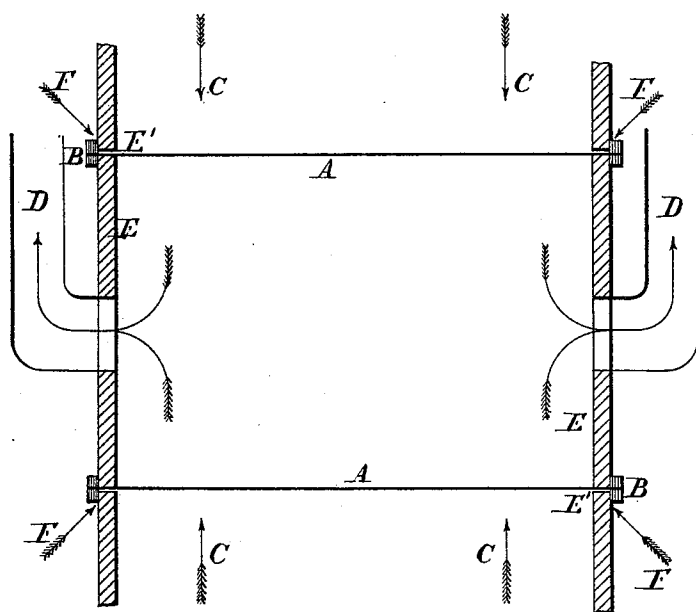


(No Model.)

H. SIMON.
DUST COLLECTOR.

No. 394,408.

Patented Dec. 11, 1888.



Witnesses,
Geo. H. Rea,

Robert Everett.

Inventor,
Henry Simon.

By
James L. Norris,
Atty.

UNITED STATES PATENT OFFICE.

HENRY SIMON, OF MANCHESTER, COUNTY OF LANCASTER, ENGLAND.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 394,408, dated December 11, 1888.

Application filed August 16, 1888. Serial No. 282,865. (No model.) Patented in England September 30, 1887, No. 13,275.

To all whom it may concern:

Be it known that I, HENRY SIMON, a subject of the Queen of Great Britain, residing at Manchester, in the county of Lancaster, England, have invented an Improvement in Dust-Collectors, (for which I have obtained a patent in Great Britain, provisionally, September 30, 1887, No. 13,275,) of which the following is a specification.

My invention relates to traveling filters or dust-collectors, such as are used in milling and other operations to clear the air from dust. Such a filter or dust-collector consists of an endless traveling web or apron of porous fabric, through which the air is drawn by an exhaust-fan, it being intended that only the pure air shall pass through its pores, while the dust is deposited externally—as shown, for example, in Letters Patent No. 345,508, issued July 13, 1886, to J. B. Holgate.

In employing such filters great difficulty is experienced in preventing leakage of the dust-laden air past the edges of the traveling web or apron, and several expedients have been tried to prevent this, such as binding the edges of the web or apron with bands or cords, which are either caused to travel along in tightly-fitting grooves fixed on the inner sides of the filter-casing, or to travel in slots formed in the sides of the casing, in which they are made to fit tightly by means of packing in order to prevent passage of air. In the first-mentioned arrangement, however, the dust has leaked through the grooves from the one side of the filter web or apron to the other, notwithstanding the tightness of the packing, and dust-laden air has consequently been blown by the fan into the mill, and in both cases the tight fit of the packing or binding renders it liable to stick or jam in the grooves or slots, thereby greatly impeding the motion of the filter. Now, according to my invention I entirely obviate these difficulties by a traveling apron having its edges passed freely through slots in the casing of a dust-collector and provided with flexible bindings outside the casing of a width to cover the slots, as hereinafter described and claimed, reference being made to the accompanying drawing, in which the figure is a transverse sectional view of sufficient of a dust collector or filter to illustrate my invention.

In the drawing, the letters A A indicate the

traveling apron (shown in cross-section) through which the dust-laden air passes in the direction of the arrows at C C to the outlets D D in the casing E, through which it is propelled by the usual exhaust-fan, so that the dust is separated from the air and retained on the outer surfaces of the filter-apron.

I do not deem it necessary to exhibit an exhaust-fan connected with the outlets D D, in that the fan may be of any known construction and arrangement—such, for example, as in the Letters Patent referred to. The travelling web or apron will be supported by rollers, as usual, and substantially as in the aforesaid patent.

The edges of the apron pass freely through slots E' in the casing E, and have bands B of leather or other material, attached to them on the outside of the casing. These bands are of sufficient width to cover the slots in the casing and greatly restrict the inward leakage of air, while such air as does leak in the direction of the arrows F will assist in pressing the web or apron against the suction side of the slot, owing to the exhaust between the filters A A, so that the outer air practically will only enter on the outer sides of the filters.

Should, notwithstanding the contact of the filter-web with the edge of the casing, some of the outer air still pass into the middle space, this air, not being dust-laden, will not have any detrimental effect on the action of the filter.

Having thus described the nature of my invention and the best means I know for carrying the same into practical effect, I claim—

The combination, with the slotted casing of a dust-collector, of a traveling apron having its edges passing freely through the slots in the casing and provided with flexible bindings outside the casing, which cover the slots, substantially as described.

In testimony whereof I have signed my name to this specification, this 1st day of August, 1888, in the presence of two subscribing witnesses.

HENRY SIMON.

Witnesses:

F. ELLIOTT,

L. O. MAXWELL,

Clerks, both of 20 Mount street, Manchester.