No. 713,641. Patented Nov. 18, 1902.

W. HOOD.

EXHAUST MECHANISM.

(Application filed Mar. 10, 1902.)

(No Model.)

Fig. 1.

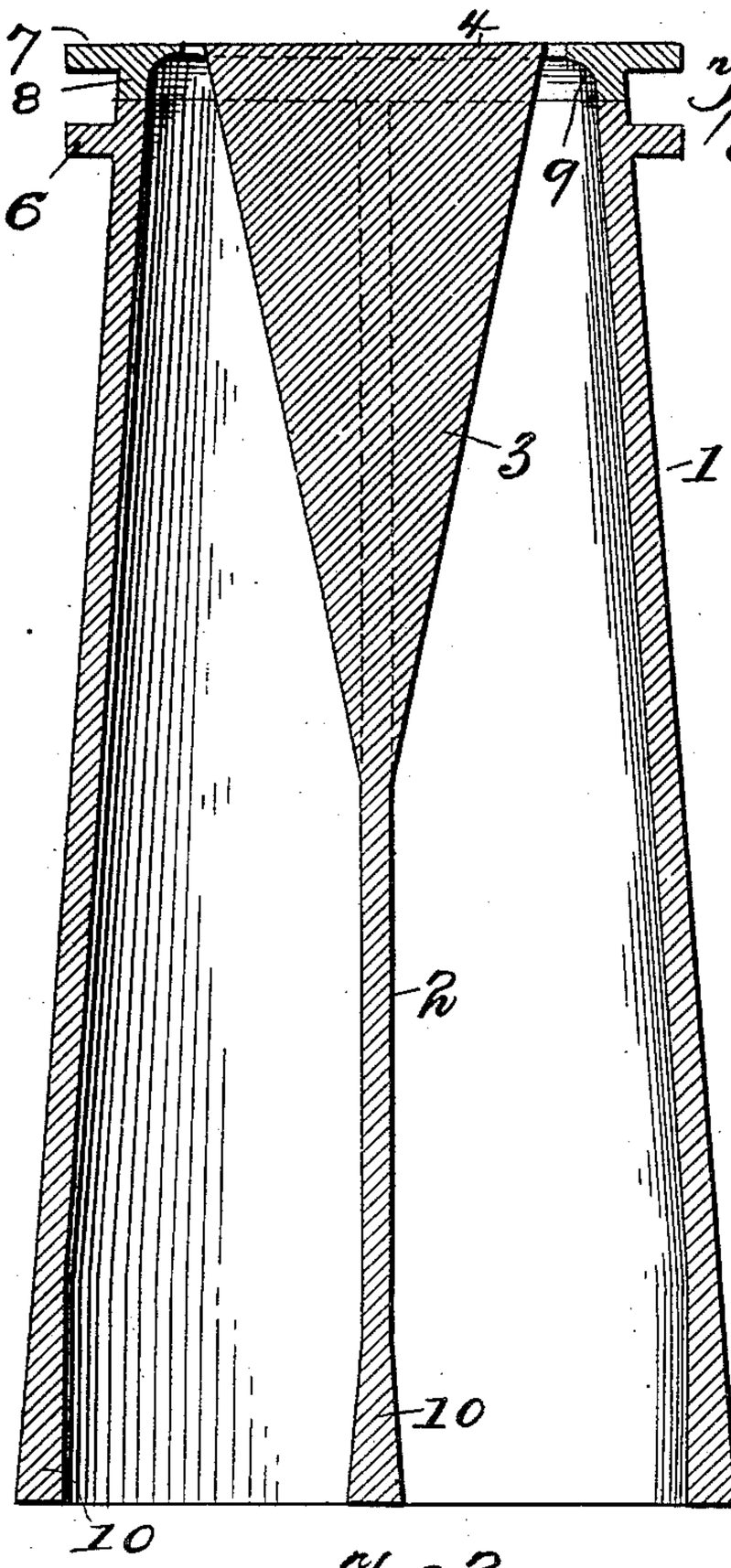
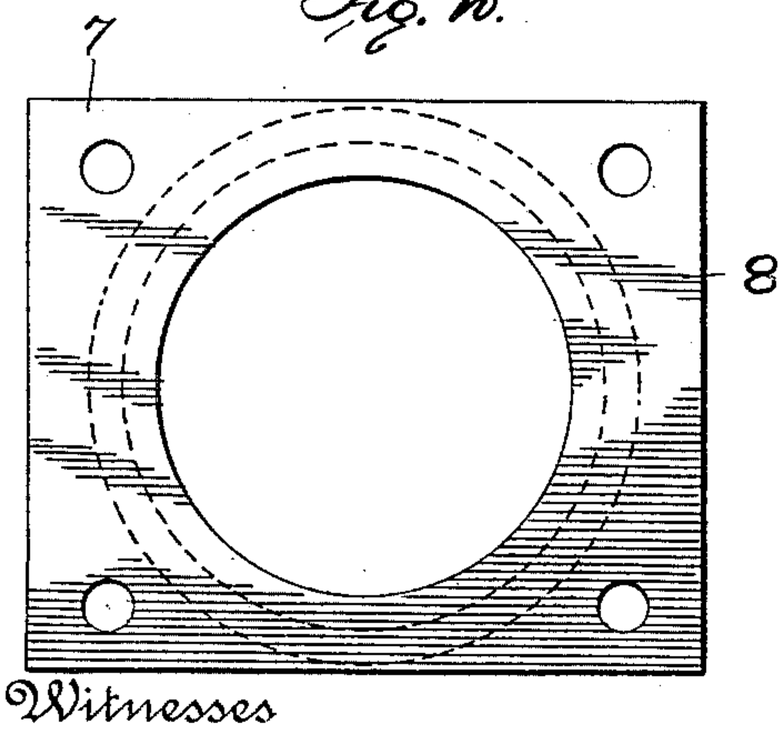


Fig. 2.



Witnesses
Chas. K. Davies.
C. C. Carrick

Fig. 3.

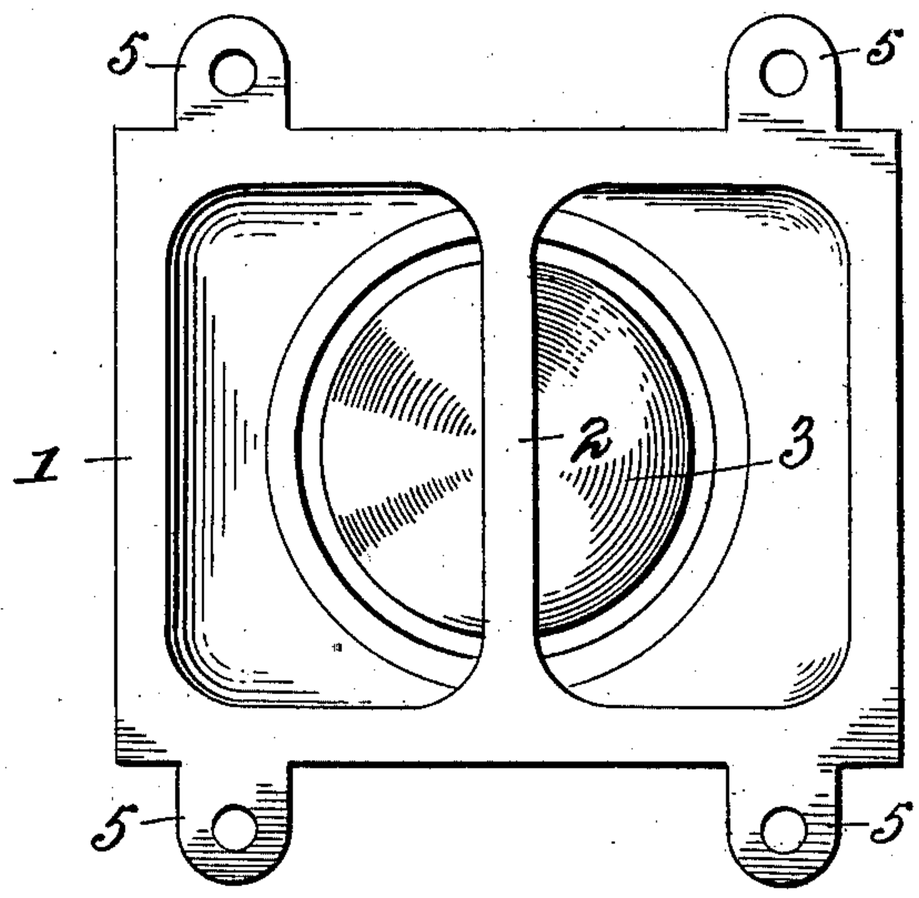


Fig. 4.

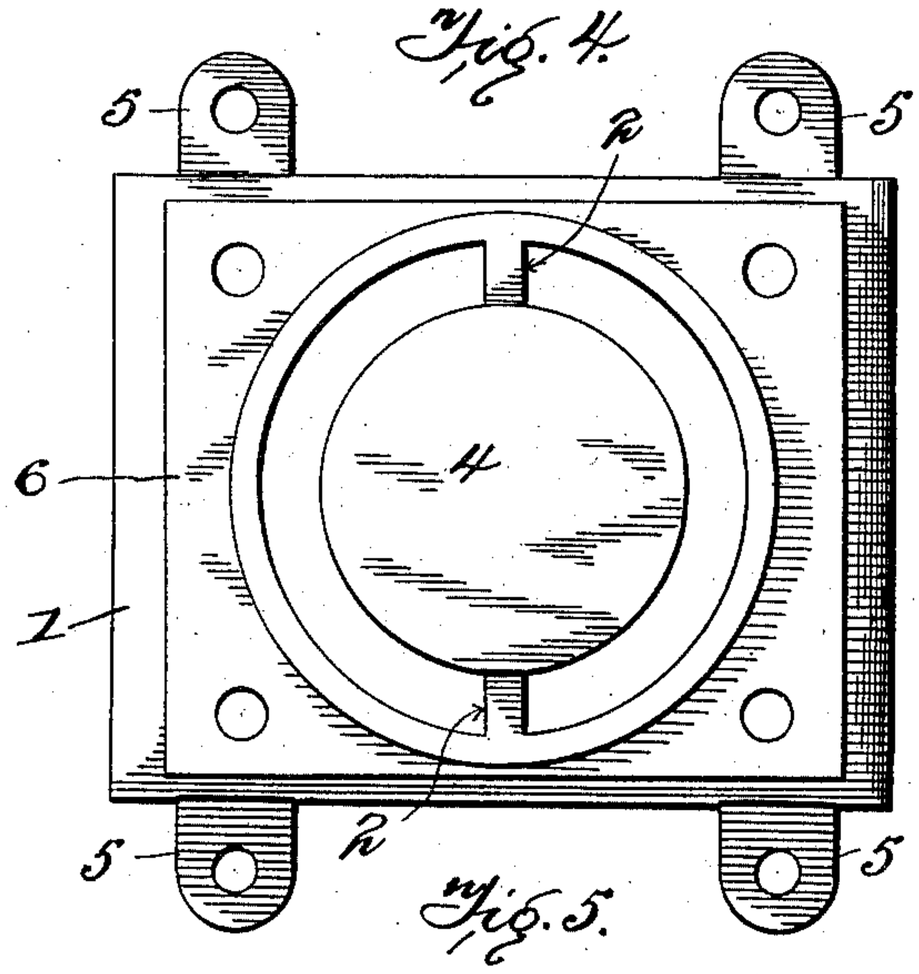
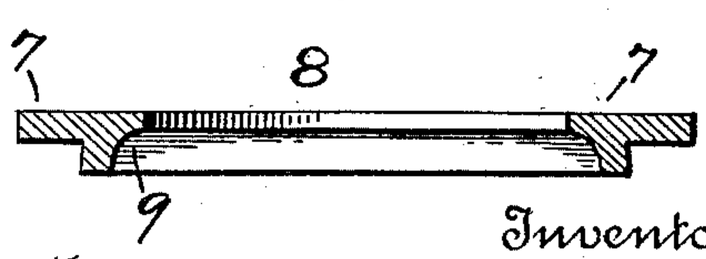


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM HOOD, OF HORNELLSVILLE, NEW YORK.

EXHAUST MECHANISM.

SPECIFICATION forming part of Letters Patent No. 713,641, dated November 18, 1902.

Application filed March 10, 1902. Serial No. 97,638. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HOOD, of Hornellsville, county of Steuben, and State of New York, have invented certain new and useful Improvements in Exhaust Mechanisms; and I do hereby declare that the following is a full and clear description thereof.

My invention relates to exhaust mechanisms, and is designed for any use to which it is adapted.

More particularly stated, my invention relates to locomotive exhaust-nozzles, and the particular type of nozzle comprises a separate exhaust-passage for each cylinder, which passages merge into a common annular exhaust-opening.

The object of my invention is to provide an exhaust-nozzle composed of two parts adapted to be securely adjusted and secured together, so as to provide a single exhaust-opening, whereby an effective construction is secured, resulting in the practical elimination of any back pressure from the cylinders, an economical saving in fuel, and a constant production of a vacuum over the fire-bed when in use. For these purposes my invention consists in the following construction and arrangement, which will first be particularly set forth and the features of novelty then pointed out and claimed.

Figure 1 represents a central longitudinal sectional elevation of my invention. Fig. 2 is a top view thereof. Fig. 3 is a bottom view. Fig. 4 is a top view with the annular cover-plate removed. Fig. 5 is a transverse vertical section through the cover-plate.

The exhaust-nozzle comprises, preferably, a cast-metal main portion 1, having a central partition 2 extending throughout the length of the nozzle. The partition 2, at a point about mid-length of the nozzle, is provided with an inverted conical portion terminating in a flat circular top 4. The base of the nozzle is provided with fastening means, as 5, securely attaching the nozzle to the top of the exhaust-passages from the cylinders.

The top of the main portion 1 is provided with a flange 6, and the top plate-cover 7 is also provided with flanges 8. Suitable fastening means secure the flanges 6 and 8. The outer edge of the top 4 of the cone portion 3 and the inner circular edge of the cover-plate 7 form between them an annular nozzle, through which the exhaust-steam is ejected. The inner face of the cover-plate 7 is provided with a curved deflecting part 9, registering at its lower edge with the inner wall of the main portion 1 and curving inwardly at its upper end toward the annular orifice.

It will be noted that the conical portion 3 projects above the top of the main portion 1 a distance equal to the thickness of the cover-plate 7, permitting the cover-plate to be bolted securely to the main portion 1 and presenting a flat surface in one plane at the top of the nozzle.

The partition or rib 2 is carried clear to the top of the main portion, the division in the rib commencing at the base of the inverted conical part and continuing upon opposite sides, uniting the outer wall and the opposite sides of the inverted cone.

The lower part 10, including the outer wall and the partition, is thickened in the immediate neighborhood of the base of the exhaust-nozzle.

The whole structure forms a compact, strong, and simple device which is remarkably efficient in performing the functions hereinbefore referred to.

I have found in practice that the efficiency of the exhaust of the cylinders of a locomotive is increased largely by the employment of a long inverted cone which separates the alternate exhaust and permits it to commingle only at the extreme end of the nozzle.

What I claim as new, and desire to secure by Letters Patent, is—

In an exhaust-nozzle, the combination with an outer casing, a central partition and an inverted cone, all cast in one piece, said partition extending diametrically throughout the length of the pipe, and diametrically upon both sides of the cone to a point just below the top of the cone, of a cover-plate secured to the top of the nozzle having an annular chamber just above the partition for converging the exhaust from both sides of the partition at the extreme end of the nozzle.

In testimony whereof I have affixed my signature in the presence of two witnesses.

WILLIAM HOOD.

Witnesses:
J. K. CHAPMAN,
L. T. HOWARD.