

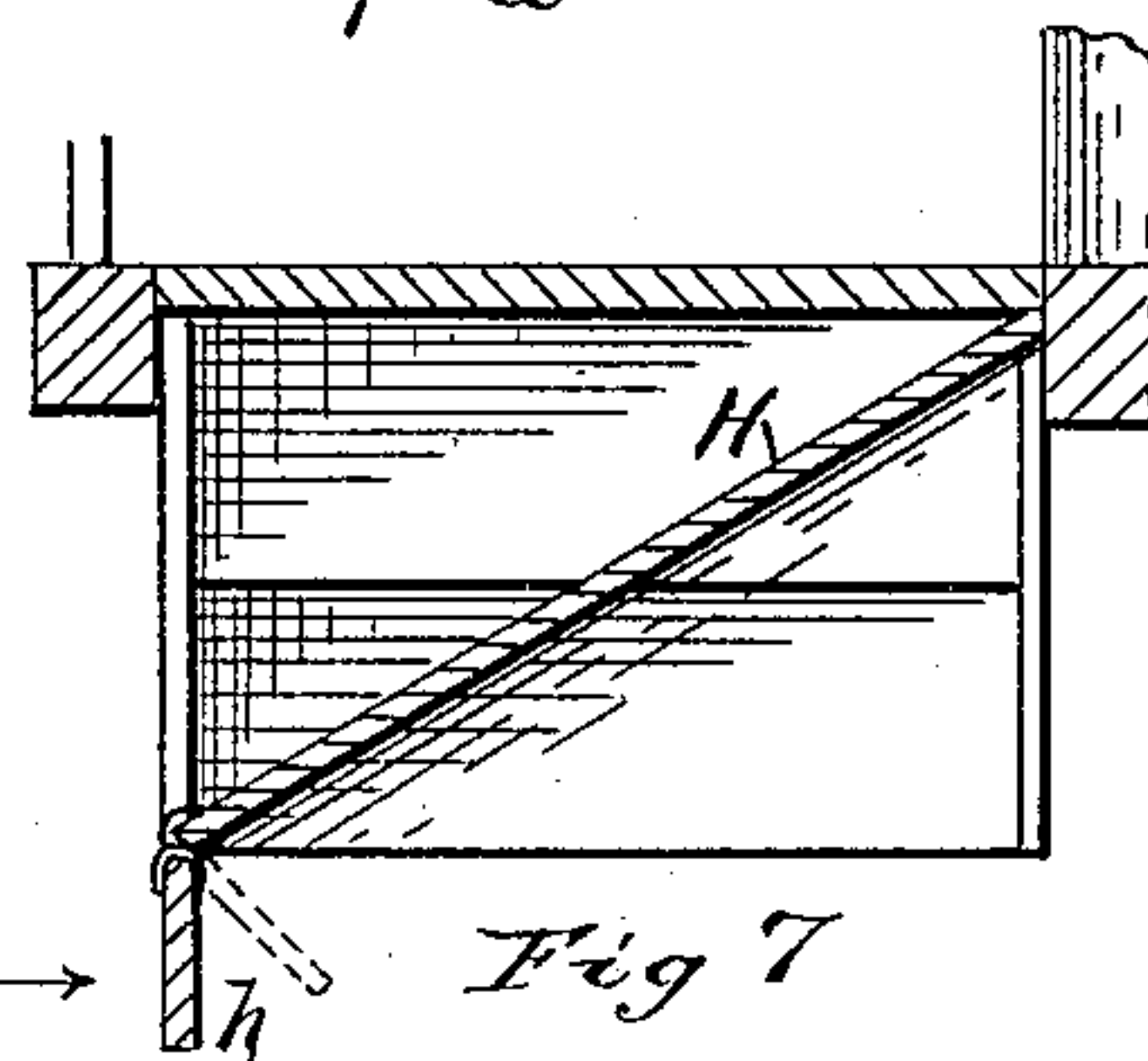
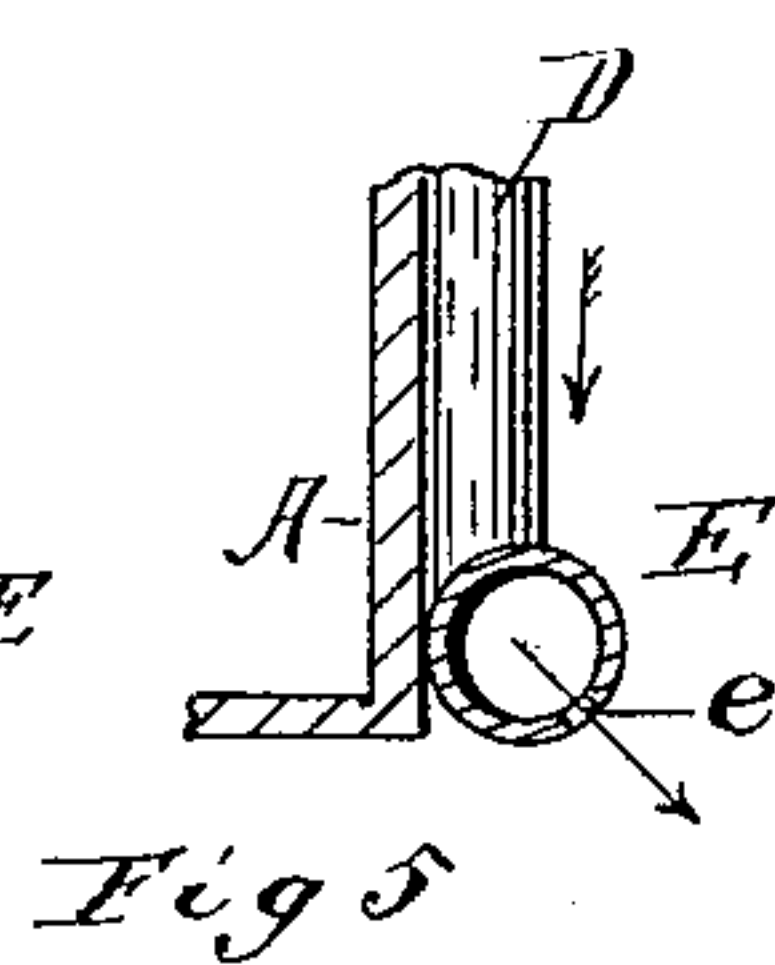
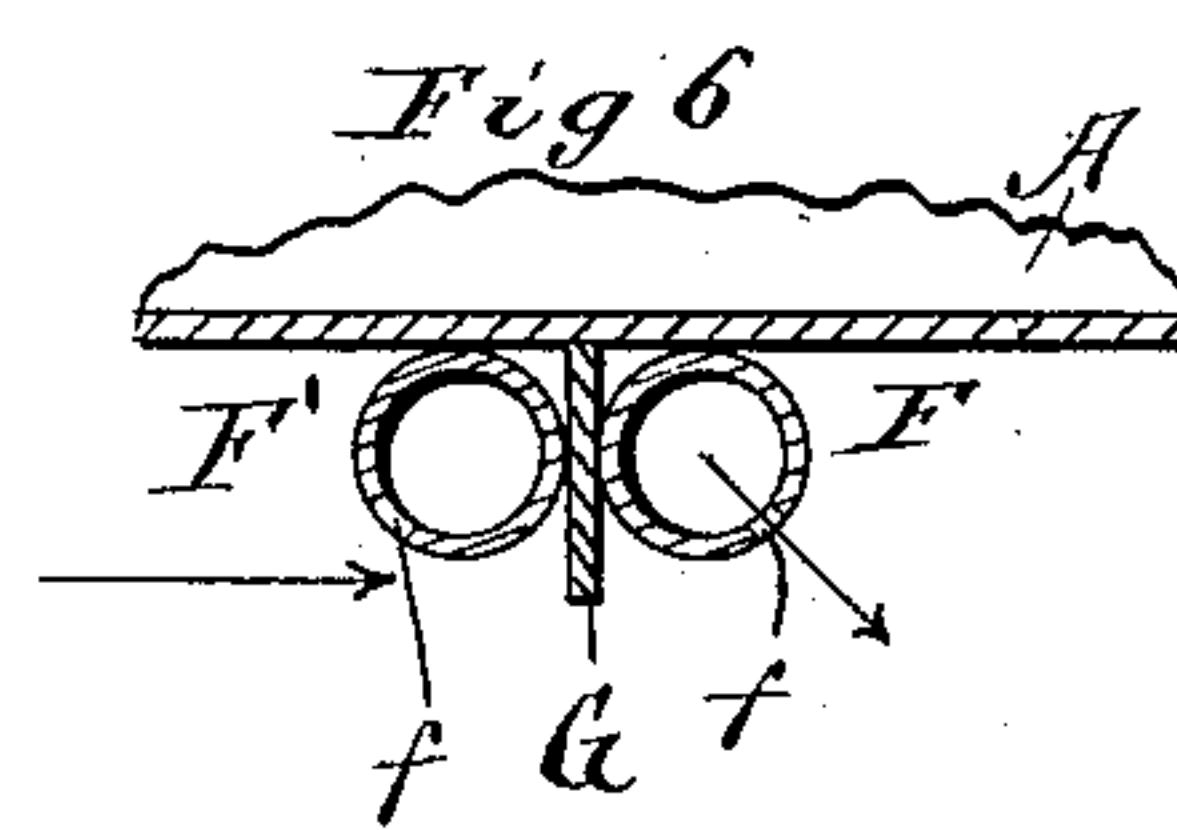
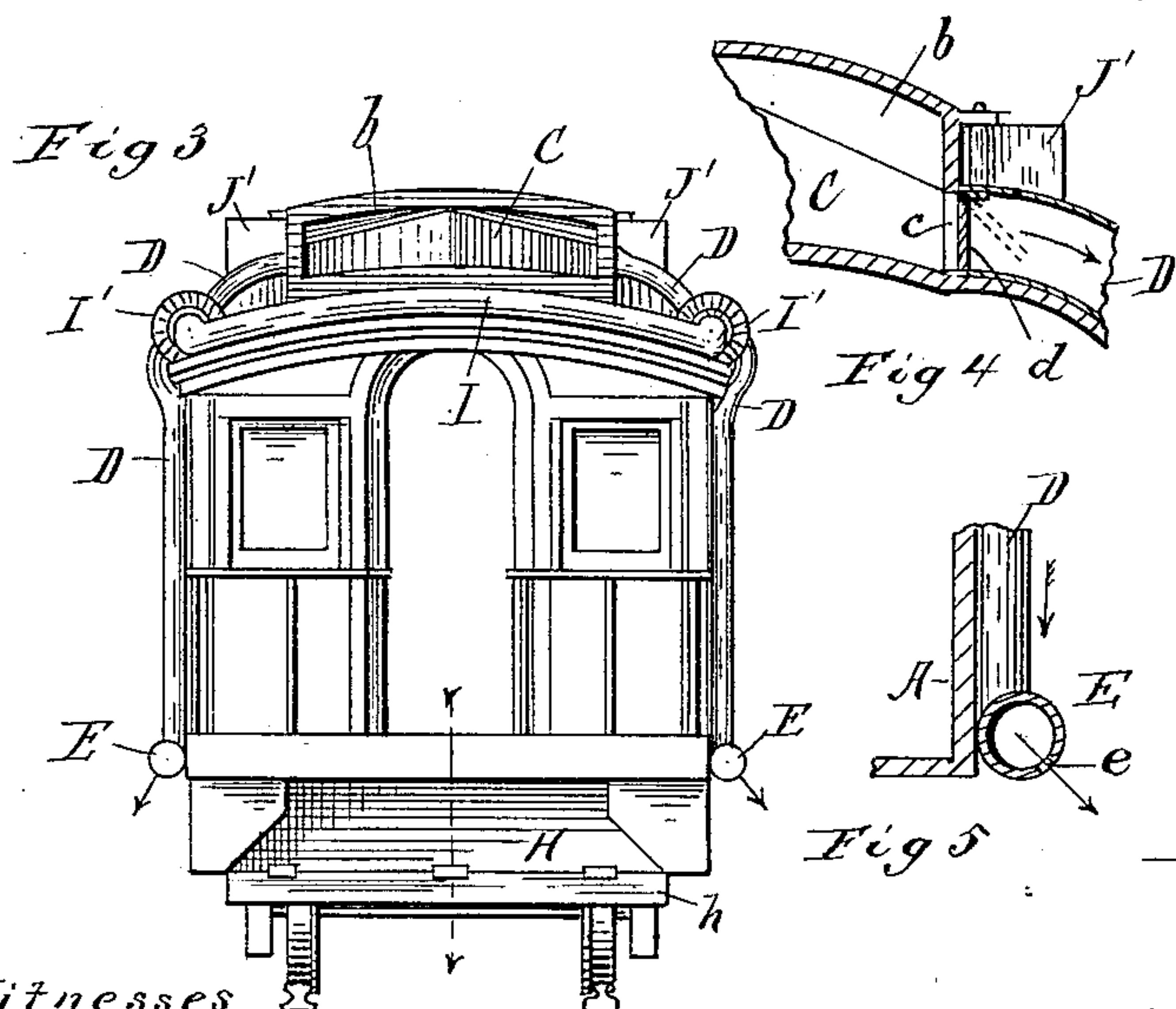
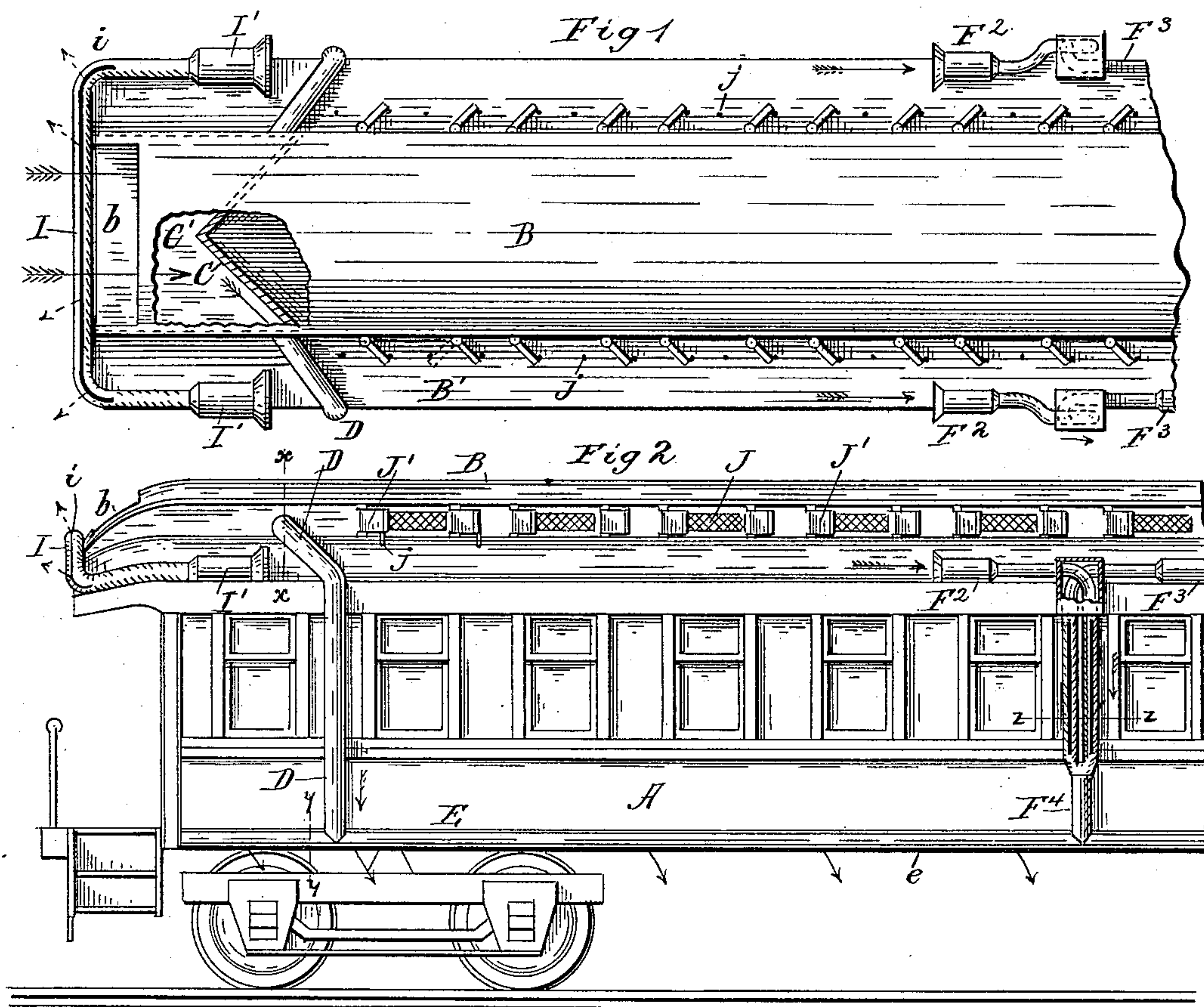
(No Model.)

C. TURNER.

DUST PREVENTING APPARATUS FOR RAILWAY CARS.

No. 373,622.

Patented Nov. 22, 1887.



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CHARLES TURNER, OF CHICAGO, ILLINOIS.

DUST-PREVENTING APPARATUS FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 373,622, dated November 22, 1887.

Application filed November 26, 1884. Serial No. 148,951. (No model.)

To all whom it may concern:

Be it known that I, CHARLES TURNER, a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dust-Preventing Apparatus for Railway-Cars, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a railway passenger-coach having my improvements applied thereto; Fig. 2, a side elevation of the same; Fig. 3, an end view; Fig. 4, a detail sectional view on the line xx of Fig. 2 and on an enlarged scale; Fig. 5, a detail sectional view on the line yy of Fig. 2; Fig. 6, a detail sectional view on the line zz of Fig. 2, and Fig. 7 a detail sectional view on the line vv of Fig. 3.

Like letters refer to like parts in all the figures.

My invention relates to apparatus for preventing the entrance of dust into railway-coaches, by means of which a thorough ventilation of the interior thereof may be obtained without the annoyance attendant upon the entrance of dust, smoke, &c.; and to that end it consists in certain novel features, which I will now proceed to describe, and then specifically point out in the claims.

In the drawings, A represents the body of the car, and B the clear-story thereof. This clear-story is open at each end at b , and within the space between the clear-story and roof proper B' , at some distance from the opening b , a partition, C, is arranged, preferably constructed as shown, with the sides inclined outward and toward the center of the car. At the point where this partition joins the sides of the clear-story is formed an opening, c , communicating with a pipe, D, extending downward to the lower edge of the car-body A, as shown in Figs. 2 and 3, where it connects with a pipe, E, extending along said lower edge the whole length of the car. One of these pipes, E, is arranged on each side of the car, and each pipe is connected with the clear-story by means of a pipe, D, at each end. In the pipe E, near the under side thereof, is formed a slot, e , opening out at an angle of about forty-five degrees to the vertical plane of the pipe, and at the upper end of each pipe D is arranged a hinged valve, d , adapted to close the

opening C, which connects with the space C' , within the clear-story, formed between its roof and the roof proper B' and the partition C. 55

The operation of this device is as follows: When the car is in motion, the air will enter the space C' at the opening b , at that end of the car which is the front end, and which in the present instance is supposed to be the end shown in the drawings. The air being driven forcibly into the space C' by the motion of the train, will be guided by the inclined sides of the partition C to the openings c , will raise the valves d at that end of the car, and pass through the pipes D and forcibly out through the slots e , all in the manner indicated by the arrows in the several figures, the valves d at the rear end of the car being closed by the pressure of the air in the pipes D at that end, so as to prevent the air from passing out at that end, instead of through the slots e . By this means a sheet of air, moving at a high rate of velocity, is interposed between the under side of the car and the upper portion thereof, in which the windows, doors, and other orifices are located, so that none of the dust raised from the road-bed by the commotion caused by the passing train will be able to ascend to the windows and doors, and thence into the car, but will all be retained underneath the car-body until the train has passed. The other end of the car, which is not shown in the drawings, will be similarly constructed, so that when the car is moving in the opposite direction a current of air will issue from the slots e in the manner just described. 65 70 75 80 85

In order to further protect the car-windows against the entrance of smoke, dust, or cinders, I arrange upon the side of the car, between the windows, several groups (in the drawings only one is shown) consisting of two pipes, F F' , slotted as shown at f , these slots being arranged at an angle of about forty-five degrees to the line of motion with the car and in opposite directions. At the upper end the pipe F is connected with a suitable funnel, F^2 , opening toward one end of the car, and a pipe, F' , with a similar funnel, F^3 , opening toward the other end of the car. The two pipes may be connected at their lower end with a short pipe, F^4 , connecting with the pipe E. When the car is moving in the direction hereinbefore mentioned, the air will enter the funnel F^2 and 90 95 100

be forced into the pipe F, from which it will issue forcibly in a sheet through the slot *f*, as indicated by the arrow in Fig. 6. This sheet of air will effectually prevent any dust or cinders from entering the windows immediately in the rear of it, and I contemplate providing each car with a sufficient number of these groups of pipes to effectually shield all the windows. It will readily be understood that when the car is moving in the opposite direction the pipe F' will operate in a similar manner and effect the same result as the pipe F with regard to the windows in the rear of it. G indicates a plate or shield arranged between each pair of pipes F F' and projecting slightly outward beyond the same to prevent the stationary body of air surrounding the moving train from too abruptly breaking in upon the sheet of air issuing from the slot *f*, this shield also acting as an additional support, to which the pipes may be attached.

In order to prevent the dust which is retained underneath each car by means of the air issuing from the pipes E from rising in the spaces between the car, I attach under each platform an inclined guard, H, as shown in Figs. 3 and 7, extending down to the level of the lower step, and hinge to the lower end of this guard a swinging shield, *h*. The air and dust underneath the car will be deflected downward by means of the inclined guard H under the rear platform, the shield *h* swinging outward, as indicated by the dotted lines in Fig. 7, to permit its escape, while the corresponding shield, *h*, will swing in the opposite direction or inward, as indicated in dotted lines in Fig. 7, to permit the dust and air to pass underneath the next car. Owing to the downward direction given to this dust-laden air by the guard H and shield *h*, it does not have time to rise between the two cars, but passes immediately under the following one, where it is retained, as hereinbefore described, and so on until it passes out at the rear end of the train.

In order to prevent any dust, smoke, or cinders from entering between the cars from above, I attach to each end of the car-roof, along the upper edge thereof, a pipe, I, slotted at *i* and connected at each end to a funnel, I'. The air entering these funnels I' will be forced into the pipe I and thence outward and upward through the slot *i*, so as to deflect any cinders or dust which would otherwise pass down between the cars and be liable to enter through the doors or windows.

In the sides of the clear-story are arranged the usual ventilating-orifices, J, in order to protect which I hinge at each end of each orifice a swinging dust-shield, J', the motion of which is limited by means of stops consisting of pins or other projections *j*, arranged in the path of motion of the shield. These shields deflect any cinders or dust which would otherwise enter the car through the ventilators J, their action being automatic—i. e., upon a change in the direction of motion of the car they will swing automatically from the position shown

in full lines in Fig. 1 to that shown in dotted lines in the same figure, so as to effectually protect the ventilators in either case.

It is obvious that various mechanical modifications in the construction shown and described may be made without departing from the principle of my invention, and I therefore do not wish to be understood as limiting myself precisely to the details of the construction set forth.

I am aware that slotted pipes, into which air is driven by the motion of the train, to prevent the entrance of dust into car-windows, are not new, the same being shown in Letters Patent No. 175,569, granted April 4, 1876, to Charles G. Lea, and in Letters Patent No. 215,896, granted May 27, 1879, to James E. Driesbach. I am also aware that pivoted deflectors arranged to shield the ventilating-orifices in the clear-story of a railway-car are not new, the same being shown in Letters Patent No. 123,770, granted February 20, 1872, to William G. Creamer. I therefore do not wish to be understood as claiming either of these constructions, broadly.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the car-body A, of the pipes E, arranged along the lower edges thereof, and having a slot, *e*, in their lower portion, and the pipes D, communicating therewith and with an air-chamber having an opening in the direction of motion of the car, substantially as and for the purposes specified.

2. The combination, with the car-body A, of the pipes E, slotted at *e*, the pipes D, communicating therewith, and the space C', formed within the clear-story B by means of the partition C, and having opening *b* in the direction of the motion of the car, and openings *c*, communicating with the pipes D, the said partition C having outwardly and rearwardly inclined sides terminating at the openings *c*, substantially as and for the purposes specified.

3. The combination, with the car-body A, of the clear-story B, having at each end thereof a space, C', having opening *b* at the end, and openings *c*, communicating with pipes D and controlled by valves *d*, and the said pipes D communicating with pipes E, arranged along the lower edge of the car body and slotted at *e*, substantially as and for the purposes specified.

4. The combination, with the pipes F F', slotted as described at *f*, and arranged in pairs between the car-windows, of the shield G, arranged between the two and projecting beyond them, substantially as and for the purposes specified.

5. The combination, with the pipes E, slotted at *e* and connected by pipes D with the spaces C', of the pipes F F', connected, respectively, with the funnels F² F³, and having the pipes F⁴ communicating with the pipes E, substantially as and for the purposes specified.

6. The combination, with the car-body A, of the downwardly and outwardly inclined

guards H, arranged under each end thereof, substantially as and for the purposes specified.

7. The combination, with the car-body A, of the downwardly and outwardly inclined
5 guards H, arranged under each end thereof, and having the swinging shields h hinged to their lower edges, substantially as and for the purposes specified.

8. The combination, with the car-body A,
10 having the slotted pipes E arranged along the

lower edges thereof, to retain the dust underneath the car, of the downwardly and outwardly inclined guards H, arranged under each end of the car and having the swinging shields h hinged to their lower edges, substantially as
15 and for the purposes specified.

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Witnessess:

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