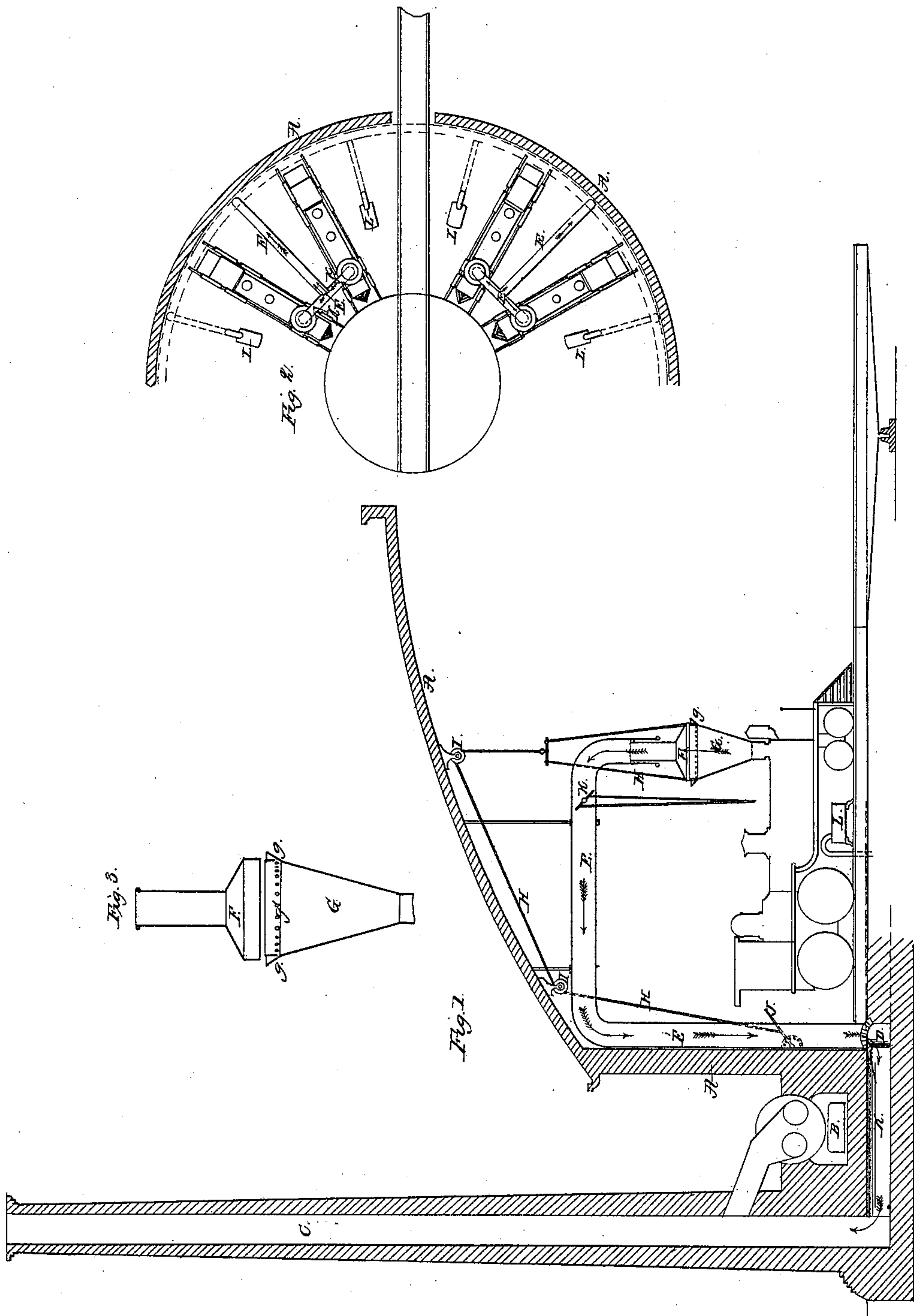


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*House Ventilator,*

*N<sup>o</sup> 19,469*

*Patented Feb. 23, 1858*





# UNITED STATES PATENT OFFICE.

JOHN O. D. LILLY, JAMES L. VANCLAIN, AND JAMES W. LILLY, OF LA FAYETTE, INDIANA.

ARRANGEMENT FOR CARRYING OFF SMOKE FROM LOCOMOTIVES IN ENGINE-HOUSES.

Specification of Letters Patent No. 19,469, dated February 23, 1858.

*To all whom it may concern:*

Be it known that we, JOHN O. D. LILLY, JAMES L. VANCLAIN, and JAMES W. LILLY, all of La Fayette, Tippecanoe county, Indiana, have invented a new and useful Arrangement or Device for Carrying Off the Smoke From Locomotives in Engine-Houses; and we hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

The operation of raising steam from cold water in a locomotive engine is ordinarily a very tedious one, seldom occupying less than an hour and a half, and in cold or humid weather (when the passages have what is technically called "the damps") usually consuming several hours; involving of course great waste of time and fuel, filling the house with smoke, and occasionally seriously deranging the business of the road.

Our invention is principally intended to expedite the raising of steam and to conduct off the smoke of locomotives while within the engine house and consists in a provision for temporarily connecting a locomotive funnel with the flue of a stationary furnace.

In the accompanying drawings Figure 1 is an axial section through a part of an engine house. Fig. 2 is a plan of a portion of the house. Fig. 3 is a section on an enlarged scale, of a funnel and hood.

A, A, are portions of the inclosing wall and dome of an engine house.

B, C, represent a common stationary furnace and stack.

D, is a flue which encircles the building beneath the floor and connects with the stack C.

E are pipes which extend upward from the flue D, at suitable distances and bifurcating as shown in Fig. 2, each branch descends to a little above the funnel top of the locomotive when backed into its stall.

F, is a short tube resembling an inverted funnel, its stem being fitted to play up and down snugly within the depending portion of the pipe and its mouth adapted when the tube is lowered to fit around the rim of a locomotive funnel G, thus bringing the flues of the locomotive into communication with those of the building. This connecting tube or funnel we call the "hood." From the hood F, cords or chains H, pass upward and around pulleys I, and thence to a handle J by means of which the hood F, can be ele-

vated at pleasure or suffered to drop onto the rim of the funnel. The locomotive funnel may be encircled near the top with a flange *g*, which, flaring upward, receives the lower rim of the hood. Small holes *g'*, through the funnel, just above the junction of the flange permit the return of any moisture of condensation.

K, are valves or dampers to close the several flues when not in use and to regulate their draft. The dampers nearest the hood may if desired be made to close automatically by the upward movement of the latter.

The pipes of the usual stoves L, may pass beneath the floor directly into the flue D, so as to contribute to the desired draft and also to the warmth of the house.

When the dampers are open and the hood closed down upon the funnel the draft is such that in from five to seven minutes after kindling there is a live body of fire throughout the furnace and steam is commonly raised in half an hour and under the most unfavorable circumstances within three quarters of an hour.

Where a stationary engine exists in the vicinity of the locomotive house the stack of the same may be made use of as above described. Otherwise the furnace and stack B, C, may be specially erected for the purpose.

The advantages of this arrangement may be summarily stated as follows:—1st speedy raising of steam 2nd freedom from smoke 3rd economy of labor, fuel and heat.

We do not intend to claim the movable hood as new in itself, neither do we claim broadly the idea of conducting smoke from a movable furnace into a stationary flue but

We claim as new and of our invention herein—

The described construction and arrangement of the movable hood F, or its equivalent, adapted to fit closely over the top of a locomotive funnel, when used in combination with conducting flues (D, E,) stationary furnace (B,) and stack (C) for the purposes specified.

In testimony whereof we have hereto set our hands before two subscribing witnesses, November 15, 1856.

J. O. D. LILLY.  
JAMES L. VANCLAIN.  
JAS. W. LILLY.

Witnesses:

JACOB TUKLED,  
J. M. PIERCE.