

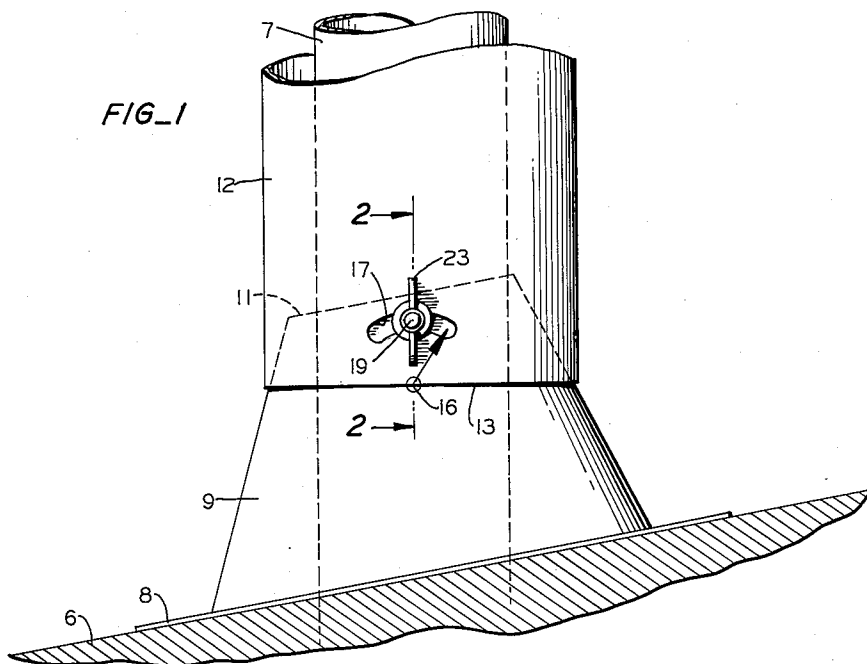
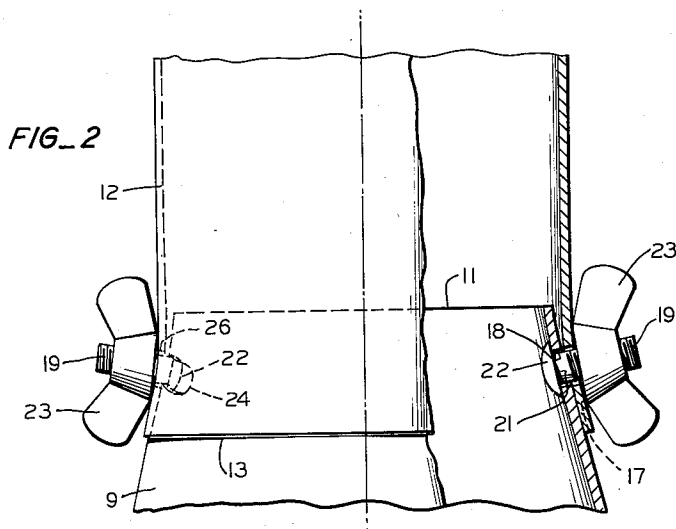
April 18, 1961

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2,980,008

CAP ASSEMBLY

Filed July 14, 1959



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2,980,008

CAP ASSEMBLY

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Filed July 14, 1959, Ser. No. 827,108

2-Claims. (Cl. 98-46)

My invention relates to devices useful particularly in the building trades and designed especially for installation on the flat or sloping roof of a building surrounding a vent pipe emerging through the roof. Devices of this general nature are shown in the patent to Fernsten et al., No. 2,890,642, issued June 16, 1959, entitled "Cap Assembly." Such devices usually include a pair of mechanically separate members which are assembled at the site and are then adjusted to the precise roof angle necessary and are then fastened together, the fastening being one which preferably can be detached if necessary but which will remain indefinitely in secured position, despite the dislodging forces of wind, snow and the like.

It is an object of my invention to provide a cap assembly in which the individual components can readily be assembled at the site by the usual workman utilizing only the normal tools or no tools at all.

Another object of the invention is to provide a cap assembly which can economically be made.

A still further object of the invention is to provide a cap assembly which can easily be adjusted to the desired relationship of the parts and can then effectively be locked in such position.

A further object of the invention is, in general, to provide an improved cap assembly.

While the device of the invention can easily be incorporated in a number of different ways, it has been successfully constructed substantially as shown herein and as described in the accompanying description.

In the drawings:

Figure 1 is a side elevation of the cap assembly of the invention as it is installed on a slightly sloping roof;

Figure 2 is, in effect, a cross-section, the plane of which is indicated by the line 2-2 of Figure 1, but the fastening arrangement on the right-hand side of the center line is slightly different from the fastening arrangement on the left-hand side of the center line.

In the usual instance, the cap assembly is installed on a roof 6 having either a horizontal attitude or a slope, for example, of the amount illustrated. Projecting upwardly through the roof is a vent pipe 7. Surrounding the vent pipe and installed on the roof 6 is a base plate 8 usually fabricated of flexible sheet metal, such as galvanized iron of approximately twenty-two gauge. The base plate 8 is installed in the customary fashion and has an opening encompassing the vent pipe 7. Suitably secured to the base plate is a frusto conical base member 9, also preferably fabricated of flexible sheet metal of the sort indicated, and extending from the plate 8 to a substantially planar terminating edge 11 at a convenient distance above the plate 8.

Designed to be slipped over and to encompass the vent pipe 7 is a circular cylindrical tube member 12, likewise fabricated of similar sheet material, and at its lower end terminating in a substantially circular edge 13. When the parts are initially assembled, the lower edge 13 rests on the frusto conical base member 9. Since geometrically the normal cross-sections of the circular cylindrical

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tube member 12 and of the frusto conical base member 9 are not exactly the same, and since the cross-section of the frusto conical base member is not always normal to or parallel with the base plate 8, there is a theoretical discrepancy in the meeting portions of the two members.

In the usual instance, the tube member 12 and the frusto conical base member 9 are sufficiently flexible so that they meet approximately around the perimeter or lower edge 13 of the tube but usually rest in actual contact with each other only at two points 16 located at the opposite ends of an approximate diameter of the members. Due to the bending or displacement of the flexible material of the members, the points 16 are not usually mathematically exact but rather represent limited areas which are substantially opposite each other transversely of the tube member 12, for example. These restricted areas, theoretically points, are referred to as points herein. They are not mathematically always on a precise diameter since their individual location in any instance depends partly on the angle of the roof 6, that is, the angle that the tube member makes with the base member, and depends also upon the yielding nature of the particular material used.

Pursuant to the invention, especially as shown in Figure 1 and to the right-hand of Figure 2, the tube member 12 is provided with an arcuate slot 17 which is symmetrical about the adjacent center 16 and extends for a sufficient distance to accommodate substantially all of the relatively adjusted positions of the tube member and base member encountered in customary practice. Registering with the arcuate slot 17 and disposed substantially on a transverse diameter of the tube member 12 is a substantially circular aperture 18.

Passing through the registering openings 17 and 18 in the two members 9 and 12 are nut and bolt fasteners, including a bolt 19 having a shank 21 of a size to pass readily but without undue looseness through the aligned aperture and slot and also having an enlarged head 22. A wing nut 23 is included in the nut and bolt assembly and can readily be somewhat tightened on the threaded bolt shank. When the tube member and the base member are assembled and in appropriate adjusted position, the wing nut 23 is firmly tightened. This has the effect usually of slightly distorting or bending the material of the base member and of the tube member so that there is a semi-permanent interlock provided between these members, the metal distortion assisting in holding the parts together in addition to the frictional interengagement therebetween and the friction therewith by the bolt head 22 and the base of the wing nut 23.

A quite comparable arrangement, in fact, an identical arrangement, can be provided on the other side of the diameter of the parts, but for illustration the mechanism, although including a duplicate of the bolt 19 and of the wing nut 23, is varied in that the arcuate slot 24 is provided in the frusto conical base member 9 whereas the circular aperture 26 is provided in the tube member 12. Otherwise, the two sides operate identically and are in alignment to serve as a transverse fastening.

It is to be understood that the arrangement on the right-hand side of Figure 2 can be duplicated on the left-hand side thereof, the arrangement on the left-hand side of Figure 2 can be duplicated on the right-hand side thereof, or a composite arrangement precisely as illustrated in Figure 2 can be employed. In any case, the parts are held together first with a relatively light engagement of the nuts on the bolts so that a precise final adjustment can be made and then, when the nuts are finally tightened, the materials of the tube member and of the base member are so distorted as substantially to lock the parts in place, for that particular installation, against dis-

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lodgment by forces which tend to rock the structure from all directions.

What is claimed is:

1. A cap assembly comprising a sheet metal frusto conical base member, a circular cylindrical tube member telescoped over said base member, a pair of bolt fasteners in substantial alignment on a diameter of said frusto conical base member and passing through said members, one of said members having apertures therein of just sufficient size to pass the bolt shank of said fasteners and the other of said members having arcuate slots therein of a size to pass the bolt shank of said fasteners, and nuts engaged with said bolts and when tightened being effective to deform said tube member and said conical member into abutment.

2. A cap assembly comprising a sheet metal frusto

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conical base member, a circular cylindrical tube member telescoped over said base member and resting thereon substantially at two points at the opposite ends of a diameter of said base member, means defining slots in one of said members arcuate about said points, means defining substantially aligned circular apertures in the other of said members registering with said slots, and nut and bolt fasteners passing through said apertures and said slots and engaging said members, and deforming said members substantially into abutment.

References Cited in the file of this patent

UNITED STATES PATENTS

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1,704,942	Hopson	Mar. 12, 1929
2,890,642	Fernsten	June 16, 1959