(No Model.)

W. BEDELL.

CAR VENTILATION.

No. 280,783. Patented July 10, 1883.

Fig 1

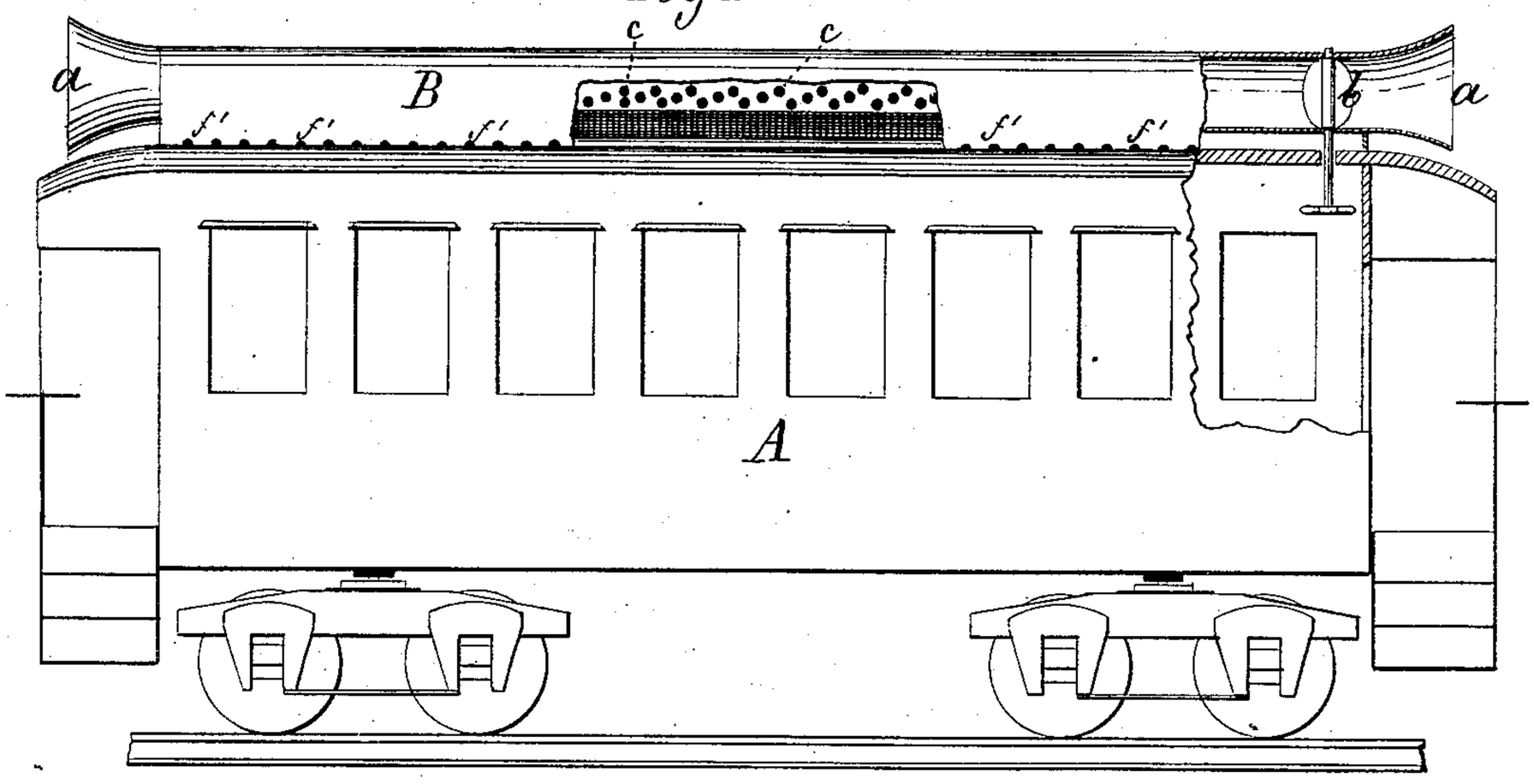


Fig 2

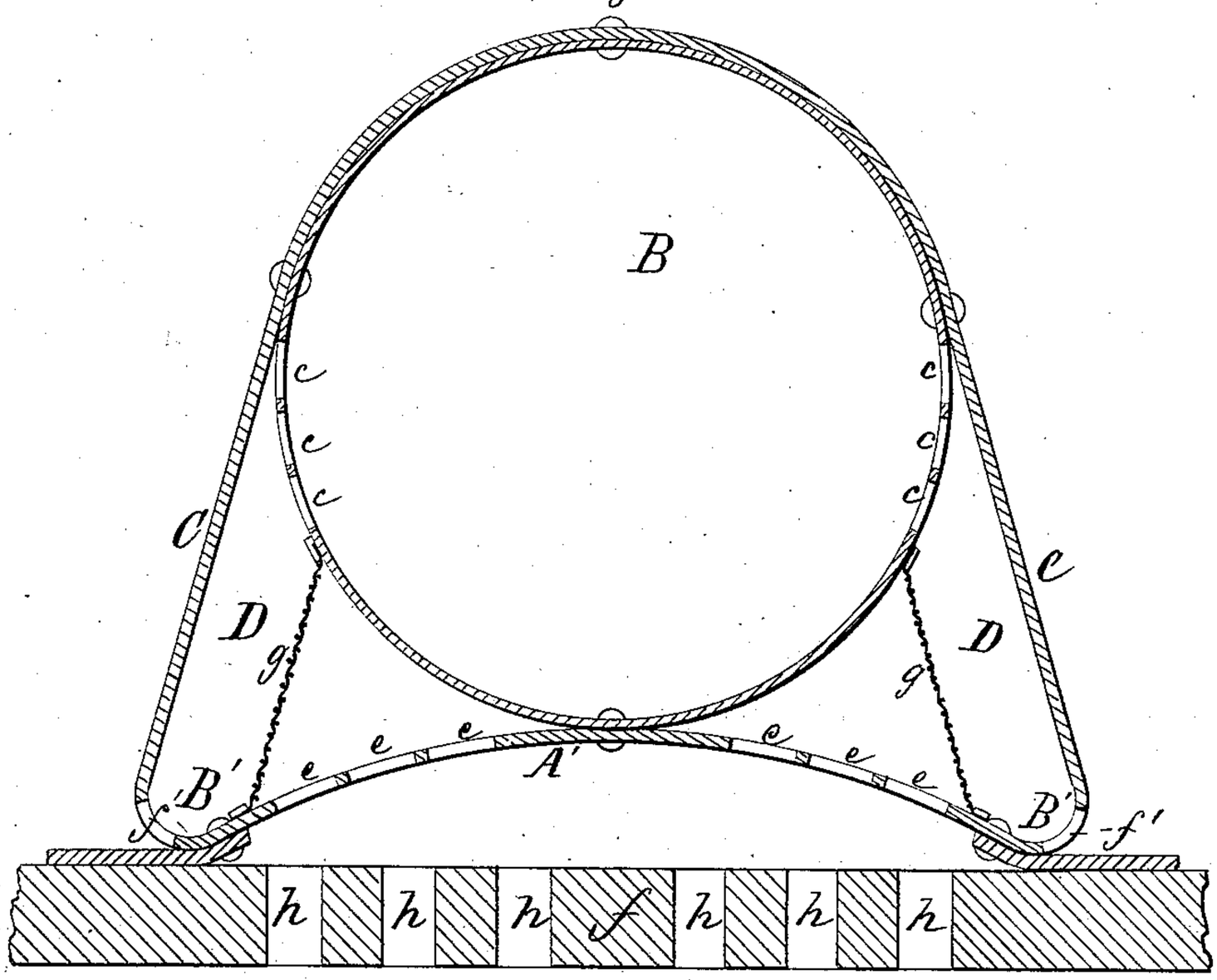
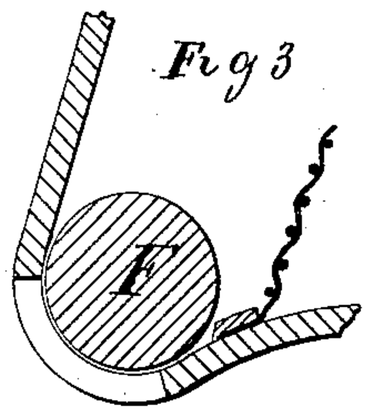


Fig 3



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WILLIAM BEDELL, OF NEW YORK, N. Y.

CAR-VENTILATION.

SPECIFICATION forming part of Letters Patent No. 280,783, dated July 10, 1883.

Application filed January 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BEDELL, of the city, county, and State of New York, have invented certain Improvements in Car-Ventilation, of which the following is a specification.

This invention comprises certain novel combinations of parts, whereby provision is made for exhausting the warm or foul air from the interior of railway-cars, and at the same time providing against the ingress of dust, cinders, &c., and whereby further provision is made for insuring a proper ventilation of the car when the same is stationary, as distinguished from the withdrawal therefrom of the warm or foul air when the car is in motion.

Figure 1 is a side view and partial longitudinal section of a railway-car provided with my said invention. Fig. 2 is a transverse sectional view on a larger scale, representing my said invention. Fig. 3 is a detail view, illustrating one feature of my said invention not fully shown in the other figures aforesaid.

A is the body of the car, provided with the usual means of ingress and egress, and with windows, which latter are preferably tight in their places. Ingress of air into the car at any desired parts is provided for by means of suitably-arranged inlet-pipes, or by means of minute openings suitably arranged; or reliance may be had for such purposes upon the crevices around the doors, which crevices almost invariably exist in such structures, the air rushing through the minutest inlet when suction is exerted within the car through the agency of the apparatus hereinafter described. B is a trunk or tubular passage-way provided upon the false roof A′ of the car A, and arranged lengthwise thereof. The said trunk is open at its ends, and is provided with flaring or trumpet-shaped extremities *a*. Said trunk is provided at each end with a butterfly-valve, *p*, by which its available cross-section may be increased or diminished, as desired. The lower walls or sides of the trunk B are provided with numerous openings, *c*. That portion of the false roof of the car A underneath the trunk B is provided with numerous openings, *e*. Plates C extend from the upper lateral external portions of the trunk B down to the lateral portions of the false roof A′, as represented more fully in Fig. 2, the lower ends of the said plate C being curved inward, as shown at B′. These portions B′ of the plate C are provided with numerous openings along the length thereof, as indicated at *f′*, in Fig. 2.

D are lateral chambers, which extend parallel with the plates C at the inner sides thereof, and which are formed by partitions *g*, of wire-cloth, the upper edges of said partitions *g* being attached to the lower portions of the trunk B, below the lateral openings *c* thereof, while the lower edge of each of said wire-cloth partitions is attached to the roof A′, intermediate between the openings *f′* and the outermost of the openings *e*. The ceiling *f* of the car has numerous openings, *h*, through which the air from the interior of the car may pass to the openings *e* of the false roof A′ thereof.

In the operation of the apparatus the forward motion of the car induces a strong draft of air through the trunk B, the velocity of which is not only proportioned to the speed of the car, but to the extent to which an increased volume of air is gathered and caused to pass through the trunk by means of the foremost of the flaring or trumpet-shaped ends *a*. This current of air induces a strong draft from the interior of the car through the openings *h*, *e*, and *c*, into the trunk and thence out at the rear thereof. Any dust or cinder which may pass into the trunk from the air gathered and passed into the foremost end thereof, as just explained, and which might otherwise pass laterally downward through the opening *c*, is intercepted by the wire-cloth partition *g*, and deflected downward, so that it escapes through the openings *f′*. By the means described, therefore, the hot and relatively foul air from the interior of the car is continually exhausted therefrom, to be replaced from the outer atmosphere, as hereinbefore explained, the interior of the car being meanwhile kept free from dust and cinders. When the car is stationary, a natural draft of air passes upward through the opening *f′*, the chambers D, and openings *c*, into the trunk B, thereby inducing a draft through the latter, which in its turn induces a draft from the interior of the car, and thereby measurably exhausts the hot and comparatively foul air therefrom. When for any reason it is desired to close the openings *f′*, a cylindrical rod, F, is placed length-

wise in each of the parts B′, thereby closing the openings *f′* of the said parts and shutting off direct communication between the chambers D and the outer atmosphere. When desired, the mouths of the trumpet-shaped ends of the trunk may have diaphragms of wire-cloth placed over them, to prevent the ingress of larger particles of cinder.

It is of course to be understood that the air is to be admitted to the car in any suitable manner—as, for example, by an opening arranged at or near the front end thereof—so that the supply of the fresh air may be admitted in due ratio as the foul air is exhausted through the apparatus at the top of the car, as hereinbefore explained.

What I claim as my invention is—

1. The car-ventilator composed of the trunk B, constructed with the lateral openings *c*, the roof A′, constructed with the openings *e*, and carrying the aforesaid trunk B, the side plates, C, and the wire-cloth partitions *g*, interposed between the openings *e* of the roof and the openings *c* of the trunk, the said parts combined and arranged substantially as and for the purpose herein set forth.

2. The combination, in a car-ventilator, of the longitudinal trunk B, having flaring or trumpet-shaped ends and lateral openings *c*, the roof A′, having openings *e*, the side plates, C, having the curved lower parts, B′, provided with openings *f′*, and the wire-cloth partitions *g*, arranged at such distance from the plates C as to provide the chamber D, and so placed between the openings *c* and *e* as to intercept the passage of dust, cinders, &c., into the car, all substantially as and for the purpose herein set forth.

3. The combination of the trunk B, having flaring or trumpet-shaped ends *a*, lateral openings *c*, and valves *b*, the roof A′, having openings *e*, the ceiling *f*, having openings *h*, the side plates, C, having curved lower parts, B, provided with openings *f′*, and the wire-cloth partitions *g*, arranged at such distance from the side plates, C, as to provide the chambers D, and so placed between the openings *e* and *c* as to direct dust, cinders, &c., toward the openings *f′*, all substantially as and for the purpose herein set forth.

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