

Oct. 13, 1936.

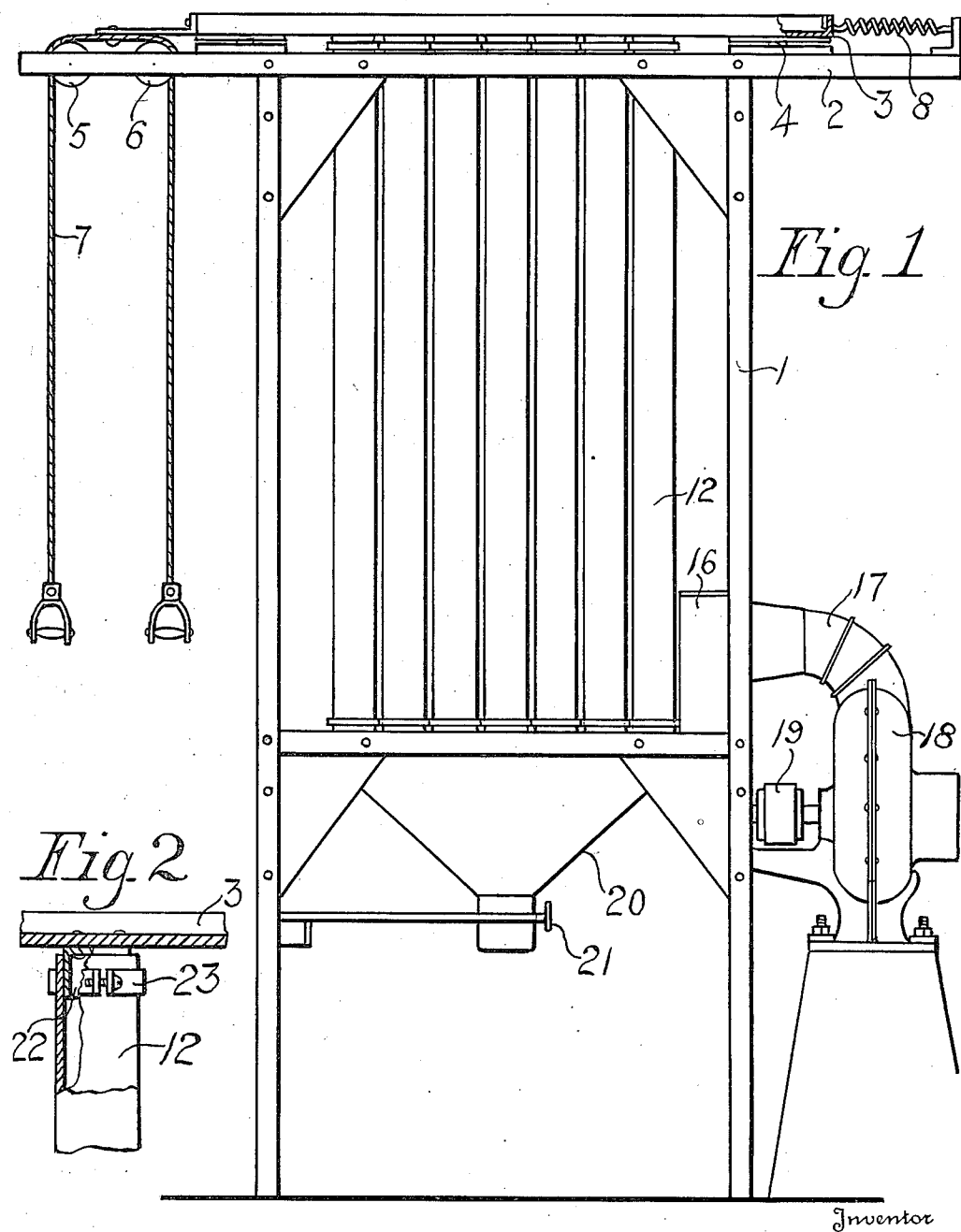
E. A. KLEISSLER

2,057,578

DUST COLLECTOR.

Filed Aug. 1, 1935

2 Sheets-Sheet 1



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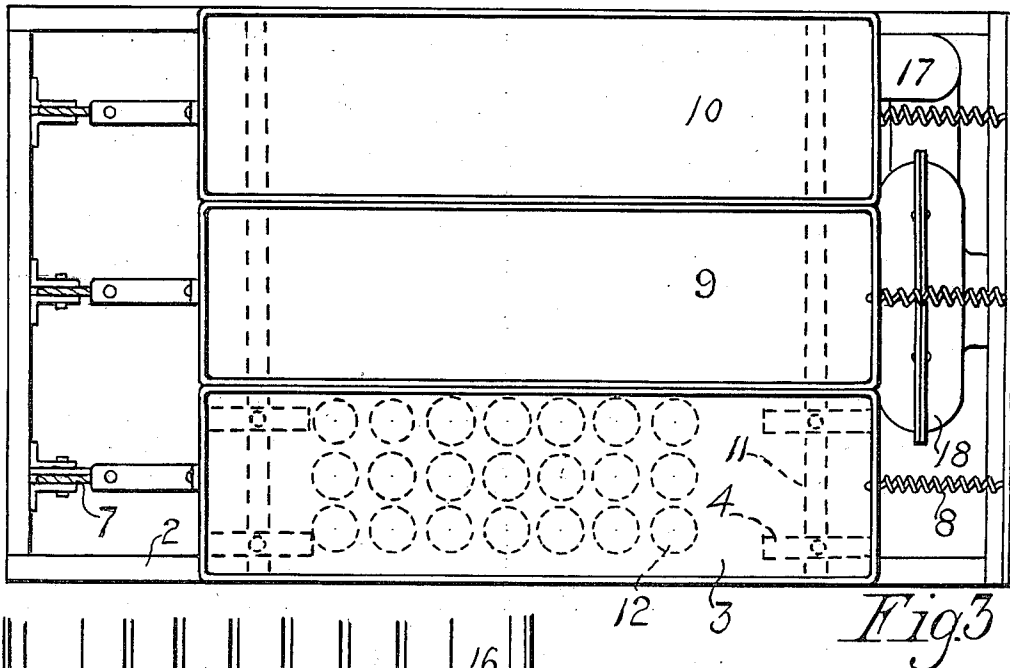
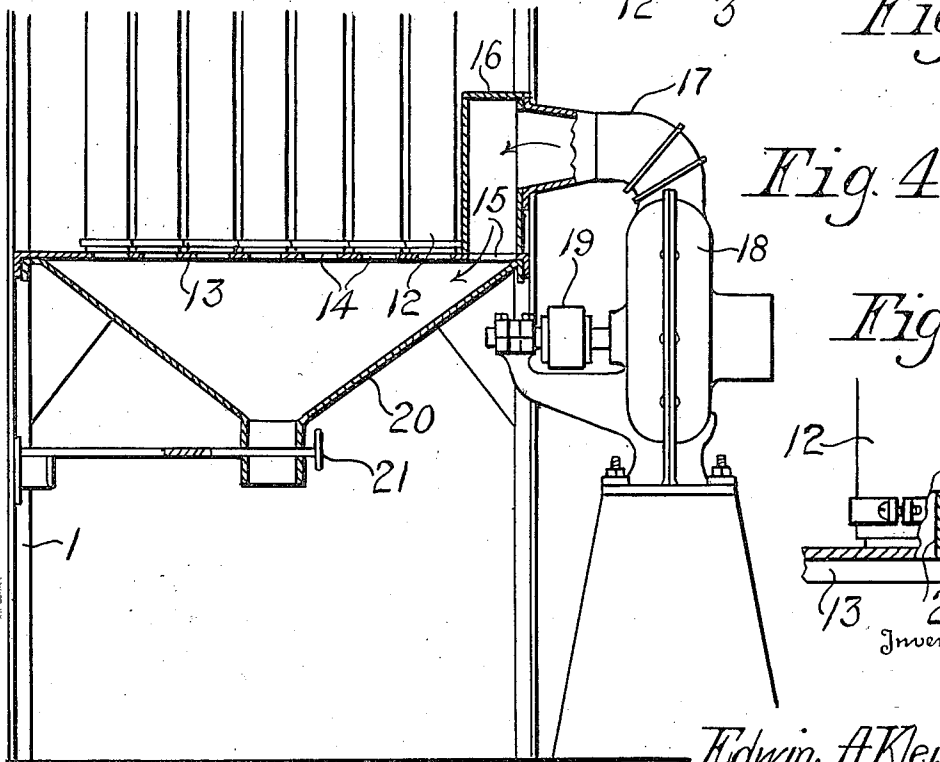
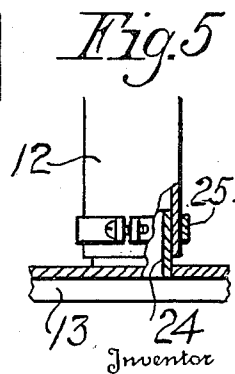
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,057,578

DUST COLLECTOR

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Application August 1, 1935, Serial No. 34,276

1 Claim. (Cl. 183—58)

This invention relates to dust collectors, more particularly to apparatus for removing dust and particles from air in manufacturing establishments and factories, or wherever the use of like contrivances may be advantageously employed. It is designed as an improvement upon the like apparatus for which Letters Patent of the United States numbered 1,912,280, dated May 30, 1933, were issued to this applicant.

The object of the present invention is the production of a construction wherein the dust laden air enters the hopper from the blower in such manner that the heavier particles will settle to the bottom into the hopper, and only the lighter particles and air enter the pervious tubular filtering members.

In the accompanying drawings are illustrated the special construction and arrangement of the various combined parts of this invention. Of the drawings Fig. 1 represents a front view of the apparatus showing all parts assembled.

Fig. 2 shows one manner of securing the tops of the pervious tubes to the top plate of the support whereby the tops of the tubes are closed.

Fig. 3 shows a top view of the top plates to which are attached the tops of the sets of tubes.

Fig. 4 is a sectional view of the lower portion of the parts illustrated in Fig. 1, showing the communication of the blower with the air box and hopper.

Fig. 5 shows one manner of connecting the lower ends of the pervious tubes with the openings of the bottom plate.

Throughout the description and drawings the same number is used to refer to the same part.

In the drawings, the supporting frame 1 has an upper angle iron 2 above which is arranged, as shown in Fig. 1, a flanged top plate 3, which may be carried upon ball bearings 4. The plate may be moved back and forth by hand or by motor if so desired. In Fig. 1 of the drawings the pulleys 5 and 6 have thereon a cord 7, or strap or chain, attached to the plate for shaking it in opposite directions as will be readily understood, at the will of the attendant. As this invention is usually constructed there are three top plates as shown in Fig. 3, those plates 3, 9 and 10 being arranged side by side, and each plate being provided with a spring such as spring 8 at one end of the plate, and the cord and pulleys described at the other end. The spring is ordinarily made to hold the plate yieldingly in a middle position from which it can be moved as desired in alternately opposite directions. The ball bearings and the races for the balls may be carried by the supporting frame on cross irons 11 indicated in Fig. 3 by broken lines. It is not intended to limit this invention to the particular forms, sizes or dispositions of the parts thus far mentioned, as those

elements of the invention may be modified variously for the purposes intended.

Tubular air pervious members 12, in any number or groups extend from the top plates to the bottom plate 13, which has openings 14 into the hopper, as shown in Fig. 4. In this Fig. 4 is also shown the air box 16 having the opening 15 into the hopper, and in open communication by way of duct 17 with the blower 18 driven by belt 19, by which the air is delivered first into the hopper 20, and if the mouth of the hopper is closed by damper 21, as it may be, air from the blower will be directed upwardly into the pervious tubular members.

Considering Fig. 2, the top plate 3 may have 15 attached to its under surface in suitable positions the thimbles 22, and by means of the strap clamps 23 the tops of the tubes 12 may be secured to the top plate, and the tops of the tubes closed. In Fig. 5, it is shown that the bottom and apertured 20 plate 13 may be provided with suitable hollow cylindrical connections 24, and the lower ends of tubes 12 may be secured to the cylinders by the strap clamps 25. The details illustrated in Figs. 2 and 5 are believed to be susceptible of a number of different constructions within the knowledge of makers of such devices. Top plates 3, 9 and 10, may be guided by ball guides 4'.

In the operation and arrangement of the parts of this invention it is found preferable to introduce the air box as shown and described, although it is practicable to connect the blower with the hopper directly. As the air carrying the dust and particles enters the hopper, the heavier particles are found to fall by their own weight, while the lighter dust moves along with the air into the pervious tubes. The air passes outwardly through the walls of the tubes leaving the dust in the tubes, and when the tubes are shaken as set forth the dust drops off into the hopper, from which it may be permitted to pass out downwardly in the customary way.

Having now described this invention and the manner of its use, I claim:—

In a dust collector, the combination with a support of a hopper carried by the support, means for opening and closing the outlet of the hopper, a blower arranged to deliver air into the hopper, a plurality of separate sets of tubular air pervious members closed at the tops and having their lower ends in open communication with said hopper, plates arranged to slide longitudinally on the top of said support, each plate having secured thereto the closed tops of one of said sets of tubular members, said support being provided adjacent the ends of said plates with spaced pulleys, and said plates having attached thereto cords passing over the pulleys whereby any plate may be reciprocated by hand to shake the tubular members.

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