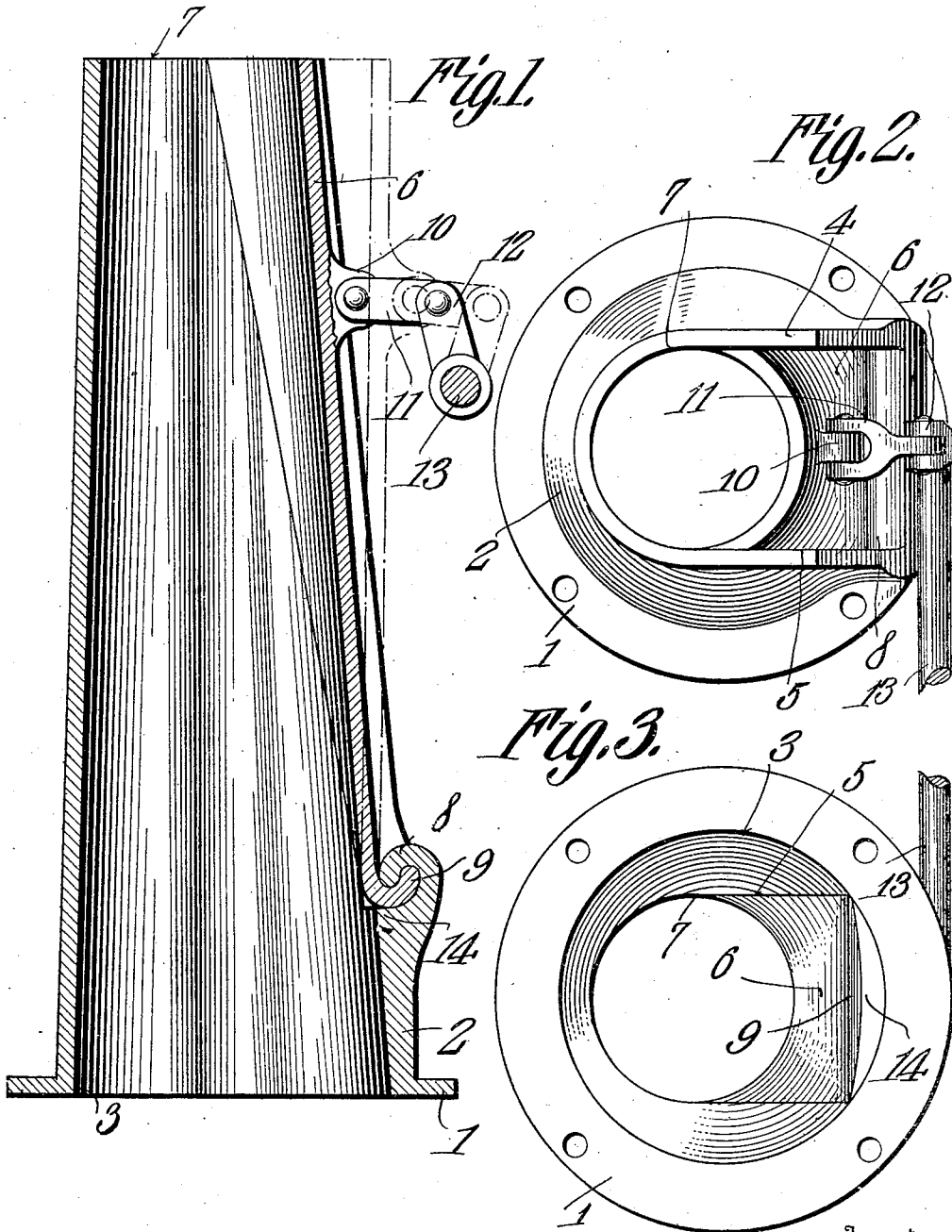


W. T. DODGE.
ADJUSTABLE NOZZLE.
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935,745.

Patented Oct. 5, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

WASHINGTON T. DODGE, OF BELMONT, NEW YORK.

ADJUSTABLE NOZZLE.

935,745.

Specification of Letters Patent.

Patented Oct. 5, 1909.

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To all whom it may concern:

Be it known that I, WASHINGTON T. DODGE, a citizen of the United States, residing at Belmont, in the county of Allegany and State of New York, have invented a new and useful Adjustable Nozzle, of which the following is a specification.

This invention relates to nozzles of that type ordinarily employed for directing exhaust steam and the like into the stacks of locomotives, etc., for the purpose of increasing the draft.

The object of the invention is to provide a nozzle of this type, the outlet of which can be varied in size so as to produce a corresponding variation in the size of the jet discharge from the nozzle.

Another object is to provide a nozzle having a reducing member mounted therein in a novel manner, said member and the body of the nozzle having interlocking portions so constructed as to obviate the necessity of as heretofore employed in devices of this character.

A further object is to so construct the body and reducing member of the nozzle as to permit said member to swing freely within the body without permitting leakage of steam between the meeting faces of the parts.

A further object is to provide a nozzle, the reducing member of which is capable of considerable movement, simple means being employed whereby said member may be readily actuated.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a central longitudinal section through a nozzle constructed in accordance with the present invention, the reducing member of the nozzle being shown in its innermost position. Fig. 2 is a top plan view of the nozzle. Fig. 3 is a bottom plan view thereof.

Referring to the figures by characters of reference 1 designates a circular flange constituting the base of the nozzle, said flange surrounding one end of the frusto-conical body 2 of said nozzle, said body having a circular inlet opening at its base as indicated at 3 in Fig. 3, the walls of the body

gradually merging into straight parallel walls 4, which extend along opposite edges of an elongated opening 5, formed longitudinally within the nozzle body. A reducing plate 6 is movably mounted between the straight walls 4 and serves to close the opening 5. As indicated in Fig. 2 this plate 6 is concavo-convex in cross section, the arc thereof being similar to that of the body 2 so that when the plate is in its innermost position the upper or outer end thereof cooperates with the curved body 2 to form a circular discharge opening 7.

Formed upon the body 2 adjacent the bases of the straight walls 4 is an inverted U-shaped flange 8 designed to be movably engaged by a curved flange 9 formed at the inner end of the reducing plate 6. As shown in the drawings the concavity within the plate 6 gradually diminishes in extent toward the curved end 9 of the plate and at this end the said plate is straight from side to side.

An ear 10 is formed upon the outer face of the reducing plate 6 near the free end thereof and pivotally connected to this ear is a link 11 which is also pivotally attached to an arm 12, extending from a rock-shaft 13. This shaft may be actuated by any suitable means so as to permit the plate 6 to be swung in either direction with relation to the body of the nozzle.

It is of course to be understood that the flange 1 is to be bolted or otherwise fastened to a supply pipe and after the body of the nozzle has been placed in proper position the reducing plate 6 is placed at substantially right angles to the longitudinal axis of the body and the flanged end 9 thereof is inserted into the body and thence shifted into engagement with the flange 8.

The shoulder 14 formed by the body 2 and which is overhung by the flange 8 constitutes a support for the hooked flange 9 so that after the plate 6 has been elevated to a predetermined position the parts 8 and 9 will interengage and prevent displacement of the plate although permitting the plate to swing between the straight walls 4 of the body. The link 11 can then be attached to ear 10 and, by actuating the shaft 13 so as to swing arm 12, the plate 6 can be caused to swing with the parts 8 and 9 as a pivot and the size of the discharge opening of the nozzle can thus be increased or diminished at will.

It is of course to be understood that if desired suitable packing may be arranged within the longitudinal edge portions of the reduced plate so as to prevent leakage between said plate and the walls 4.

Although the nozzle is especially designed for directing steam into smokestacks and thus increasing the draft through furnaces of locomotives and the like it is to be understood that said nozzle may be used for various other purposes without requiring any change in the structure thereof. It is also to be understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing the advantages of the invention.

What is claimed is:—

1. A nozzle comprising a body having a longitudinal opening, there being flat parallel walls at opposite sides of the opening and extending beyond the body at tangence thereto, the end wall of said opening having a supporting shoulder, and an inverted U-shaped flange overhanging said shoulder, a reducing plate movably mounted within the opening and bearing at its sides against the walls, said plate having a curved flange co-operating with the first mentioned flange to

constitute a pivot for the plate, and means for shifting the plate within the opening. 30

2. A nozzle comprising a tapered body having a longitudinal opening therein, a reducing plate movably mounted within the opening, interlocking means upon the plate and body and constituting a pivotal connection therebetween, and means for shifting the plate within the opening, said plate being bodily shiftable to disengage the interlocking means. 35 40

3. A nozzle comprising a body tapered toward one end and having a longitudinal opening therein, a pivot member integral with the end wall of said opening, a reducing plate movably mounted within the opening, said plate having a pivot member integral therewith and the two pivot members interengaging, and a means for shifting the plate within the body, said plate being bodily shiftable to disengage the pivot members upon the body and plate. 45 50

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WASHINGTON T. DODGE.

Witnesses:

E. HUME TALBERT,
C. E. PREINKERT.