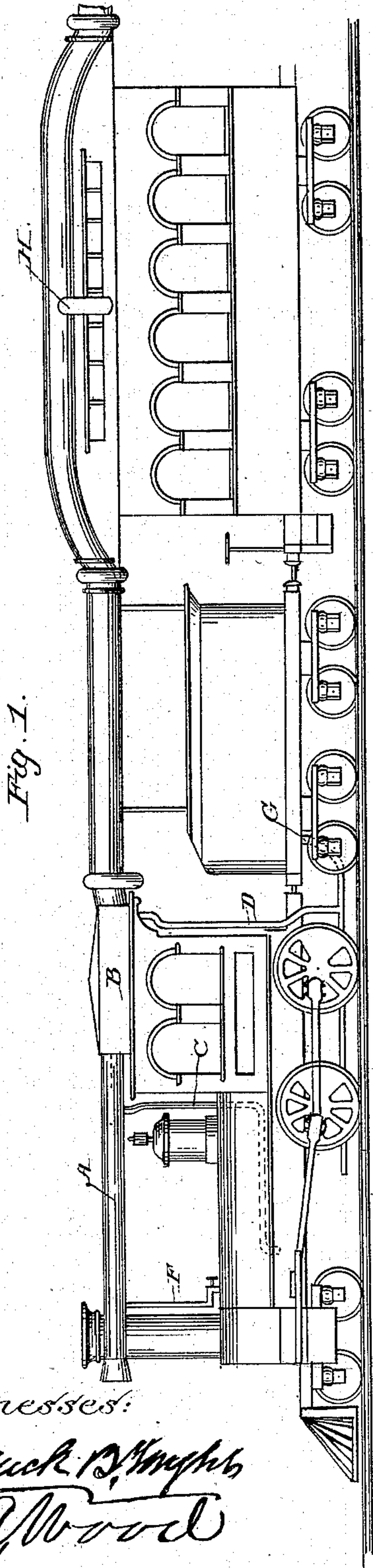


(No Model.)

J. D. BIRMINGHAM.
VENTILATING CARS.

No. 249,220.

Patented Nov. 8, 1881.



Witnesses:

Harold B. Wright
J. A. Wood

Fig. 2.

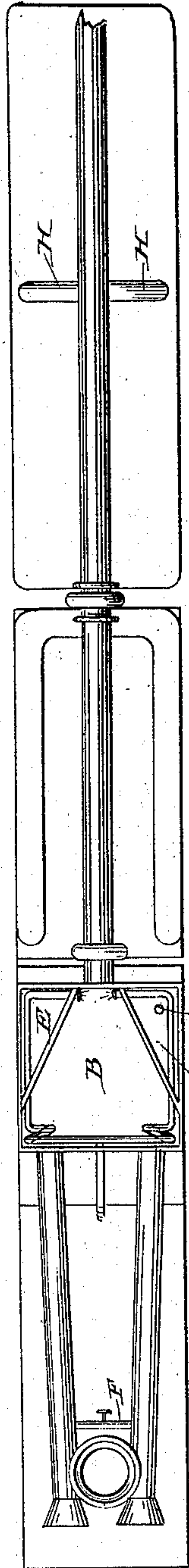
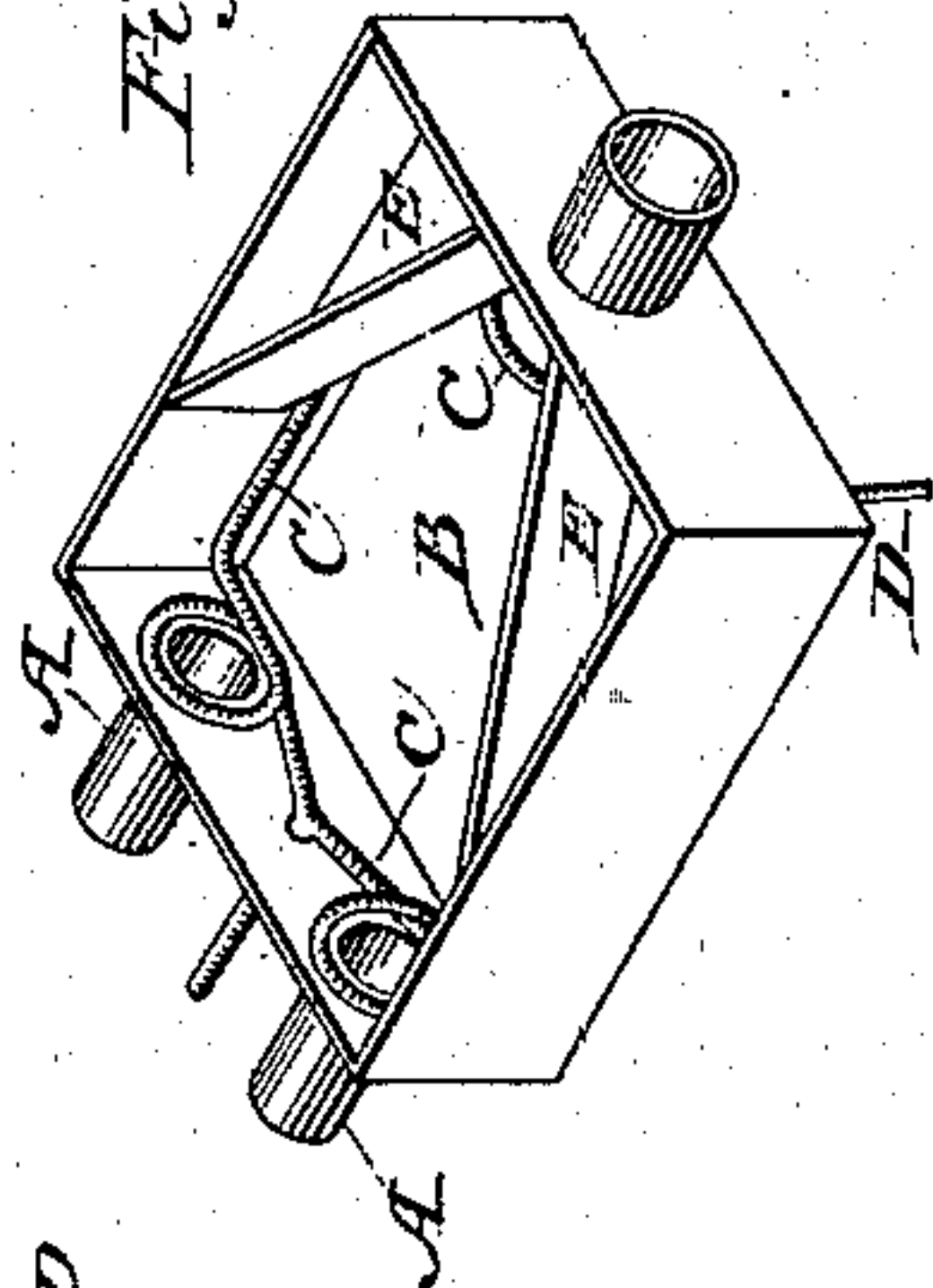


Fig. 3.



Inventor

John D. Birmingham

UNITED STATES PATENT OFFICE.

JOHN D. BIRMINGHAM, OF WILKES-BARRÉ, PENNSYLVANIA.

VENTILATING CARS.

SPECIFICATION forming part of Letters Patent No. 249,220, dated November 8, 1881.

Application filed December 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. BIRMINGHAM, of Wilkes-Barré, Pennsylvania, have invented a new and useful Improvement in Ventilating Cars, of which the following is a specification.

Heretofore cars have been cooled and ventilated by opening doors, registers, windows, &c. By these devices no current of pure cool air is supplied, but the current has been intermixed with dust, gases, smoke, cinders, and the like.

The object of my invention is to provide a means for ventilating, consisting in tubes or pipes made of wood, metal, or any other suitable substance located on the roof of the cars or otherwise suitably placed in relation to the cars, and which project over the tender and locomotive, as shown in the annexed drawings, and as now fully pointed out in the claim hereto affixed.

In the drawings, Figure 1 is a vertical section of a train, showing pipes and cooling-chamber, hereinafter described. Fig. 2 is a top view of the same. Fig. 3 is a vertical view, in perspective, of the cooling-chamber, showing coiled perforated water-pipes and ice-shelves.

Like letters refer to the same parts in all the views.

A A represent pipes which convey the air to the cooling-chamber B, which chamber is located on the locomotive and is furnished with a coiled tube, C, suitably perforated to permit jets of water to be conveyed to the center of the air-tubes, thus bringing the air in contact with water-sprays as it enters and leaves the chamber B. This pipe C is to be connected with a pump or other device for supplying water to the cooling-chamber.

D is a pipe connected to the bottom of the cooling-chamber B, and its office is, in connection with pipes *f* and *G*, to convey the waste water to the engine-tank.

E E are shelves located in chamber B. They are perforated and adapted to receive ice, which is intended to aid in reducing the temperature of the air-current. The air-current may be increased by a steam-blower, as shown in Figs. 1 and 2, or diminished by dampers or suitably-arranged registers in the cars.

From the cooler the main air-conductor extends over the roof of the cars with connections between the cars made of canvas, rubber, or other suitable flexible material.

Air-branches of the main pipes are to be let through the roof of each car of the train, as at H. These branches will connect with the pipes in each car, the pipes running lengthwise of each car, with escapes at such distances as may be necessary.

The substance used for connecting the air-tubes between the cars should be elastic and formed so as to yield and conform to the motion of the cars.

I claim as my invention in this application—

The combination, with the pipes extending from in front of the locomotive for the purpose of conveying the air to the cars, of the cooling-chamber located in advance of the train, whereby the air is cooled before it is admitted into the cars from the pipes extending along and upon the roof of the cars, substantially as shown and described.

JOHN D. BIRMINGHAM.

Witnesses:

HENDRICK B. WRIGHT,
W. S. PARSONS.