(No Model.)

W. BRENNAN.

SMOKE CONVEYER.

No. 462,425. Patented Nov. 3, 1891.

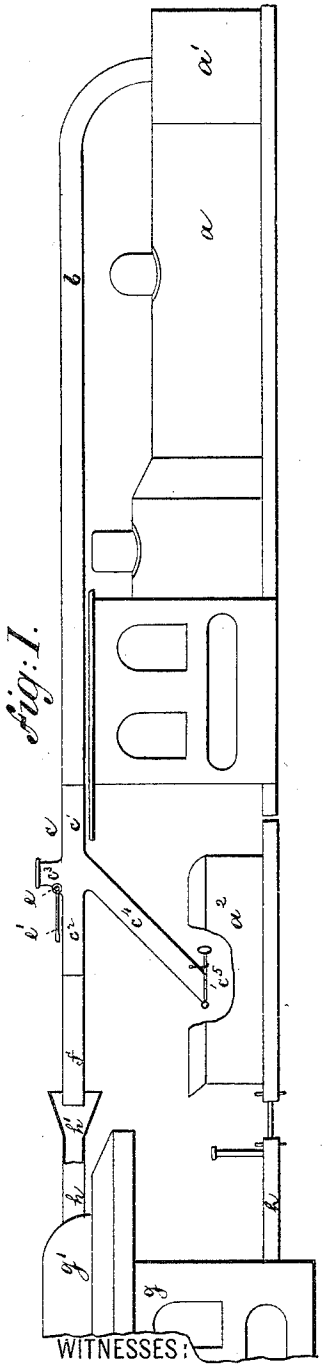

Fig. 1.

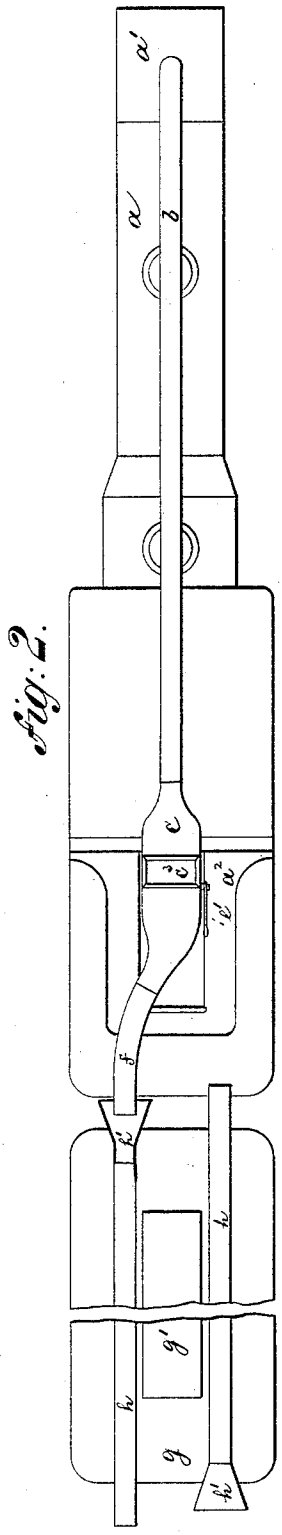

Fig. 2.

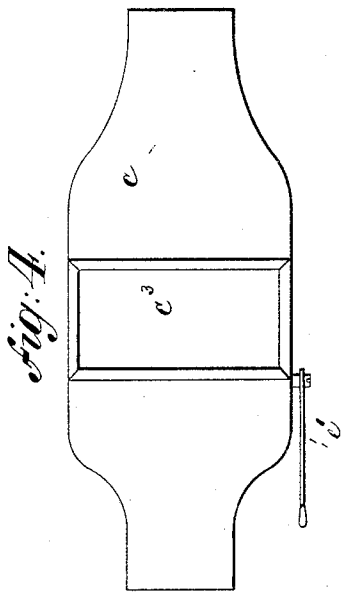

Fig. 4.

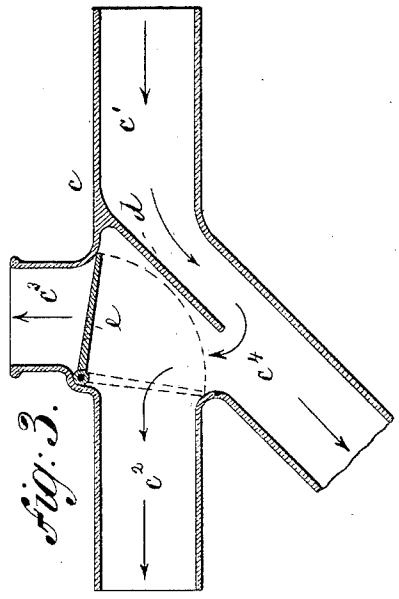

Fig. 3.

WITNESSES:

A. Schehl.

Wm. Schulz.

INVENTOR

W. Brennan

BY Roeder & Briesen

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM BRENNAN, OF BROOKLYN, NEW YORK.

SMOKE-CONVEYER.

SPECIFICATION forming part of Letters Patent No. 462,425, dated November 3, 1891.

Application filed July 6, 1891. Serial No. 398,537. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BRENNAN, of Brooklyn, New York, have invented an Improved Smoke and Spark Separator and Conveyer for Locomotives, of which the following is a specification.

This invention relates to an improved apparatus to be applied to the locomotive and to the car-roofs of a train, for the purpose of separating the sparks, dust, and cinders from the smoke and gases. The former are deposited in a suitable chamber adapted to be emptied into the tender, while the latter are carried either to the rear of the train or upward, as may be desired.

The invention consists in the various features of improvement more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved apparatus; Fig. 2, a top view thereof; Fig. 3, a vertical longitudinal section through the separating-box, with part of branch c^4 broken away; and Fig. 4 a top view of the same.

The letter a indicates the superstructure or body of the locomotive, having the usual smoke-box a'. Into this box enters the curved smoke stack or flue b, which first extends upward and then backward in a horizontal direction, as shown. At its rear end the flue b is connected to a four-way separating-chamber c, more fully shown in Fig. 3. This chamber is provided with the horizontal inlet branch c', the horizontal outlet branch c^2, the upright outlet branch c^3, and the downwardly-depending inclined cinder branch c^4. In order to deflect the cinders and other solid matters into the branch c^4, and to prevent them from entering the branches c^2 c^3, an inclined deflector d depends from the branch c' into the upper end of the branch c^4. This deflector intercepts the solid particles and guides them into the branch c^4, which is provided with a hinged bottom c^5, placed directly above the tender a^2 of the locomotive. Thus the branch c^4 constitutes, in effect, a collector for the unconsumed solid portions of the fuel, and when a sufficient quantity of the same has accumulated on the bottom c^5 it is dumped into the tender to be consumed with the other fuel.

At the junction of the branches c^2 c^3 there is hinged within the chamber c a gate e, that may be set by means of a handle e'. If the gate is swung downward to close the mouth of the horizontal branch c^2, (dotted lines, Fig. 3,) the gases and other volatile products of combustion escape through the branch c^3 directly upward into the air. This is the proper position of the gate when the locomotive is connected to a freight-train. When, on the other hand, the locomotive draws a passenger-train, the gate e is swung up, (full line, Fig. 3,) to guide the gases into the horizontal or rearwardly-extending branch c^2. This branch is connected to a laterally-bent pipe f, that projects beyond the rear end of the tender.

Each passenger-car g is provided upon its roof with two longitudinal parallel flues or tubes h, one on each side of the dome g'. These tubes project beyond the edges of the roof and are provided at one end with a flaring mouth h', as shown. The mouth h' of one tube is placed at the diagonally-opposite end of the car from the mouth of the other tube, as shown, while the plain or male ends are also placed diagonally opposite. When the train is made up, the bent pipe f will enter the flaring mouth of the flue h of the car next behind. The rear end of this tube will in turn be connected in a similar manner to the next car, and in this way the entire train will form a continuous flue that opens at the end of the rear car.

I attach importance to the use of two flues on each car, placed to the right and left of the center line and having the mouths h' at opposite ends. This construction permits the train to be quickly made up and a continuous flue to be formed, no matter which end of the car is foremost. The continuous flue will run along one side of the car, (right side, Fig. 2,) while the flues on the other side are out of action. The joint formed between the several flues is such that the cars can readily round a curve and that the coupling is automatic and can never break in case the

cars are uncoupled. Moreover, a strong suction is created at each mouth h', through which the air rushes backward to draw the gases from the stack rearwardly with great energy.

What I claim is—

1. The combination of a locomotive having a bent rearwardly-extending stack b with a box c, connected to the end of the rearward extension, and having branches c^2 c^3 that extend, respectively, rearward and upward, and with gate e, substantially as specified.

2. The combination of a locomotive having stack b with a box c, connected therewith and having branches c' c^2 c^3 c^4, a deflector d, and a gate e, substantially as specified.

3. The combination of a locomotive having stack b with a divided separating-box c, connected therewith, a laterally-extending pipe f, secured to the box and adapted to couple with a flue on the car-roof, substantially as specified.

WM. BRENNAN.

Witnesses:
F. v. BRIESEN,
WM. SCHULZ.