June 13, 1939. E. R. JOHNSON 2,162,019

DUST REMOVING APPARATUS

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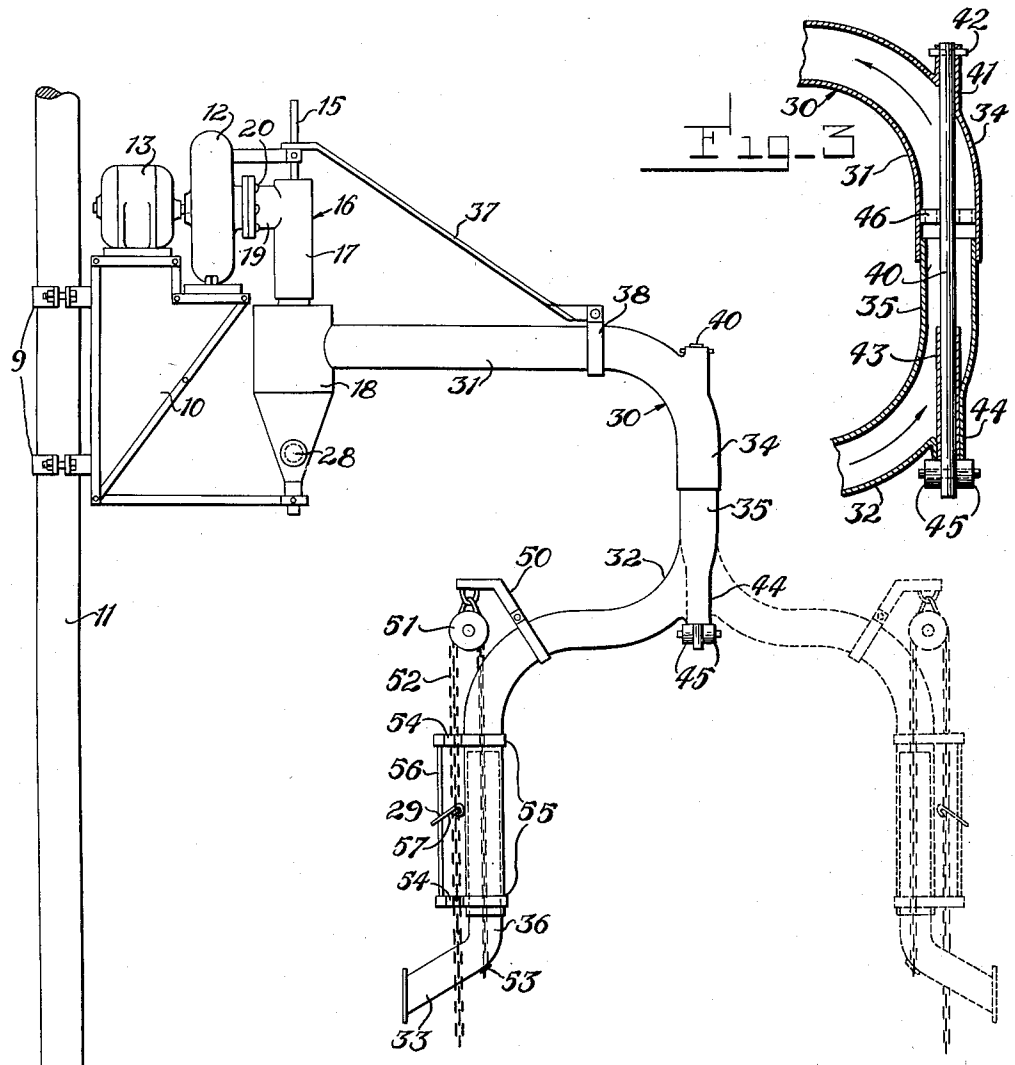


Fig. 1

Fig. 3

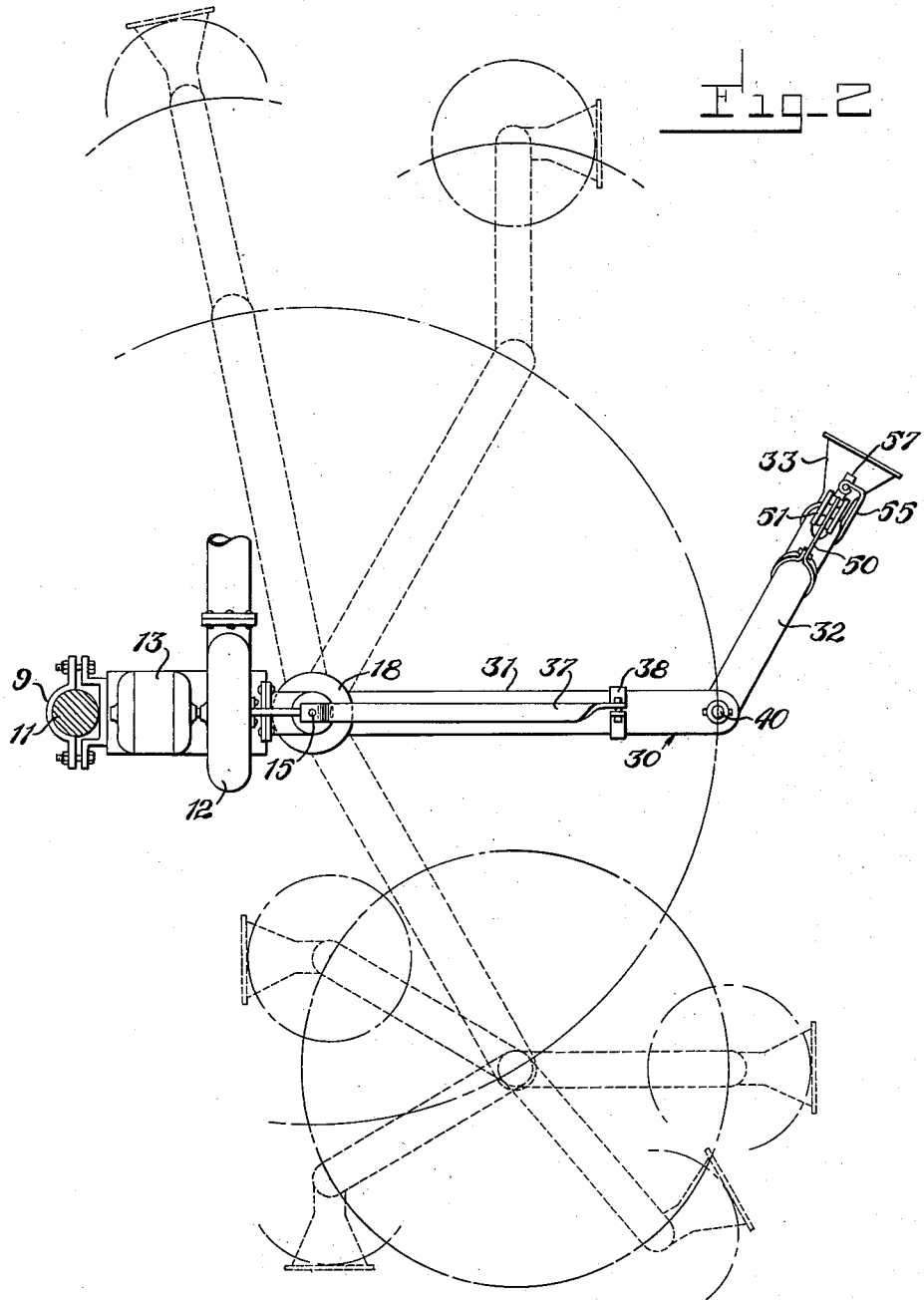
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Fig. 2



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UNITED STATES PATENT OFFICE

2,162,019

DUST REMOVING APPARATUS

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Application May 28, 1938, Serial No. 210,604

2 Claims. (Cl. 98—115)

The cutting and carving of stone creates a fine stone dust which floats around in the air in shops where such work is done. The workmen inhale this dust in large amounts and as a result their health soon is injured. The length of life of such workmen is considerably below average. In order to overcome these difficulties it is necessary to conduct this fine dust directly from the points where it is created to the exterior of the work shop. Apparatus provided for this purpose, heretofore, has been very expensive to install and has been so difficult to use that the workmen did not wish to bother with it and preferred to take their chances with the consequences resulting from inhaling the dust.

It is the object of the present invention to provide an apparatus for overcoming the above difficulties and which is inexpensive to build and install and convenient to use.

The invention will be more clearly understood from the following description in conjunction with the accompanying drawings, in which:

Fig. 1 is an elevational view of an apparatus embodying the invention;

Fig. 2 is a plan view of the same; and

Fig. 3 is a detail sectional elevational view of a portion of the apparatus.

Before explaining in detail the present invention, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practised or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation, and it is not intended to limit the invention beyond the terms of the several claims hereto appended as considered in view of the prior art and the requirements thereof.

One embodiment of the invention is illustrated in the accompanying drawings and comprises a frame 10, secured as by clamps 9 in raised position upon a stationary portion of a building, such as a pillar 11. A rotary blower or air pump 12 driven by a motor 13 is suitably mounted upon the frame 10. A vertical shaft 15 secured in the frame 10 supports a member 16 having a stationary portion 17 and a rotatable portion 18. The stationary portion 17 is provided with an extension 19 connected to the inlet of the blower 12, as by bolts 20. An opening is provided near the lower end of the conduit portion 18 and is normally closed by a cover plate 28.

A conduit 30 having conduit portions 31, 32 and 33 is connected to the rotatable member 18 through one end of the conduit portion 31. The conduit portion 31 is provided with a down-turned portion 34 which receives the up-turned portion 35 of conduit portion 32. The other end of the conduit portion 32 is turned down and slidably receives the up-turned portion 36 of the conduit portion 33. The conduit portion 31 is supported by a tie rod 37 having one end rotatably engaging the shaft 15 and its other end secured to a link 38 surrounding the conduit portion 31.

A rod 40 extends through the portion of the conduit 30 formed by the down-turned portion 34 of conduit portion 31 and the up-turned portion 35 of conduit portion 32. One end of the rod 40 is positioned in a tubular projection 41 extending from the wall of the conduit portion 31 and is fixed therein by a pin 42. A sleeve 43 surrounds the rod 40 near its other end and is fixed, as by welding, in a tubular projection 44 extending from the wall of the conduit portion 32. The rod 40 passes through the sleeve 43 and projection 44 and is provided with a pair of rollers 45 bearing against the outer end of the projection 44. A support 46 in the form of a collar fits snugly around the rod 40 and engages the inner wall of the conduit portion 31 near the end of the down-turned portion 34 thereof.

A bracket 50 is fixed upon the conduit portion 32 and supports a pulley 51 for receiving a chain 52. The chain 52 extends through the vertically extending portions of the conduit portions 32 and 33 and is secured at one end 53 to the conduit portion 33. The chain 52 passes over the pulley 51 and down through openings 54 in each of the spaced brackets 55 which are connected by a rod 56. The rod 56 passes through an opening 29 in a lever 57 one end of which is fixed upon the chain 52.

It will be apparent from the above description that the conduit 30 as a whole is rotatable about the rod 15 and that the conduit portions 32 and 33 are rotatable about the rod 40. Furthermore, the conduit portion 33 is rotatable about the axis of the down-turned portion of the conduit portion 32 thereby permitting the open end of the conduit 30 to be positioned at practically any position within an area having a relatively large radius so as to be adjacent the source of dust formation. Furthermore, the open end of the conduit 30 may be easily adjusted to any desired vertical position merely by first bringing a lever 57 to a horizontal position and then moving the chain 52 upwardly or downwardly. The open

end of the conduit 32 is held in its adjusted position by the action of the weight of the conduit portion 33 upon the chain which causes the lever 57 to assume the inclined position as shown in Fig. 1 whereupon the sides of the opening 29 in the lever 57 bind against the rod 56.

I claim:

1. In a dust removing apparatus, in combination, an air pump, a conduit of substantially uniform diameter having one end open to receive dust and having a connection at its other end to the inlet of said pump, said conduit having spaced curved parts between its ends and comprising two separate portions connected between said curved parts so that one portion may be rotated relative to the other portion to permit the open end of said conduit to be positioned adjacent the source of dust, a rod providing a bearing for rotatably supporting said rotatable conduit portion and fixed to the other conduit portion, and a sleeve surrounding said rod and fixed to said rotatable conduit portion.

2. In a dust removing apparatus, in combination, an air pump, a conduit of substantially uniform diameter having one end open to receive dust and having a connection at its other end to the inlet of said pump, said conduit having spaced curved parts between its ends and comprising two separate portions connected between said curved parts so that one portion may be rotated relative to the other portion to permit the open end of said conduit to be positioned adjacent the source of dust, a rod providing a bearing for rotatably supporting said rotatable conduit portion and fixed to the other conduit portion, and rollers carried by said rod and engaging said rotatable conduit portion.

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