Aug. 17, 1965 E. C. BERGEN 3,200,735

ADJUSTABLE ROOF SAFE AND CAP ASSEMBLY

Filed July 10, 1963

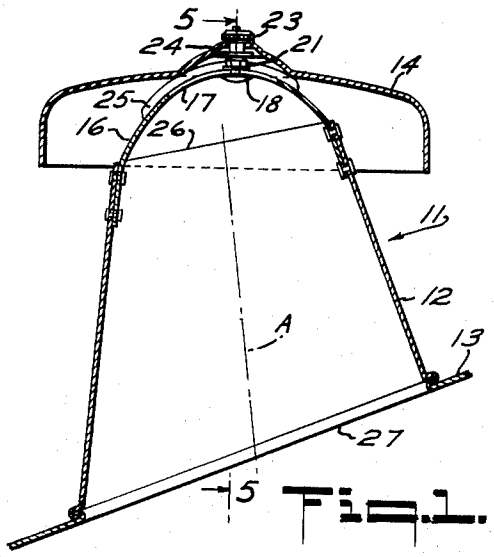

Fig. 1.

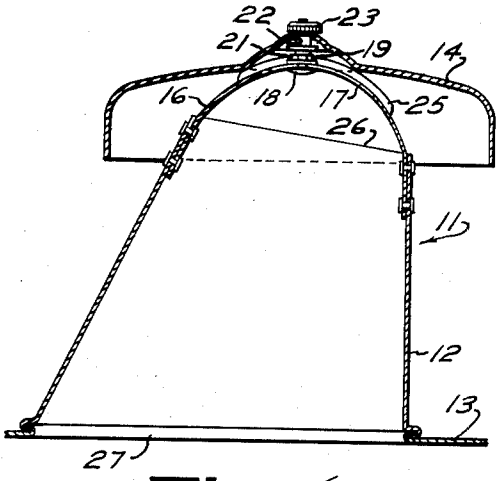

Fig. 4.

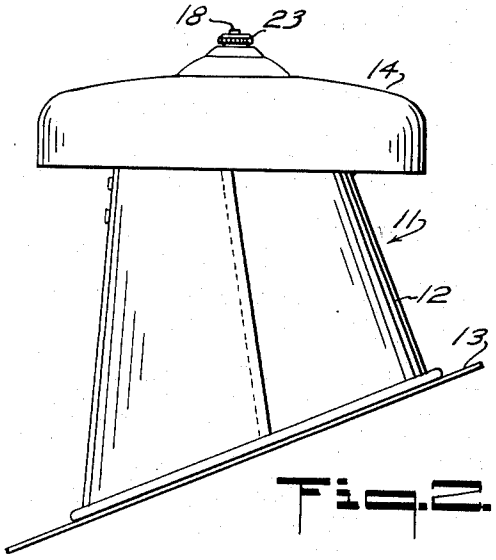

Fig. 2.

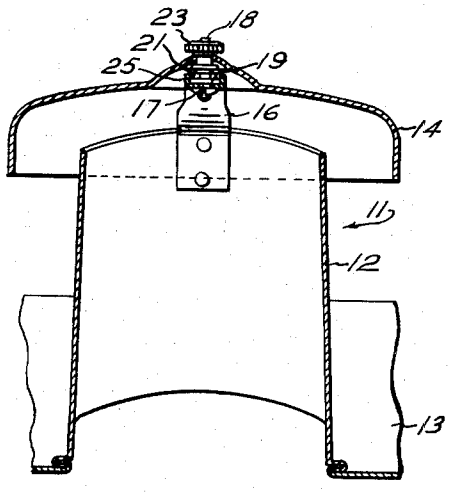

Fig. 5.

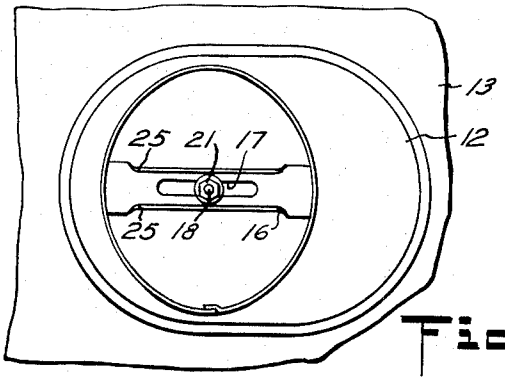

Fig. 3.

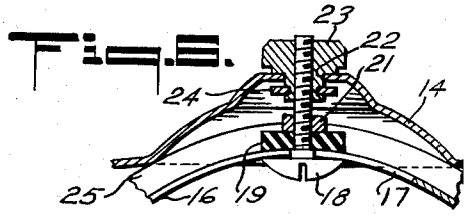

Fig. 6.

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ADJUSTABLE ROOF SAFE AND CAP ASSEMBLY

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This invention relates to safe and cap assemblies of the type employed upon a roof to terminate vent pipes and the like, and is particularly directed to a safe or flashing and cap assembly which is adjustable to accommodate roofs of different pitches.

At the roof outlet of a vent pipe or the like it is common practice to provide a safe and cap assembly which serves to shield the pipe outlet from rain, etc. Heretofore, these assemblies have been specifically designed for use with roofs of a given pitch. Accordingly, a different assembly has been required for each different pitch of roof. Inventory requirements have been substantial by virtue of the different safe and cap assemblies which must be stocked to accommodate the varied roof pitches that might be encountered.

It is therefore a primary object of the present invention to provide a roof safe and cap assembly which is readily adjustable to different pitches of roof whereby but a single form of assembly need be stocked to accommodate a plurality of roof pitches.

Another object of the invention is to provide a roof safe and cap adjustably securable thereto in a variety of angular relationships such that the cap may be horizontally positioned upon the safe for all pitches of roof upon which the safe may be mounted.

Still another object of the invention is the provision of an adjustable roof safe and cap assembly of the class described which is easily and rapidly installed.

It is yet another object of the invention to provide an adjustable roof safe and cap assembly having a construction which facilitates nested storage of a plurality of the safes and of a plurality of the caps.

It is a further object of the invention to provide a roof safe and cap assembly in two pieces so as to permit visual inspection of the pipe when the cap is removed.

It is a still further object of the invention to provide an adjustable roof safe and cap assembly of the class described which is of an attractive modern architectural design.

The invention possesses other objects and features of advantages, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

FIGURE 1 is a vertical sectional view of an adjustable roof safe and cap assembly in accordance with the invention, the assembly being depicted for a maximum pitch roof.

FIGURE 2 is a side elevation of the safe and cap assembly.

FIGURE 3 is a plan view of the safe, the cap being removed.

FIGURE 4 is a view similar to FIGURE 1, but depicting the safe and cap assembly for installation on a zero pitch roof.

FIGURE 5 is a sectional view taken at line 5—5 of FIGURE 1.

FIGURE 6 is a fragmentary vertical section on an enlarged scale of the means for selectively securing the cap to the safe.

Referring now to the drawing, there will be seen to be provided a roof safe or flashing and cap assembly 11 for terminating the roof outlet of a vent pipe or the like. The assembly includes a tapered tubular safe or flashing 12 having an outwardly flared rectangular flange 13 at its enlarged end defining a roofing member for installation on a roof in the region of a vent pipe, or other roof opening, in circumscribing relation thereto. A cap 14 is secured in spaced relation to the reduced end of the safe, the cap having a rim portion encompassing the periphery of the reduced end of the safe in spaced relation thereto. Accordingly, a vent passage is defined between the cap and safe while the cap shields the safe interior, as well as a vent pipe or the like encompassed thereby, from the entry of rain, snow, etc. It will be appreciated that to the extent described, the safe and cap assembly are conventional. However, in a conventional assembly of this type, the cap is secured to the safe in fixed coaxial position and is thus horizontal for only one of many pitches of roof upon which the safe might be installed. To accommodate all of the roof pitches that might be encountered it has therefore been the usual practice to provide a number of assemblies slightly modified from each other, each specifically suited to a different roof pitch. In this regard, the enlarged end and flange of the safe of each assembly are commonly angled with respect to the safe axis to correspond to a given roof pitch. A number of assemblies respectively having variously angled flanged ends have accordingly been stocked by roofing contractors and the like in order that all pitches of roof can be accommodated. This of course entails the maintenance of a substantial inventory of the assemblies. However, this is not the case with the assembly 11 of the instant invention, inasmuch as same is readily adjustable to accommodate all pitches of roof. Accordingly, only one form of assembly need be stocked, such assembly being universal in its application.

Considering now the assembly 11 in greater detail as to its structure which renders same adjustable to accommodate all roof pitches, it is first to be noted that unlike conventional designs, the cap 14 is angularly adjustable in its securance to the safe 12. The cap may accordingly be secured to the safe at a variety of angles to the safe axis, as well as in coaxial relation thereto. Irrespective of the pitch of a roof upon which the assembly is installed, the cap may be adjustably secured to the safe in a horizontal position. To the foregoing end, an arcuate strap 16, or the like, is preferably secured between opposite points of the reduced end of the safe 12, the strap thus bridging the reduced end and curving outwardly therefrom. A slot 17 is provided longitudinally of the strap, and a bolt or screw 18 is slidable therein with its threaded end protruding outwardly with respect to the safe. A washer 19, of preferably resilient material, is concentrically disposed upon the protruding end of the screw and abuts the strap in bridging relation to the slot 17. A nut 21 is in turn threadably engaged on the protruding end of the screw and may be tightened against the washer to thus selectively fix the screw at any position along the slot. Inasmuch as the strap is curved, the angle of the screw with respect to the safe axis varies as the screw is moved along the slot. Accordingly, for any pitch roof, the screw may be moved to a position of the slot for which the screw is vertically oriented and locked in such position by tightening nut 21.

The cap 14 is in turn arranged for coaxial attachment to the protruding end of the screw 18 whereby the cap is horizontally disposed when the screw is vertically oriented as noted above. More particularly, the cap is preferably centrally apertured, as shown at 22, and a cap nut 23 is provided with its shank extending through the aperture in rotatable relation thereto. To facilitate retention

of the cap nut on the cap, a snap ring 24, or the like, is secured concentrically about the cap nut shank adjacent its end protruding into the cap interior. The ring hence defines a collar which prevents withdrawal of the cap nut from the aperture. Accordingly, with the screw 18 selectively secured in vertically oriented position, the cap is placed over the reduced end of the safe and the cap nut is threadably engaged upon the protruding end of the screw. In order that the cap be rigidly secured to the safe upon tightening the cap nut, the strap 16 is preferably formed with right angularly turned flanges 25 along its side edges adjacent the slot 17, which abut the underside of the cap and function as a support base therefor. The cap may of course be readily removed from the safe upon unscrewing the cap nut to thus facilitate visual inspection of, and access to the safe interior.

The adjustable safe and cap assembly 11 of the present invention may be provided in a vairety of configurations. In this regard, the term "tubular" as pertains to the safe 12 is to be taken as including hollow members having rectangular or other polygonal cross sections, as well as circular or elliptical cross sections. The cap 14 is, in turn, conformed to the particular cross section of the safe. In the preferred form of the assembly, as illustrated in the drawing, the safe is ovate at its enlarged base end and undergoes a transformation to circular at its reduced upper end. The cap is then of circular dome shaped configuration.

The adjustable assembly 11 is advantageously arranged to present an attractive appearance for all orientations of the cap relative to the safe necessary to accommodate the various possible roof pitches. In addition, it will be appreciated that the assembly must be arranged to permit unobstructed positioning of the cap over the safe for any position of screw 18 with the peripheral wall of the cap yet encompassing the end of the safe on all sides. To facilitate the foregoing, both the upper end edge 26 and the lower end edge 27 of the safe are preferably inclined with respect to the safe axis indicated on the drawing by the letter A. More particularly, the enlarged end edge of the safe and therefore the flange 13 are preferably inclined or pitched by an amount equal to the maximum roof pitch likely to be encountered, commonly $\frac{5}{12}$. The reduced end edge is preferably inclined by an amount equal to one-half of the maximum pitch, but may be inclined down to zero pitch. The strap 16 is then secured between the uppermost and lowermost points of this inclined reduced end edge. With such an arrangement, when the assembly is installed at maximum pitch, as shown in FIGURE 1, the reduced end edge of the safe does not interfere with the cap in the horizontal positioning thereof. Furthermore, the rim of the cap encompasses the reduced end of the safe on all sides. Similarly when the assembly is installed at zero pitch, as shown in FIGURE 4, the reduced end edge of the safe does not obstruct the cap and the rim of the cap encompasses the safe on all sides.

It is to be further noted that by virtue of the tapered configuration of the safe, a number of these members may be nested for purposes of saving space in storage. The caps may be similarly nested in storage.

What is claimed is:

1. An adjustable flashing and cap assembly comprising a tubular flashing, an arcuate strap secured to said flashing in outwardly curved bridging relation to an end thereof, said strap having a slot extending longitudinally thereof, a cap secured to said flashing by a fastener slidably disposed in said slot to thereby permit arcuate movement of said cap with respect to said flashing to change the the angular orientation of said cap with respect to said flashing, and means for selectively securing said fastener at any position of said slot to maintain said cap at a predetermined angular orientation with respect to said flashing.

2. An adjustable flashing and cap assembly comprising a tubular flashing, an arcuate strap secured to said flashing in outwardly curved bridging relation to an end thereof, said strap having a slot extending longitudinally thereof, a threaded fastener slidably disposed in said slot with its end protruding outwardly from said strap, means for selectively securing said fastener at any position of said slot, a cap centrally transpierced by said fastener, and nut means carried by said cap threadably engaging said fastener.

3. An assembly according to claim 2, further defined by said flashing being tapered with the enlarged end thereof inclined with respect to the flashing axis by an amount equal to a predetermined roof pitch and the reduced end thereof inclined with respect to the flashing axis by an amount less than said predetermined pitch, said strap secured between the uppermost and lowermost points of said reduced end.

4. An adjustable flashing and cap assembly comprising a tapered tubular flashing having an ovate enlarged end and circular reduced end with an ovate-to-circular transformation region therebetween, said enlarged end inclined with respect to the flashing axis by an amount equal to a predetermined maximum roof pitch, said flashing having a rectangular flange outwardly flared from said enlarged end, said reduced end inclined with respect to the flashing axis by an amount equal to half said maximum roof pitch, an arcuate strap secured between the uppermost and lowermost points of said reduced end in bridging relation thereto, said strap having a slot longitudinally thereof, said strap having upwardly turned flanges along its opposite side edges, a threaded fastener slidably disposed in said slot and protruding outwardly from said strap, a resilient washer disposed on said fastener and engaging the outer surface of said strap in bridging relation to said slot, a nut secured to said fastener and engaging said washer, a circular dome shaped cap having a central aperture, a cap nut having a shank extending through said aperture, and means retaining said cap nut within said aperture, said cap nut threadably engaging said fastener, said cap abutting the flanges of said strap.

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