July 31, 1923. 1,463,664

L. H. BOWMAN

FLUE TOP

Filed Feb. 11, 1922

Fig. 1

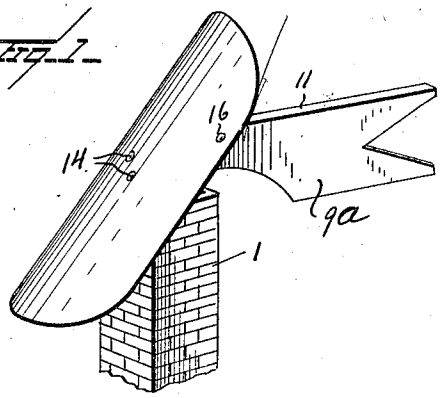


Fig. 3

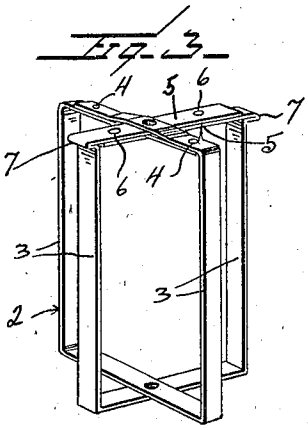


Fig. 5

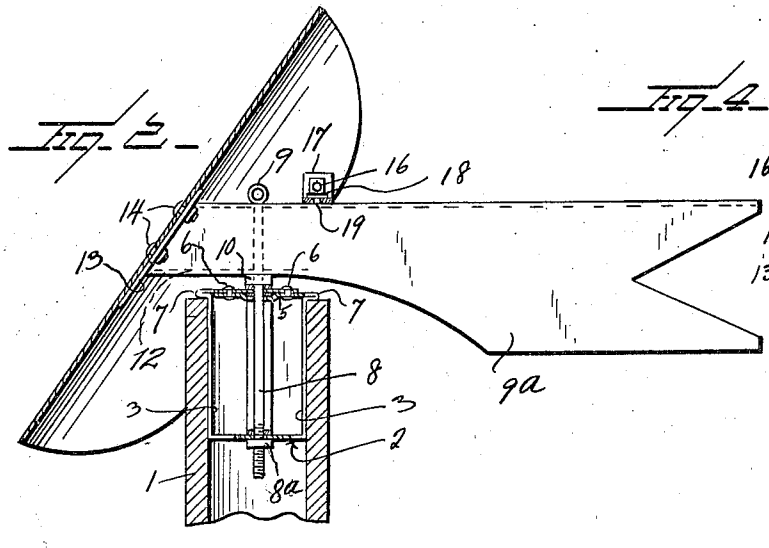
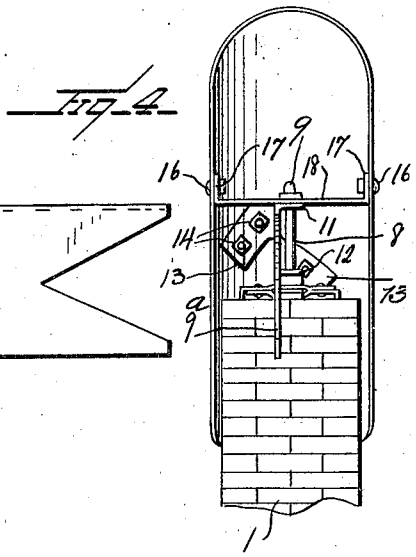


Fig. 4



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UNITED STATES PATENT OFFICE.

LEWIS H. BOWMAN, OF FENN, IDAHO.

FLUE TOP.

Application filed February 11, 1922. Serial No. 535,860.

To all whom it may concern:

Be it known that I, LEWIS H. BOWMAN, citizen of the United States, residing at Fenn, in the county of Ida and State of Idaho, have invented certain new and useful Improvements in Flue Tops, of which the following is a specification, reference being had to the accompanying drawings.

It is the purpose of the present invention to provide a device of the present character, which is self-adjustable, according to the direction of the wind, capable of causing a better draft in the flue, and producing a better drawing action in the stove or furnace below.

Heretofore where the flues are left uncovered, there is considerable back draft, preventing the fire in the stove or furnace from drawing and properly burning, and causing the interior of the building to become full of smoke and soot.

The present invention aims to avoid these disadvantages, by providing a self-adjustable rotary flue top or cap, the cap or top proper of which being connected to a vane and disposed on an angle downwardly and laterally for a substantial distance below the upper end of the flue or chimney or any other smoke outlet pipe, thereby creating a tendency to start the wind in an upward direction before it reaches the upper end of the flue, thereby insuring a draft, as well as a drawing action in the flue, and causing the fire on the interior to thoroughly burn, and also insuring the discharge of the smoke and soot. It is obvious that this self-adjusting flue cap or cover may be applied to the discharge end of a flue of any kind, not only to insure the prevention of foreign matter entering the flue to a very great degree, but also insuring a draft or drawing action in the furnace, the vane acting to rotate the top or cover in any direction, so as to cause a deflection of the wind and to create a draft and drawing action near the upper end of the flue.

Still another purpose is the provision of a flue top or cap including a bracket detachably fitted within the upper end of the flue or chimney, to hold the cap or cover in position, for instance on an angle of substantially forty degrees, more or less.

A further purpose is the provision of a holder, preferably of skeleton form, which may be made to fit any size interior of a flue regardless as to its exterior, whether or not it is cylindrical, square or otherwise shaped in cross section.

A still further purpose is the provision of a rotary cap or cover for a flue, including a vane of sufficient length to one side of the center of the flue, thereby inducing the cap or cover to more readily turn, so that it may create an upward draft around the upper end of the chimney or flue.

Still another purpose is the provision of a flue cap or cover, including its supporting frame of skeleton construction, which is very simple in construction and may be manufactured at a relatively low cost, enabling it to be sold to the trade at a reasonable profit.

Furthermore the present device eliminates the use of threads and other fasteners.

While the design and construction at present illustrated and set forth are deemed preferable, it is obvious that as a result of a reduction of the invention to a more practical form for commercial purposes, the invention may be susceptible of changes and the right to these changes is claimed, provided they are comprehended within the scope of what is claimed.

The invention comprises further features and combination of parts, as will be hereinafter set forth, shown in the drawings and claimed.

In the drawings:—

Figure 1 is a view in perspective of the improved flue cap or cover as applied to the upper end of a flue or chimney and constructed in accordance with the invention;

Figure 2 is a vertical sectional view through the same;

Figure 3 is an enlarged detail view of the skeleton frame which fits within the flue or chimney, for revolubly supporting the flue cap or cover;

Figure 4 is a view in elevation looking toward the interior of the cap or cover, and showing the vane in edge elevation.

Referring to the drawings, 1 designates a flue, which may be any suitable construction, made of any suitable material, either brick, metal, heavy sheet tin, iron or the like.

Arranged movably in the upper end of the flue is a rectangular frame 2. This frame is skeleton in form, comprising the bars 3, which are rectangular, one disposed

within the other, at right angles to each other, so as to engage the opposite sides of the flue or chimney. It will be noted that the upper ends of one of the bars 3 are overlapped and riveted or otherwise bolted together as shown at 4. The ends 5 of the other U-shaped bar overlap and one of them is secured between the first overlapping ends of the other bar, and are riveted or otherwise bolted together as at 6. However, the bar which includes the latter overlapping ends, where it merges thereinto is bent upon itself outwardly, thereby providing projections 7, which are designed to overlap and engage the upper end of the flue, so as to limit the frame in its insertion into the flue.

Mounted in bearings of the skeleton frame, which is mounted in the flue is a supporting rod 8, which has an eye 9 at its upper end, and a washer 10. This rod has mounted thereon a wind vane 9^a which may be any suitable size and constructed of any suitable material, either sheet metal, such as tin, sheet aluminium, iron or the like. This vane may be any suitable length and its upper portion is provided with an elongated flange 11 extending laterally. The inner portion of the lower edge of the vane has a lateral flange 12, through bearings of which and the other flange the rod extends.

Also the inner end of the vane terminates in lateral ears 13, which are bolted or otherwise fastened at 14 to the cap or cover for the flue. This cap or cover is elongated, and is preferably semi-cylindrical in cross section, and since the inner end of the vane has an inclined edge, the cap or cover is supported in an inclined position extending downwardly and laterally, substantially at an angle of 35 or 40 degrees.

Furthermore it will be noted that the cap or cover extends downwardly and terminates a substantial distance below the upper end of the flue, in order to start the wind in an upward direction before it gets very close to the flue. In other words the disposition of the cap or cover creates an upward draft, causing a proper drawing through the flue, as well as causing the fire in the stove or furnace to thoroughly burn.

Bolted to the edge portions of the opposite sides of the top or cover as at 16 are the ears 17 of a transverse bar 18, which is in turn bolted centrally at 19 to the upper flange of the vane, thereby reinforcing the vane relatively to the top or cover.

It will be noted that the longer arm of the vane extends a substantial distance from the shaft, and is of a substantial depth, in order to be acted upon by the wind, for the purpose of inducing the vane to easily turn and thereby position the top or cover in the direction of the wind.

A suitable nut 8^a may or may not be mounted upon the shaft below the frame or holder or support as the case may be, in order to hold the shaft in place, it being obvious that the nut may be dispensed with, provided the shaft 8 is made sufficiently long as to prevent it from upward displacement.

The top or cover may be used in connection with chimneys, which may be constructed of any suitable material, such as brick, tile, sheet iron, concrete or the like. Also the top or cover may be used on factory smoke stacks, or on smoke stacks of any character.

The invention having been set forth, what is claimed is:—

In a flue top, the combination with a flue, of a support mounted therein, said support comprising a pair of rectangular frames disposed one within the other and positioned at right angles to each other, the upper portion of one of said frames having laterally extending flanges adapted to engage the upper edge of the flue, said frames being arranged to frictionally engage the inner walls of the flue, a shaft extending through the end portions of said frames, a vane rotatably mounted on the shaft and comprising long and short arms, the short arm having lateral ears, a flue top of arcuate shape in cross-section fastened to the ears and disposed at an acute angle to the flue and overlying the upper end of the flue, a transverse brace secured to the vane and having its opposite ends secured to the opposite sides of the top, said top extending downwardly and laterally a substantial distance below the upper end of the flue, thereby inducing a draft in an upward direction over the upper end of the flue.

In testimony whereof I hereunto affix my signature.

LEWIS H. BOWMAN.