(No Model.)

W. SWINDELL.

STACK FOR FURNACES.

No. 245,098. Patented Aug. 2, 1881.

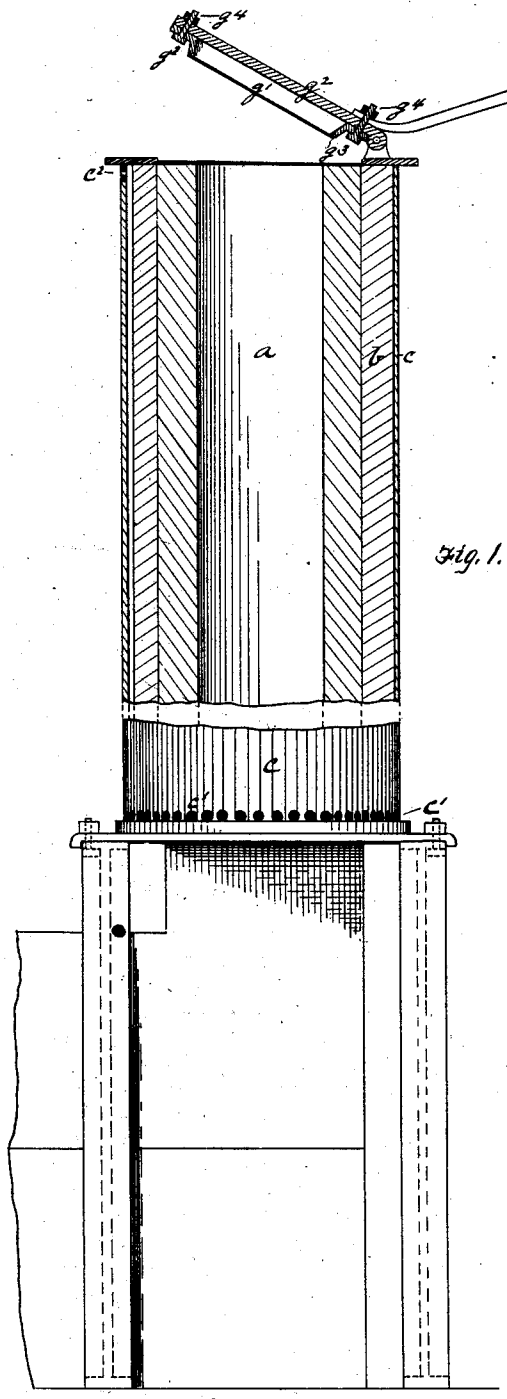


Fig. 1.

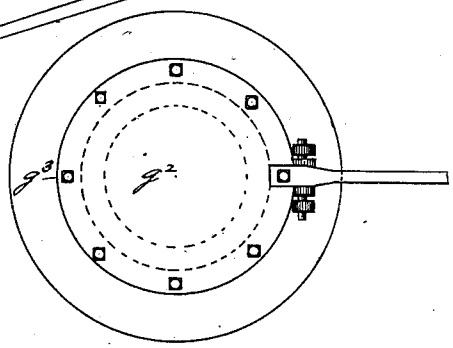


Fig. 2.

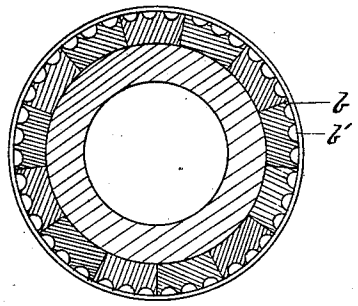


Fig. 3.

Witnesses,
Jos. Smith
R. C. Winshall

Inventor,
William Swindell
by his attorneys
Bakewell & Kerr

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM SWINDELL, OF ALLEGHENY, PENNSYLVANIA.

STACK FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 245,098, dated August 2, 1881.

Application filed November 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SWINDELL, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Stacks for Furnaces; and I do hereby declare the following to be a full, clear, and exact description thereof.

Heretofore stacks of furnaces have been constructed of one or more courses of fire-brick surrounded by an outer casing of sheet-iron. This construction is defective because the outer or metallic casing becomes so overheated as to burn off the paint with which it is coated, and thus expose it to oxidation, which in a short time will destroy it and necessitate its renewal.

It is the object of my invention to remedy this defect in the construction of the stack.

To enable others skilled in the art to make and use my invention, I will now describe its construction and manner of use, referring for that purpose to the accompanying drawings, in which—

Figure 1 is an elevation, partly in section, of my improved furnace-stack. Fig. 2 is a plan view of the damper. Fig. 3 is a section of the stack.

Like letters of reference indicate like parts in each.

I build the outer course of the brick-work of the stack *a* of bricks *b*, having longitudinal channels *b'* on their outer surfaces—that is, the surface which comes next to the sheet-iron casing *c*.

At the foot of the stack I make a series of holes, *c'*, in the sheet-iron casing *c*, corresponding in position to the channels *b'* in the brick-work, and at the upper end I preferably form a series of exit-holes, c^2. This construction enables the air to enter the casing and rise and pass out at the top opening, c^2, and thus to keep the iron casing cool and prevent the paint from burning off.

The perforation *c'* and c^2 may be omitted, if desired.

Another advantage consists in the fact that it also cools the brick-work and keeps it from burning away so rapidly.

I form the damper *g* with a facing, *g'*, of refractory material, preferably a tile of suitable shape, with dovetailed edges, secured to the iron plate g^2 by means of a circular flange, g^3, which is held by bolts g^4. The tile *g'* is first placed upon the iron plate g^2 and then the flange g^3 put on and bolted, as shown in Fig. 1. This damper is so arranged relatively to the mouth of the stack that the latter is completely covered by the refractory portion of the former. The metallic back or plate g^2, being protected from the flame or heat of the stack, will not warp, and thus I secure a perfectly-fitting damper, by means of which I am enabled to regulate the heat and control the operation of the furnace.

I am aware that for the purposes of dispensing with an interior fire-pot and to prevent the vitiation of the heated air fire-brick stove-linings have been formed with air-flues through them, and also with air-channels in the lining next to the outer casing, and do not herein claim such subject-matter; but I am not aware that air-channels have heretofore been used next to the outer metallic casings of stacks and like exposed heated surfaces to prevent the burning off of the protective coating and the subsequent oxidation and destruction of the casing by the weather. Therefore

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

A furnace or similarly-exposed stack, provided with an outer metallic casing covered with a protective coating of paint or like substance, and having a series of air-spaces between the brick-work of the stack and the metallic casing, to prevent the peeling off of the paint and oxidation of the metallic casing, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand.

WILLIAM SWINDELL.

Witnesses:
T. B. KERR,
JAMES H. PORTE.