(No Model.)

R. SOLANO.

STEAM MUFFLER.

No. 352,273. Patented Nov. 9, 1886.

Fig. 2.

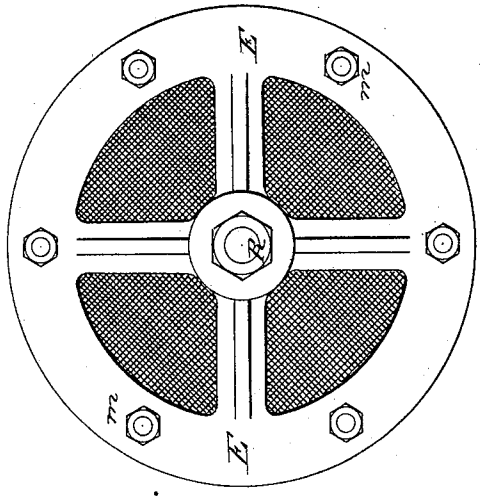


Fig. 3.

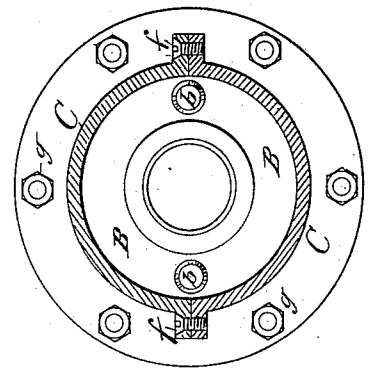
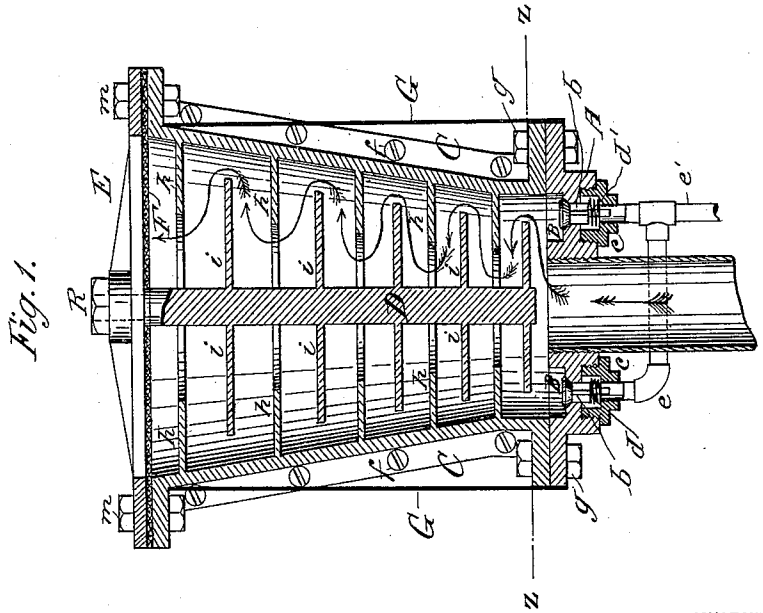


Fig. 1.



WITNESSES:

Aug. Loveling

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UNITED STATES PATENT OFFICE.

RENALDO SOLANO, OF BROOKLYN, NEW YORK, ASSIGNOR OF TWO-THIRDS TO JOHN W. HOWARD AND DAVID R. MORSE, BOTH OF SAME PLACE.

STEAM-MUFFLER.

SPECIFICATION forming part of Letters Patent No. 352,273, dated November 9, 1886.

Application filed August 14, 1886. Serial No. 210,861. (No model.)

To all whom it may concern:

Be it known that I, RENALDO SOLANO, a citizen of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Mufflers for Deadening the Sound of Escaping Steam, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which—

Figure 1 is a vertical section; Fig. 2, a top plan view; and Fig. 3, a horizontal cross-section taken on the line *z z*, Fig. 1.

The object of this invention is to suppress the noise of escaping steam blowing from pipes, nozzles, valves, or other openings.

In the present instance the invention is adapted for use in connection with an ejector for vacuum-brakes; and in order that others may understand and use my invention, I will first proceed to describe a device embodying the same, and subsequently point out in the claim its novel features.

In the drawings, A represents a casting that is intended to be screwed onto the pipe of an ejector for vacuum-brakes. In said casting an annular ring, B, is provided, in which two drip-valves, *b b'*, are placed, and secured by two hollow nuts, *c c*, which support the springs *d d'*, and are connected with the pipes *e e'*. These drip-valves are held open by the springs *d d'* when the muffler is vacant, and closed by the pressure accumulated during the escape of steam.

C is a cylindrical casting divided in two parts, fastened together with screws *f*, and supported and fastened on the casting A by suitable bolts, *g*. The casting C has a series of inwardly-projecting annular flanges or annular rings, *h*, which increase in length and intermediate space from the bottom to the top of the chamber.

D is a casting depending within the center of the chamber, and having a series of plates or flanges, *i*, projecting outwardly and arranged intermediate of the annular flanges *h*, to cover the central openings of the latter and leave a space at both ends adjacent to the casting. The casting D is bolted to a supporting-plate, E, by a screw and nut, R, and the plate is secured to the casting C by bolts *m*. Between the casting C and plate E a wire-cloth, F, is placed.

G is a sheathing, to make the body of the muffler of uniform diameter.

Having referred to the respective parts of which the device is made up, I will now explain the operation.

The steam escaping from the ejector or other instrument passes up through the pipe *a*, and follows the circuitous or zigzag course through and between the projecting flanges *h* and *i*, as indicated by the arrows, until it meets the wire covering F, through which it escapes to the atmosphere in a finely-divided state, and the condensed water that accumulates in the device is automatically carried off through the drip-valves *b b'*. The escaping steam in its passage through and around the projecting flanges *h i* is constantly diverted from its direct course, which checks its velocity and roaring sound.

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

A muffler attachment for the escape-nozzles of vacuum-brake ejectors or other steam-escapes, consisting of an annular chamber formed of a separable casting, A, having a series of inwardly-projecting annular flanges, and a central core or casting, D, having a series of outwardly-projecting flanges arranged alternately, as described, for diverting the course of the passing steam, said chamber communicating openly with the steam-escape and with the atmosphere through a perforated or gauze covering, and fitted with suitable drip-valves, as set forth.

RENALDO SOLANO.

Witnesses:

AUG. CREVELING,

C. W. FORBES.