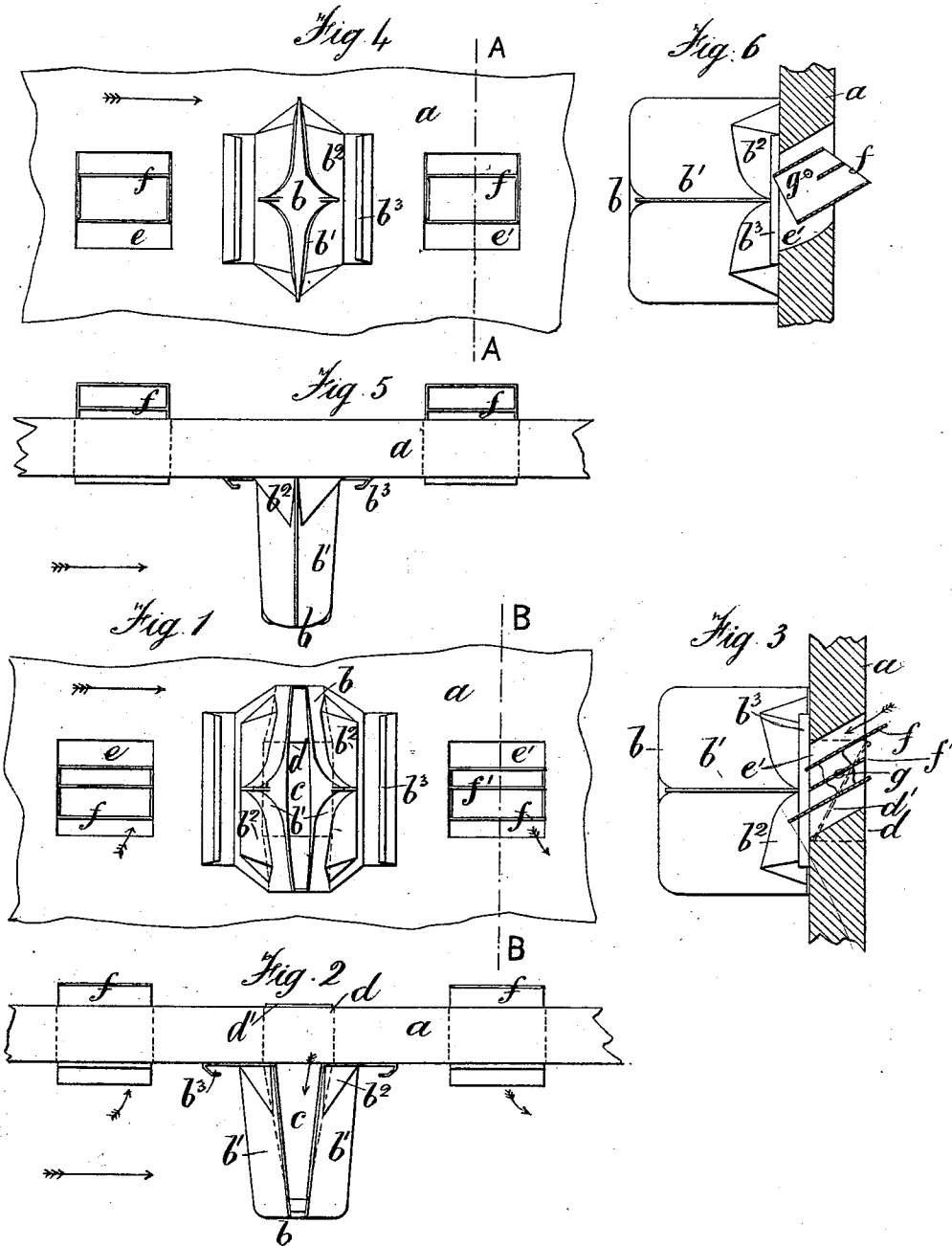


(No Model.)

J. LEATHER.
VENTILATOR.

No. 543,995.

Patented Aug. 6, 1895.



Witnesses

J. Johnson
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Inventor

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UNITED STATES PATENT OFFICE.

JOSEPH LEATHER, OF LIVERPOOL, ENGLAND.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 543,995, dated August 6, 1895.

Application filed October 26, 1894. Serial No. 527,063. (No model.) Patented in England November 7, 1890, No. 17,902, and February 16, 1891, No. 2,759; in France November 12, 1890, No. 209,453; in Belgium November 13, 1890, No. 92,711, and in Austria-Hungary June 8, 1891.

To all whom it may concern:

Be it known that I, JOSEPH LEATHER, a subject of the Queen of Great Britain, residing at Liverpool, in the county of Lancaster, England, have invented a new and useful Improvement in Ventilators, (for which I have obtained patents in the following countries: Great Britain, No. 17,902, dated November 7, 1890, and No. 2,759, dated February 16, 1891; France, No. 209,453, dated November 12, 1890; Belgium, No. 92,711, dated November 13, 1890, and Austria-Hungary, dated June 8, 1891,) of which the following is a specification.

Figure 1 is an elevation, Fig. 2 is a plan, and Fig. 3 is a section at the line B B, of a ventilator constructed in accordance with my invention. Fig. 4 is an elevation, Fig. 5 is a plan, and Fig. 6 is a section at the line A A, of a more simple construction of the ventilator than that shown in Figs. 1, 2, and 3.

In all the views the same letters denote equivalent parts.

The invention relates more particularly to ventilators for use in railway and tramway carriages and like moving structures, but is also applicable to the ventilation of rooms or stationary structures where there is a current of air.

The main objects are to provide simple and efficient apparatus for, first, regulating the admission and emission of air to and from structures; second, preventing strong drafts, and, third, preventing dust and solid particles (say from a locomotive) from entering the structure with the inflowing air. The feature (third) last above referred to is of great moment.

a represents the top of a railway-carriage door or other suitable support or carrier for the ventilator.

b is a divided projecting piece with a through way or passage *c*, opening to an air way or aperture *d*, which leads from the structure to be ventilated.

The line *d'* indicates a door opening outward to prevent the inflow through the way or passage *d*.

e e' are air ways or apertures leading into the structure to be ventilated. The air ways or apertures *e e'* are fitted with louvers *f* piv-

oted at *g* to the support or carrier *a*, so as to be capable of being turned, as shown, to admit air into the structure in an upward direction, and so prevent strong drafts. The louver *f'* is stationary, so that the four air ways formed are closed by the two louvers. More or less air will be admitted according as the louvers are turned, so as to more or less open the air ways or apertures *e e'*. The projection *b* is made with curved surfaces *b'*, angle deflecting-surfaces *b²*, and turned-up flanges *b³*.

If a current of air is passing across the projecting piece *b* in the direction of the arrow, air will be drawn or educed through the air way or aperture *d* and through way or passage *c* of the structure, while air striking against the projecting piece will be in part deflected back through the air way or aperture *e*, while part will be turned to the sides and outward by the curved surfaces *b'* and angle surfaces *b²*, so assisting the eduction of air through the air way or aperture *d* and through way or passage *c* from the structure. The dust and solid particles are not deflected back, but travel on with the air, which is deflected sidewise and outward. Hence only clean air enters the structure. Any dust or solid particles which might tend to travel back are caught by the turned-up edge of the flange *b³*.

Referring to Figs. 4, 5, and 6, the projecting piece *b* has no through way or passage and the air is deflected back—say, through one air way or aperture *e*, and educed through the other air way or aperture *e'*. Here the pivoted louvers *f* are of slightly-modified construction and do not project beyond the support or carrier. It is obvious that the greater the number of louvers the greater the division of the entering air-currents.

When the current of air is in the opposite direction to that shown by the arrow, the fresh air enters through the air way or aperture *e'* and vitiated air is educed through the apertures *d* and *e*.

I claim—

1. In ventilating apparatus, the combination with a support having an aperture, of a projecting piece at one side of the same and

cooperating therewith, said support and projecting piece having registering air-ways therethrough, substantially as described.

2. In ventilating apparatus, a support having apertures provided with pivoted louvers, of a projecting piece having curved surfaces located between and arranged to act in conjunction with said apertures, said projecting piece having an air-way in register with an air-way through the support; substantially as described.

3. In ventilating apparatus, a support having apertures provided with pivoted louvers,

of a projecting piece having an air-way in register with an air-way through the support and being provided with curved surfaces located between and arranged to act in conjunction with said apertures, said projecting piece having deflecting pieces and turned-up flanges to intercept dust or other particles; substantially as described.

JOSEPH LEATHER.

Witnesses:

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