(No Model.) 2 Sheets—Sheet 1.

J. A. COTTER.

SPARK ARRESTER AND CONDUCTOR.

No. 267,158. Patented Nov. 7, 1882.

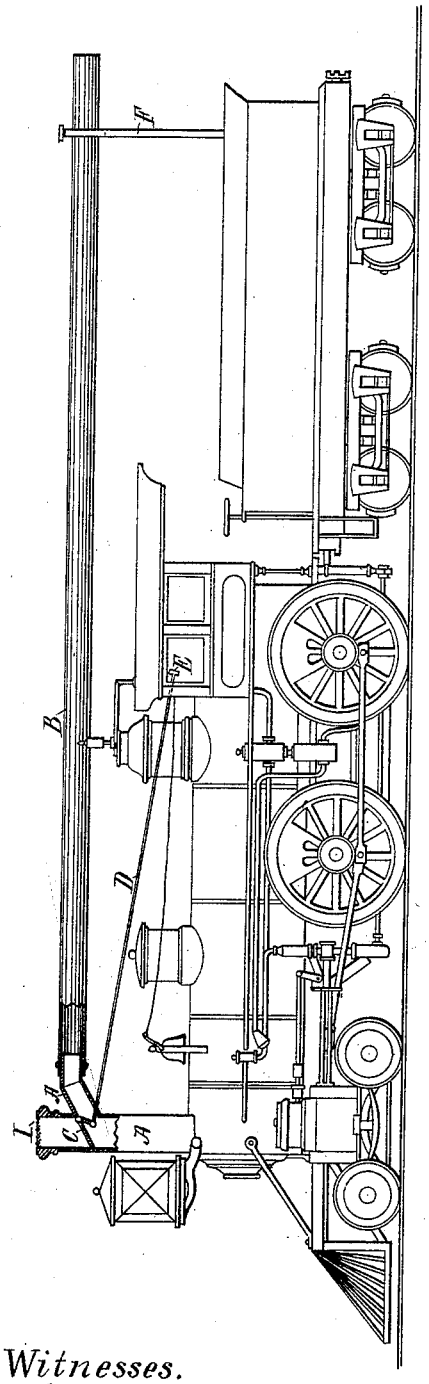

Fig. 1.

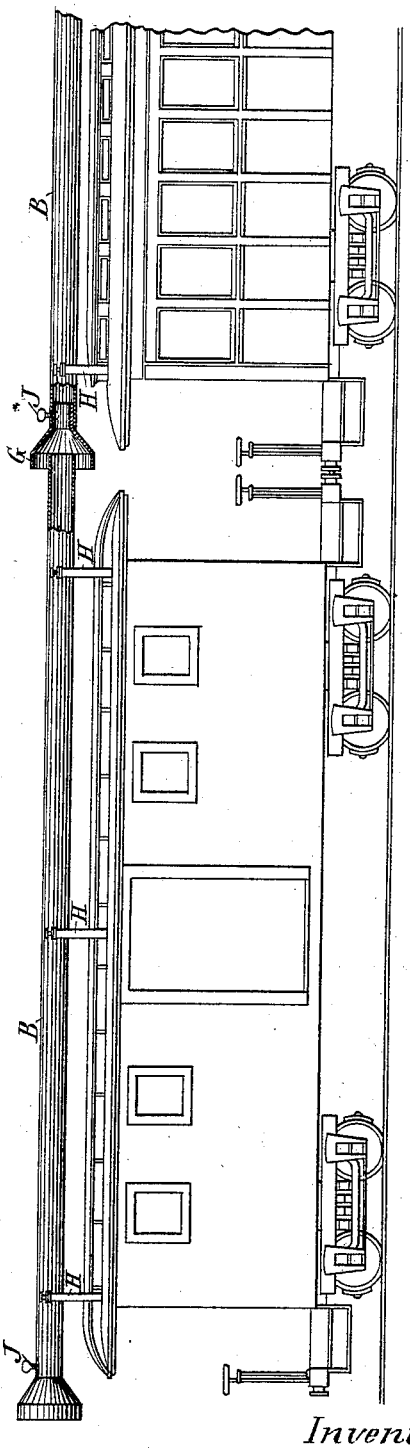

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2,

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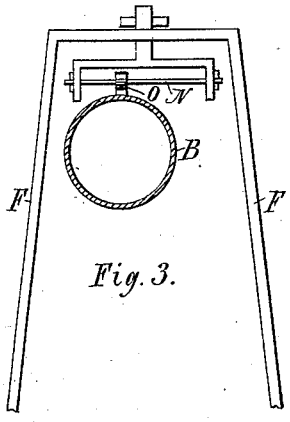

Fig. 3.

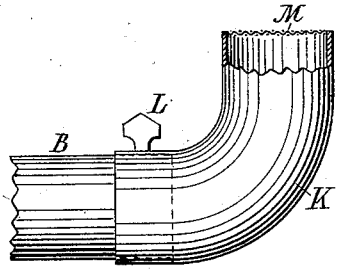

Fig. 4.

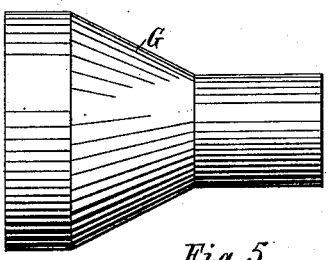

Fig. 5.

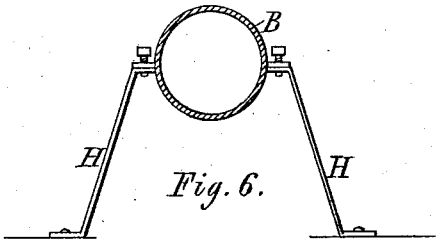

Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN A. COTTER, OF SAGINAW, MICHIGAN.

SPARK ARRESTER AND CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 267,158, dated November 7, 1882.

Application filed November 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. COTTER, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented a certain new and useful method of conducting sparks and smoke from the locomotive to the rear end of the train by the use of a series of pipes over and along the tops of locomotive and passenger-cars; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Heretofore great discomfort to passengers in railroad-cars and to train-men has been experienced from sparks and smoke from the locomotive smoke-pipe, these also causing damage to clothing and upholstery and to the exterior finish of the cars.

The object of my invention is to endeavor to do away with this great source of annoyance, dissatisfaction, damage, and destruction, as hereinbefore set forth, by the use of a series of pipes, as shown and described in the drawings and specification.

To carry my invention into effect I use a series of pipes and other appliances, described as follows:

Figure 1 is a view of the invention claimed as applied to a locomotive. Fig. 2 is a view of the invention also as applied to passenger-cars. Fig. 3 is a view of a hanger for holding up the rear end of the locomotive conducting-pipe; Fig. 4, outlet for use on the rear end of the train; Fig. 5, receiver for inserting in the forward end of conducting-pipes on top of passenger-cars; Fig. 6, holder for holding conducting-pipes in position on passenger-cars, all described as follows:

Fig. 1: A A are cast-iron smoke-pipe and elbow, all one piece, one foot (more or less) square, of such thickness of shell as may be deemed necessary, the elbow at the end to be round to receive and on which conducting-pipe B is connected, so constructed in diameter to fit a little loose to allow room for any quivering motion or oscillation there may be on the smoke-pipe elbow A while the locomotive is running, said conducting-pipe B to be fastened to said smoke-pipe elbow A with one or more bolts, as may be deemed necessary; C, cast-iron door of sufficient size and thickness to shut off sparks and smoke from escaping up smoke-pipe A, except while the locomotive is standing still or running backward, which said door C serves for the double purpose of closing up either pipe A or B, as desired; D, rod to operate door C from the cab; E, collar, with thumb-screw on inside of cab, to hold rod D in the desired position; F, hanger (see Fig. 3) to receive and hold up conducting-pipe B, so made as to run from each side of the tank to a sufficient height as is necessary, (for plan of which see Fig. 3;) I, wire or cast netting to prevent sparks escaping while the locomotive is standing still or running backward.

Fig. 2: G is a receiver, (see Fig. 5,) movable, to be shoved in the front end of all conducting-pipes B B running the length of and on top of all passenger-cars, as shown in Fig. 2, said receiver to be six inches in diameter, more or less, on the front end larger than conducting-pipes B B, as shown, to allow a liberal and free rocking motion of the end of conducting-pipe B entering into it while the train is running, and also to admit a current of air to assist in forcing sparks and smoke through conducting-pipes B B to the rear end of the train, the front end or collar of the receiver to be twelve inches long, more or less, so that the rear end of conducting-pipes B B will be covered and occupy about the position as shown in Fig. 2; J, thumb-screw running through conducting-pipes B B, the receiver, and also through a half-inch plate riveted on the upper inside of the receiver G to hold said receiver in place; H H H H, holders to hold conducting-pipes B B in position on the top of passenger-cars, as shown in Fig. 2.

Fig. 3: F F are wrought-iron supporters to run from each side of the tank as high as necessary, to hold swinging swivel-hanger O N, through which runs conducting-pipe B, as shown in Fig. 3.

Fig. 4: K is an outlet to be placed on the rear end of the train, to be shoved over the end of conducting-pipe B; L, thumb-screw to hold said outlet in place in the same manner as receiver; M, wire-netting to prevent the escape of sparks, if thought necessary, this outlet and all receivers to be transferred to their proper places when the train is made up, all

conducting-pipes and receivers to be constructed of galvanized iron, (or other, if preferred,) of such thickness as may be desired.

Fig. 5 represents a receiver to shove in the front end of conducting-pipes B B, as described, and shown in Fig. 2.

Fig. 6 represents holders on which conducting-pipes would be held, as set forth, and shown in H H H H, Fig. 2.

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

In a spark arrester and conductor, the combination, with the smoke-stack having an elbow, a damper, and means for operating the latter, of the pipe B and the support F, having swiveled adjustable hanger O N, as set forth.

JOHN A. COTTER.

Witnesses:
CHAS. C. COTTER,
F. C. BURCH.