non-75 and 23 may be of any suitable material, fibre glass injurious to health. Thus the air taken from the interior of the work-shop and forced through the unit by the rotating wheel is directed back into the work-shop substantially dust free and heat losses are practically eliminated. The dust is retained within the unit and collected in the sump 32 in the main housing 21. When the unit is to be used in conjunction with an exhaust system, the filter frame 23 is removed from the main housing 21 and a back cover plate substituted for it. The sump 32 is then connected to a conduit of the exhaust system which will be boosted by the air flow from the wheel.

The filter frame as shown in Figs. 16 and 17 has an outwardly extending flange 91 at the two vertical front edges thereof, said flanges being slidably receivable by the slideways 31 provided at the rear end of the main housing 21 so as to secure the filter frame to said main housing. The two vertical edges of the rear end of the filter frame 23 each have a U-shaped angle plate 92 attached thereto forming oppositely disposed slide ways 93. The filter elements are secured in frame 23 in any suitable manner to permit replacements of said elements.

The unit of the present invention may be applied to and used with a sanding belt as well as a polishing wheel. Figs. 18 to 23 illustrate change over appliances to be placed on the unit when a sanding belt is to be used. For this installation a driving wheel or pulley 120 is substituted for the polishing wheel 20 and a belt 121 passes over the driving pulley and an idler pulley 114 outside the unit. The rear filter supported in slide-ways 93 of frame 23 is removed and a supporting plate 115 is slid into the bottom end of the slide-way 93. Plate 115 has an angular flange 116 at its upper edge, said flange forming a pivotal surface for the belt guiding and supporting frame 119. Said frame 119 consists of two oppositely disposed side members 126 and 127, each having a top plate at right angles to a side portion, the front ends of members 126 and 127 being secured together in spaced relation by a cross plate 122 the front and rear edges of which are bent over to form a channel in which the flanged end 116 of the supporting plate 115 pivotally nests. A screw bolt 123 is attached to plate 115 and extends through a slot 124 in the cross plate 122. A wing nut 125 on bolt 123 engages the plate 122 and holds it in pivotal engagement with the flange 116 on the plate 115. Operation of nut 125 inwardly or outwardly of the screw bolt 123 pivotally actuates the plate 122 on the supporting plate 115 and thereby respectively, tiltably raises or lowers the frame 119 which, as shown in Fig. 24, extends into the interior of the filter frame 23. The pivotal center of this tilting movement is the point of contact of cross plate 122 of frame 119 with the angled edge of flange 116 of the stationary supporting plate 115. The two side members 126 and 127 of frame 119 are further secured together in spaced relation by a plurality of spaced louvre plates 128 fastened to said side members transversely of the frame 119. The spaced louvre plates 128 form a grill over which the sanding belt passes within the unit. A gate or guide plate 129 has one side secured to the side member 127 by means of hinges 130, gate 129 normally resting upon the side members 126 and 127 and thereby forming a clearance space equal to the thickness of said members 126 and 127 through which the lower portion of the belt 121 passes, the smooth back surface of the belt sliding over the inner surface of the gate 129, the abrative outer surface of the belt clearing the cross member 122 of the frame 119, due to the width of the space 131 established by the thickness of the cross plate 122. The guide plate 129 or what may be called a gate, holds the abrative, dust laden side of the belt sufficiently close to the edges of the louvres 128 so that the dust may pass through the spaces between said louvres and drop to the sump provided bottom of the unit. The frame 119 and its guide plate or gate 129 are brought into proper operative position relatively to the belt by manipulation of the wing nut 125 to tilt the frame 119. Plate 115 thus forms a closure for the rear end of the filter frame 23 below the belt 121, as shown in Fig. 24.

The open rear end of the filter frame 23, above belt 121, is closed by the closure plate 130 the side edges of which are slidably received by the slide-ways 93 in said filter frame 23. The lower flanged edge of plate 130 is brought into close proximity to the outer, abrative surface of the belt 121 as shown in Fig. 24.

In order substantially to close the open space between the upper and lower portions of the belt 121, an expandable closure member 140 is provided, said member consisting of two portions 141 and 145, one slidably supported by the other. The Figs. 21, 22 and 23 clearly illustrate member 140 as having plate 141 to which another flexible plate 142 is attached only at its central area so that the two opposite sides may be flexed from plate 141 to which it is attached. At the outer end edge of plate 141 an angular flange 143 is provided. The second plate 145 of closure member 140 has its two side edge portions bent over to form slide-ways 146 which are adapted to receive the flexed plate 142 and thereby slidably secure the two plates 141 and 145 together. Thus these plates are relatively adjustable to vary the distance between the outer side of flange 143 on plate 141 and a similar flange 148 on plate 145. To place the closure member 140 in position on the filter frame 23, between the belt portions extending therefrom, the one side edge of plate 141 is inserted in slide-way 93 at one side of the filter frame 23 while the opposite side of said plate 141 is releasably attached to the filter frame by any suitable fastening means such as a spring latch 149 secured to the frame 23. The two plates 141 and 145 are adjusted so that their respective flanges 143 and 148 are in proximity to the respective portions of the belt 121.

From the aforegoing description it may clearly be seen that the present invention provides a dust collecting unit which may be used in connection with a buffing or polishing wheel or belt, the change over from one to the other simply requiring the easy removal of some parts of the device and the application of other parts.

The dust collecting unit of the present invention is self contained, requiring no additional forced air system to carry away dust laden air. The rotating wheel or belt creates the air currents and the filters prevent the discharge of dust laden air thereby providing greater health protection than the commonly used exhaust system which also requires considerably more space in the work-shop than the present unit. The exhaust system draws heated air from the work-shop and discharges the dust laden, hot air into a dust collector usually outside the work-shop, thereby causing heat losses which are avoided by the present unit for it discharges the substantially dust free air into the work-shop.

The unit of the present invention is designed and constructed to permit the use of the entire wheel or belt or any desirable area thereof without affecting the dust collecting efficiency of the device. It may also be adjusted to permit its installation with any standard polishing pedestal or stand and the unit requires a minimum of floor space for its installation.

While the embodiment of the present invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted.

What is claimed is as follows:

1. A hood for a grinding or polishing wheel, comprising in combination, a main housing provided with a dust collecting sump; a wheel hood the sides of which consist of a plurality of members slidably supported in the main housing and individually movable to enclose a portion of or the entire wheel excepting the front, periph-

eral edge thereof or movable individually to expose and render available any desired side or edge area of said wheel; a plurality of spaced air foils slidably supported in said main housing and movable individually into proximity with the peripheral edge of the wheel; and supporting standards adjustably attachable to the main housing.

2. A hood for a grinding or polishing wheel, comprising in combination, a rectangular shaped main housing provided with a dust collecting sump; means slidably supported along each of the inner sides of said main housing, said means being selectively movable to form a hood either enclosing all but a portion of the peripheral edge of the wheel or enclosing only desirable edge or side portions of the wheel and thereby exposing other edge or side portions of the wheel for use; and means slidably supported in the main housing, transversely thereof, and movable into juxtaposition with the peripheral edge of said wheel for directing dust laden air from said wheel, through the main housing toward the dust sump therein.

3. A hood for a grinding or polishing wheel, comprising in combination, a main housing provided with a dust collecting sump; a wheel hood defined on both sides of the wheel by adjustable shrouds slidably supported in the main housing, said shrouds being individually movable either to enclose the entire wheel on both sides thereof, or to expose and render available for use either side of the wheel in it's entirety or any desirable portion thereof, the top of said wheel hood being defined by a member slidable in the main housing and provided with a depending apron movable by said member into proximity with the peripheral edge of the wheel, the bottom of said wheel hood being defined by a scoop-pan slidably supported by the main housing; a plurality of spaced air foils slidably supported transversely in said main housing and individually movable into proximity with the peripheral edge of the wheel; and supporting standards adjustably attachable to the main housing.

4. A hood for a grinding or polishing wheel, comprising in combination, a rectangularly shaped main housing provided with a dust collecting sump; a wheel hood consisting of a plurality of selectively operated members slidably supported within said main housing, one of said members forming the top of said wheel hood and having a depending apron slidably attached to the outer end of said one member and movable into proximity with the peripheral edge of the wheel, another member being a scoop-pan movable beneath the wheel to form the bottom of the wheel hood, further members consisting of a plurality of superposed shrouds slidable along each side of the main housing, each shroud slidably interfitting with the adjacent shroud and being individually movable to form either entirely closed or partially open sides of said wheel hood; an air baffle plate slidably supported in said main housing adjacent the top member of the wheel hood, said baffle plate having a depending skirt movable into proximity with the peripheral edge of the wheel; a second air baffle plate slidably supported within the main housing and having a riser portion normally spaced from the skirt portion of the first mentioned air baffle plate whose lower edge is above the axis of the wheel, the lower edge of said second air baffle plate being beneath the horizontal axial plane of said wheel; and a plurality of air foils slidably supported between the sides of said main housing, the inner ends of said foils being bent to deflect dust laden air from the wheel toward the sump in the main housing.

5. A hood for a grinding or polishing wheel, comprising in combination, a rectangularly shaped main housing open at the front and back ends and provided with a dust sump; a secondary housing secured within said main housing, the secondary housing being the smaller and thereby providing spaces between the adjacent sides and the tops and the bottoms of the main and secondary housings a removable cover for the back end of the main housing; a hood for the wheel consisting of relatively adjustable side, top and bottom members slidably supported in the spaces between the main and secondary housings, said members being selectively movable either entirely to enclose the wheel excepting a front edge portion thereof or to expose all or a desired portion of the wheel for use; air foils slidably supported transversely in said secondary housing, said air foils being movable to bring their front edges into proximity to the peripheral edge of the wheel; and deflecting portions on said air foils, operative to direct dust laden air from the wheel to the dust sump in the main housing, the back end of the main housing being closed by the removable cover.

6. A dust collecting unit for a grinding or polishing wheel, comprising in combination, a rectangularly shaped main housing open at the front and back ends and provided with a dust sump; a secondary housing secured within said main housing and being shorter and narrower than the main housing so as to provide a space between each two adjacent surfaces of said housings; a removable cover for the back end of the main housing; a hood for the wheel operative either to enclose all but a front edge portion of the wheel or to expose and make available for use substantially all or any desirable side or edge portion of the wheel, said hood consisting of a top slide member slidably supported between the spaced tops of the main and secondary housings, said slide member having a baffle plate adjustably secured to its outer end to permit said plate to be moved into proximity to the peripheral edge of the wheel, the bottom of said hood being formed by a scoop-pan slidably supported within the secondary housing, the respective sides of said hood being formed by a plurality of shrouds slidably interposed between the adjacent sides of the main and secondary housings, said shrouds slidably interfitting one with the other so as to permit movement of one relatively to another; and spaced air foils slidably supported transversely of the secondary housing, said foils being adjustable to move their respective front edges into proximity with the peripheral edge of the wheel for directing dust laden air from the wheel toward the sump in the main housing.

7. A device in accordance with claim 6, in which a slide plate is adjustably supported in the secondary housing adjacent its ceiling, said plate having a depending skirt terminating above the axis of the wheel and movable into proximity with the peripheral edge of the wheel; and a second slide plate slidably supported within the secondary housing in a plane passing beneath the axis of said wheel and having a riser portion extending parallel to and substantially above the lower edge of the skirt of said first mentioned slide member from which it is normally spaced.

8. A device in accordance with claim 6, in which a pair of spaced, vertical baffle plates form spaced inner walls within the unit, one of said baffle plates being slidably supported in the secondary housing adjacent its ceiling and being adjustable into juxtaposition with the peripheral edge of the wheel, the second baffle plate being slidably supported within the secondary housing in a horizontal plane beneath the axis of the wheel, said second baffle plate being normally spaced from the first baffle plate and having its upper edge terminating short of the ceiling of said secondary housing; and air foils slidably supported in said secondary housing, transversely thereof, for adjusting their front edges relatively to the peripheral edge of the wheel.

9. A dust collecting hood for an abrative wheel, comprising in combination, a rectangularly shaped main housing provided with a dust sump and open at its front and back ends; a removable cover for the back end of the housing; a secondary housing, smaller than the main housing, open at its front and back ends, secured within the main housing to provide spaces between the adjacent walls of said housings; a hood for enclosing all but a front edge portion of the wheel, said hood consisting of a top member slidably supported in the

space between the adjacent tops of the main and secondary housings, said top member having a vertical baffle plate adjustably attached to its outer end, the lower edge of said plate being movable into selective proximity with the peripheral edge of the wheel by adjustment of said plate relatively to the top member or by adjustment of said top member relatively to the main housing or both; the hood consisting also of side portions each comprising a plurality of shrouds slidably fitting between the adjacent side walls of the two housings, said shrouds slidably interfitting one with the other, the bottom and top shrouds each having an inwardly extending flange respectively slidably supported between the bottom sides of the housings and the said top member and adjacent top of the main housing, said shrouds being selectively operative partially or completely to enclose the sides of the abrative wheel, a scoop-pan slidable in the main housing, forming the bottom of the hood.

10. A device in accordance with claim 9, in which the top member of the hood is a frame containing an air filter operative to permit the exit of air from the hood but trapping dust with which the air from the wheel is laden; and an injector on said top member operative to direct fluid dressing upon the abrative wheel.

11. A device in accordance with claim 9, in which a plurality of baffle plates are slidably supported within the secondary housing, transversely thereof, said plates being selectively adjustable relatively to each other and to the peripheral edge of the wheel for directing dust laden air flow from the wheel to the sump in the main housing.

12. A dust collecting hood for an abrative wheel, comprising in combination, a rectangularly shaped main housing open at its front and back ends and provided with a dust sump; a wheel hood, the sides of which consist of a plurality of members slidably supported within the main housing and individually movable to enclose either the complete sides of the wheel or only portions of the wheel thereby exposing portions for working purposes; a plurality of spaced air flow controlling baffle plates slidably supported in the main housing, transversely thereof, said plates being individually adjustable relatively to the peripheral edge of the wheel; and a rectangular frame attachable to the rear end of the main housing, certain sides of the frame being open for receiving air filters which retain dust but permit dust free air to pass from the main housing.

13. A device in accordance with claim 12, in which the back end of the main housing is provided with slide ways along two opposite edges thereof, said slide ways forming receptacles for a solid closure plate or for said frame containing the air filters.

14. A dust collecting hood for a sanding belt carried by a driving pulley and an idler pulley, comprising in combination, a main housing open at its front and back ends and provided with a dust sump; a hood for the driving pulley of the belt, said hood consisting of members slidably supported in the main housing and individually operative to enclose desired portions of the driving pulley; a supporting plate adjustably secured to the back end of the main housing, movable into juxtaposition with the lower portion of the sanding belt and forming a closure for the back end of the main housing beneath the belt extending therefrom; a frame pivotally secured to said supporting plate and extending into the main housing, said frame having a plurality of transverse baffle plates forming louvres; means on the supporting plate, engaging the louvred plate, said means being operative pivotally to adjust the said frame for moving it into operative alinement with the sanding belt; a cover plate adjustably secured to the back end of the main housing and movable into juxtaposition with the top portion of the sanding belt for closing this part of the main housing; and a closure member attachable to the back end of the main housing between the upper and lower portions of the sanding belt, said closure member consisting of two portions, one slidably carrying the other to permit expansion or contraction of said closure member in order to move opposite edges thereof into closing proximity with the respective upper and lower portions of the sanding belt.

15. A device in accordance with claim 14, in which a frame, closed only at its top and bottom sides, is removably attached to the back end of the main housing, said frame having air filter elements secured in its two opposite sides and oppositely disposed slide ways at its rear end, said slide ways providing mounting means for the supporting plate of the louvred frame, the upper closure plate and the expandable closure member.

16. A device in accordance with claim 14, in which the louvred frame has an abutment plate hinged thereto, said abutment plate forming a guide engaged by the inside surface of the sanding belt for maintaining said belt in dust discharging, spaced position relatively to the spaced louvres in said frame as the belt passes over said frame.

17. A dust collecting device for a polishing wheel or belt, comprising in combination, a main housing provided with a dust sump; a plurality of individually adjustable members slidably supported in the main housing, certain of said members being individually movable to form an enclosure for selected portions of the wheel or belt while other portions are exposed for use, certain other members being individually movable to form air conduits between the wheel or belt and the sump in the main housing; and a secondary, open sided housing removably attached to the main housing, said secondary housing carrying a filter in each open side thereof said filters being operative to permit the air generated by the wheel or belt and directed through said conduits to be discharged from the secondary housing through said filters while the dust in said air is retained within the main housing and collected in the sump.

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