(No Model.)

I. TOWNSEND.

CAR VENTILATOR.

No. 305,251. Patented Sept. 16, 1884.

Fig. 1.

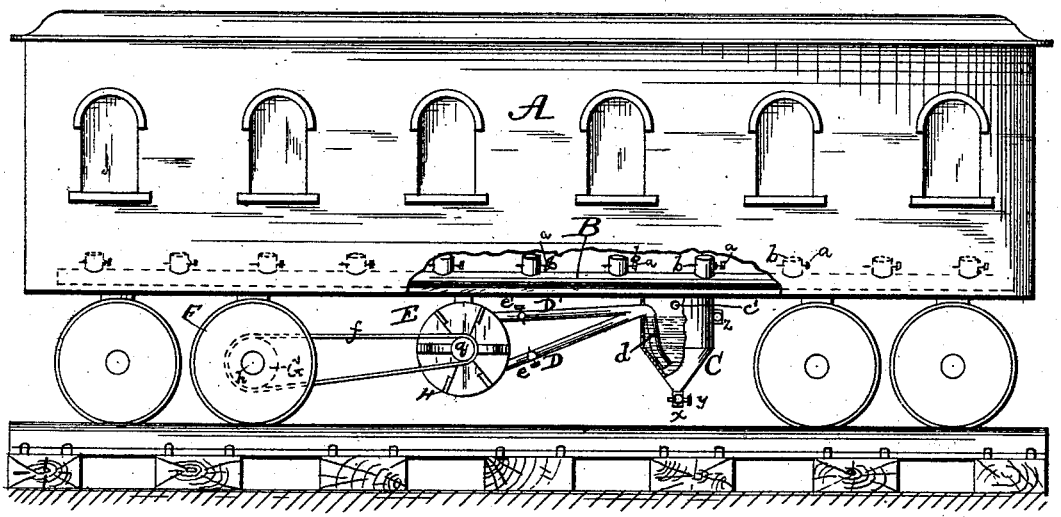


Fig. 4.

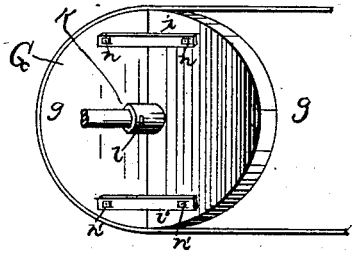


Fig. 2.

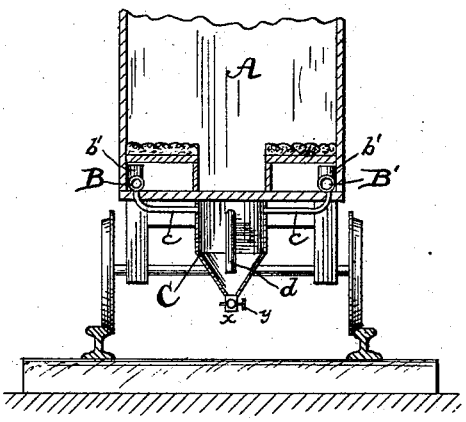
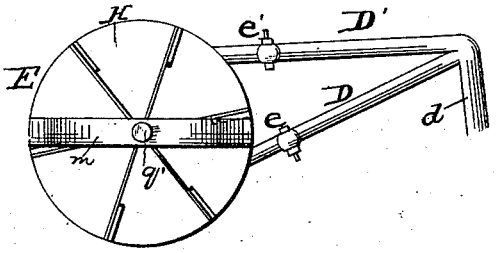


Fig. 3.



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UNITED STATES PATENT OFFICE.

ISRAEL TOWNSEND, OF PORTSMOUTH, VIRGINIA.

CAR-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 305,251, dated September 16, 1884.

Application filed March 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, ISRAEL TOWNSEND, a citizen of the United States, residing at Portsmouth, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Car-Ventilators; 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention has for its object the ventilation of railroad-cars from beneath by forcing the air up through certain pipes by means of certain mechanical devices fastened to the bottom of said car and between the trucks of said car.

My invention is illustrated in the accompanying drawings.

Like letters represent like parts in all the figures.

Figure 1 represents a side view of railroad-car with my invention attached ready for use; Fig. 2, a broken-away end view of said car, showing a section of reservoir or tank, with connecting-pipes; Fig. 3, a reversible blower with connecting-pipes; Fig. 4, adjustable or split pulley attached to axle or shaft of car-wheel.

The letter A represents body of railroad-car; B, the horizontal pipe running along whole length of floor and on the inside of car, with smaller perpendicular pipes *b* open at the top, putting out of and being attached to pipe B. There are two horizontal pipes, B, and two sets of pipes, *b*, one on each side of car, as shown in Fig. 2. The pipes *b* may be four feet in length, longer or shorter, and may be provided with stop-cocks *a*, for the purpose of preventing the passage of air when it is so desired.

C represents the reservoir or tank for holding water, to be so constructed as to be both water and air tight, and to be securely fastened to the bottom of car A. The curved pipe *c* descends into the reservoir or tank from under side of pipe B, to which it is attached in such a manner as to allow the passage of air from one pipe to the other. There are two curved pipes, *c*, as shown in Fig. 2. The reservoir or tank C is penetrated by pipe *d*, which descends into tank C a greater or less distance. Tank C is provided with a check-valve, *z*, to which a hose-pipe can be attached for the purpose of filling said tank with water. Tank C is also provided with a small orifice or waste-pipe, *x*, at its bottom, sufficient to drain said tank of its contents. Said orifice *x* is provided with stop-cock *y*, to be used so as to open or close said water-pipe.

D D′ represent hollow metal pipes putting out from pipe *d* and radiating so as to enter the metal case of blow-wheel, as shown in Fig. 1. Said pipes D D′ are provided with stop-cocks *e e′*, to be opened or closed, as hereinafter shown.

E represents a reversible blow-wheel, provided with a metal casing securely fastened to the bottom of the car-body A. The blow-wheel E is so constructed that when the car is running in a forward direction it will be revolved by means of belt *f*, attached to pulley G and to pulley *q*, so as to force the air into the hollow pipe D, when the stop-cock *e′* will be opened, so as to allow the passage of air through pipe D′, and stop-cock *e* will be closed, so as to prevent the passage of air through pipe D. When the car is running in an opposite direction, the blow-wheel will be revolved in an opposite direction by means of said belt and pulleys, and force the air into hollow pipe D, when stop-cock *e* will be opened, so as to allow the passage of air through pipe D, and stop-cock *e′* will be closed, so as to prevent passage of air through pipe D′.

The circle F represents car-wheel. The dotted circle G represents the adjustable or slip pulley securely fastened to the shaft or axle *h* of car-wheel F, with belt *f* attached.

In Fig. 3 is given a detailed drawing of the reversible blower, consisting of blow-wheel E, partly inclosed by metal casing H, and the curved arm or band *m*, extending on both sides of blow-wheel, as shown in drawings, and containing axle box or brass *q′*, in which the journal of axle of wheel E revolves. There are two boxes, *q′*—one on each side of wheel—also

consisting of two hollow pipes or tubes, D D′, with stop-cocks *e e′*.

In Fig. 4 is given a drawing of split pulley G, divided into half-sections *g*, said half-sections being held firmly together by means of metal bands or straps *i*, which are securely fastened to both sides of pulley G by means of bolts *n*, passing through pulley G and straps *i*, and being tightened by means of nuts. The hub or center of pulley G is provided with a metal box, *k*, which fits upon shaft or axle *h*, and is locked to said shaft or axle by means of key *l* in such a manner as to prevent said pulley G from slipping. Pulley G is provided with flanges, and is of sufficient width to prevent belt *f* from slipping off.

When the car is in motion, the blow-wheel E will be revolved in such a manner as to force air into the pipes D D′, as hereinbefore described; from thence into pipe *d;* from thence into the water contained in tank C, where the air is purified of all dust or dirt; from thence into and along pipes B; from thence into both sets of pipes *b;* from thence into interior of car A; from thence out at openings in top of car, thereby cooling, purifying, and ventilating said car.

Having fully described my invention, what I desire to claim and secure Letters Patent for is—

In a car-ventilator, a reversible blower, E, provided with twin pipes D D′, said pipes having suitable valves to change or check the current of air, and converging into pipe *d*, all being situated and operated beneath the car, substantially as and for the purpose set forth.

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

ISRAEL TOWNSEND.

Witnesses:

GEO. W. NELSON,

L. C. MAIN.