G. W. GLASSFORD, JR.
DUST COLLECTOR.
APPLICATION FILED NOV. 3, 1913.

1,109,059.

Patented Sept. 1, 1914.

2 SHEETS—SHEET 1.

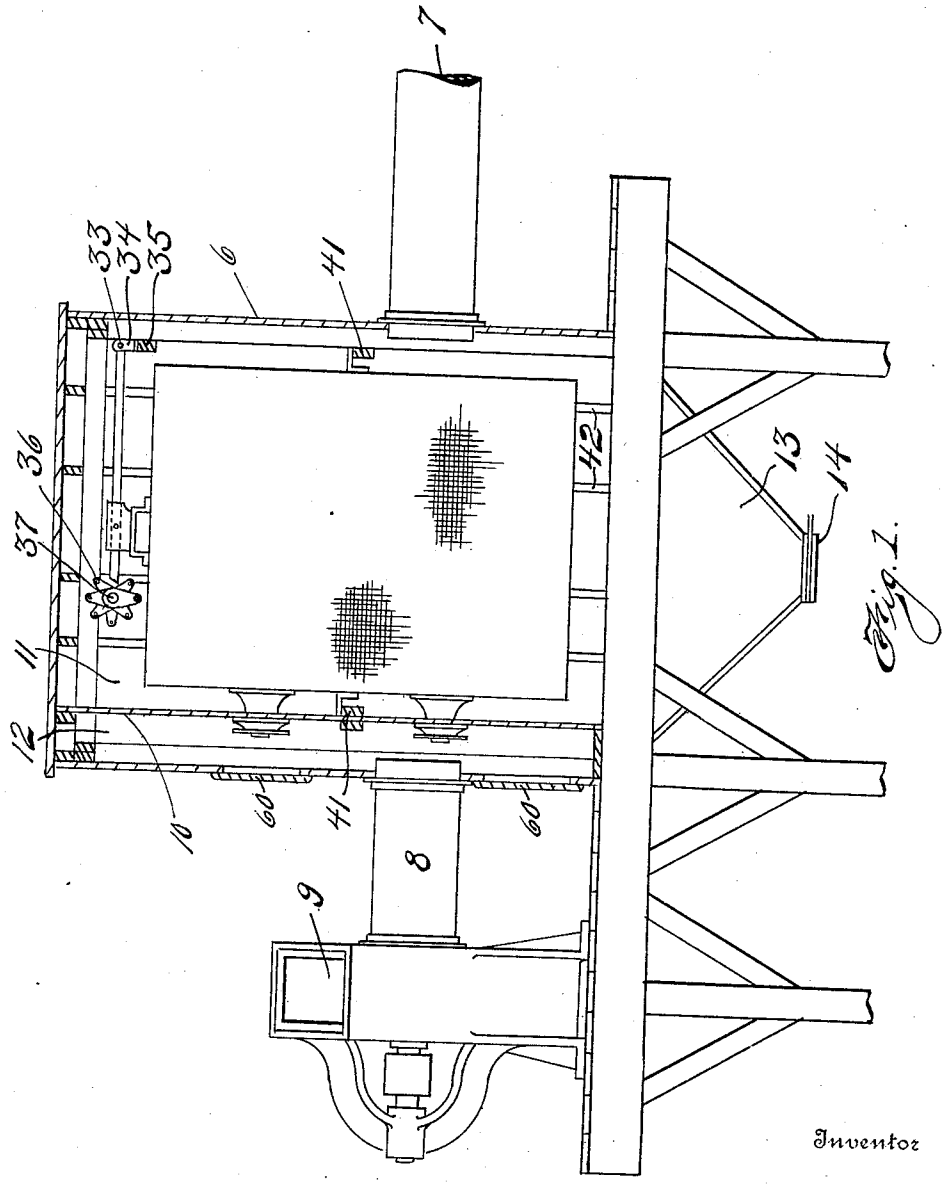


Fig. 1.

Witnesses
H. L. Richey
Anna Watters

Inventor
George W. Glassford Jr.
By John A. Bommhardt
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

G. W. GLASSFORD, JR.

DUST COLLECTOR.

APPLICATION FILED NOV. 3, 1913.

1,109,059.

Patented Sept. 1, 1914.

2 SHEETS—SHEET 2.

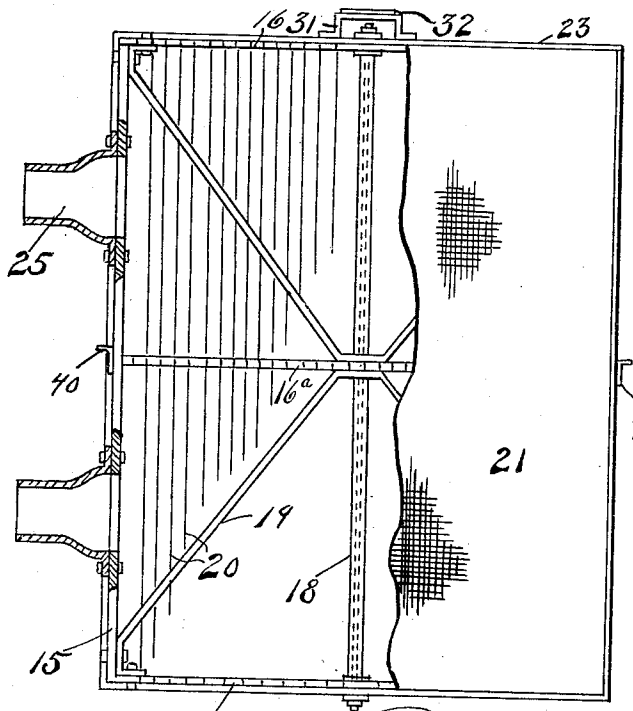


Fig. 2.

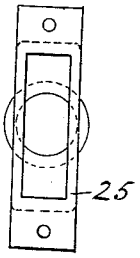


Fig. 7.

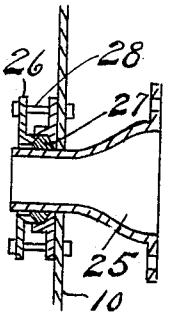


Fig. 6

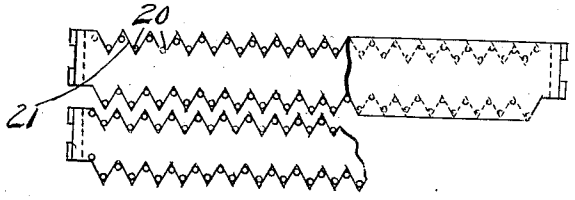


Fig. 3.

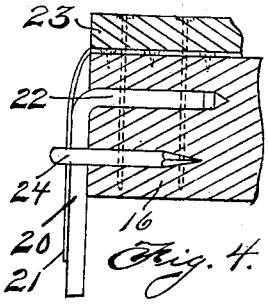


Fig. 4.

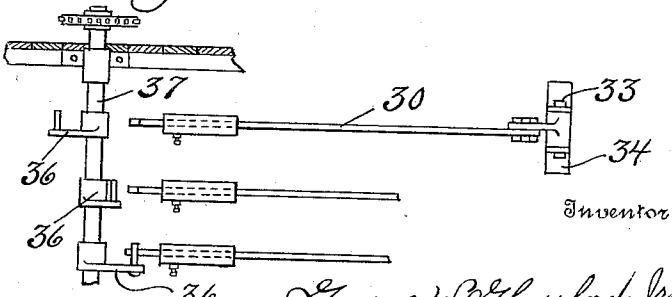


Fig. 5.

Witnesses

H. L. Richey

Anna Watters

Inventor

George W. Glassford Jr.

By John A. Bommhardt

Attorney

THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. GLASSFORD, JR., OF CLEVELAND, OHIO.

DUST-COLLECTOR.

1,109,059. Specification of Letters Patent. Patented Sept. 1, 1914.

Application filed November 3, 1913. Serial No. 798,977.

To all whom it may concern:

Be it known that I, GEORGE W. GLASSFORD, Jr., 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, of which the following is a specification.

This invention relates to dust collectors, of that type used to separate dust from air, and consisting of a plurality of screens inclosed in a casing through which air is passed.

The object of the invention is to provide an improved screen construction, the screens comprising separate units each of which is constructed in a new manner, and is capable of independent removal without disturbing the others.

A further object of the invention is to provide an improved connection between the screens and the outlet chamber of the casing.

Other improvements in details will be apparent from the following description and the accompanying drawing.

In the drawings—Figure 1 is a vertical sectional view of the device. Fig. 2 is a sectional detail of one of the screen units. Fig. 3 is a top view illustrating the arrangement of the screens. Fig. 4 is a detail in section of the screen structure. Fig. 5 is a plan of the hammer operating devices. Figs. 6 and 7 are details of connecting nozzles.

Referring specifically to the drawings, 6 indicates a casing having an inlet 7 at one side for the dust laden air and an outlet 8 at the opposite side for the clean air exhausted by any suitable fan or the like as indicated at 9. Extending across the casing is a vertical partition 10, forming a screen chamber 11 and a clean air chamber 12. The former has a dirt chute 13 at the bottom, with a slide valve 14 to empty the same.

A set or plurality of screens stand side by side in the screen chamber. Each screen, as shown, comprises a rectangular frame having side bars 15 and top and bottom bars 16, and a middle bar 16^a, the latter being connected with a rod 17 which passes through a pipe 18, the bars being thus spaced apart. Iron braces 19 extend diagonally from the corners of the frame to the middle thereof where they engage the middle bar 16^a and the iron rod 17. Wires 20 are stretched between the upper and lower bars 16, in zig zag arrangement, and the canvas or other screen cloth 21 is stretched around these wires at opposite sides of the frame to form a hollow unit or cell. The wires 20 have bent ends which are driven into the bars 16 as indicated at 22, (Fig. 4) and the upper and lower edges of the canvas or cloth are tacked under cleats 23 nailed to the top and bottom bars 16, the wires being fastened by staples 24. The zig zag arrangement of the screen cloth permits the various screen units to be fitted with the corrugations of one unit between those of the other, as shown in Fig. 3, whereby space is economized, while providing a large screen surface. The dust laden air enters between the screen units and is drawn through the cloth into the same, the dust collecting on the outer side of the screens.

Each screen is connected to the exhaust chamber 12 by means of one or more nozzles 25 which project through openings in the partition 10, the nozzles being attached to the upright bar 15 at one edge of the screen. Packing rings 26, inclosing packing 27, are provided around the reduced ends of the nozzles 25, the rings being tightened by bolts 28 extending through the wall 10. The open ends of the nozzles communicate with the air chamber 12, so that the clean air is exhausted from the interior of the screen units.

The screens are jarred to dislodge dirt from the exterior thereof by means of hammers 30 striking bumpers 31 on the upper bar 16 of each screen. A leather 32 is applied to the bumpers to lessen noise and shock. These hammers are pivoted at 33 to brackets 34 on a cross bar 35, and operate by gravity, being lifted by trippers 36 mounted on a shaft 37 which extends across the casing 6 above the screens and which may be driven by any suitable means. The trippers lift the hammers which then drop by gravity to hit the bumpers on the screens thereby jarring the same to dislodge the dirt which drops into the chute 13.

Each screen is supported by angles 40 projecting from the side bars 15 and resting on cross bars 41 in the casing, as well as by additional cross bars 42, extending across the casing under the screens.

By the construction shown, each screen unit is separate and complete in itself, which is advantageous in case repairs have to be made. The bracings and supports for the screen frames provide the necessary rigidity,

and the nozzle and gland connection between each screen and the partition 10 enables connection or disconnection to be readily made. The openings in the partition 10, through which the nozzles 25 pass, are preferably slightly larger than the nozzles, so that the screens can vibrate under the stroke of the hammers, but the packing rings and the packing confined thereby make a dust tight joint under all conditions, the rings being accessible through the doors 60 so that they can be removed when desired on the exhaust side of the partition 10, and the nozzles pulled out at the opposite side.

What I claim is:

1. A dust arrester comprising a casing with a partition across the same, forming inlet and exhaust chambers, said partition having a plurality of openings therein, and a plurality of separate and independently-removable screen units standing side by side in the inlet chamber, each screen unit having a frame extending completely around the same and screen cloth on opposite sides of said frame, one side bar of the frame having a nozzle communicating with the corresponding opening in the partition, packing between each nozzle and the edge of the opening with which it communicates and permitting vibration of the screen frame, and means to jar each screen frame.

2. A dust arrester comprising a casing having a partition therein forming an inlet chamber on one side and an exhaust chamber on the other, a screen unit in the inlet chamber, said unit including a frame, and having an outlet nozzle, rigidly fixed to the frame, and projecting therefrom through the partition into the exhaust chamber, a gland between said nozzle and the partition, said gland having packing permitting vibration of the nozzle and screen frame with respect to the partition, and means to jar the screen frame.

3. A dust arrester comprising a casing having a partition therein forming inlet and exhaust chambers, a plurality of hollow screen units standing edgewise in the inlet chamber, each unit having a nozzle rigid therewith and communicating with the interior thereof and projecting at one side thereof through the partition, a packing gland between the partition and the nozzle, permitting vibration of the latter, and clamping the nozzle to the partition, and hammers arranged to strike the screen units at one end thereof, the gland being removable on the outer side of the partition, to permit removal of the unit, after loosening of the gland.

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

GEORGE W. GLASSFORD, JR.

Witnesses:
JOHN A. BOMMHARDT,
J. B. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."