

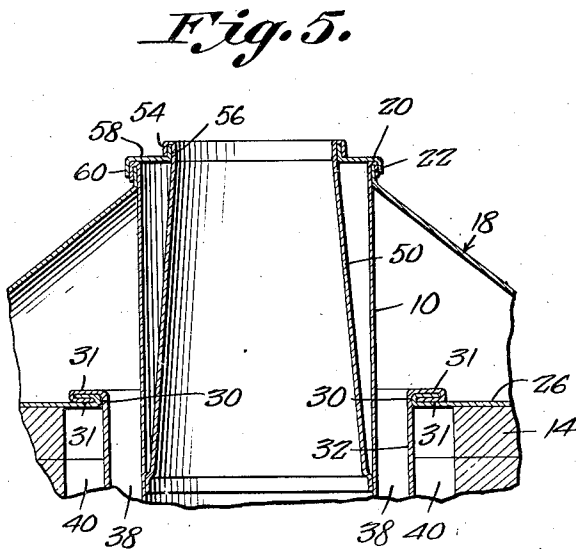
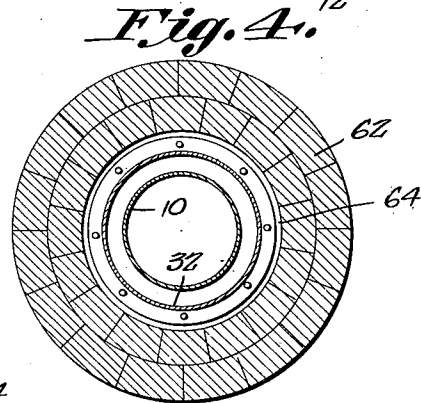
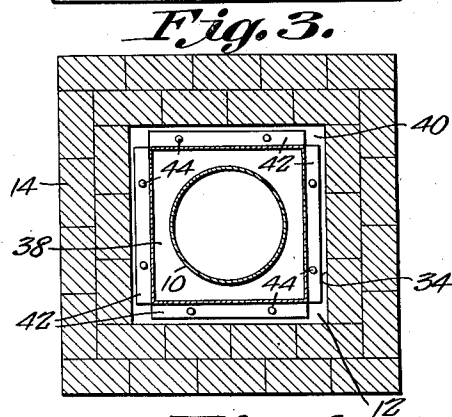
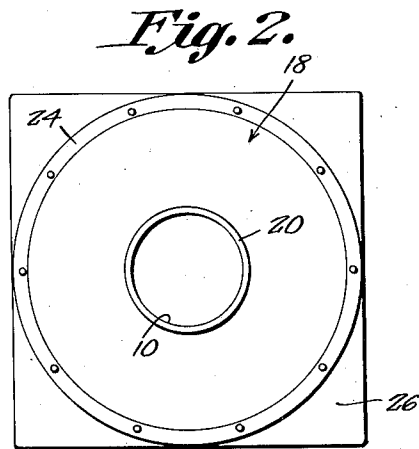
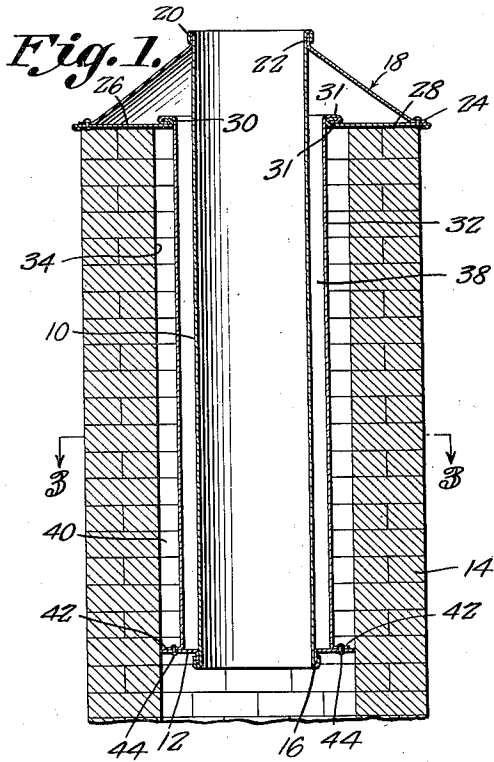
Sept. 7, 1943.

E. R. LOVELY

2,328,731

CHIMNEY

Filed Jan. 9, 1942



Elmer R. Lovely,
INVENTOR.

BY
Victor J. Evans & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE

2,328,731

CHIMNEY

Elmer R. Lovely, Pittsfield, Maine, assignor to
James B. Barry, New York, N. Y.

Application January 9, 1942, Serial No. 426,226

3 Claims. (Cl. 72-94)

My invention relates to chimneys, flues and the like, and has among its objects and advantages the provision of novel means adapted for association with conventional chimneys and flues and is designed to provide more perfect combustion of the fuel with consequent conservation thereof, the reduction of up chimney heat loss through the creation of proper draft and the elimination of down draft, the retention of more heat within the chimney and therefore within the heating unit so that the latter may radiate more heat to points desired, the insurance of warm and dry chimneys or flues to prevent the formation of soot, creosote and other inflammable substances inside the flue or chimney structure and thereby reduce the possibility of chimney or flue fires, together with protection of the chimney or flue from weather at both the upper and lower ends, and in which a reducer is provided to secure additional draft regulation under conditions which require such additional control.

In the accompanying drawing:

Figure 1 is a vertical sectional view of a chimney structure illustrating my invention applied thereto;

Figure 2 is a top plan view;

Figure 3 is a sectional view taken along the line 3-3 of Figure 1;

Figure 4 is a cross sectional view of a chimney structure of the cylindrical type, as distinguished from the square-cornered type of Figures 1 and 2; and

Figure 5 is a vertical sectional view of a reducer or additional draft regulator incorporated in the structure of Figure 1.

In the embodiment selected for illustration, I make use of a flue tube 10 circular in cross section and provided with a plate 12 at its lower end having edge engagement with the chimney structure 14 to support the tube centrally therein. The lower end of the flue tube 10 projects a short distance beneath the horizontal plate 12 to provide a drip edge, as at 16. In a chimney of the square-cornered type, as in Figures 1 through 3, the plate 12 is contoured in accordance with the flue passage of the chimney structure so as to provide a wall or closure between the flue tube 10 near its lower end and the chimney structure.

To the upper end of the flue tube 10, which projects some distance above the chimney structure 14, is secured a hood or cover 18 of truncated conical shape. The flue tube 10 is preferably bent back upon itself, as at 20, to embrace an apex flange margin 22 bent from the cover 18 so as to provide a moisture-tight connection between

the cover and the upper or outer end of the flue tube. The base flange margin 24 of the cover 18 is riveted to a plate 26 lying on the end face 28 of the chimney structure 14. The plate 26 is provided with a central opening at which point it is bent back upon itself at 30 for interengagement with right angular flanges 31 comprising the upper end margin of a jacket or wall 32 bent back upon itself. The jacket 32 is positioned between the flue tube 10 and the flue face 34 of the chimney structure 14. The plate 26 and the flanges 31 are so connected as to make a tight joint.

The jacket 32 is of such cross sectional dimensions as to provide a space 38 between the flue tube 10 and the jacket and a space 40 between the jacket and the flue face 34. At the lower end of the jacket 32 are right angular flanges 42 riveted at 44 to the plate 12. As the plate 26 extends inwardly only to the jacket 32, the upper end of the jacket has communication with the space 48 inside the cover 18. Mortar may be applied between the plate 26 and the face 28 to secure the device to the upper end of the chimney and to provide a sealed relationship.

In operation, the flue tube 10 is surrounded by the insulating air space 38, which space has communication with the space 48. The insulating air space 40 extends about the jacket 32 surrounding the flue tube 10. The hot gases must flow through the flue tube 10 by reason of the plate 12. The space 40 minimizes the absorption of cold by the jacket 32. The space 38 also minimizes absorption of cold by the flue tube 10. Thus the flue tube 10 is well insulated from the cold flue or chimney structure 14. Such a construction aids in the rapid absorption and retention of heat ascending the chimney structure thereby preventing condensation and accumulation of soot, creosote and other inflammable substances which would result in chimney structures where the heat has direct contact with the cold chimney or flue structure.

The drip edge 16 extends beneath the plate 12 to cause any moisture finding its way into the flue tube 10, either by introduction from the outside or through condensation, to fall straight down the chimney where it evaporates, thus preventing such moisture from creeping outwardly along the plate 12 to the chimney structure. Such moisture is the cause of objectionable disintegration and crumbling of chimney or flue structures. In addition, the flue tube 10 is of smaller diameter than the cross sectional dimen-

sions of the chimney flue duct so as to function as a damper or draft regulator.

In cases where additional draft regulation might be necessary, a reducer or draft regulator 50 may be inserted in the upper end of the flue tube 10, as in Figure 5. This reducer is of slight taper upwardly and is provided with a lower end formation 52 having snug fitting engagement with the flue tube 10. A down-turned flange 54 is provided at the upper end of the reducer 50 which overlies an up-turned flange 56 on a plate 58 having a flange 60 pressed over the down-turned portion 20 of the flue tube 10. Thus the lower end of the reducer prevents the escape of hot gases between the reducer and the flue tube, while the plate 58 constitutes a closure between the reducer and the outer end of the flue tube to prevent moisture from entering therebetween.

Figure 4 illustrates an installation wherein the chimney 62 is circular in cross section. In such a case, the plate 64, which corresponds to the plate 12, is circular to have close fitting engagement with the chimney structure.

Without further elaboration, the foregoing will so fully illustrate my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. In a chimney, a first tube arranged axially inside the chimney but spaced therefrom, means closing the space between the lower end of said first tube and the chimney, a second tube ar-

ranged axially of said chimney between said first tube and the chimney to provide first and second insulating air spaces between the first tube and the chimney, the lower end of said second tube being mounted on said means, a cover mounted on the upper end of said chimney and having a first wall connected with the upper end of said second tube to close the first chamber, and a second cover wall comprising a part of said cover and connected with said first wall and the upper end of said first tube, said second wall being of frusto-conical contour with its base end attached to the first wall and its apex end attached to the first tube, said second wall providing a chamber communicating with said second chamber.

2. The invention described in claim 1 wherein said first wall and the upper end of said second tube are folded back upon themselves to provide a fixed connection between the two, and in which said first tube extends beneath said means to provide a drip edge, with the upper end of said first tube folded back upon the apex end of said second wall.

3. The invention described in claim 1 wherein there is provided a draft reducer insertable in the upper end of said first tube, said draft reducer comprising a tubular part tapering upwardly and having its lower end frictionally engaging said first tube, said tubular part having a flange at its upper end arranged to hang on the upper end of said first tube.

ELMER R. LOVELY.