

Aug. 9, 1932.

L. J. DRUMGOLD

1,870,947

DUST COLLECTOR

Filed Nov. 7, 1930

2 Sheets-Sheet 1

Fig. 2.

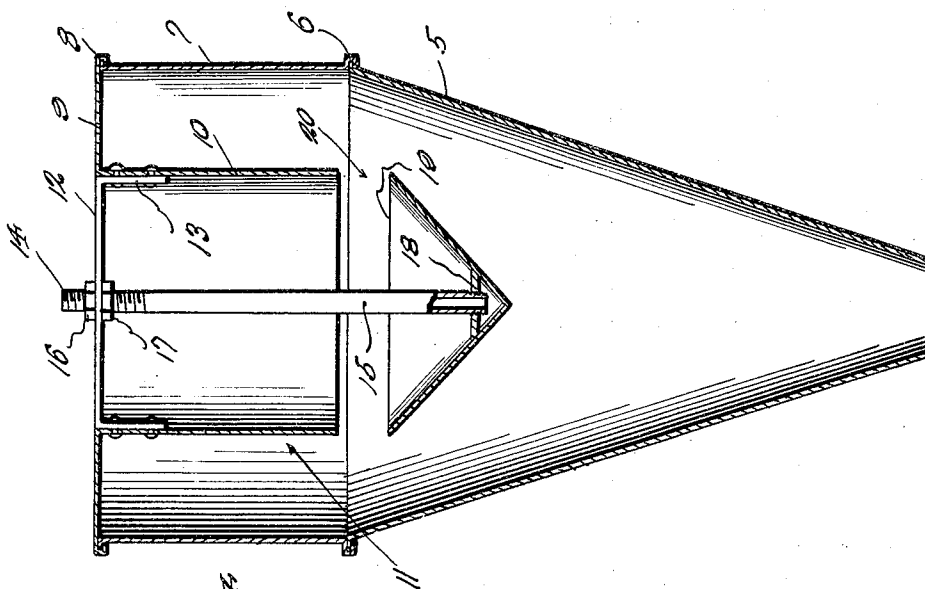
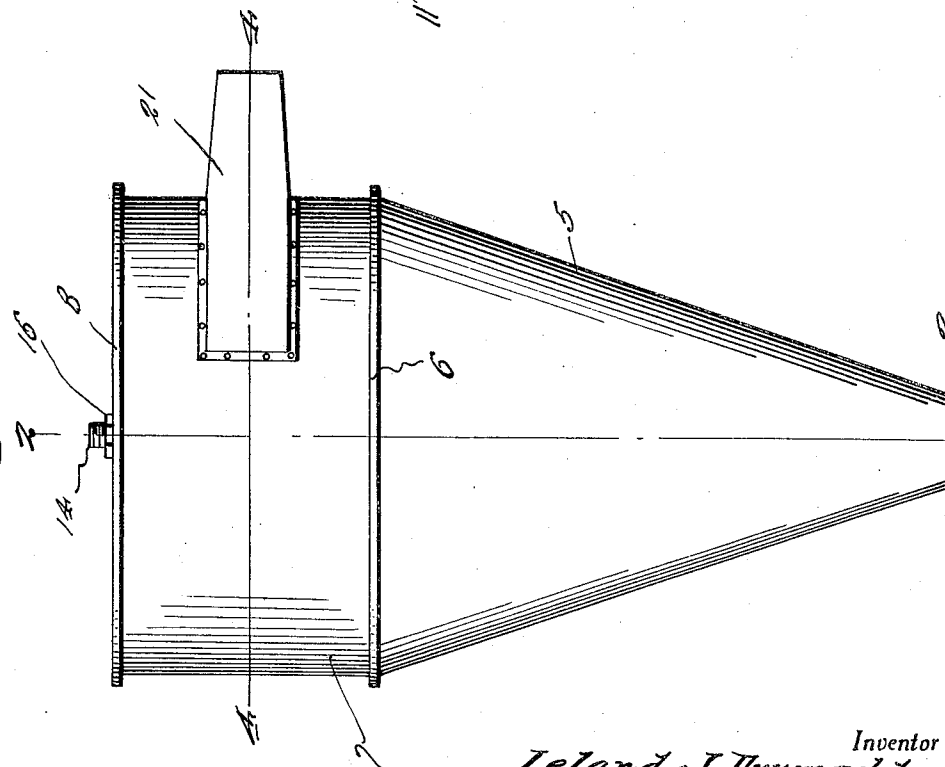


Fig. 1.



Inventor
Leland J. Drumgold

By *Clarence A. O'Brien*
Attorney

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Fig. 4.

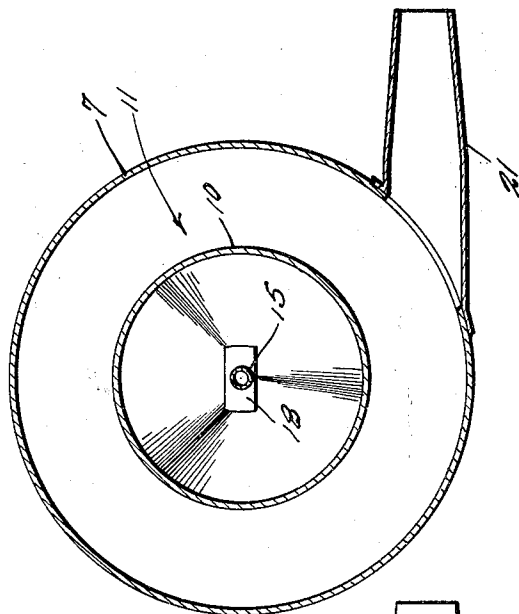
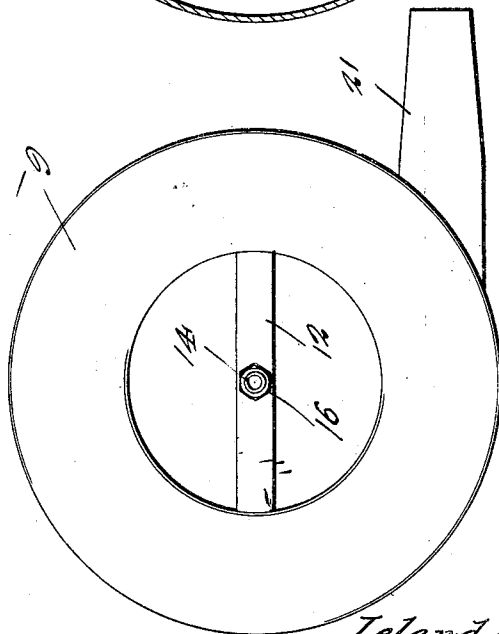


Fig. 3.



Inventor

Leland J. Drumgold

By

Clarence A. O'Brien

Attorney

UNITED STATES PATENT OFFICE

LELAND JOSEPH DRUMGOLD, OF OAKLAND, CALIFORNIA, ASSIGNOR OF ONE-HALF TO
VAN A. NEHER, OF OAKLAND, CALIFORNIA

DUST COLLECTOR

Application filed November 7, 1930. Serial No. 494,133.

This invention relates to a structure which is generally referred to in the prior art as a dust collector, and it has more particular reference to a structure in this classification which is susceptible of general domestic and industrial usage but which is primarily designed for use on shoe machines to separate dust and other foreign matter from the atmosphere in the factory or other establishment.

Structurally recited, the novelty is predicated upon a novel organization of parts which is calculated to fulfill the requirements of a device of this class in a more satisfactory manner than similar prior art devices with which I am familiar, this result being possible due to the particular selection of parts and the proper structural co-relation thereof to provide for more effective and complete separation and gravitation of the dust and heavy extraneous particles ordinarily carried in dust laden air.

The particular assemblage of mechanical parts constituting the alleged novelty will become more readily apparent from the following description and drawings. In the drawings:

Figure 1 is an elevational view of a dust collector developed in accordance with the present inventive conception.

Figure 2 is a central vertical sectional view on the line 2—2 of Figure 1.

Figure 3 is a top plan view.

Figure 4 is a horizontal section on the line 4—4 of Figure 1.

The body portion of the structure is primarily in the form of a hollow metallic casing and this embodies a frusto-conical dust accumulating and discharge hopper or receptacle 5. The truncated apex at the bottom of this constitutes the discharge for conveying the separated material to a suitable point of deposit (not shown).

At its upper end, this receptacle 5 is provided with an outstanding marginal flange which is confined and retained in an annular channel-shaped keeper 6 formed on the lower marginal edge of the annular rim 7. This rim 7 is in turn provided on its top with an outstanding flange which is clamped in a

similar channel-shaped keeper 8 on the outer periphery of the ring-like top 9.

This top has a central air discharge opening and depending from this is an open-ended integral cylinder 10 whose lower end terminates just above the point 6. This cylinder is concentrically arranged with respect to the rim 7 to define an annular separating space 11.

The numeral 12 designates a suspension spider or hanger having attaching ends 13 riveted or otherwise secured to the upper portion of the cylinder. This hanger is disposed on a plane substantially even with the cover ring or plate 9, and the bight portion thereof is centrally apertured to permit passage therethrough of the screw-threaded pin 14 of a hanger tube or pipe 15. Incidentally, the adjustment, or adjustable connection between the spider 12 and the threaded end is afforded by the presence of adjusting and retaining nuts 16 and 17 respectively.

The lower screw-threaded end of this tube is fastened to a strap 18 formed in the apex portion of an inverted conical deflector or baffle element 19. This baffle has its extreme diameter matching the diameter of the cylinder 10 and these parts 10 and 19 are spaced apart to form an air discharge opening 20.

The numeral 21 designates a tangential material inlet or intake. In practice, the dust-laden material enters under pressure through the tangential intake 21 and swirls under centrifugal action in the space 11 between the rim 7 and the associated cylinder 10. The heavier particles of dirt and dust gravitate down into the conical receptacle 5 where they are discharged. The air is separated and flows upwardly through the space 20, up through the cylinder 10 and out through the top centralized opening in the cover plate 9.

The sensitivity of operation of this structure can be regulated by varying the air discharge opening 20 and this is accomplished by adjusting the conical deflector or baffle 19 toward and from the relatively stationary cylinder 10.

It is thought that persons skilled in the art to which the invention relates will be

able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded
5 as unnecessary.

Minor changes in shape, size, and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice if desired.

10 I claim:

A dust collector comprising an elongated conical portion and a superposed cylindrical portion of a diameter substantially equal to the larger diameter of the conical portion,
15 a concentrically disposed open ended cylinder in the cylindrical portion having its ends substantially transversely aligned with the ends of said cylindrical portion, a cover between the top of the cylinder and the top of the cylindrical portion, a baffle adjustably
20 mounted on the cylinder at its upper end, the means for supporting the baffle being disposed on the inside wall and near the top of the cylinder, said baffle comprising an inverted hollow cone the larger diameter of
25 which is substantially equal to the diameter of the cylinder, the baffle being adjustable to simultaneously provide an air passage of equal height between the entire peripheries of the opposed edges of the cone and cylinder
30 respectively, and a tangential intake in the cylindrical portion entering a chamber defined by the wall of the cylindrical portion and the cylinder, said chamber providing an unobstructed path to the passage-
35 way defined by said cone and cylinder.

In testimony whereof I affix my signature.

LELAND JOSEPH DRUMGOLD.

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