

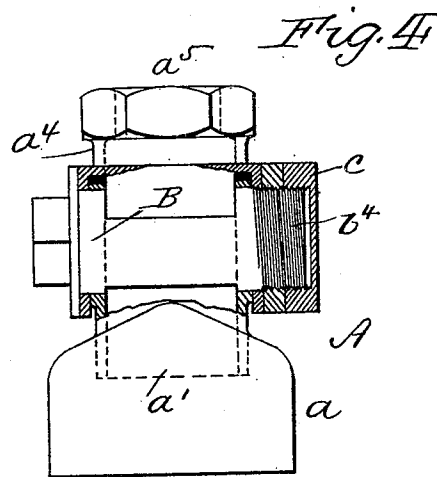
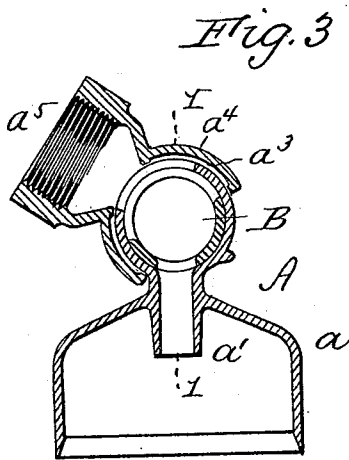
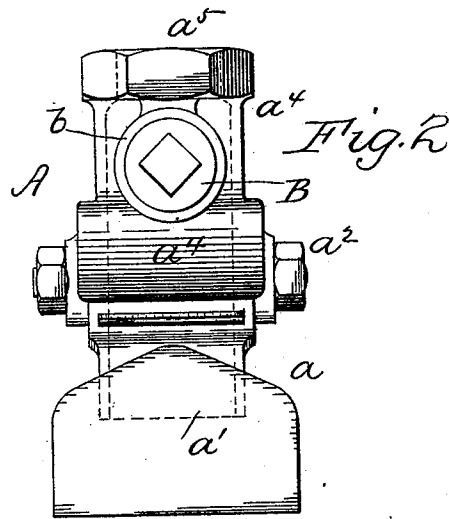
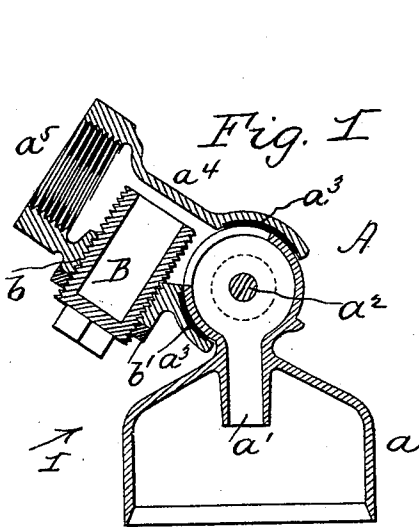
(No Model.)

2 Sheets—Sheet 1.

W. EVANS.
LOCOMOTIVE SAND PIPE END.

No. 460,529.

Patented Sept. 29, 1891.



WITNESSES:

Geo. R. Byington
L. R. Miller

INVENTOR,

William Evans
By S. J. VanStavorn
Attorney

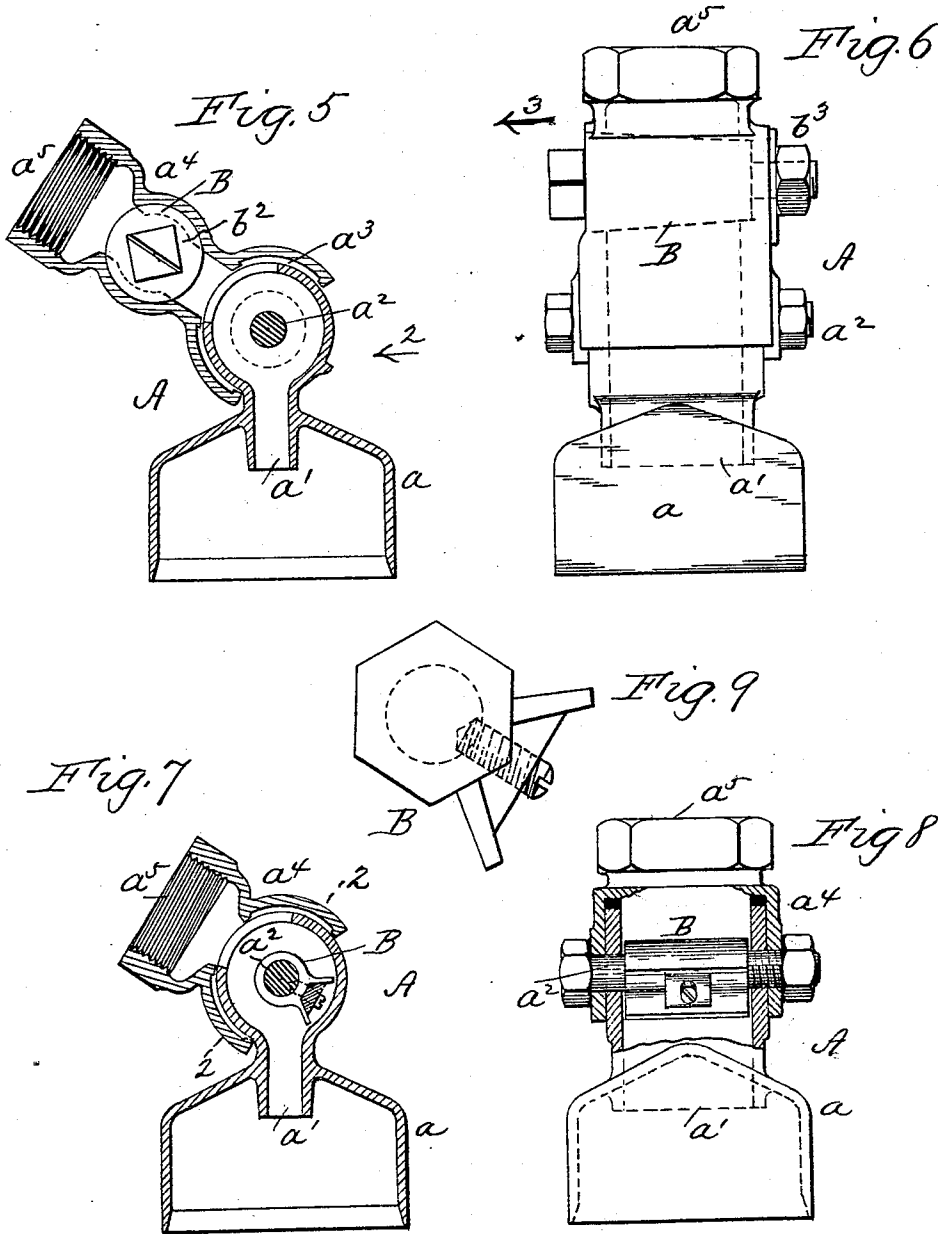
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Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM EVANS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE REAGAN MANUFACTURING COMPANY, OF SAME PLACE.

LOCOMOTIVE SAND-PIPE END.

SPECIFICATION forming part of Letters Patent No. 460,529, dated September 29, 1891.

Application filed October 26, 1889. Serial No. 328,242. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EVANS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Locomotive Sand-Pipe Ends, of which the following is a specification.

My invention has relation to bell-mouth couplings for locomotive sand-pipes of the form having a reduced outlet or nozzle within an exterior wide bell-mouth, and particularly to that form of the same in which the coupling is so constructed that it is adjustable at an angle to the sand-pipe.

In practice it has been found that the sand for the sand-pipes of locomotives is often imperfectly screened, so that small stones and other débris are contained in the sand, and which collect or accumulate in the coupling to interfere with the free flow of the sand when needed for use and ultimately clogging up the coupling, so that the flow of sand therefrom is stopped.

My invention has for its object to so construct the coupling that the accumulations of stones or other débris in the coupling can be easily and expeditiously removed without detaching the coupling from the sand-pipe and also to admit of that part of the coupling which controls the removal of said accumulations acting as a regulator for determining the flow or volume of sand from the coupling.

My invention accordingly consists of the combinations, constructions, and arrangements of parts comprising a coupling of the kind described, having a plug or valve for regulating the flow of sand and so arranged that it is movable or removable to admit of discharging from the coupling the stone or débris accumulations, all as hereinafter more particularly described in the specification, and pointed out in the claims.

Reference is had to the accompanying drawings, wherein Figure 1 is a sectional view, partly in elevation, of a sand-pipe bell-mouth coupling or end, showing a form of regulating and discharging valve embodying my invention; Fig. 2, an elevation of same, looking in

direction of arrow 1, Fig. 1. Fig. 3 is a view similar to Fig. 1, showing a modification of construction of coupling and of said valve. Fig. 4 is a sectional elevation on line 1 1, Fig. 3. Fig. 5 is a view similar to Fig. 1 of another form of sand-valve for the coupling. Fig. 6 is an elevation of Fig. 5, looking in direction of arrow 2, Fig. 5. Fig. 7 is a view similar to Fig. 5 of another form of valve for use in connection with the form of coupling shown in Figs. 3 and 4. Fig. 8 is a sectional elevation on line 2 2, Fig. 7; and Fig. 9 is an end elevation of the valve and bolt-shaft therefor (shown in Figs. 7 and 8) detached from the coupling.

A represents the coupling, which has a bell-mouth *a* and a reduced nozzle or outlet *a'* within said bell-mouth, of any desired construction and configuration, and may be in one piece or in sections. In the drawings I have represented it as composed of sections suitably pivoted or hinged together, as indicated at *a²*, and suitably packed, as shown at *a³*, so that the joint between the sections will be water or air tight and yet permit the lower or bell-mouth section *a* to be adjusted at any desired angle within its limit of motion relatively to the upper section *a⁴*, which has a screw end *a⁵* for attachment to the end of the sand-pipe, all of which I do not herein claim of itself, as it constitutes the subject-matter of another pending application filed by me the 6th day of May, 1889, Serial No. 309,672.

The coupling-section *a⁴* in Figs. 1 and 2 is represented as provided with a lateral threaded opening *b*, into which screws a plug B, provided with jam-nuts *b'* for holding it firmly in position against accidental displacement by jarring or vibration incident to travel. Plug B is of any desired and suitable diameter and length, and, as indicated in Fig. 1, reduces the bore of section *a⁴*, so as to limit or regulate the flow of sand therethrough and prevent the passage to the nozzle *a'* of stones or other débris in the sand. Such stones and débris accumulate in advance of the plug or valve D, and by simply removing the latter they drop out of the coupling-section *a⁴* or sand-pipe through the opening *b*. This removal is easily and quickly effected at any

time when necessary, and is accomplished without dismounting the coupling from the sand-pipe. In Figs. 5 and 6 the plug B is in the form of a tapered rotary plug or valve, which fits a corresponding opening in the section a^4 and has an elongated slot or passage-way b^2 (see more plainly Fig. 5) for the purpose of better regulating the flow of sand through the coupling, as desired. By loosening nut b^3 on this valve and sliding it out of its slot in the coupling-section a^4 in the direction of arrow 3, Fig. 6, the removal of stones and débris is effected.

In Figs. 1, 2, 5, and 6 the plug or valve B in section a^4 is separate from and located above the pivot-point or shaft a^2 for the coupling-sections a a^4 , and this construction I deem the most preferable one. In any case said plug is located in advance or above the inlet end of nozzle a' .

In Figs. 3 and 4 I have shown the plug B serving also as a shaft for connecting the coupling-sections, said plug being tubular at its end b^4 , which is covered by a removable cap c for effecting the discharge from the coupling of the stones and débris.

In Figs. 7, 8, and 9 the side opening in the coupling is dispensed with, and a shutter or gate form of plug or valve secured to the shaft a^2 is substituted for the plugs and valves above described in this case. When the gate-valve is fully opened, as indicated in Fig. 7,

the stones and débris will escape through the nozzle a' . It is evident, therefore, that the construction and arrangement of parts comprising my improvements may be variously provided for without departing from the spirit of the invention, and hence I do not limit myself to the same as described and shown.

The coupling may be made of metal, rubber, or other material, as desired.

What I claim is—

1. A bell-mouth coupling or end for locomotive sand-pipes, having a valve for regulating the flow of sand and for controlling the discharge of stones or débris from the coupling, substantially as set forth.

2. A bell-mouth coupling for locomotive sand-pipes, composed of a fixed and an adjustable section and a movable cut-off valve controlling the discharge of sand and débris from the coupling, substantially as set forth.

3. A bell-mouth for a locomotive sand-pipe, comprising a bell a and upper nozzle a^4 , having an opening a^5 for attachment to the sand-pipe, an outlet-pipe a' within and above the edge of bell a , and removable plug B in said nozzle, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM EVANS.

Witnesses:

FRANK H. MASSEY,
FRANK R. JORDAN.