Feb. 9, 1932. J. W. HELLING 1,844,870

ROOF JOINT

Filed May 15, 1931

Fig. 1.

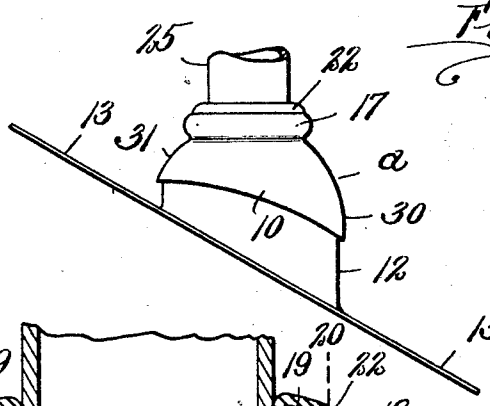


Fig. 2.

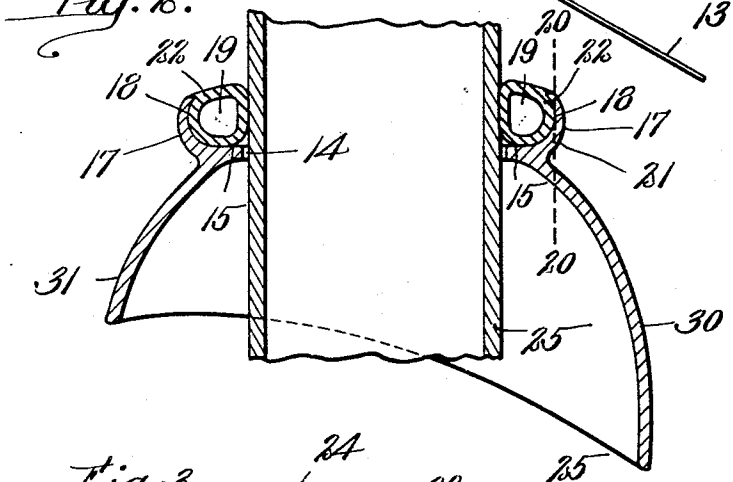


Fig. 3.

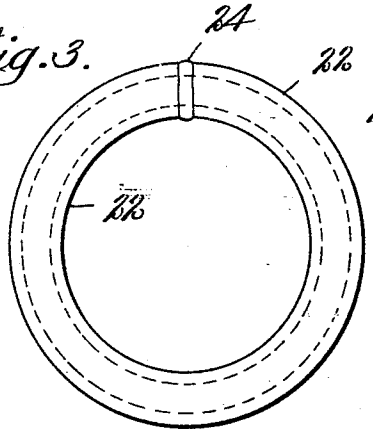
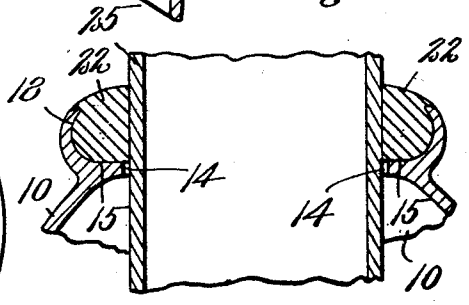


Fig. 4.



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1,844,870

UNITED STATES PATENT OFFICE

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ROOF JOINT

Continuation of application Serial No. 163,013, filed January 24, 1927. This application filed May 15, 1931. Serial No. 537,729.

This invention relates to a roof joint for soil pipes and has for its object to provide a roof joint of a novel construction as will be described, which enables a sealing ring of lead or other suitable material to be fitted to the roof joint in the shop and to be transported to the job as a unit, whereby expense, loss of time, etc., and danger of attending the use on the roof of molten metal for forming the sealing ring is avoided and especially under unfavorable weather conditions.

The invention further has for its object to provide the roof joint with a hollow sealing ring of relatively soft metal which is capable of being quickly and easily manipulated to make a tight joint with the soil pipe, which is relatively inexpensive and which enables a tight joint to be maintained under all conditions of use.

The particular features of the invention will be pointed out in the claim at the end of this specification.

Fig. 1 represents in side elevation a roof flashing provided with a joint embodying this invention;

Fig. 2, an enlarged view in vertical section of the roof joint and sealing ring shown in Fig. 1 and of a portion of the soil pipe with which they cooperate;

Fig. 3, a plan of the sealing ring shown in Figs. 1 and 2, and

Fig. 4, a view in section of a portion of the roof joint and soil pipe and a modified sealing ring.

Referring to the drawings, *a* represents the roof joint which is preferably made of cast iron and is provided with an elongated body portion 10 which is fitted upon an upright elongated hollow member 12, preferably of copper which is extended from a copper sheet or flashing 13.

The body portion 10 is provided at its upper end with a substantially circular opening 14 from which extends outwardly a substantially flat annular surface 15, from whose outer portion extends upwardly a substantially circular hub 17, which is horizontally arranged with its vertical axis substantially coincident with the vertical axis of the opening 14, and whose inner surface 18 is curved transversely and forms part of a circle of relatively small radius whose center 19 is located between the substantially circular hub 17 and the circumferential wall of the opening 14, so that the upper annular edge of the substantially circular hub 17 lies within a vertical plane 20 which is tangent to the transversely curved inner surface 18.

The curved inner surface of the substantially circular hub 17 is of a width substantially equal to the height of the hub 17 above the substantially flat surface 15 and merges with the latter.

It is preferred to make the outer surface 21 of the circular hub curved transversely as herein represented.

The body 10 and the circular hub 17 may and preferably will be made in one piece, and preferably of cast iron.

By reference to Figs. 2 and 4, it will be observed that the circular hub 17 cooperates with the body portion 10 to form a chamber having a mouth at its top formed by the upper edge of the circular hub 17, and that the inner surface of the hub is curved transversely from said mouth to the substantially flat surface 15 and forms on the inner surface of the hub an annular groove of greater diameter than said mouth, so that a packing or sealing member 22 of lead or like compressible metal and either hollow as shown in Fig. 2, or solid as shown in Fig. 4, when forced or pressed into the annular chamber so as to rest upon the bottom wall of said chamber and also engage the curved inner circumferential wall thereof, will be locked within said chamber against dropping out therefrom or being otherwise accidentally removed therefrom.

As a result, the relatively soft metal sealing member or ring 22 may be fitted to the roof joint in the shop ready to be transported to the job, where it can be quickly and easily slipped upon the soil pipe 25 on the roof and tamped or pressed into contact with the soil pipe to make a liquid-tight joint therewith, thereby effecting a material saving in time and labor on the job and avoiding the use of oakum and molten metal for forming the

joint especially under severe and frequently dangerous weather conditions.

The soft metal sealing ring 22 may be solid, as represented in Fig. 4, but it is preferred to make it hollow, as represented in Fig. 2.

The hollow sealing member 22 may be made by bonding into circular form a piece of lead pipe of the proper diameter, whose ends are caused to abut, and then securing the abutting ends together by means of a band 24 of solder affixed to the outside of the abutting ends.

A hollow endless sealing ring of lead or like relatively soft metal is particularly adapted for use with a roof joint of the character herein shown and described, because it not only is less expensive and capable of being fitted to the roof joint in the shop, but also is capable of maintaining a liquid-tight joint with the soil pipe under all conditions of use, thereby compensating for contraction and expansion of the iron soil pipe and roof joint under different temperature conditions, and avoids danger to the operator on the roof especially under unfavorable weather conditions as the use of apparatus for melting lead on the roof is not required.

The elongated body portion 10 is provided with end portions 30, 31 of unequal height or depth and curved vertically and horizontally, and cooperates with the elongated hollow member 12 of the flashing 13 to enable the latter to be applied to roofs of different pitch and yet have the roof joint vertically arranged under all conditions of use, with the substantially circular hub 17 horizontally arranged and concentric or substantially so with relation to the vertically arranged soil pipe.

It will be observed by reference to Figs. 1, 2 and 4, that the sealing member 22 conforms to and fits the inner surface of the hub 17, and further that the upper portion of the sealing member projects for a substantial distance above the upper edge of the hub 17 so as to enable the roofer or plumber to tamp the upper portion of the sealing member into the position illustrated in Figs. 2 and 4 in which the inner circumference of the sealing ring is caused to hug tightly against the soil pipe 25 for substantially the entire depth of the ring. At the same time the tamping operation operates to shape the upper surface of the sealing member so that it tapers downwardly and outwardly from the soil pipe 25, thus providing a most efficient form of joint for shedding water and minimizing the liability of the joint leaking. The hub 17 being shaped to conform to the natural curvature of the sealing ring operates to cause movement of the material of the sealing ring under the tamping operation applied to the upper portion of the ring, in a direction toward the soil pipe 25, and as a result a most efficient and relatively wide contact is established between the inner surface of the ring and the soil pipe.

This application is a continuation of my prior application Serial No. 163,013, filed January 24, 1927 and forms a part thereof.

I claim:

Means for sealing the joint between a soil pipe and a roof comprising a flashing having a hollow rigid body portion through which the soil pipe extends, a hub formed integrally with one end of said body portion, said hub having its inner surface shaped to provide a flat bottom portion which merges into an upwardly extending curved portion terminating in an overhanging edge, and a soft metal ring initially of substantially circular cross section positioned in the hub to partially project above said overhanging edge and tamped to entirely fill the space between the body and hub providing a tight seal with an expanded portion of the projecting part of the ring overlying the said overhanging edge to effectively lock the ring within the hub.

In testimony whereof, I have signed my name to this specification.

JOHN W. HELLING.