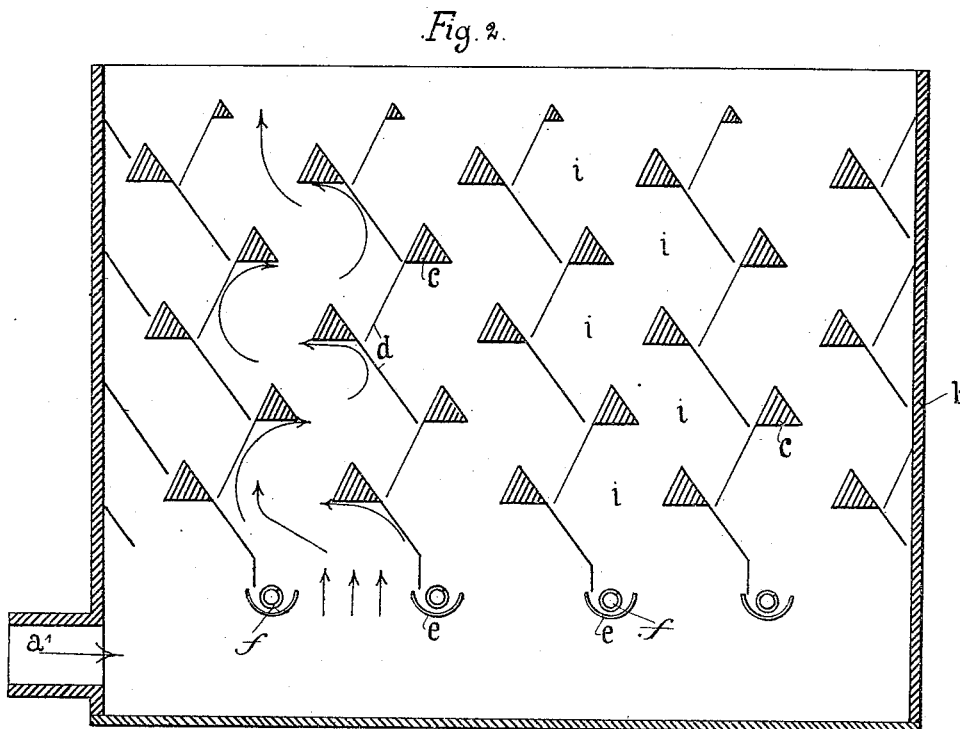
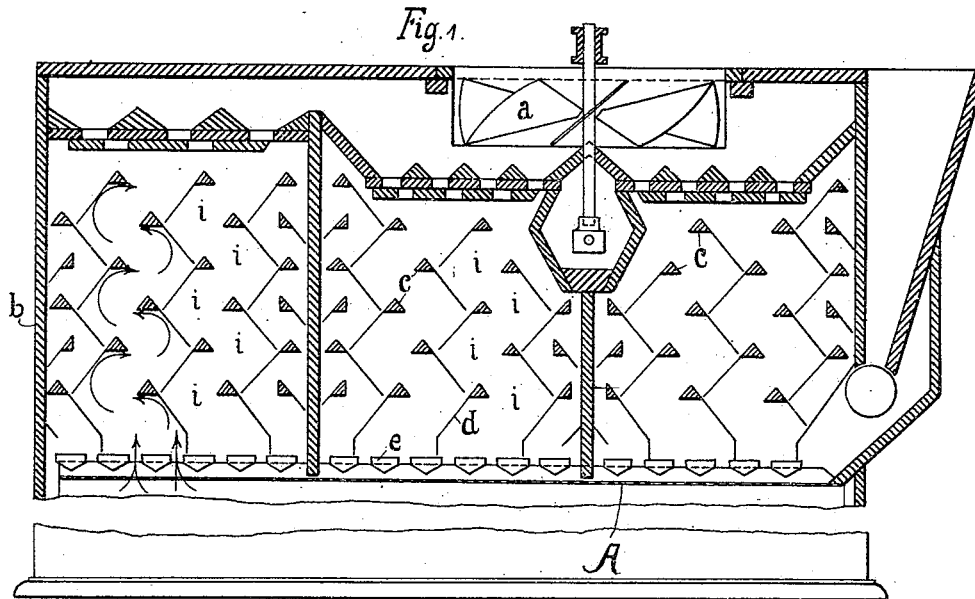


(No Model.)

H. SECK.
DUST COLLECTOR.

No. 493,565.

Patented Mar. 14, 1893.



Witnesses:
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Robert G. Smith

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UNITED STATES PATENT OFFICE.

HEINRICH SECK, OF DRESDEN, GERMANY.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 498,565, dated March 14, 1893.

Application filed April 2, 1892. Serial No. 427,511. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH SECK, of Dresden, in the Kingdom of Saxony and German Empire, have invented a certain new and useful Improvement in Dust-Collectors, of which the following is a specification, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention has for its object to provide a novel, simple, efficient and economical apparatus for removing dust or other light particles from a moving current or body of air, and specially designed for middlings purifiers, but useful wherever it is desirable to remove dust from dust-laden air.

To accomplish this object my invention involves the features of construction and the combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1, is a detail vertical sectional view showing my invention applied in connection with the shaking sieve of a middlings purifier, and Fig. 2, is a detail vertical sectional view of an apparatus suitable for purifying air delivered to rooms or compartments.

In Fig. 1, the letter A indicates the shaking sieve of a middlings purifier, and *a*, a suitable exhaust fan for sucking air into the apparatus from the middlings purifier below.

In both figures the letter *b* indicates a suitable casing open or partly open at the top. In Fig. 2 the casing is provided with an inlet *a'* through which dust laden air is forced into the casing, for purifying air delivered into rooms or compartments. The casing *b* in both constructions is provided with interior obstructions composed of cross-pieces *c* here shown as having a triangular cross section, the said cross-pieces being arranged the one above the other in series and having their ends secured to the walls of the casing. To these cross-pieces are secured plates or webs *d* of wood, sheet metal or other suitable material in such a manner as to extend therefrom obliquely and likewise arranged the one above the other in series in such a manner as to cause the lower free end of each plate or web to adjoin the upper surface of the next plate or web below, leaving a small interme-

diate space between the two plates each of which spaces serves as an outlet opening for the angular space above it, formed by the two respective adjoining plates, while the lowermost plate or web of each vertical series terminates above a separate space or receptacle here shown as constructed in the shape of a receiving gutter or canal *e* which is closed toward the side whence the dust or particles enter the dust collector and which gutter or canal, therefore, contains a body of unmoved air. In order to admit of removing the dust or other particles, collected in the said gutters from the different series of plates above, the same may either be arranged in an inclined position and adapted to be shaken, or they may each be provided with a conveyer, as indicated by *f* in Fig. 2.

The operation of my improved device is as follows:—The air carrying the dust or light particles with it upon being sucked into the same as described enters between the several gutters *e* under a certain pressure passing upward through the several vertical passages *i* formed by the series of plates or webs *d*. In passing along the said plates or webs the air impinges against the lower inclined surfaces of the said plates and against the cross-pieces *c* supporting the same, and is thereby deflected in such a manner as to be directed against the lower inclined surface of a higher plate of the opposite series and thus to alternately impinge against the several plates of the one and the other series until it escapes above. In consequence of the resistance thus offered to the moving current of air its impetus is temporarily arrested whereby the dust or other particles suspended therein will, by reason of their greater gravity, be thrown in the direction of a downwardly curved line while the current of air will continue its course in the direction of an upwardly curved line. The solid particles thus discharged from the current of air will, in striking against the upper surface of the plates, slide down along the same into the angular spaces, where they will be removed from the influence of the air current, and will thence slide through the intermediate spaces between each two adjoining plates from one plate to the other until they will

ultimately reach the respective collecting gutter *e* below to be subsequently removed therefrom in any suitable manner.

Having fully described my invention, what I desire to claim and secure by Letters Patent is—

1. In a device for removing from a moving current or body of air the dust or other light particles contained therein, a number of plates or webs arranged the one above the other in series between an inlet and an outlet for the current of air, the said plates or webs carrying obstructions near their upper ends and on their lower surfaces and being so arranged that the lowermost plate of each series will terminate above one of a number of spaces containing air in a state of rest and closed toward the side whence the air enters into the apparatus, the lower end of each of the other plates or webs of a series approaching the upper surface of the next plate below it leaving an open intermediate space, and the planes of each two adjoining plates intersecting each other at an acute angle, substantially as and for the purpose set forth.

2. In a dust collector a casing having a lower inlet and an upper outlet opening, a number of series of transverse plates within the said casing, having obstructions near the upper ends of their lower surfaces and so arranged that the planes of each two adjoining plates of a series will intersect each other and the lower end of each plate will approach the upper surface of the next lower plate leaving an open intermediate space, and a number of receptacles each arranged below the lowermost plate of the several series, substantially as described.

3. In a dust collector the combination, with a casing having a lower inlet and an upper

outlet opening, of means for conveying a current of air through the said casing, a number of series of transverse plates therein having obstructions near the upper ends of their lower surfaces and so arranged that the planes of each two adjoining plates of a series will intersect each other and the lower end of each plate will approach the upper surface of the next lower plate of the same series leaving an open intermediate space, and of a number of receptacles each arranged below the lowermost plate of the several series, substantially as described.

4. In a dust collector, the combination with a casing, and means for causing the upward passage of dust-laden air through said casing, of a series of plates arranged in the casing, one above the other at such angle relatively to each other that the continuation of the plane of each plate will intersect the plane of the next plate below it and the dust-laden air in its upward passage impinges alternately against the lower sides of the plates, substantially as described.

5. In a dust collector, the combination with a casing, and means for causing the upward passage of dust-laden air through the casing, of plates arranged in the casing one above the other, extending in alternating directions and each having its upper end portion provided with an air obstructing cross piece for deflecting the ascending dust-laden air, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HEINRICH SECK.

Witnesses:

F. C. DÖRFEL,
PAUL MATTHES.