

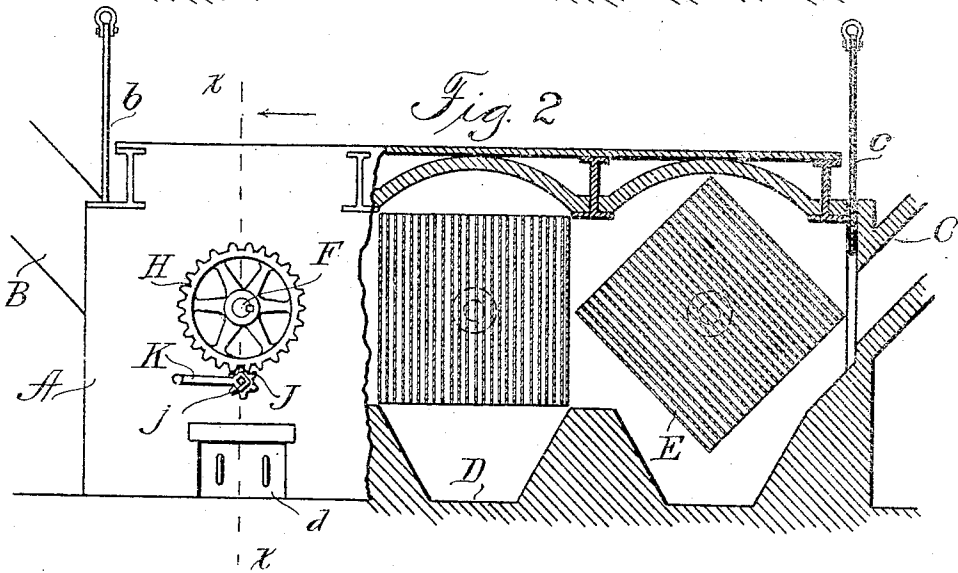
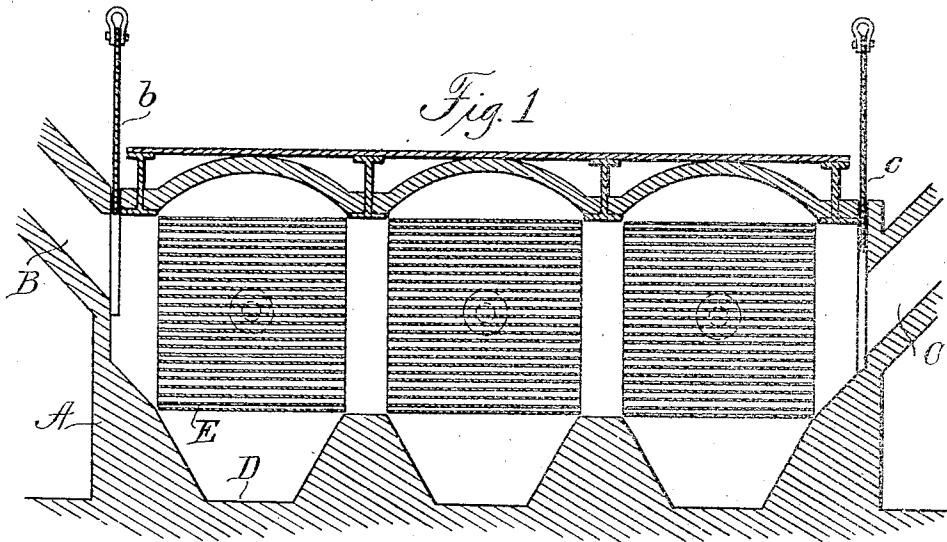
W. T. HARDER.
DUST COLLECTOR.

APPLICATION FILED FEB. 1, 1911. RENEWED JAN. 4, 1913.

1,056,331.

Patented Mar. 18, 1913.

2 SHEETS—SHEET 1.



Inventor

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By

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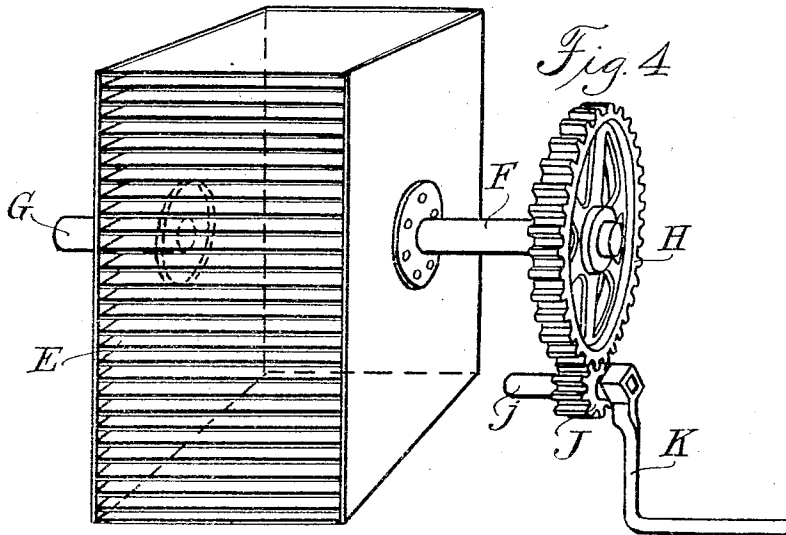
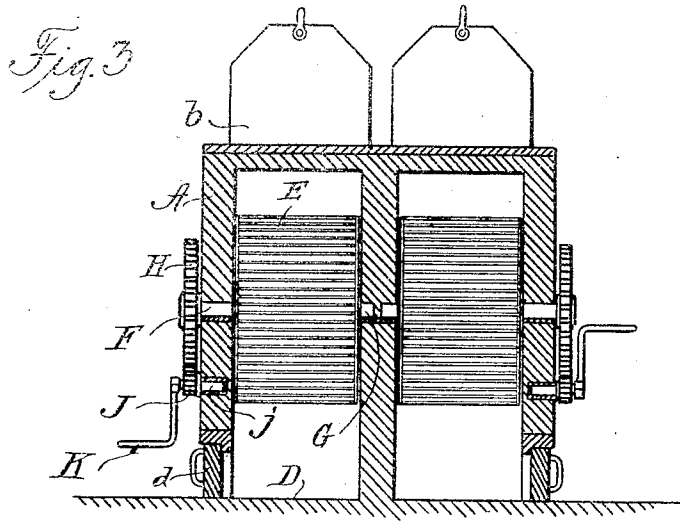
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UNITED STATES PATENT OFFICE.

WILLIAM T. HARDER, OF SOUTH BALTIMORE, MARYLAND.

DUST-COLLECTOR.

1,056,331.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed February 1, 1911, Serial No. 605,900. Renewed January 4, 1913. Serial No. 740,238.

To all whom it may concern:

Be it known that I, WILLIAM T. HARDER, a citizen of the United States, residing at South Baltimore, in the county of Anne Arundel and State of Maryland, have invented certain new and useful Improvements in Dust-Collectors, of which the following is a specification.

This invention relates to dust collectors, and is particularly adapted for use in apparatus the operation of which necessitates the separation and deposit of quantities, usually very large quantities, of dust from fumes or vapors. For example, in the manufacture of sulfuric acid, the "pyrites fines" run through the burner, result in the sending over with the gas produced an enormous amount of fine dust that must be collected and removed in some manner. In attempting to make the dust chambers large enough to be effective, the temperature of the gases is often reduced to such an extent as to interfere with the further steps of the process. Furthermore, in those dust collectors with which many such apparatuses are equipped, it is extremely difficult to get the dust out after it is caught, without affecting the quality of the desired product.

It is the object of this invention to produce a dust collector suitable for receiving the deposit of great quantities of dust, and which may be periodically unloaded or dumped into dust pits, without affecting the interior temperature of the chambers containing the invention.

This invention consists of adjacent walled chambers provided interiorly with sets of dust-collecting shelves, usually one set of shelves in a single chamber, and the chambers and sets of shelves being arranged in series. Each set of shelves is supported upon trunnions, and is revoluble within the chamber by means of suitable contrivances accessible from without. Each chamber is provided with a dust pit beneath the set of shelves, having a door from which the dust may be removed.

This invention is illustrated in the accompanying drawings, of which—

Figure 1 represents a vertical section lengthwise of a series of chambers constructed in accordance with this invention and provided with sets of shelves with operating means shown therefor. Fig. 2 is an external side view of a set of chambers, hav-

ing a part of the front wall broken away, and showing one set of shelves in the dumping position. Fig. 3 is a vertical cross-section on broken line $x-x$ of Fig. 2, and Fig. 4 is a perspective view of a set of shelves alone.

The same letter is employed to refer to the same part throughout the description and drawings.

The series of chambers A, has a gas inlet B, that may be opened and closed by a damper b , and, at the other end of the series is an outlet C, governed by a damper c . Each chamber is constructed with a dust pit D, having the door d , the pit being arranged directly below the set of shelves E.

The supporting trunnions of the set of shelves are marked F and G, and the trunnion F is provided with a gear H, operated by a pinion J on a stub shaft j that is turned by a crank K. The function of the shelves is to receive the dust deposited as gases laden with dust pass, usually somewhat slowly, through the sets of shelves, and between the shelves of each set lying horizontally one above another.

Considering Figs. 1 and 2, it will be noted that, when all the sets of shelves are arranged in receiving position, that is to say, with the shelves horizontal, any set of shelves may be individually turned upon its trunnions, for the purpose of dumping its contents into the pit D, without disturbing the remaining sets of shelves, and that the chambers are constructed, and the distances between the sets of shelves fixed to permit the movement without making the chamber any larger than is necessary. Economy of construction is believed to be in that way accomplished without danger of loss of heat. Again, it will be observed that the set of shelves is co-extensive with the openings between the chambers, and, therefore, all the gas must pass through the sets of shelves. In other words, it is thought that a dust collector constructed in accordance with this invention, provides dust-arresting means, as large as the chambers can be made to operatively receive. It is thus believed to be now made out hereinabove that very large quantities of dust may be collected, and the sets of shelves repeatedly cleared by dumping, before it is necessary to open the chambers or either of them.

Having now described this invention, and

explained the mode of its operation, what I claim is:—

1. In a dust collector, the combination with a chamber having a dust pit and pit door, of a set of shelves comprising a plurality of shelves arranged one above another and connected together, the said set of shelves being revoluble as a whole within the chamber, and means extending without the chamber constructed to actuate the set of shelves.

2. In a dust collector, the combination with a chamber having a dust pit and pit door, the said chamber having openings on both sides, of a set of shelves revoluble as a whole within the chamber, the said set of shelves being co-extensive with the said openings in the chamber, and means extending without the chamber constructed to actuate the set of shelves.

3. In a dust collector, the combination with a chamber having a dust pit and pit door, the said chamber having a gas inlet and a gas outlet provided with dampers, of a set of shelves revoluble as a whole within the chamber, and means extending without the chamber constructed to actuate the set of shelves.

4. In a dust collector, the combination with a chamber having a dust pit and pit door, the said chamber having openings on both sides, of means for controlling the passage of gas through the said openings, a set of shelves revoluble as a whole within the chamber, the said set of shelves being co-extensive with the said openings of the chamber, and means extending without the chamber constructed to actuate the set of shelves.

5. In a dust collector, the combination with a series of chambers having openings at the ends whereby the chambers are in communication, of sets of shelves pivotally supported within the chambers, the said sets of shelves being co-extensive with said openings between the chambers, and means extending without the chambers constructed to actuate the said sets of shelves each set as a whole.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM T. HARDER.

Witnesses:

ALLEN B. CRISP,
ANNA POTE.