

H. R. WALKER.
Locomotive-Engine Chimney.

No. 212,414.

Patented Feb. 18, 1879.

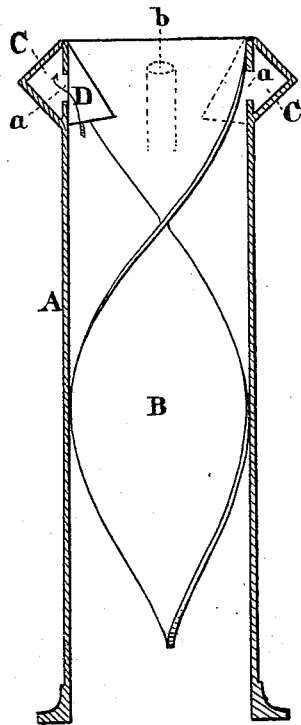


Fig. 1.

Sec. elevation on line a-a fig. 2

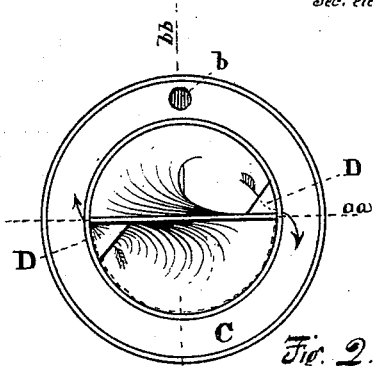


Fig. 2.

Plan view: part removed, to show Chamber-C.

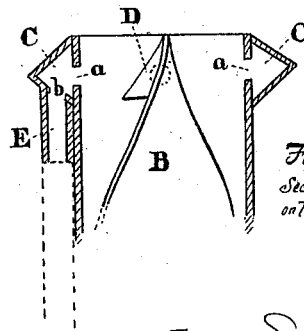


Fig. 3.

Sec. elevation on line bb fig. 2.

Witnesses
Barth Shurlow
Clarence Shurlow

Inventor
Hugh R. Walker
by Ed Shurlow his atty
and friend

UNITED STATES PATENT OFFICE.

HUGH R. WALKER, OF JOLIET, ILLINOIS.

IMPROVEMENT IN LOCOMOTIVE-ENGINE CHIMNEYS.

Specification forming part of Letters Patent No. **212,414**, dated February 18, 1879; application filed December 31, 1878.

To all whom it may concern:

Be it known that I, HUGH R. WALKER, of Joliet, in the county of Will, in the State of Illinois, have invented an Improvement in Locomotive-Engine Chimneys; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a sectional elevation; Fig. 2, a plan view; Fig. 3, a vertical cross-section on line *b b*, Fig. 2.

This invention is an improvement on spiral flues or smoke-passages used to produce centrifugal motion in the column of smoke; and consists of a single spiral divisional diaphragm, separating the chimney into two separate smoke-passages, in such a manner as to produce a whirling motion of ascending steam and smoke, with a resultant centrifugal motion, by which means sparks and cinders, dust, &c., are thrown toward the circumference of the chimney, and are caught before exit near the top of the latter by means of a pocket or canopy placed in the angle of and just below the point at which the diaphragm joins the chimney near its top. A passage in the chimney within the pocket conducts such cinders, dust, &c., into an annular chamber surrounding the chimney here, whence said matter is conducted downward, through a passage or passages, pipe or pipes, on the outside of the chimney, to any desirable point for discharge of the same.

The downward passages are essential; but the annular chamber might be dispensed with.

The pocket is repeated at opposite sides of the diaphragm, with corresponding lateral passages out of the pocket and chimney.

In the drawing, which represents one of the forms in which I construct my chimney and diaphragm, is as follows: A represents the chimney or smoke-stack; B, the diaphragm, a spiral division of no great thickness, completely dividing the smoke and steam passage into two equal parts vertically, warped from

end to end, or twisted one-half turn spirally. I make the diaphragm less or more twisted, according to requirements, commencing the twist at the base of the chimney and continuing it to the top, or thereabout, and in contact with the sides of the smoke and steam passage throughout. D represents the dust-pockets or canopies, situated respectively at the angles, near the top of the chimney, formed by the junction of the diaphragm with the chimney. These each consist of a hood opening downward far enough to receive sparks, cinders, dust, &c., and to cover a dust-passage, *a*, near the chimney-top, which opens into circular chamber C, surrounding the chimney-top, which chamber has, in turn, one or more openings, *b*, into a pipe or passage or passages, E, which descend below the body of the locomotive, or far enough below the chimney to effectively dispose of said dust, sparks, cinders, &c.

Perhaps one dust-discharge passage, E, might be sufficient for the purpose; but more may be used than one. I also elect to place the hood D and dust-passage *a* at either or all of the upper angles or junction of the diaphragm with the chimney sides, or where the same will operate the best.

What I claim as my invention is—

1. The circular chamber C, with dust-receiving passages *b b*, and discharge-pipe E, in connection with hoods C C and spiral diaphragm B, substantially as and for the purposes described.
2. The construction and arrangement of the spiral diaphragm B in chimney A, hoods D, passages *a*, annular chamber C, and discharge-passages E, substantially as and for the purposes described.

In testimony that I claim the foregoing chimney I have hereunto set my hand this 23d day of December, 1878.

HUGH R. WALKER.

Witnesses:

JOHN McCOWAN,
L. S. BAKER.