Dec. 13, 1960 P. I. ARTIS ET AL 2,963,955

VENT CAP

Filed Aug. 19, 1957

Fig. 1.

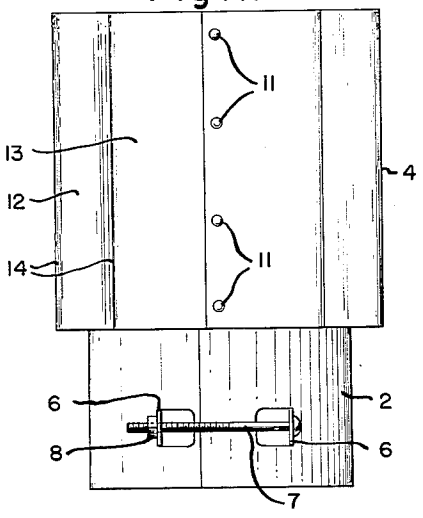


Fig. 3.

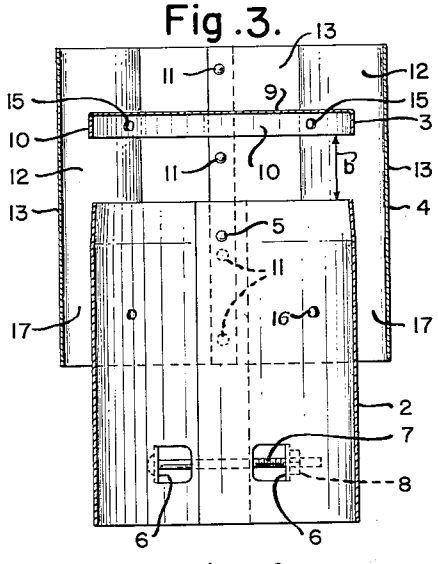


Fig. 2.

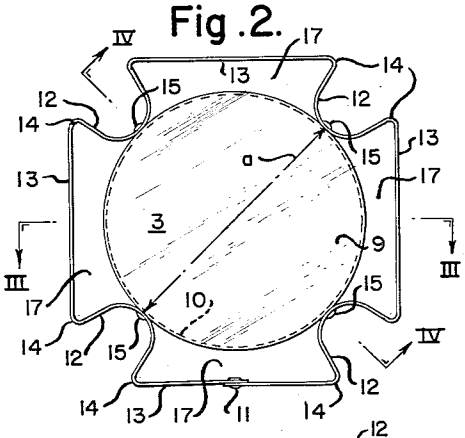


Fig. 4.

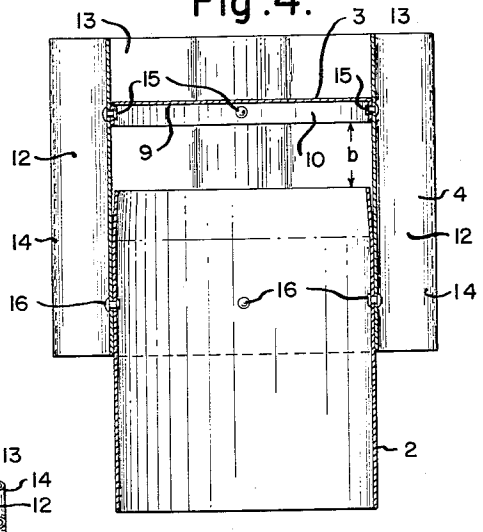
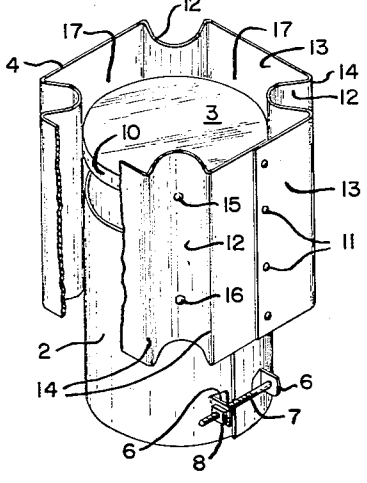


Fig. 5.



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VENT CAP

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1 Claim. (Cl. 98—84)

This invention relates to a vent cap for chimneys, air ducts and the like which, while of a general type known to those skilled in the art, has specific advantages in simplicity and reduced cost and in improved operation in use.

Our vent cap is of the type comprising a hollow base adapted to be applied to a chimney or the like, a top spaced from the base and a fluted connecting member having connections with each of the base and the top. Vent caps of that type have previously been made having a top of much greater transverse dimension than the base and/or with the fluted connecting member of tapered or generally conical form, but such vent caps have not proved to be efficient in use and they are relatively difficult to assemble and no not withstand long usage and the action of the elements. Some vent caps of the type in question have been made with spacers interposed between the base and the fluted connecting member which pose a problem in economical manufacture and also tend to create turbulence in air flow between the fluted connecting member and the base.

Our vent cap is relatively simple in construction and economical to manufacture yet is unprecedentedly rugged and capable of withstanding the action of the elements for a long period of time and at the same time highly efficient in use, promoting smooth air flow between the fluted connecting member and the base. Our vent cap comprises a hollow base adapted to be applied to a chimney or the like, a top spaced from the base and having its rim substantially in alignment with the base and a fluted connecting member substantially surrounding a portion of the base and the top and directly connected with each of the base and the top. Preferably the fluted connecting member is substantially peripherally closed and also preferably of substantially uniform cross-section from end to end, and its minimum inside transverse dimension is preferably approximately equal to an outside transverse dimension of each of the base and top. The base is preferably generally cylindrical and the top is preferably generally circular with its diameter substantially equal to the outside diameter of the base. The top preferably has flange means at its periphery and the fluted connecting member is preferably connected with such flange means.

Other details, objects and advantages of the invention will become apparent as the following description of a present preferred embodiment thereof proceeds.

In the accompanying drawings we have shown a present preferred embodiment of the invention in which

Figure 1 is an elevational view of a vent cap;

Figure 2 is a top plan view of the vent cap shown in Figure 1;

Figure 3 is a vertical cross-sectional view taken on the line III—III of Figure 2;

Figure 4 is a vertical cross-sectional view taken on the line IV—IV of Figure 2; and

Figure 5 is an isometric view, with a portion cut away, of the vent cap shown in Figures 1–4.

Referring now more particularly to the drawings, our vent cap comprises a base designated generally by reference numeral 2, a top designated generally by reference numeral 3 and a fluted connecting member designated generally by reference numeral 4. The parts 2, 3 and 4 are preferably made of sheet material, either metal or plastic, and are preferably made of aluminum or of steel galvanized or otherwise treated to resist the action of the elements. The base 2 is in the form shown generally cylindrical, being formed from a generally rectangular sheet bent into generally cylindrical form. The edges of the sheet may be overlapped as shown. The edges are shown as being riveted together near the top of the base 2 at 5, the bottom portion of the base being left flexible to facilitate its application to a chimney or the like. Ears 6 are shown as being struck up from the material of the base and a bolt 7 with a nut 8 applied thereto extends through openings in the ears to draw up the base about the chimney or the like to which it is applied.

The top 3 is shown as being generally circular and having a diameter substantially equal to the outside diameter of the base 2. The top 3 comprises a disc-shaped body portion 9 with flange means 10 at the periphery thereof. The flange means 10 may be either intermittent or continuous as shown in the drawings. The flange means 10 are shown as disposed toward the body 2 but the top 3 may be inverted if desired so that the flange means 10 will be disposed away from the body 2.

The fluted connecting member 4 is shown as being formed from a generally rectangular sheet bent into peripherally closed shape with its edges overlapped and riveted together as shown at 11. The fluted connecting member 4 is shown as being of substantially uniform cross-section from end to end with its minimum inside transverse dimension approximately equal to an outside transverse dimension of each of the base and top. Such transverse dimension is indicated by *a* in Figure 2. The fluted connecting member 4 has a number of inwardly extending portions 12, four of such portions being shown in the drawings, the portions 12 being equally spaced about the fluted connecting member 4 so that pairs thereof are diametrically opposed as indicated at "*a*". Intermediate the portions 12 are outwardly extending flutes 13 flared at their sides as shown at 14. The fluted connecting member 4 is shown as being riveted to the top 3 at 15 and to the base 2 at 16. The riveted connections of the vent cap may be replaced by spot welds, although we find that riveted connections are stronger and better withstand the elements. In assembling the fluted connecting member 4 with the base 2 we preferably initially spot weld the fluted connecting member to the base and subsequently rivet the two elements together.

Between each flute 13 and the body 2 is an air passageway designated generally by reference numeral 17 which is of substantially constant cross-section at the portion thereof opposite the base 2 and provides for smooth flow of air thereto. A gap designated *b* in Figure 3 is provided between the base 2 and the top 3. The cross-sectional area of the imaginary cylinder having the height *b* and the diameter *a* is preferably made equal to the area of the base, i.e., equal to

$$\frac{\pi a^2}{4}$$

and the total cross-sectional area of the four passageways 17 is preferably also equal to

$$\frac{\pi a^2}{4}$$

to allow for free passage of air or gas. π is approximately 3.1416.

Thus we form a highly effective rigid vent cap which is rugged and will withstand the action of the elements yet which is made out of but three pieces fastened together and can be produced at high speed with great economy.

While we have shown and described a present preferred embodiment of the invention it is to be distinctly understood that the invention is not limited thereto but may be otherwise variously embodied within the scope of the following claim.

We claim:

A vent cap comprising a generally smooth cylindrical hollow base adapted to be applied to a chimney or the like, a generally flat circular top of a diameter equal to the outside diameter of the base and being spaced from the base in peripheral registry therewith, said base having a slightly inward peripheral taper at the end adjacent the top, said top having a continuous flange about its periphery and depending therefrom toward the base, and a peripherally closed fluted connecting member of uniform cross section from end to end whose minimum inside transverse dimension is approximately equal to the outside diameter of each of the base and top, said fluted connecting member surrounding the top and the upper portion of the base and extending substantially above the top and being directly connected with the base and the flange of the top whereby unobstructed channels are formed between said fluted connecting member and the base and top.

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