

J. M. WILLSON.
LOCOMOTIVE SMOKE-STACK.

No. 175,890.

Patented April 11, 1876.

Fig. 1.

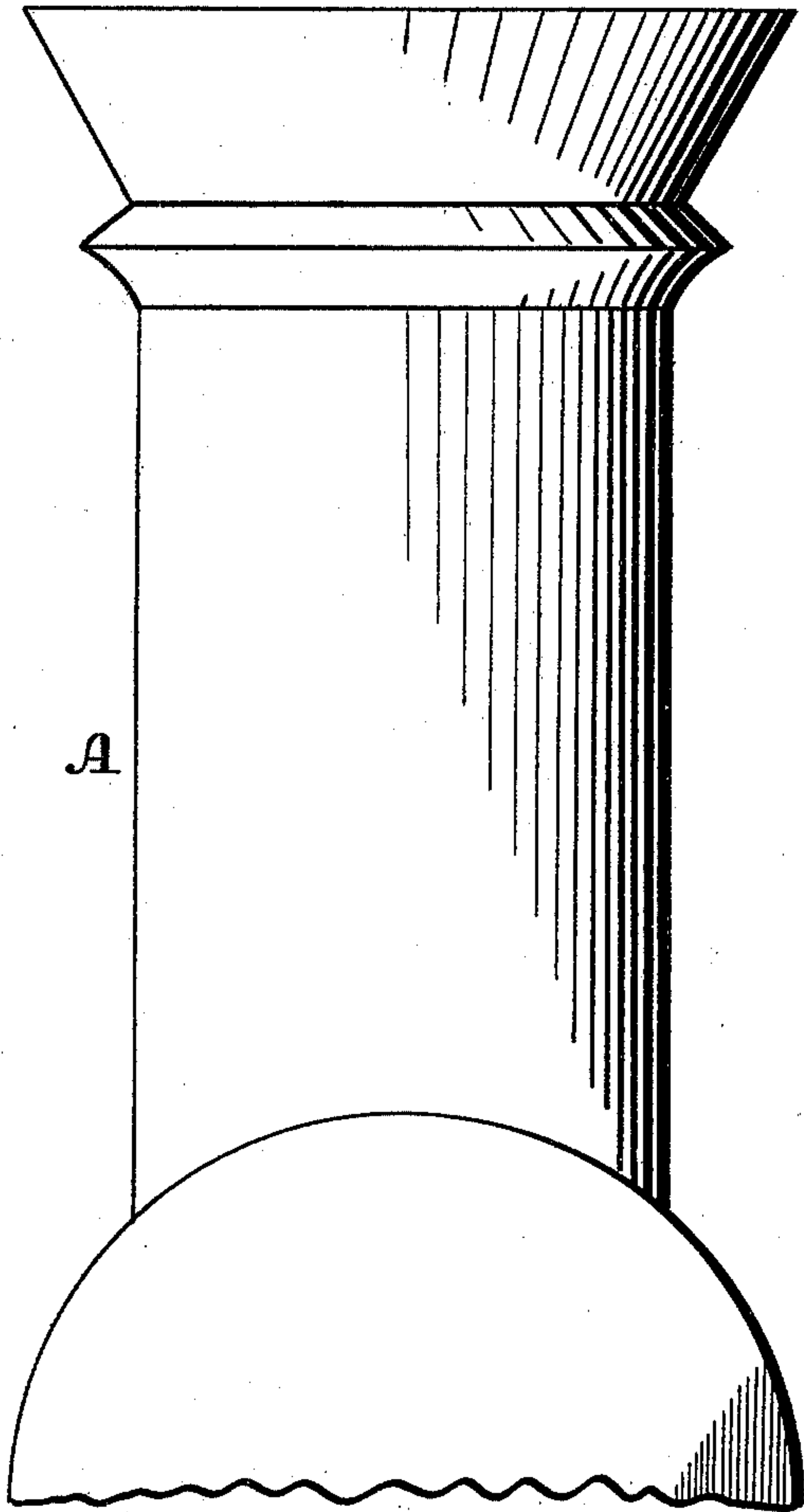


Fig. 2.

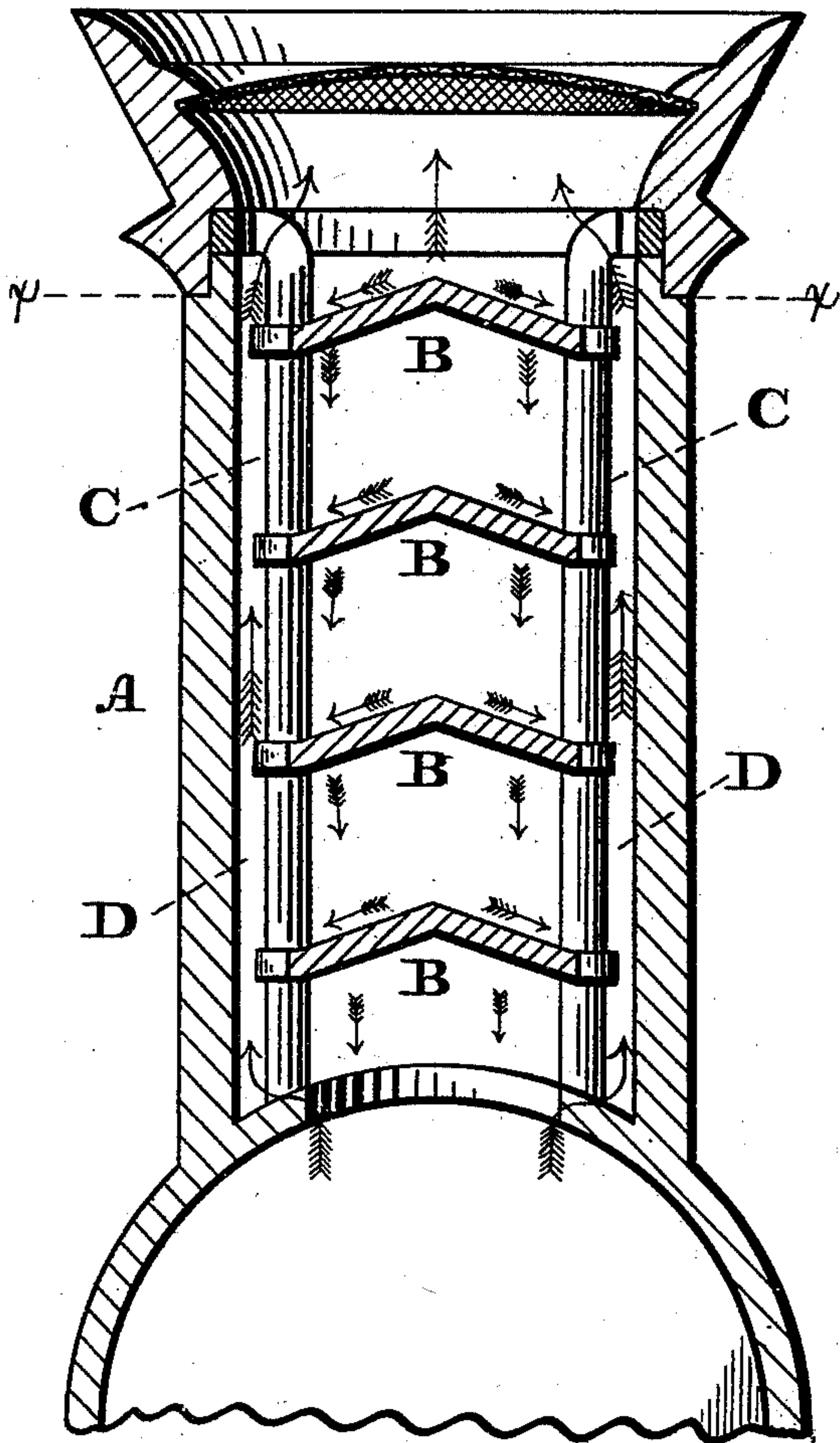
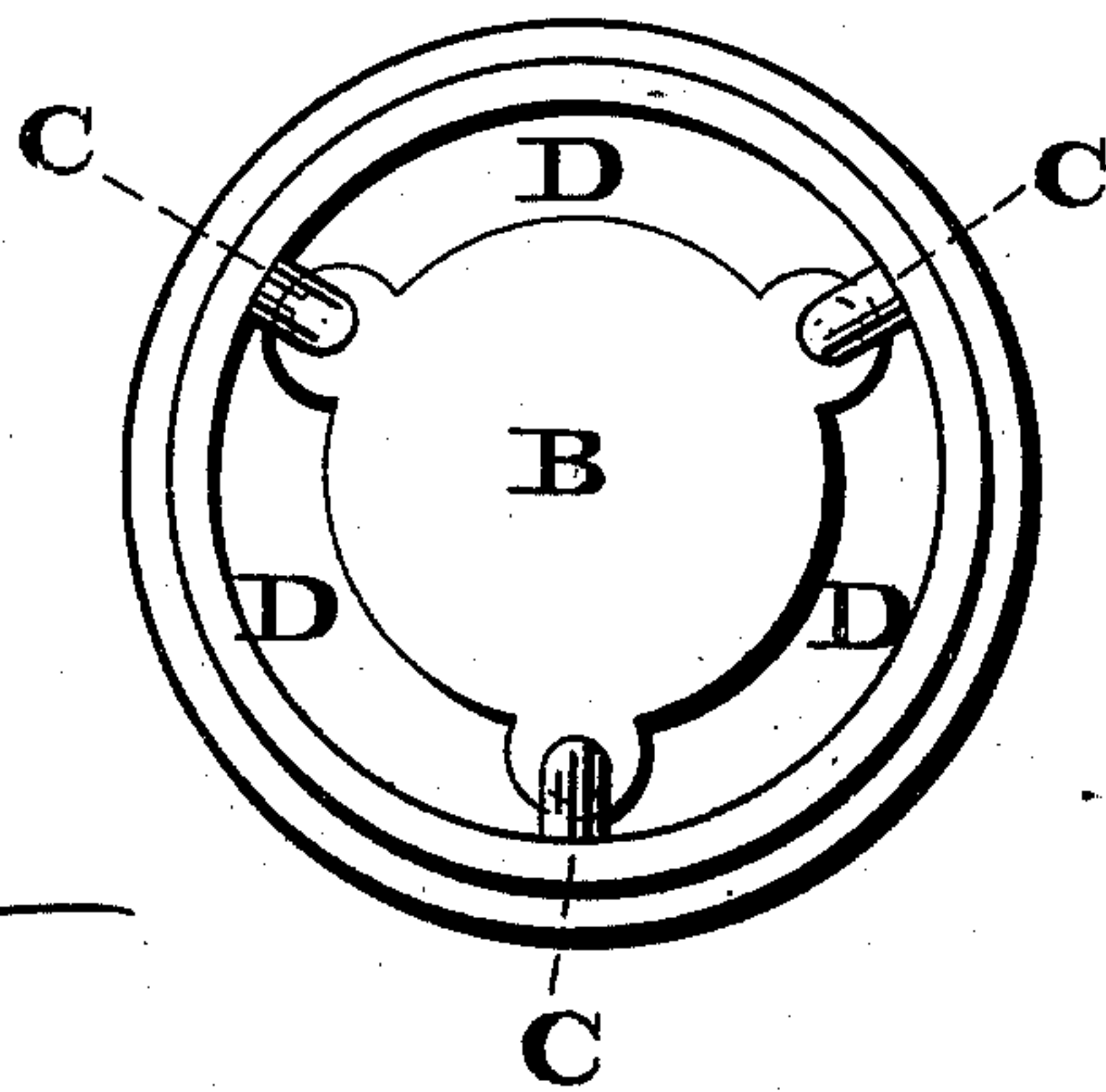


Fig. 3.



Witnesses:

Lewis, F. Brown,
J. E. Shaw

Inventor:

John M. Willson
by *John J. Diederichsen*
Att'y.

UNITED STATES PATENT OFFICE.

JOHN M. WILLSON, OF CAMDEN, NEW JERSEY, ASSIGNOR TO JOHN L. MASON,
OF SAME PLACE.

IMPROVEMENT IN LOCOMOTIVE SMOKE-STACKS.

Specification forming part of Letters Patent No. **175,890**, dated April 11, 1876; application filed August 26, 1875.

To all whom it may concern:

Be it known that I, JOHN M. WILLSON, of the city and county of Camden and State of New Jersey, have invented a new and useful Improvement in Locomotive Smoke-Stacks, and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains, to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front view of the stack embodying my invention. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a top view thereof below the line *xx*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in arranging in the smoke-stack of a locomotive-engine a series of shelves, which extend in an inclined direction, whereby cinders are arrested and caused to return to the bottom of the stack or flue-space, and thus prevented from discharging upwardly.

Referring to the drawings, A represents a smoke-stack, which may be of well-known form and construction. B represents a series of shelves, which are arranged within the stack and extend in an inclined direction from the center toward the sides of the stack. These shelves are secured to uprights or supports C located within the stack and a space, D, is left between the shelves and inner face of the stack. It will be seen that as the cinders

ascend they reach the lowermost shelf and strike thereagainst on the under side, whereby they are checked and caused to fall into the flue-space beneath, or to a chute, which directs them outside of the stack. Some of the cinders will escape upwardly or pass the lowermost shelf and strike the under side of the higher shelves, in which case they are checked by the latter and drop on the upper faces of the shelves below the same, and owing to the inclined direction thereof the cinders will roll down said upper faces, and reaching the space D, they fall into the bottom of the stack or flue-space below it.

Referring to Fig. 2, the course of the cinders is indicated by the short arrows, and that of the smoke and steam by the long arrows, the space C, continuous from top to bottom of the stack, amply providing for the passage of said smoke and steam without interfering therewith.

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

The combination, with the smoke-stack of a locomotive-engine, of a series of shelves, B, inclined toward the bottom of the stack, and having a space, D, between the outer faces of the shelves and inner faces of the stack, said space being continuous from top to bottom of the stack, substantially as and for the purpose set forth.

JOHN M. WILLSON.

Witnesses:

JOHN A. WIEDERSHEIM,
ALBERT H. HOECKLEY.