D. M. CRAVEN, SR.

FIREPROOF SWING AND VENTILATOR.

APPLICATION FILED MAY 6, 1916.

1,241,824.

Patented Oct. 2, 1917.

2 SHEETS—SHEET 1.

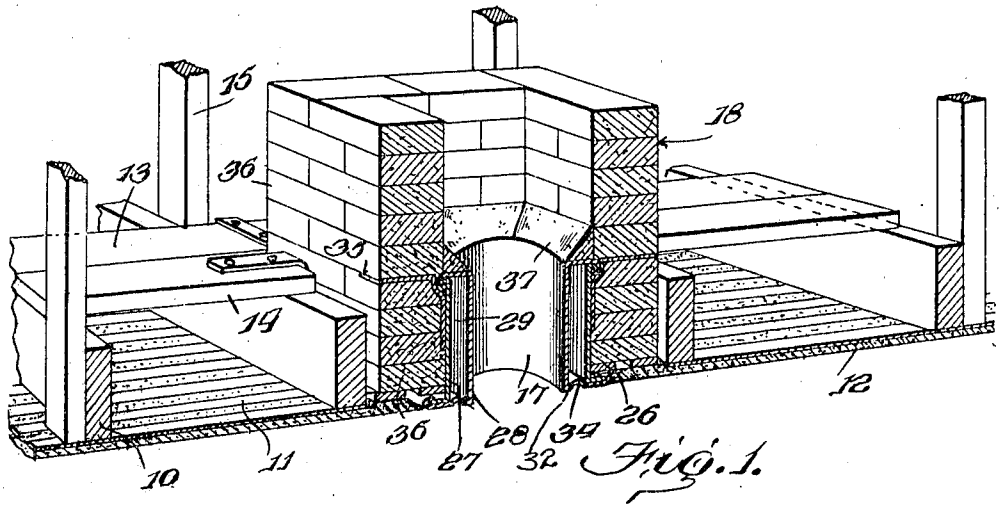


Fig. 1.

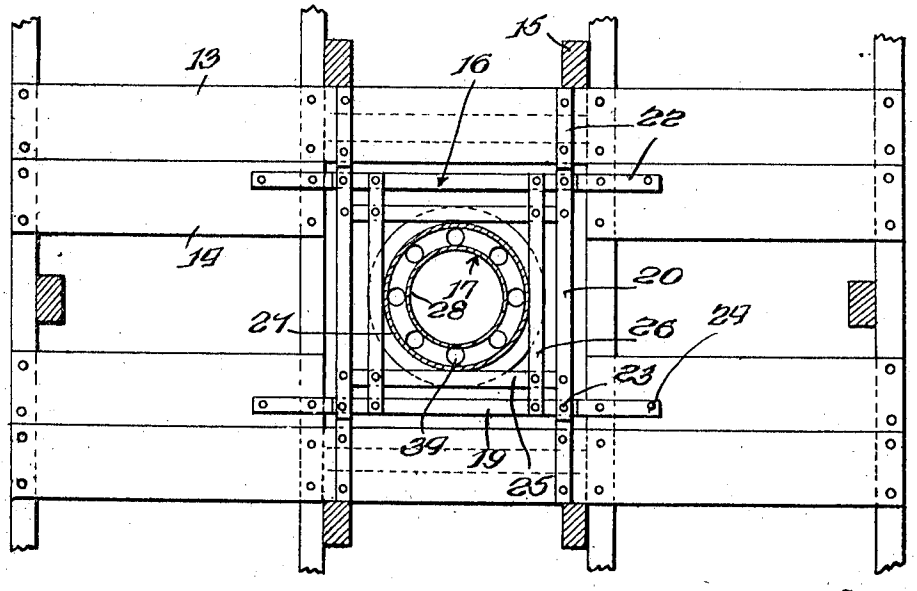


Fig. 2.

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Fig. 3.

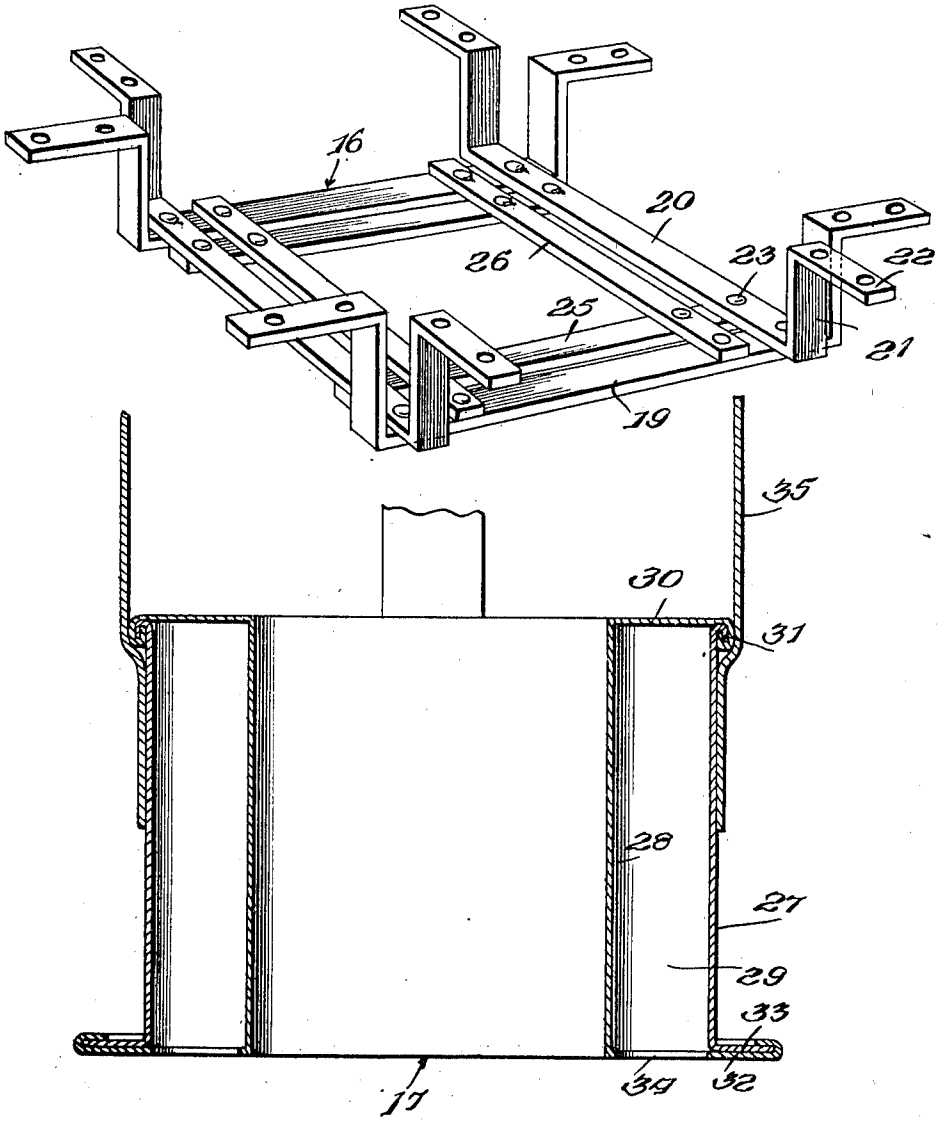


Fig. 4.

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UNITED STATES PATENT OFFICE.

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FIREPROOF SWING AND VENTILATOR.

1,241,824. Specification of Letters Patent. Patented Oct. 2, 1917.

Application filed May 6, 1916. Serial No. 95,858.

To all whom it may concern:

Be it known that I, DANNIEL M. CRAVEN, Sr., a citizen of the United States, residing at Paducah, in the county of Cottle and State of Texas, have invented certain new and useful Improvements in Fireproof Swings and Ventilators, of which the following is a specification.

My invention relates to new and useful improvements in chimney constructions, the primary object of my invention being the provision of a fireproof ventilated swing for the chimney base.

In many instances, in order to economize in space or prevent the building of unsightly abutments in lower rooms, it is found advisable to build a chimney the base of which is supported upon the ceiling timbers or the upper joists, the smoke or other products of combustion from a stove or furnace passing into the lower end of the chimney through a sheet metal flue or flue of other suitable material. One of the primary objects of this invention consists in constructing a swing for supporting the base of a chimney of this character in such a manner that the weight of the chimney will be evenly distributed between a number of the ceiling joists and a number of the roof supporting rafters in order that any sagging of the ceiling may be prevented.

A still further object of my invention consists in constructing the swing in such a manner that the base of the chimney is projected between the ceiling joists and lies nearly flush with the ceiling itself, so that the flue leading to the chimney need not pass through any woodwork.

In this connection, a still further object of my invention consists in the provision of a sheet metal ventilating flue which is built into the lower open end of the chimney to receive the flue leading from the stove or other heater so as to provide a fireproof air space about the upper portion of the flue proper.

Other and incidental objects will appear as the description proceeds and in the drawings wherein I have illustrated the preferred embodiment of the invention and wherein similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a fragmentary perspective view, partially in section of the base portion of a chimney and its swing constructed in accordance with my invention,

Fig. 2 is a plan view of the ceiling timbers with the swing in place and showing the parts before the chimney itself is applied,

Fig. 3 is a perspective view of the body portion proper of the swing.

Fig. 4 is a central vertical sectional view of the ventilated flue portion of the chimney base.

In order to insure a clear and accurate understanding of my invention, I have illustrated my chimney construction in connection with a plurality of parallel ceiling supporting joists 10 to the lower edges of which are secured the usual laths 11 carrying the plastering 12 making up the ceiling proper of an upper story room. Secured to the upper edges of these joists is a supporting frame including side sills 13 and intermediate shorter sills 14, the ends of which are spaced to define a square opening between the inner ends of the intermediate sills 14 and the sides of the side sills 13 in which space the chimney swing and base are to be located. Preferably, any suitable bracing means, such as a number of boards or longer timbers 15 are connected to the joists 10 and extend vertically with their upper ends connected to the roof carrying rafters, not shown, to provide braces for the roof and ceiling. Because of this, any strain exerted upon the frame 13 will be distributed over a considerable portion of both the ceiling and roof timbers and any sagging of the ceiling because of the weight of the chimney is thereby prevented.

Supported in the square space provided within the frame is the swing proper 16 which carries both the ventilating flue 17 and the chimney base 18. This swing proper is best shown in Fig. 3 of the drawings and is formed of iron bars cut to the proper dimensions and bent to the desired shape. More particularly, this swing includes a square outer frame made up of spaced side bars 19 upon which are secured spaced end bars 20, both the side bars and end bars having upwardly directed ends 21 the terminals of which are outwardly bent as shown at 22 to rest upon the upper face of the frame formed by the sills 13 and 14. The bars 19 and 20 are secured by rivets 23 or other suitable fastening means and bolts 24 may

be employed to fasten the outer terminals 22 to the frame. In addition, inner side bars 25 are riveted to the under faces of the end bars 20 and inner end bars 26 are riveted to the upper faces of the side bars 19, these inner bars being then riveted to each other, with the result that inner and outer square frames are formed. The upwardly directed end portions 21 of the swing bars are so proportioned that when the swing is in place, the bars proper will rest almost flush with the laths constituting a portion of the ceiling.

Disposed centrally within the swing thus formed is the ventilated flue 17. This flue includes an outer cylindrical shell 27 of sheet metal, preferably relatively heavy sheet iron and an inner cylindrical shell or flue portion 28 of less diameter than the outer shell to provide an annular air chamber 29. The inner shell at its upper end is formed with a laterally directed peripheral flange 30 which projects beyond the outer shell and the free edges of this flange and the upper edge of the outer shell are bent to provide interlocking seams 31 by means of which the two shells are secured together and the inner shell held in centralized position with respect to the outer shell. In like manner, the inner shell at its lower end is formed with a peripheral flange 32 which engages against the lower face of an outwardly directed peripheral flange 33 of the outer shell and the free edge of the flange 32 is peened and soldered over the flange 33 as clearly shown. This flange 32 is provided with a plurality of peripherally spaced openings 34 communicating with the chamber 29 in order that there may be a free circulation of air in this chamber.

The external diameter of the interlocking flanges 32 and 33 is greater than the distance between the bars of the inner frame of the swing while the external diameter of the outer shell 27 is slightly less than the distance between the bars of the inner frame of the swing. In constructing a chimney in accordance with my invention, the supporting frame is first made and the swing secured in place, a suitable opening having been formed in the ceiling. The ventilated flue 17 is then passed upwardly through the opening in the ceiling and between the bars of the inner frame of the swing until its flange engages the bars as shown in Fig. 2. It is then supported in place by bending over the free ends of diametrically disposed hanger strips 35 formed of sheet metal and secured to the outer shell. The upwardly bent ends of these straps engage over bricks 36 forming the base of the chimney 18 and built up in regular courses in the usual manner, the bricks of course being embedded in mortar and forming a square housing about the flue 17. After several courses of bricks have been laid about the flue, the space between the corners of the chimney base thus being formed and the peripheral wall or outer shell of the flue is filled in with mortar and when the bricks have been built up to an elevation above the flue, this mortar is continued to provide an annular deflecting ring or spout 37 through which any soot deposited from smoke and other products of combustion passing through the chimney will be directed into the flue 17 and so to the flue leading from the stove. Of course, after the base portion of the chimney is constructed in the hanger and the strips 35 have been embedded therein, the remainder of the chimney is built up and extended through a suitable opening formed in the roof in the usual manner. With a chimney of this character, a sheet metal flue is led from the stove or furnace and has its end fitted into the lower end of the ventilated flue 17, a suitable thimble ring being employed at this point, if desired.

As will be noticed by reference to Fig. 1, the flange 32 of the ventilated flue will lie flush and in effect, form a continuation of the plaster of the ceiling in order to present a neat appearance in the room below. If preferred however, or if required by fire insurance underwriters, the swing may be so proportioned as to extend somewhat below the ceiling of the room in order to still further remove the sheet metal flue from all woodwork of the ceiling.

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

1. In chimney construction, a metallic swing adapted to be located between adjacent ceiling supporting joists, a chimney base of brick built within the swing, a metallic flue located within the lower end of the chimney base, said flue including inner and outer cylindrical walls providing an intermediate annular chamber closed at its upper and lower ends with openings formed in the closure of the lower end of the chamber, means for supporting the flue within the chimney base, and a filling of plastic material between the upper portion of the flue and the adjacent portion of the chimney base.

2. The combination with ceiling supporting joists, of a supporting frame fixed to the upper faces of the joists, braces fixed to the joists and frame and adapted for attachment to roof supporting rafters, a swing suspended from the supporting frame between adjacent joists, a chimney base built within the swing, and a ventilated flue mounted within the chimney base and adapted to receive a stove pipe from a room below.

3. In chimney construction, a swing including inner and outer rectangular frame

members secured together, the outer frame member having upwardly directed arms with lateral terminals whereby the swing may be depended between ceiling supporting joists and held in position, a ventilating flue having a body proportioned to pass upwardly through the inner frame of the swing, and a peripheral flange adapted to engage against the base of the swing, the flue having radially extending straps at its upper end adapted to be embedded in a brick chimney base within the swing.

4. In chimney construction, a metallic swing provided centrally with an opening and at its edges with upwardly directed arms for attachment to a support, a metallic flue projecting through the opening and formed at its lower edge with a flange engaging against the lower face of the swing, a chimney base built upon the swing and surrounding the flue, and supporting portions extending laterally from the upper portion of the flue and embedded in the chimney base.

5. In chimney construction, a metallic swing provided centrally with an opening and at its edges with upwardly directed arms for attachment to a support, a metallic flue projecting through the opening and formed at its lower edge with a flange engaging against the lower face of the swing, a chimney base built upon the swing and surrounding the flue, and supporting portions extending laterally from the upper portion of the flue and embedded in the chimney base, the flue including spaced inner and outer walls providing an annular chamber closed at its ends, the wall forming the lower end of the chamber being provided with openings.

6. The combination with ceiling supporting joists, of a swing mounted between certain of the joists, a chimney built upon the swing to project through a roof, a flue in the lower portion of the chimney projecting through the ceiling, and bracing means secured to the ceiling about the chimney and adapted for attachment to the roof to prevent undue sagging of either the roof or ceiling.

7. In chimney construction, a swing, a chimney base supported thereby and open at its lower end, and a flue secured in the open lower end of the chimney base, said flue including an outer annular wall fitting closely within the chimney base and provided at its lower end with an outwardly directed peripheral flange, an inner annular wall spaced within the first to provide an annular chamber and provided at both ends with outwardly directed peripheral flanges, the lower flange having locking engagement about the edge of the flange of the outer member and the upper flange having locking engagement with the upper edge of the outer member, the lower flange being adapted to bear against the lower face of the swing when the flue is in place, and spaced supporting members carried by the upper portion of the flue and embedded in the chimney base.

In testimony whereof I affix my signature.

DANNIEL M. CRAVEN, SR. [L. S.]

Witness:

JAMES M. WHATLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."