

No. 710,624.

Patented Oct. 7, 1902.

W. W. SLY.
DUST COLLECTOR.
(Application filed Mar. 17, 1902.)

(No Model.)

Fig. 1.

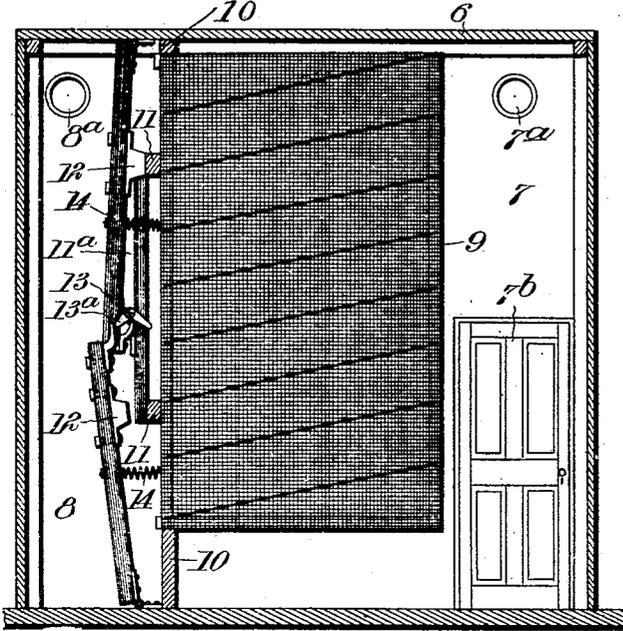


Fig. 3.

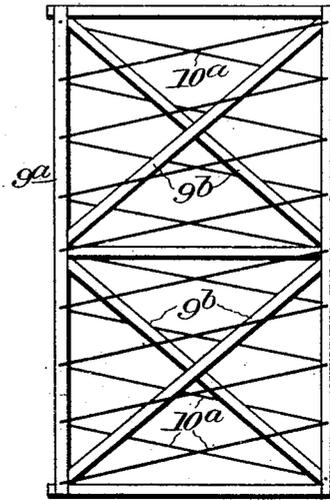
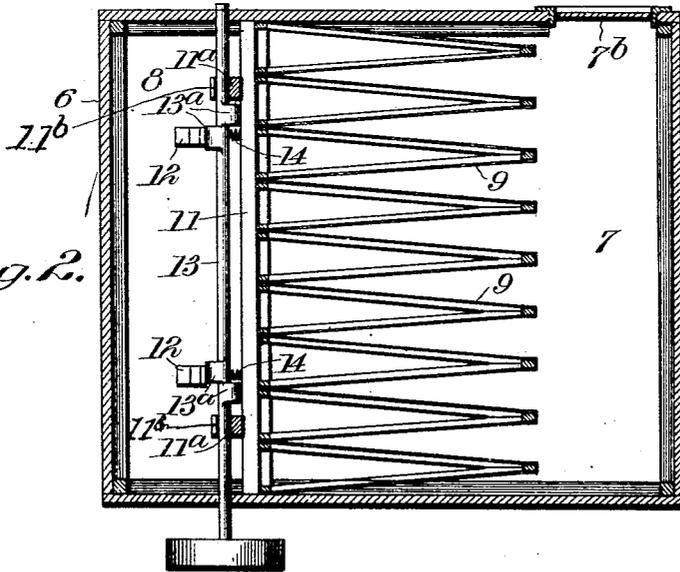


Fig. 2.



Witnesses
 L. H. Walker
 Geo. E. Tew

Inventor
 W. W. Sly
 by Milo B. Stevens & Co
 Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM W. SLY, OF CLEVELAND, OHIO.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 710,624, dated October 7, 1902.

Application filed March 17, 1902. Serial No. 93,663. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SLY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Dust-Collectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

15 This invention relates to dust-collectors.

The object of the invention is to form a dust-collector particularly useful in handling mineral-dust—such as sand from castings, dust from emery-wheels, &c.

20 A further object is to improve the construction of the screens used in such collectors, so that they will be strong enough to handle successfully the mineral-dust from foundries and metal-working factories.

25 A further object comprises means to jar or shake the screen-frame, so as to dislodge the dust therefrom.

30 A further object is to assist the operation of the machine by providing a rarefied-air chamber in which much of the dust will settle by its own weight.

A further object is to generally improve the construction of such machines.

35 With these and other objects in view the invention is hereinafter described, and is illustrated in the accompanying drawings, in which—

40 Figure 1 is a side elevation of the machine with the side of the casing removed to show the interior thereof. Fig. 2 is a horizontal section. Fig. 3 is a plan view of one of the screen-frames with the screening-cloth removed.

45 Referring specifically to the drawings, 6 indicates the walls of the casing, which is divided into two chambers 7 and 8 by a series of screens 9 and partition 10. Air is exhausted from the chamber 8 through a pipe 8^a, and a pipe 7^a serves to conduct the dusty air to the chamber 7. In machines of this kind it is preferable to exhaust pure air from

the casing by the fan rather than to force dusty air into the casing, since by the former method a chamber of rarefied air is formed before the screen in which the heavier dust particles settle without being drawn against the screen. This rarefied-air chamber is indicated at 7 in my construction and is provided with a door 7^b, through which it may be entered to remove the dust which collects on the floor and to sweep or repair the screens when necessary. The screens are disposed vertically in a zigzag course across the casing and are supported at one edge only by attachment to the partition 10, from which they project into the rarefied-air chamber. By supporting the screens at one edge only they are less rigid than they otherwise would be and are consequently more readily shaken or jarred. Bars 11 are secured to and extend horizontally across the back edges of the screen-frames, and the screens are jarred by hammers 12, which are hinged to the floor and the ceiling of the casing and alternately strike the said bars. The hammers are lifted by tripping-cams 13^a on a shaft 13, which extends through the walls of the casing and is rotated in any proper manner. The horizontal bars 11 are connected by vertical braces 11^a, carrying bearings 11^b for the shaft, by which construction the parts are strengthened and braced and the screen and shaft held at proper distance. Springs 14 bring the hammers forcibly against the bars when they are tripped by the cams.

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The screens consist of rectangular frames 9^a, covered with suitable filtering-cloth, which is tacked or otherwise secured to the frames, and the frames are strengthened by diagonal braces 9^b. Wires 10^a are stretched across the frame, between the side bars thereof, on both sides of the filtering-cloth. This prevents the cloth from bulging and meeting under the air-pressure and also tends to communicate the jar given by the hammers to all parts of the screen. The zigzag arrangement of the screens produces V-shaped spaces therebetween, permitting ready access thereto for the purpose of cleaning or repairing. The joints between the screens and also between the screens and the partition are made as air-tight as possible, as will be understood.

The light partition on which the screens rest provides a non-rigid support, which will vibrate easily with the screens, and also raises the screens from the floor to provide room for the dust to settle and be easily removed. A dust hopper or conveyer may be located beneath the screens, if desired.

What I claim is—

1. A dust-collector comprising a casing divided into two chambers by a vibratory partition and a series of vertically-arranged screens, said screens being supported on the partition at one edge only, the remaining edges being free, and hammers arranged to

strike the screens at the supported side at opposite ends alternately. 15

2. In a dust-collector, in combination, the casing 6, the partition 10 therein, the screens 9 supported at one edge by the partition, means to jar the screens, and inlet and exhaust pipes for the casing. 20

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

WILLIAM W. SLY.

Witnesses:

JOHN A. BOMMARDT,
LOTTIE NEWBURN.