Dec. 22, 1936. E. W. PETERSEN 2,065,091

TROUGH HANGER

Filed Nov. 2, 1935

Fig. 1

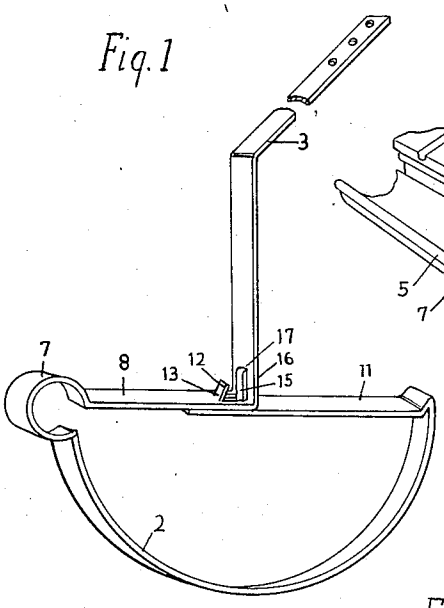



Fig. 3

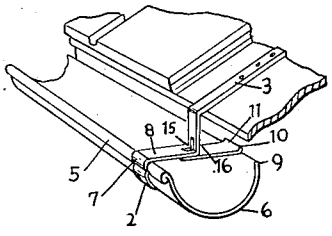



Fig. 2

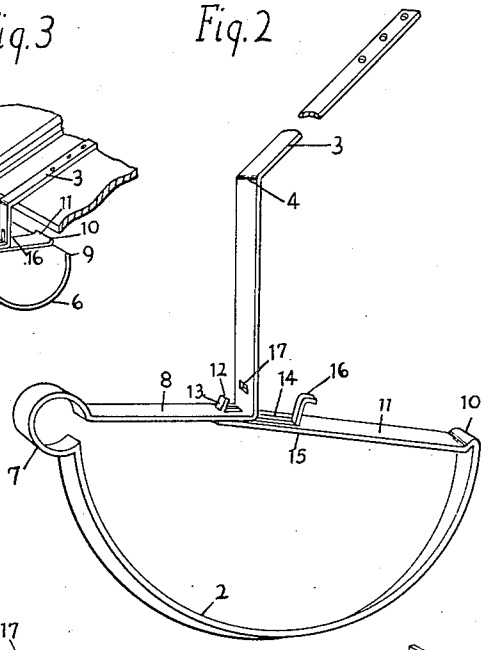



Fig. 4

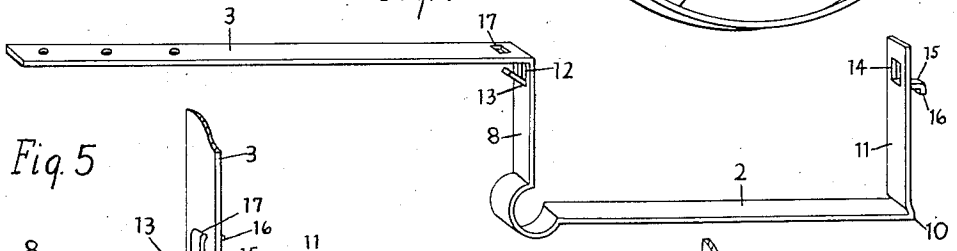



Fig. 5




Fig. 6

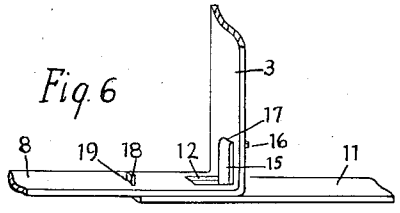



Fig. 7

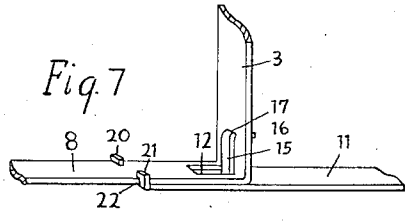



Fig. 8

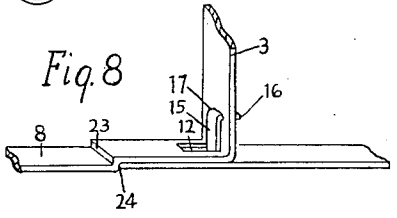
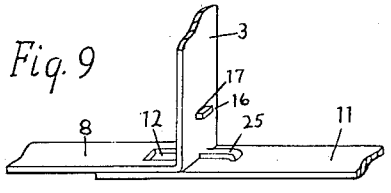



Fig. 9




INVENTOR

ELMER W. PETERSEN

BY Jones, Addington, Cram & Seibold

ATTORNEYS

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## TROUGH HANGER

Elmer W. Petersen, Chicago, Ill., assignor of one-half to William A. Bertram, Chicago, Ill.

Application November 2, 1935, Serial No. 47,947

4 Claims. (Cl. 248—48.1)

This invention relates to hangers for eaves troughs or the like and more particularly to an improved type of lock for securing the hangers to the troughs.

An object of the invention is to provide a new and improved lock adapted to clamp the hangers to the troughs in a simple and practical manner and to prevent pressure against the trough from disengaging the locking members and freeing the hanger.

A further object of the invention is to provide a new and improved lock of this type which is particularly applicable to a single strap hanger bowed about the under side and bent backwardly across the open face of the trough with a roof engaging bar extending upwardly therefrom. However, it will be understood that the invention is not to be limited to a hanger constructed in this manner, inasmuch as its essential features are capable of adaptation to other types of hangers.

It will be noted that the improved type of lock involves essentially integrally formed locking members which do not require additional members or parts. Moreover, it will be noted that these locking members inter-engage to hold the parts securely together and cannot be inadvertently freed of each other by the weight of a ladder or other pressure against the trough or hanger. The bowed portion is preferably provided with a slot adjacent the juncture with the roof engaging bar for receiving a hooked tongue struck up from the opposite free end, while the roof engaging bar is provided with a slot into which the hooked tongue thereafter extends for providing an interlocking engagement that cannot be accidentally released.

This type of lock is inexpensive and exceedingly simple to operate. Its action is positive and assures a proper locking relation between the parts each time it is operated. It does not require additional parts which merely add to the cost of manufacture and which hamper the quick and positive action quite essential for devices of this kind.

Other objects and advantages of the invention will be apparent from the following detailed description when taken in connection with the accompanying drawing.

In the drawing:

Figure 1 is a perspective view of a hanger embodying the present invention and illustrating the locking members secured together;

Fig. 2 is a similar view of this hanger, illustrating how the locking member of one part is brought into engagement with the other part;

Fig. 3 illustrates the manner in which the hanger supports a trough at the edge of a roof;

Fig. 4 illustrates this hanger in the form in which it is made and shipped but before it is shaped about the trough;

Fig. 5 is an enlarged detail view of the lock shown in the preceding figures;

Fig. 6 is a view similar to Fig. 5, but illustrating an alternative embodiment of the invention;

Fig. 7 is likewise a similar view, but illustrating a further alternative embodiment of the invention; and

Figs. 8 and 9 illustrate still further modified forms of lock embodying the invention.

The single strap type of hanger, illustrated herein as a preferred form of hanger to which my invention is applied, comprises, as is generally known, a trough engaging portion 2 adapted to be shaped to the under side of the trough at the time the hanger is applied. Also, a roof engaging bar 3 is provided that may be adapted to the roof at the time of installation by bending the same at 4 so as to compensate for the pitch of the roof and the manner in which the trough is to be suspended at the eaves. The outer edge 5 of the trough 6, as shown in Fig. 3, is generally varyingly formed according to the type of trough used; consequently, the outer edge of the trough engaging portion 2 is formed at 7 to fit over outer edge 5 of trough 6. I have illustrated a rolled outer edge 5 on trough 6, and consequently, a curled portion 7 which will embrace the curled edge 5. Curled portion 7 has the further function of lending resiliency to the intermediate leg 8 from which roof engaging bar 3 is bent upwardly. The inner edge of trough 6 may be differently formed, say with a sharp upstanding edge 9. Accordingly, the opposite end of trough engaging portion 2 is crimped as indicated at 10 to receive inner trough edge 9. This end of the hanger continues across the open face of trough 6 in the form of a leg 11.

The hanger is generally manufactured and shipped in the form shown in Fig. 4. It will be noted in this figure that the trough engaging portion 2 is flat so that it may be shaped to the under side of the trough at the time the hanger is mounted. This will bring legs 8 and 11 across the open face of trough 6, as illustrated in Fig. 3.

Leg 8 overlaps the free end of leg 14 in order to provide a positive and simple lock for the free end of leg 11, which will engage leg 8. A slot 12 is formed in leg 8 by striking up lip 13. The

free end of leg 11 is likewise slotted at 14 by striking up tongue 15 having a hooked end 16. Hooked end 16 is bent at right angles to tongue 15. A second slot 17 is punched in lower end of roof engaging bar 3. Slot 17 is so positioned on roof engaging bar 3 that when tongue 15 is inserted through slot 12 the hooked end 16 will enter slot 17. This form of lock is positive and any tendency to press against trough 6 and increase the bowing of trough engaging portion 2 will not disengage hooked end 16 out of slot 17.

As illustrated in Fig. 5, lip 13 may be pressed downwardly against tongue 15 after hooked end 16 enters slot 17. Lip 13 will then positively hold tongue 15 against bar 3 and keep hooked end 16 in slot 17. This locking device is exceedingly simple, inexpensive to make, and requires no additional parts. It is easy to operate, because tongue 15 may be easily inserted in slot 12 by pulling legs 8 and 11 together so that hooked end 16 may freely enter slot 17. The tension of the material will quickly pull the hooked end 16 through slot 17 and bring tongue 15 against bar 3. The advantage of a simple lock of this type which does not require additional parts will be readily appreciated in view of the hazardous positions required of tinsmiths in hanging troughs along the edges of the roof.

A snap action is provided which makes the device self-locking after tongue 15 is inserted through slot 12 and hooked end 16 enters slot 17. A slight pressure against lip 13 will bend it downwardly to engage against tongue 15 as illustrated in Fig. 5. The use of lip 13 for this purpose is not essential.

An alternative embodiment of the invention is illustrated in Fig. 6. The end of leg 11 may have a tongue 18 formed thereon which enters a slot 19 in leg 8. Slot 19 may be formed to the rear of slot 12 and lip 13 may be omitted. The strap metal construction of the hanger permits the provision of these tongues and slots by a single stamping operation, and consequently, they may be accurately positioned so that the tongues will readily enter the slots and hook into position. The same is true in connection with the form of lock shown in Fig. 5.

In the alternative embodiment shown in Fig. 7, the free end of leg 11 is formed with a pair of of upstanding tongues 20 and 21 entering corresponding grooves 22 cut in the edge of leg 8. Tongues 20 and 21, engaging in grooves 22, likewise prevent disengagement of hooked end 16 from slot 17 when any pressure is applied tending to increase the bowing of trough engaging portion 2 so as to buckle legs 8 and 11 inwardly.

The same result may be obtained by stepping down leg 8 as illustrated at 23, so as to provide an abutting wall 24 against which the edge of leg 11 may rest as illustrated in Fig. 8.

If so desired, a tongue 25 may be punched out in the formation of slot 12, as shown in Fig. 9, so as to extend forwardly of leg 8 and engage in a slot 26 formed in leg 11. In this form of the device, tongue 15 will likewise pass through slot 12, as shown in the preceding views, and the hooked end 16 may enter slot 17. Inward buckling of leg members 8 and 11, tending to free hooked end 16 from slot 17, is likewise effectively prevented by tongue 25 entering slot 26.

It will be apparent from the foregoing description that my invention is directed particularly to a novel arrangement of interlocking members between legs 8 and 11 of the hanger, which interlocking members may be formed in one operation during the making of the hanger and which do not require any additional parts. The interlocking members are simple and effective, and because of the resiliency of the strap metal of which the hanger is made, legs 8 and 11 may be easily manipulated to bring these interlocking members into proper locking relation so as to effectively secure a locking of the parts that cannot be accidentally disturbed.

It will be apparent that the tongue and groove interlocking members shown herein may be applied in different ways to the hangers and also embodied in hangers of different construction than that shown in the drawing.

Without further elaboration, the foregoing will so fully explain the gist of my invention that others may, by applying current knowledge, readily adopt the same for use under varying conditions of service, without eliminating certain features, which may properly be said to constitute the essential items of novelty involved, which items are intended to be defined and secured to me by the following claims.

I claim:

1. A device for hanging troughs or the like comprising an integral strap bent to form two parts, one comprising a roof engaging bar and the other comprising a trough engaging portion adapted to extend about the trough, said roof engaging bar being connected to one end of said trough engaging portion substantially centrally across the open side of the trough, the other end extending to and meeting the first end of said trough engaging portion, slots in said first end and in said roof engaging bar, and a tongue struck up from said other end for interlockingly fitting in said slots.

2. A device for hanging troughs or the like comprising an integral strap bent to form two parts, one comprising a roof engaging bar and the other comprising a trough engaging portion adapted to extend about the trough, said roof engaging bar being bent upwardly from one end of said trough engaging bar, said end having a slot therein, said roof engaging bar having a slot therein above said bend, and a tongue on the other end of said trough engaging bar for interlockingly hooking into said slots.

3. A device for hanging troughs or the like comprising two parts, one comprising a roof engaging bar and the other comprising a trough engaging portion adapted to extend about the trough and to overlap at its ends, said roof engaging bar extending upwardly from said trough engaging portion, tongue and slot means for interlocking said ends of said trough engaging portion together, and a lug for locking said tongue in said slot after said ends of said trough engaging portion are interlocked.

4. A device for hanging troughs or the like comprising two parts, one being a roof engaging bar and the other being a trough engaging portion, said roof engaging bar being connected to one end of said trough engaging portion, a tongue and slot provided on the other end of said trough engaging portion, and a tongue and slot provided on said first end and said roof engaging bar, said slots in opposite ends receiving said tongues on opposite ends to form an interlocking connection between said parts.

ELMER W. PETERSEN.