

James. Lewis.
Exhaust Nozzle to Steam Engines

116605

PATENTED JUL 4 1871

Fig 1.

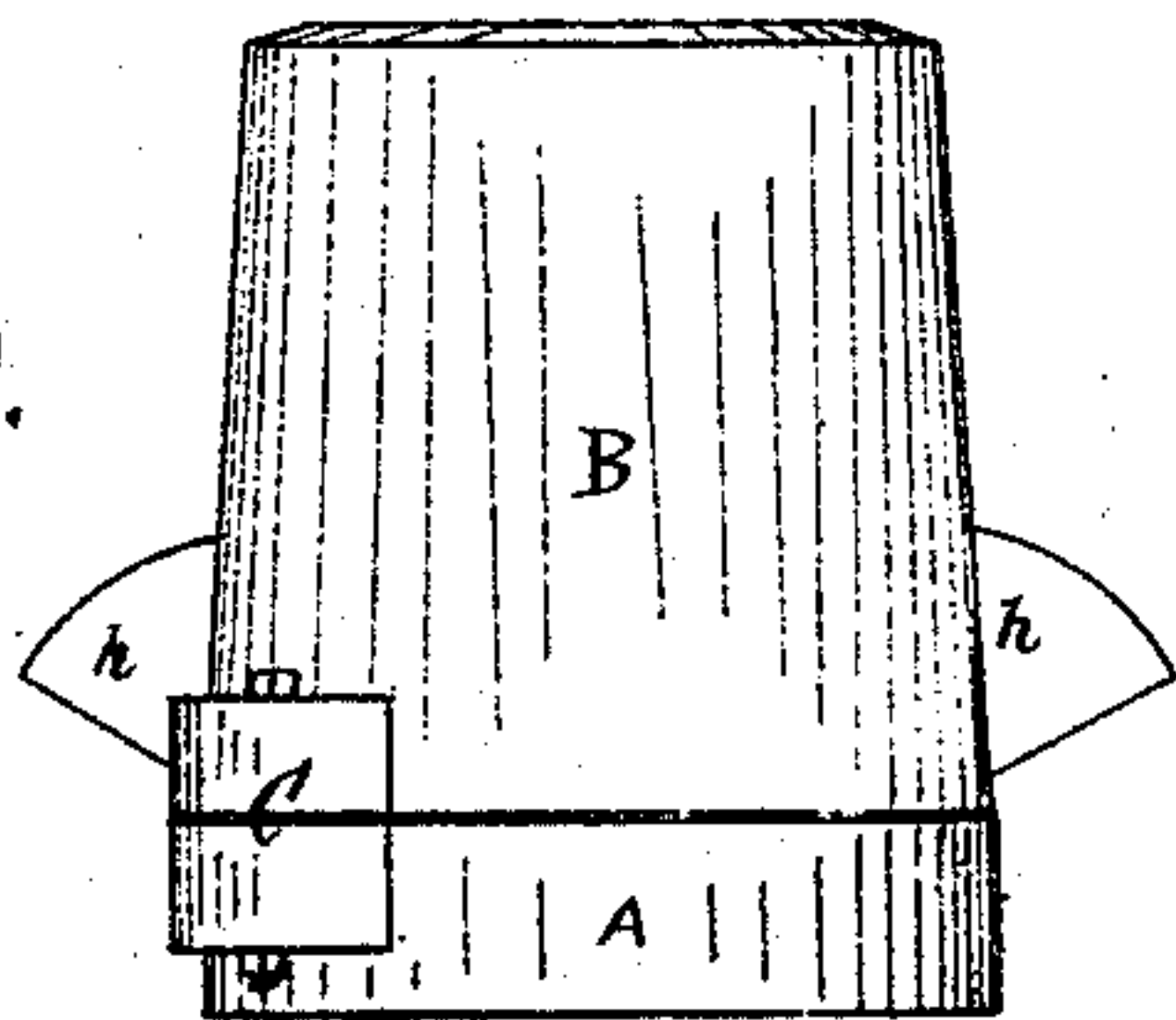
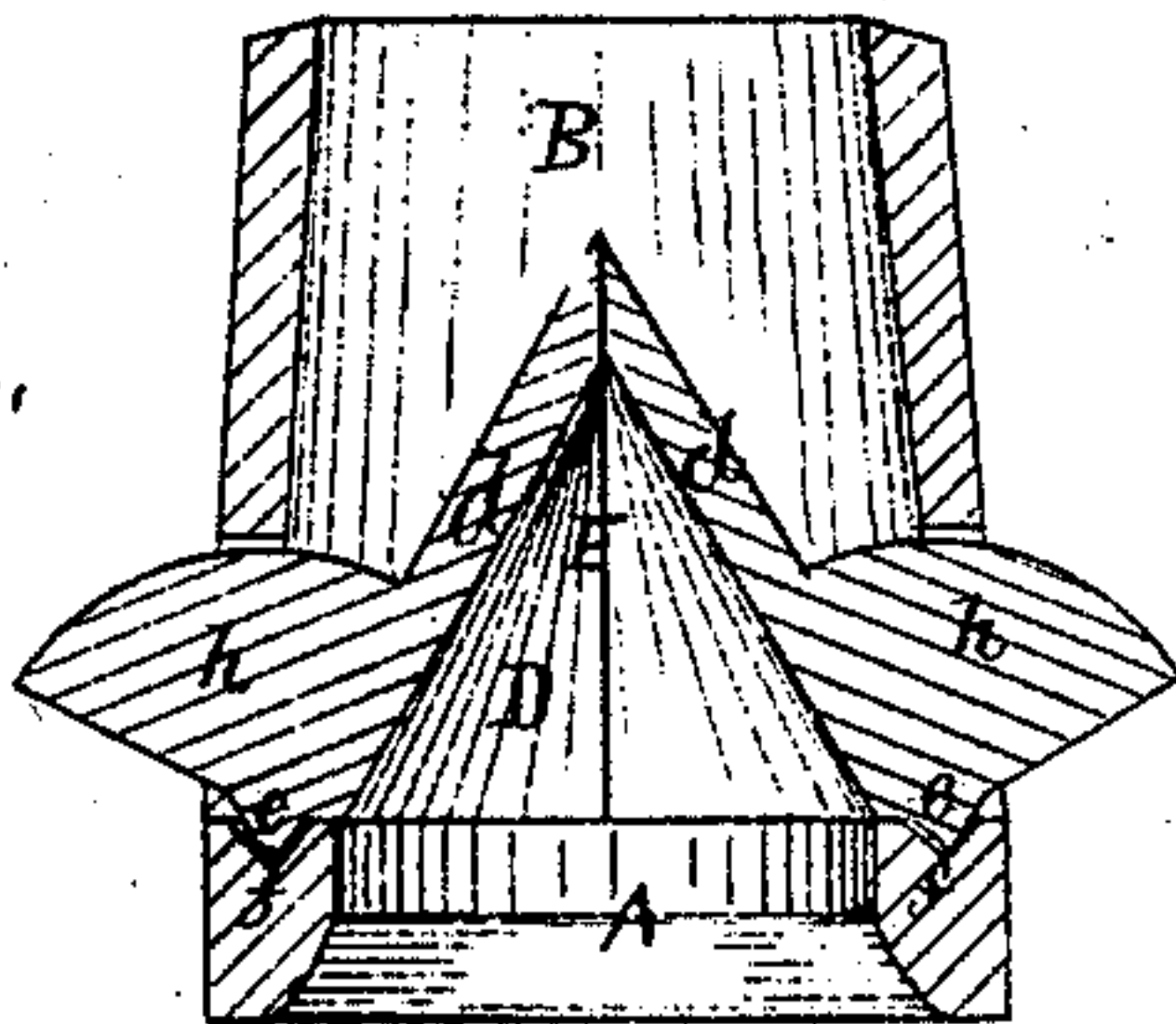


Fig 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES LEWIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND EDWARD J. CUYLER, OF SAME PLACE.

IMPROVEMENT IN EXHAUST-NOZZLES.

Specification forming part of Letters Patent No. 116,605, dated July 4, 1871.

To all whom it may concern:

Be it known that I, JAMES LEWIS, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Exhaust-Nozzle to Steam-Engines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side elevation of an exhaust-nozzle embodying my invention, and Fig. 2 is a vertical central section of the same.

Similar letters of reference indicate like parts in both figures of the drawing.

My invention relates to an automatic exhaust-nozzle to be attached to the exhaust-pipe of locomotive-engines; and has for its object to prevent ashes, cinders, &c., from entering the cylinder through the exhaust-pipe, thereby protecting the working surfaces from injury; and the invention consists in the method of securing the valve to its seat within a suitable case attached to the end of the exhaust-pipe, whereby the action of the exhaust steam, when it opens the valve, shall not break or injure its connections with the seat.

In the accompanying drawing, A is an annular plate, which is firmly secured to the end of the exhaust-pipe. B is a cylindrical case, which is securely bolted to each side of the upper surface of plate A, as shown at C. D is the valve, consisting of a hollow cone, which is bisected, as shown at E, forming two independent sections, *d d*, which rest upon plate A within the case.

Each section is provided at its base with a triangular projection, *e*, arranged centrally upon its periphery and in line parallel to its central edge, and resting within a corresponding recess, *f*, formed in the upper surface of plate A, thereby forming a center upon which the respective sections are oscillated when opened by the action of the exhaust steam, the sides of the recess being formed to admit of the movement. The outer surface of the separate sections *d d* are each provided with a curved or irregular-shaped lug, *h*, which extend through slots formed in opposite sides of case B, thereby preventing lateral displacement of the respective sections when in operation. The steam escaping from the exhaust-pipe opens the valve by forcing sections *d d* outward at their upper ends, and which oscillates upon the projections *e*, allowing the steam to escape through the valves, which then close by their own gravity after the jet of steam has escaped, thereby preventing ashes, cinders, &c., from entering the pipe.

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

The bisected conical valve D provided with projections *e e*, in combination with plate A provided with recesses *f f*, and arranged to operate substantially as and for the purpose described.

The foregoing specification of my invention signed by me this 14th day of April, A. D. 1871.

Witnesses:

JAMES LEWIS.

N. C. GRIDLEY,

N. H. SHERBURNE.