March 7, 1967 R. A. ANDERSON 3,307,811

WIRE TIE DOWN ASSEMBLY

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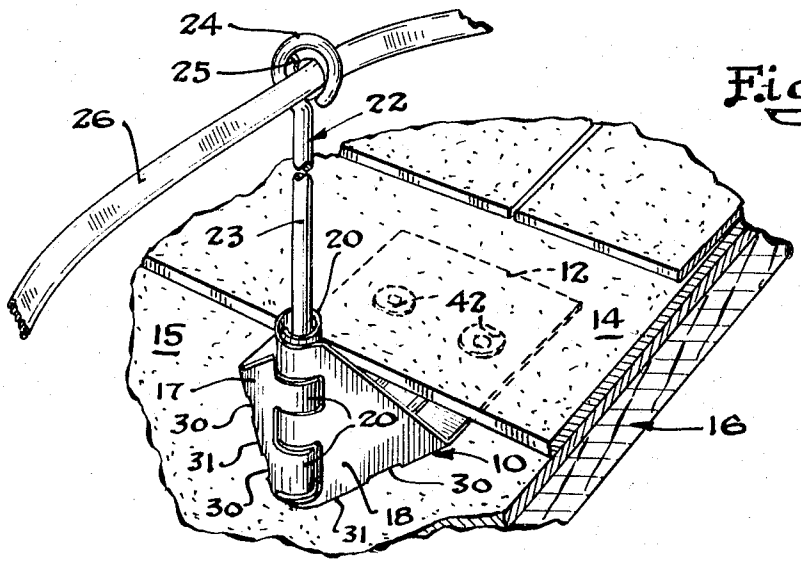


Fig.1

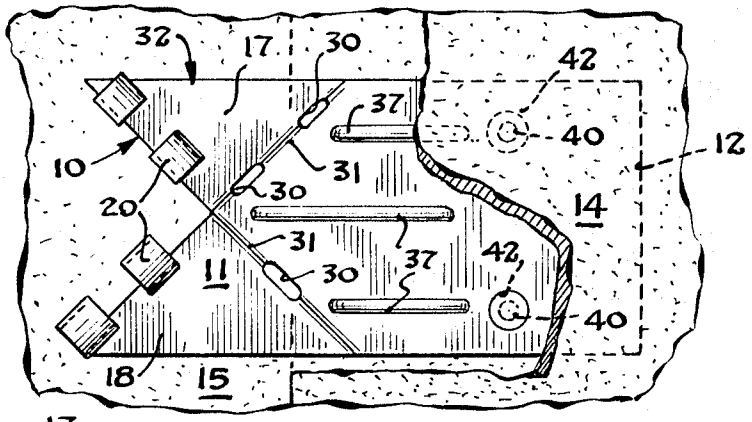


Fig.2

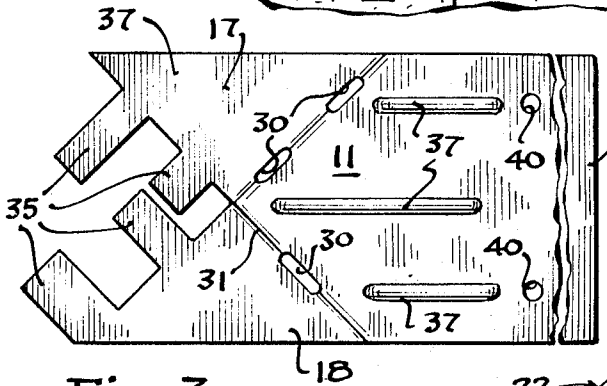


Fig.3

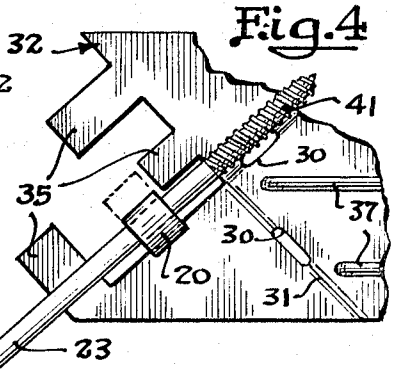
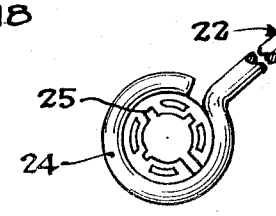


Fig.4



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WIRE TIE DOWN ASSEMBLY

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This invention relates to an assembly for fastening a wire to a shingled roof in a leakproof manner. More particularly, this invention is concerned with a device for receiving a television standoff rod and which can be nailed beneath a shingle.

There is not presently available a device for attaching a television wire standoff rod to a shingled roof so that no leakage will occur. In some instances, standoff rods are screwed into and through shingles causing subsequent leakage even though precautions are taken, such as tarring around the rod adjacent its jointure with the roof. This is to be expected because of the instability of the rod-like standoff member. A solution to this apparent problem might be in providing a plate member into which the rod-like standoff could be screwed and the plate member nailed into the shingle. Such a procedure might be suggested by Gilfry in U.S. 2,735,639. However, any time a nail is driven through a single, problems arise with respect to water leakage. Further, there is not available a metal plate member for a standoff which will engage such in a secure manner and can be manufactured in a very economical way, as well as used in a time-saving manner.

It is therefore an object of this invention to provide a novel wire tie down and standoff assembly which affords leakproof attachment to a shingled roof. It is another object of the present invention to provide a novel method for manufacturing a wire tie down and standoff assembly whereby it can be made without special tools or equipment. It is still another object of the present invention to provide a novel tie down assembly which can be easily attached to an existing shingled roof without breaking the shingles. These and other objects will be readily appreciated by reference to the detailed description to follow when considered in conjunction with the accompanying drawing wherein:

FIGURE 1 is a perspective view of the present wire tie down assembly secured to a singled roof and engaging a television wire standoff rod. This is the fourth and final stage of fabrication.

FIGURE 2 is a view in side elevation of the present assembly in the third stage of development prior to bending the two flange portions upwardly.

FIGURE 3 is a view like FIGURE 2 showing a formed blank for fabricating the present device in the first stage of development.

FIGURE 4 is a view like FIGURE 2 illustrating the second stage of fabrication in the formation of the ring-like frictional engaging means.

Briefly stated, the wire tie down and standoff assembly of this invention is comprised of three flanges, one of which is adapted to fit beneath a shingle and to be nailed through an underlying shingle and to the roof. The second and third flange portions are oppositely disposed with respect to each other and are integral with the first flange. They are movable to plane substantially transverse to said first flange portion and each movable flange portion carries frictional engaging means in a manner to provide complementary junction of the second and third flange portions and to thereby securely hold a rod-like standoff member substantially transverse to a roof.

In the particular embodiment shown in drawing, novel tie down assembly generally **10** comprises a base member **11** with a first flange portion **12** adapted to fit beneath an upper shingle **14** and a lower shingle **15** of roof **16**. As shown particularly in FIGURE 1, integral with flange **12** and base **11** but transversely disposed with respect to flange **12** are two second and third flange portions **17** and **18**. Frictional engaging means in the form of four ring-like members **20** are formed on flanges **17** and **18** in pairs and in an alternating and complementary manner to provide for junction of flanges **17** and **18** and frictional engagement with the common television rod-like standoff member **22** composed of the usual rod-like shank **23** and a hook-like head **24** carrying a slitted and turnable rubber holding member **25** for ordinary, flat, double-stranded television wire **26**.

Assembly **10** is provided with water drainage apertures **30** disposed along the line of junction of flanges **17** and **18** with base **11**. As best seen in FIGURES 2–4, the line of junction is a V-shaped preweakened line **31** formed in the substantially flat, plate-like, generally rectangular blank **32** from which assembly **10** is fabricated. Blank **32** is preferably made from standard sheet metal.

The fabrication of assembly **10** is simple and is accomplished by forming flat tongue members **35**, such as by die cutting, in a manner such that their base lines form a V-shaped configuration along the edges of flanges **17** and **18**. It will be noted that the tongues on flange **17** are spaced in an alternating manner with respect to those on flange **18** and also in transverse axial alignment so that they interfit in a complementary manner when flanges **17** and **18** are moved into a transverse plane with respect to flange **12**. Coextensive with the base lines of tongues **35** are V-shaped preweakened lines **31** which serve to form triangular flange portions **17** and **18** and are formed by prebending along the indicated lines. Extending along base **11** and into flange portion **12** are three upwardly disposed strengthening ribs or lugs **37** which are formed by die stamping and which add strength to the assembly. Two holes **40** as well as apertures **30** are also stamped in flange portion **12** to aid in nailing the assembly to roof **16**.

The blank **32** as it is shown in FIGURE 2 will in most instances be in the form made by the manufacturer and supplied to the television installer or roofer, except, of course, it will not as yet be nailed to the roof. One method of forming rings **20** from tongues **35** for a television standoff **22** is to place unthreaded section **23** transversely across tongues **35** in the manner shown in FIGURE 4 and roll the tongues thereover and around and subsequently pull or unthread threaded section **41** therefrom. As the outside diameter of the threaded section **41** is larger than the unthreaded section **23**, rings **20** will be made undersized so as to form ring-like, resilient frictional engaging means for the threaded section **23**. When all of the ring-like members are so formed, blank **32** will have the form shown in FIGURE 2. To fasten the device **10** as shown in FIGURE 2 on a pitched roof, top shingle **14** is raised and held up to permit flange portion **12** to be placed thereunder and two roofing nails **42** are driven through passages **40**, bottom shingle **15** and into roof **16**. Top shingle **14** is allowed by its natural resiliency to drop to its normal position as shown in FIG-

URES 1 and 2 and flange portions **17** and **18** are then bent upwardly along line **31** into a plane transverse to flange portion **12** so that ring-like members **20** are in axial alignment to frictionally receive threaded section **41** of standoff **22** which is screwed therein and held transversely to roof **16**.

It will be noted that by having flange portions **17** and **18** lie flat and in the same plane as flange portion **12** and base **11**, nailing of flange portion **12** is easily accomplished and tearing of shingle **14** is avoided. This is easily seen in contrast to the problem it would be to nail flange portion **12** when flange portions **17** and **18** are in an upstanding position as shown in FIGURE 1. It should also be noted that no nail is driven through a top shingle.

As previously indicated, device **10** is formed from standard sheet metal which is preferably 26 gauge. It is cut or die stamped into a generally rectangular blank **32** measuring approximately 4½ inches in length by 2¼ inches in width. Any size blank, of course, is operable and the same is true of tongues **35** which preferably measure five-eighths inch in length by ¼ inch in width. Flange portions **17** and **18** measure 1½ inches along the legs of the triangle and 2¼ inches along the base. These measurements are not critical but have been found to work well. While two pairs of tongues **35** have been illustrated to form four ring-like engaging means **20**, any number of such means can be used, including a single ring-like member which can be roll-formed by hand or machine. Further, while a threaded shank **41** is frictionally engaged well by rings **20**, a smooth or rough-surfaced shank can also be used and rings **20** made undersized to securely engage such.

Neither is it necessary that device **10** be made of sheet metal. Any material which is weatherproof and is resilient enough to be bent and to frictionally engage a rod-like member can also be employed. A low grade stainless steel, copper or aluminum, as well as their alloys, and resinous plastic materials can thus be utilized. While nailing is the customary and most economical manner of attaching assembly **10** to a roof, it can, if desired, be glued or tarred between shingles.

The preformed nail holes **40** can obviously be dispensed with and nails can be driven through the sheet metal composing flange **12** without such. Drainage holes **30**, by being disposed along preweakened lines **31**, serve to aid in bending flanges **17** and **18** but also are not essential. If desired, smaller perforations can be formed along the entire distance of lines **31**.

Two flange portions **17** and **18** with frictional engaging means **20** have been described. It should be understood that while not as effective from a stability standpoint, only one such flange with one or more engaging means can be used if desired.

It will thus be seen that there is now provided a novel wire tie down assembly which is simple in construction and easily manufactured at a minimum cost. The present assembly is quickly installed beneath a shingle, thus affording leakproof installation and without danger of tearing a shingle. No special tools are required for manufacturing the blank from which the assembly is formed or for installing the formed assembly. It is form-fitted to any type of wire standoff member and yet securely holds it in a perpendicular position with respect to a roof. Neither is there any problem of accumulation of water in the assembly.

The foregoing invention can now be practiced by those skilled in the art. Such skilled persons will know that the invention is not necessarily restricted to the particular embodiments presented herein. The scope of the invention is to be defined by the terms of the following claims as given meaning by the preceding description.

I claim:

1. A leakproof wire tie down and standoff assembly for a shingled roof comprising a first flange portion adapted to fit beneath a shingle, second and third flange portions

integral with said first flange portion lying substantially flat and in substantially the same plane as said first flange portion in a first position, but bendable to a plane substantially transverse to said first flange portion in a second position, alternating frictional gripping means spaced on the edges of said second and third flange portions for complementary junction between said second and third flange portions in said second position for securely holding a rod-like standoff member transversely to a roof.

2. The wire tie down and standoff assembly as defined in claim **1** wherein said alternating frictional gripping means are comprised of a plurality of resilient ring-like members.

3. The wire tie down and standoff assembly as defined in claim **1** wherein said alternating frictional gripping means are adapted to receive a threaded shank on said rod-like standoff member.

4. The wire tie down and standoff assembly as defined in claim **1** wherein all of said flanges are formed of standard sheet metal.

5. The wire tie down and standoff assembly as defiined in claim **1** further including said rod-like member in combination therewith.

6. The wire tie down and standoff assembly as defined in claim **5** wherein said rod-like member has a threaded shank for frictional engagement with said alternating frictional gripping means.

7. A substantially flat plate-like blank for forming a leakproof wire tie down and standoff assembly for a shingled roof comprising a first flange portion adapted to fit beneath a shingle, means integral with said first flange portion to form at least a second flange portion bendable to a plane substantially transverse to said first flange portion and tongue members adapted to form frictional engaging means carried by said means to form at least said second flange portion to securely hold a rod-like standoff member substantially transversely to a roof.

8. A substantially flat plate-like blank for forming a leakproof wire tie down and standoff assembly for a shingled roof comprising a first flange portion adapted to fit beneath a shingle, means integral with said first flange portion to form second and third flange portions bendable to a plane substantially transverse to said first flange portion and tongue members extending outwardly from said second and third flange portions, the base lines of junction of said tongue members with said flange portions forming a V-shaped configuration, said tongue members forming frictional engaging means to securely hold a rod-like standoff member substantially transversely to a roof.

9. A blank for forming a wire tie down and standoff assembly as defined in claim **7** wherein said means to form said second and third flange portions is comprised of integral oppositely disposed triangular portions.

10. A blank for forming a wire tie down and standoff assembly as defined in claim **8** wherein said second and third flange portions are joined to said first flange portion by a V-shaped preweakened line.

11. A blank for forming a wire tie down and standoff assembly as defined in claim **9** wherein apertures are provided along said preweakened line.

12. A method for forming a blank for subsequent formation of a wire tie down and standoff assembly from a plate-like member comprising forming at least two oppositely disposed tongue members on said plate-like member with the base lines of said tongue members in a substantially V-shaped configuration and the axis of said tongue members on one leg of said V in transverse alignment with said oppositely disposed tongue members, forming said tongue members in an alternating manner with respect to the oppositely disposed tongue members and providing preweakened lines coextensive with said base lines to form two oppositely disposed triangular flange portions.

13. The method as defined in claim **11** wherein two pairs of oppositely disposed tongue members are provided.

14. The method as defined in claim 11 further including the formation of said tongue members into ring-like frictional engagement members.

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