S. H. SMITH.

FASTENING DEVICE.

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1,118,159.

Patented Nov. 24, 1914.

Fig. 1

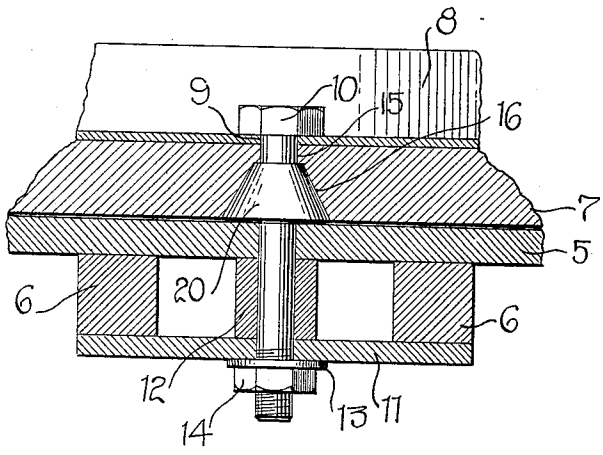


Fig. 2

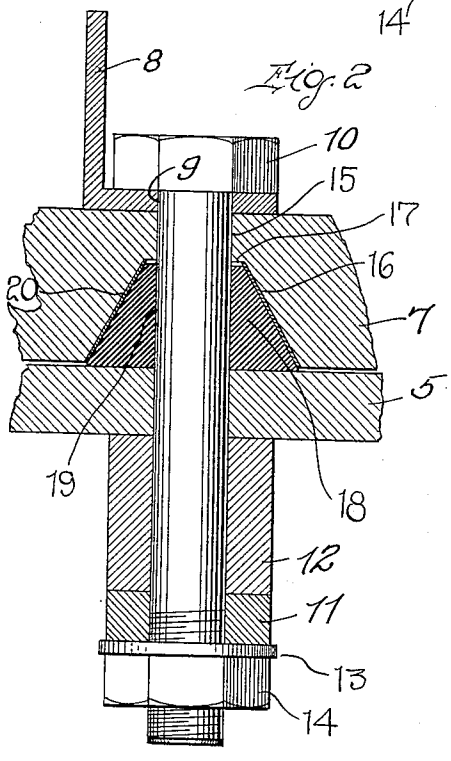
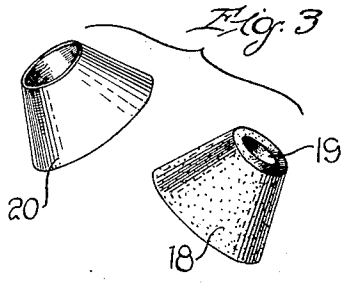


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

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FASTENING DEVICE.

1,118,159. Specification of Letters Patent. Patented Nov. 24, 1914.

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To all whom it may concern:

Be it known that I, SAMUEL H. SMITH, citizen of the United States, residing at Atlantic City, in the county of Atlantic and State of New Jersey, have invented certain new and useful Improvements in Fastening Devices, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improved means for securing signs upon the roofs of buildings, and has for its primary object to provide a simple and inexpensive device for this purpose which will absolutely preclude the possibility of leakage of water through the roof around the fastening bolt.

The invention has for another and more specific object to provide a bushing preferably of rubber, and an outer metallic sleeve therefor adapted to be arranged within an opening provided in the beam upon which the sign structure is directly mounted and supported, said bushing having a central bolt receiving opening through which the fastening bolt is disposed, said bushing expanding in the sign supporting beam and tightly fitting against the periphery of the bolt so as to prevent seepage of water around said bolt and through the roof.

The invention has for a general object to provide a fastening device which may be employed for a great number of analogous purposes, and is highly reliable and efficient in actual use.

With the above and other objects in view as will become apparent as the description proceeds, the invention consists in certain constructions, combinations and arrangements of parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a section through a roof showing a portion of the sign frame mounted thereon and secured in position by my improved fastening device: Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a detail perspective view of the rubber bushing and its metallic sleeve or casing.

Referring in detail to the drawing, 5 designates the roof proper which is supported at intervals by means of joists indicated at 6. Upon the upper surface of the roof 5, beams 7 properly prepared in accordance with the pitch of the roof are arranged and upon these beams, the sign structure is directly mounted and supported.

8 designates a portion of the sign frame, which in the illustrated application of the invention, is constructed of angle iron, the base flange thereof resting upon the beam 7 and being provided with an opening 9 to receive a fastening bolt 10. The beam 7 and the roof 5 are of course also provided with openings through which said bolt extends. A bar 11 is arranged with its ends engaged upon the roof supporting joist 6 and between this bar and the roof 5, a spacing block 12 is disposed. This block and bar 11 are provided with openings through which the inner end of the bolt 10 is disposed. A washer plate 13 is engaged upon the end of the bolt and a nut 14 threaded thereon to clamp said washer against the bar 11.

In the use of my invention in the erection of signs upon the roofs of buildings, the bolt receiving opening 15 in the beam 7 is provided with a tapering conical enlarged portion 16. At the smaller end of this enlarged conical portion 16 of the opening, a shoulder 17 is formed. A bushing 18 of rubber or other suitable packing material is provided with a central bolt receiving opening 19. This bushing is disposed within a frusto-conical sleeve or casing 20. It will be understood that by the provision of this sleeve, frictional contact of the rubber bushing 18 with the wood beam 7 is prevented. The enlarged end or base of the bushing 18 rests directly upon the upper surface of the beam 7, while the other or smaller end thereof is adapted to engage upon the shoulder 17 formed in the bolt receiving opening 15 of said beam.

It will be understood from reference to Fig. 2 of the drawings, that the bushing 18 and its metal sleeve 20 are first arranged in the conical portion 16 of the opening in the beam 7 and said beam properly secured upon the roof. The sign frame is then disposed upon the beam 7, with the opening in the base flange of the frame coinciding with the opening in the beam. The bolt 10 is then inserted through said openings and the registering openings in the roof 5, the spacing block 12 and the bar 11. The pressure by the bolt will expand the rubber bushing 18 in the beam 7 and cause the same to bind frictionally upon the periphery of the bolt 10. The nut 14 is securely tightened on the

inner end of said bolt against the bar 11 and the sign thus rigidly secured in position upon the roof. It will be obvious that by means of this construction and arrangement of parts, a very tight joint and secure closure in the opening in the beam 7 and the upper end of the opening in the roof 5 is effected so that the seepage of water downwardly through said openings and around the bolt 10 is absolutely precluded. Any enlargement of the upper end portion of the opening in the beam 7 by wear of the bolt thereon, caused by excessive strain owing to the tendency of the sign to sway in a high wind, is compensated for by the expansion of the rubber bushing which at all times maintains an absolutely fluid tight engagement upon the periphery of the bolt.

From the foregoing, it is believed that the construction and manner of application and use of my invention will be clearly and fully understood. It will be appreciated that the device may also be advantageously employed in the mounting of fire escapes upon building walls, as well as awnings, porch columns and various other building operations where it is desired to effect an absolutely water-tight joint between the engaged parts. It will also be understood that the bushing as well as its metallic sleeve may be constructed in various sizes and of other forms than that illustrated in the accompanying drawing.

The device as a whole is extremely simple in its construction, may be produced at small manufacturing cost, is capable of easy and quick application and highly efficient and reliable in practical use.

While I have shown and described the preferred construction and arrangement of the several elements employed, it will be obvious that the invention is susceptible of a great many minor modifications therein and I therefore reserve the privilege of resorting to all such legitimate changes as may be fairly embodied within the spirit and scope of the invention, as claimed.

Having thus described the invention, what is claimed is:

The combination with a supporting beam provided with a bolt receiving opening having an enlarged portion forming an annular shoulder therein, a rubber bushing and a metal sleeve for said bushing adapted to be arranged in the enlarged portion of the opening, said sleeve engaging at one end against said shoulder, and said bushing provided with a central opening to receive a fastening bolt securing together parts arranged upon opposite sides of the beam, said bushing by expansion against the metal sleeve tightly engaging upon the periphery of the bolt and forming a water-tight joint between the parts connected thereby.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

SAMUEL H. SMITH.

Witnesses:

M. CARLISLE LYDDANE,

D. W. GALL.

Copies of this patent may be obtained for five cents each. by addressing the "Commissioner of Patents, Washington, D. C."