July 17, 1956 F. W. EBBO 2,755,010

LADDER POSITIONER

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Fig. 2.

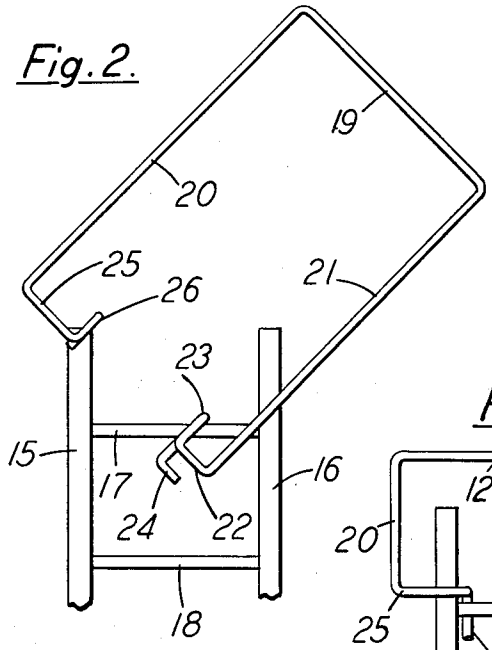


Fig. 3.

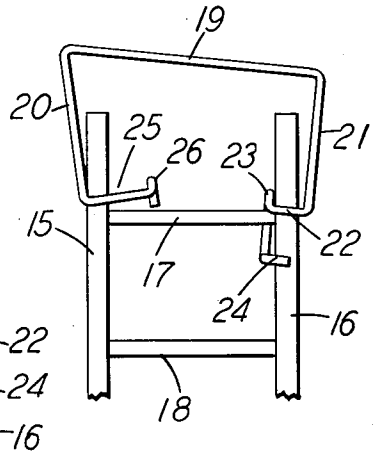
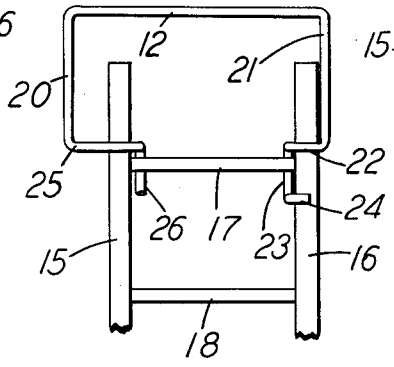


Fig. 4.



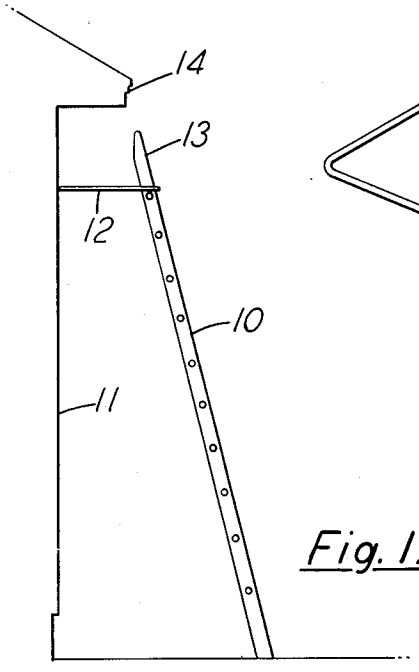


Fig. 1.

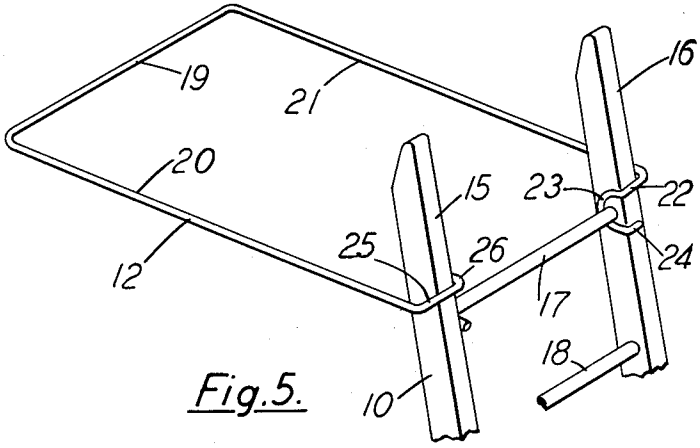


Fig. 5.

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Fig. 7.

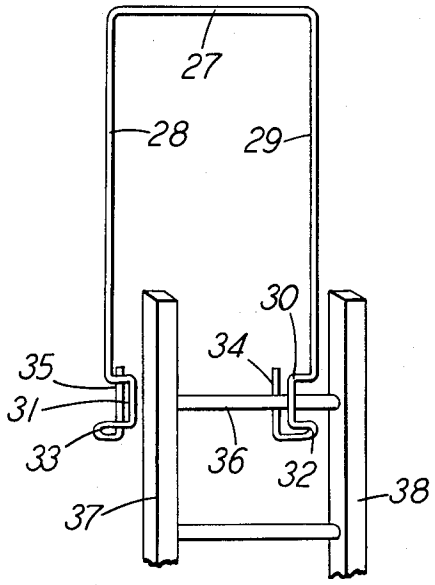


Fig. 8.

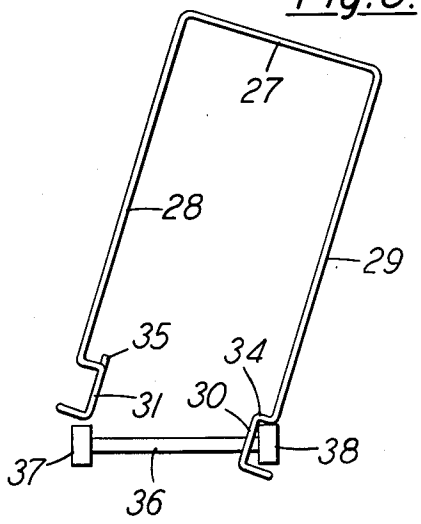
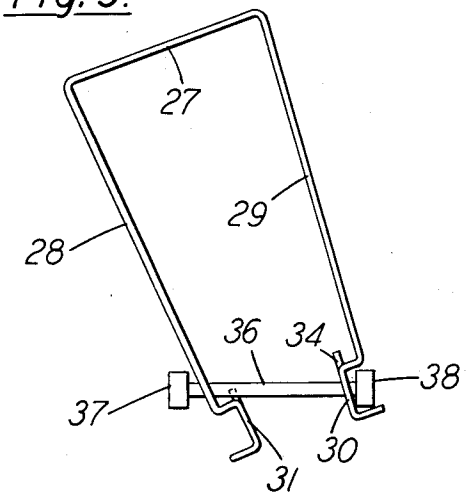


Fig. 9.



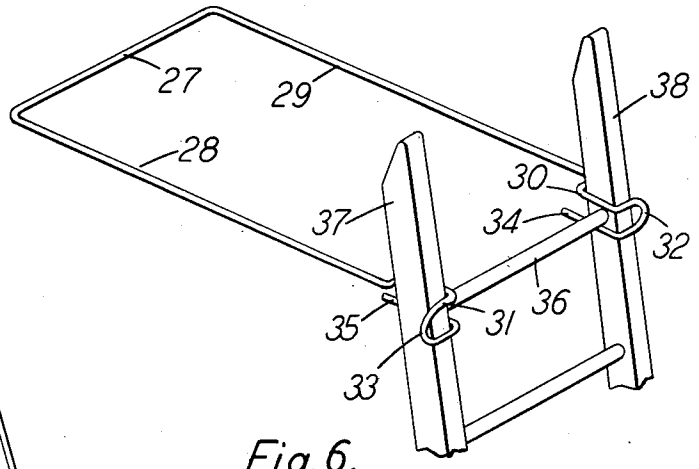


Fig. 6.

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2,755,010

LADDER POSITIONER

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Application March 13, 1953, Serial No. 342,188

2 Claims. (Cl. 228—60)

This invention is intended for use in conjunction with a conventional straight ladder for positioning the upper end thereof at a distance from a supporting wall. A painter standing near the upper end of a ladder usually finds that the presence of the ends of the ladder bearing against the surface he is painting seriously interferes with his operations. Not only is the exact spot covered by the ladder inaccessible, but a considerable area around and below it is surrounded with insufficient clearance for him to perform his work. The unit provided by the present invention will support the upper end of the ladder at a desired distance away from the wall so as ot give adequate freedom of arm movement between the ladder and the wall surface. The area covered by the bearing portion of the device is so small that paint can be applied to it as a touch-up operation on movement of the ladder to a succeeding station.

Work performed on the roof of a house, particularly around the area adjacent the eaves, presents a rather difficult problem where an eavestrough installation is present. The trough is usually formed of relatively light-gauge sheet metal, and one hesitates to lean a ladder against it for fear of crushing the cross section of the trough. Yet, there is usually no other way for a workman to obtain access to the roof without considerable inconvenience. Through the use of a device embodying the present invention, the ladder may be supported at such a point that the upper end of it is disposed approximately opposite the eavestrough, with the load supportnig the ladder actually being carried by the wall of the house rather than by the eavestrough.

An important characteristic of the present invention is its formation in such a manner that it can be easily attached and detached from a ladder without the application of an elaborate fastening system. The preferred form of the present invention involves a length of bent steel rod, with the resilience of the rod being utilized to hold the unit in engagement with the ladder. The unit itself may be described as essentially including a bearing portion which rests against the wall, and a pair of opposite legs extending between the bearing portion and the ladder. The legs are each provided with ladder-engaging sections, and these are preferably adapted not only to transfer the bearing force of the wall over to the end of the ladder but also to prevent relative rotation of the device with respect to the ladder. This feature eliminates the danger of the unit slipping and permitting the upper end of the ladder to fall over against the supporting wall.

One modification of the ladder-engaging portion of the device is adapted to grasp one of the rails at spaced points on one side of the ladder. A rung is also engaged between these spaced points, the engagement with the rung being on the opposite side of the ladder from the spaced points on the rail. A moment's consideration of this arrangement will indicate that engagement of the device in this fashion will transfer bearing forces from the wall and also prevent the rotation of the device relative to the ladder. This type of engaging portion may be disposed on one of the legs, with the other leg bearing against the opposite rail with sufficient force (contributed by the resilience of the legs) to maintain the solid engagement of the connection opposite from it.

Another modification of the present invention obtains the stability of the unit through engaging the rail or rails at opposite points on the opposite sides of the ladder, and preferably engaging a rung also to position the unit along the length of the ladder. With the rail securely grasped on opposite sides, it follows that rotation of the unit with respect to the ladder is prevented, or at least limited to an established degree of freedom of movement. This type of engaging portion can conveniently be provided at the ends of both legs, and the unit may be installed on the ladder by deflecting the legs toward each other a sufficient amount to permit insertion between the rails. The resilience of the legs then causes expansion of the ends of the device into engagement upon the release of the deflecting forces.

The several features of the present invention will be analysed through a discussion of the particular embodiments illustrated in the accompanying drawings. In these drawings,

Figure 1 presents a view in elevation showing a conventional straight ladder leaning against a house with its upper end supported at a distance from the wall by a device embodying the present invention.

Figure 2 is a view showing the first step in installation of one modification of the present invention.

Figure 3 shows a succeeding step in installation of the device illustrated in Figure 2.

Figure 4 shows the final assembled position of the device shown in Figures 2 and 3.

Figure 5 shows a perspective view of the device installed according to the steps shown in Figures 2, 3 and 4.

Figure 6 presents a perspective view of a modified form of the present invention fully installed on a ladder.

Figure 7 illustrates the first step in the installation of a device of the type shown in Figure 6.

Figure 8 illustrates a succeeding step of the installation of the device shown in Figure 6.

Figure 9 shows a further succeeding step prior to the arrival of the unit in the assembled position shown in Figure 6.

Referring to Figure 1, a conventional straight ladder **10** is shown adjacent a wall **11** of a house. A positioning unit **12** supports the upper end **13** of the ladder at such a distance away from the wall **11** as to permit work to be done on the wall without interference from the ladder. The eave **14** of the house is also made accessible to the user of the ladder without requiring that the ladder be leaning against the eave.

Referring to Figure 5, the ladder **10** is composed of the rails **15** and **16** and a series of rungs, two of which are indicated at **17** and **18** in Figure 5. The supporting unit **12** mounted on the upper end of the ladder **10** includes a bearing portion **19** which rests against the house, and the opposite legs **20** and **21**. Preferably, the unit **12** is formed of bent steel rod, and the proportions of the device are such that a considerable amount of resilience exists permitting relative deflection of the legs **20** and **21** with respect to each other. The outer end of the leg **21** is formed into a rail-engaging portion including the transverse section **22**, the segment of the loop **23**, and a second transverse portion **24**. The two transverse portions **22** and **24** engage the rail **16** at spaced points on one side of the ladder, and the loop segment **23** engages the rung **17** on the opposite side of the ladder from the spaced points. When engaged, it will be noted that the leg **21** is not only stabilized in bearing (these forces being transmitted to the rung **17**), but also against relative rotation with respect to the rail **16**.

The opposite leg **20** is also provided with an engaging

portion, but this section of the device need not necessarily stabilize the unit against rotation. It is preferable that the engaging portion on the leg **20** absorb some of the bearing load, but this is not a vital factor. The primary importance of the engaging portion of the leg **20** is to maintain the secure engagement of the transverse portions **22** and **24** and the loop segment **23**. A transverse portion **25** on the leg **20** joins a loop segment **26** adapted to reach around the rung **17** and position the upper end of the leg **20** in a direction parallel to the ladder. This arrangement also permits the leg **20** to take a share of the bearing force required to support the ladder. The leg **20**, however, is not stabilized against rotation with respect to the ladder, except as it is positioned by the effect of the leg **21**.

The installation of the positioning unit **12** is performed according to the sequence illustrated in Figures 2, 3, and 4. Figure 2 presents the first step in the sequence, and involves the insertion of the engaging portion of the leg **21** so that the loop **23** is assembled to the rung **17**. This movement is done with the unit in approximately coplanar relationship with the ladder. The unit is then moved to the right with respect to the ladder as shown in Figure 2 a sufficient amount so that the transverse portion **22** is positioned opposite the rail **16**, and the leg **21** and the loop **23** fall on opposite sides of the rail. On arrival at this position, and with the leg **21** at enough of an angle to the rail **16** so that the transverse portion **24** clears the inside of the rail, the device can be rotated in a counterclockwise direction as shown in Figure 1 to the point where the transverse portion **24** can be urged into engagement with the rail. The formation of the loop segment **26** on the leg **20** is preferably such that it is not engageable with the rung **17** except on a considerable amount of deflection of the leg **20** tending to decrease the angle between the leg **20** and the transverse portion **25**. With this arrangement, a firm and solid engagement takes place which gives a feeling of solidity and security to the user of the ladder. It will be noted that the length of the transverse portion **25** is considerably greater than the width of the rail **15**, the primary purpose of this relationship being to give a more adequate basis for the deflection mentioned above. When assembled in the condition shown in Figure 5, the natural resilience of the unit **12** will maintain its secure engagement with the ladder **10** through any type of forces normally applied to it.

In Figures 6 through 9, a modified form of the present invention is illustrated involving a different formation of the engaging portions at the ends of the legs. This modification of the invention includes a bearing portion **27** and the opposite legs **28** and **29**. These portions of the device are similar, respectively, to the base portion **19** and the legs **20** and **21** of the previously-discussed embodiments. At the ends of both of the legs **28** and **29**, an engaging portion is formed which includes the U-sections **30** and **31**, the loop segment portions **32** and **33**, respectively, and the sections **34** and **35** disposed parallel to the back of the U-sections **30** and **31**, and spaced a sufficient amount therefrom to accommodate the rung **36** therebetween. To install this device, one of the engaging portions may be applied to the rung **36** in the fashion shown in Figure 7. The legs **28** and **29** may then be deflected toward each other a sufficient amount so that the ends of both the legs **28** and **29** can be admitted between the rails **37** and **38**. This procedure is in process in Figure 8. After the insertion of the leg **28** and its engaging portion inside the rail **37**, it is thrust through the plane of the ladder a sufficient amount so that the rung **36** may be positioned between the U-shaped section **31** and the portion **35**. The leg **28** is then moved in the opposite direction (upwardly as shown in Figure 9) so that the rail **37** is in position to be received within the U-shaped section **31**. The natural resilience of the unit will force the two engaging portions outwardly, and maintain their solid connection with the rails **37** and **38**. It is preferable, however, that the sides of the U-shaped sections **30** and **31** be formed somewhat "closed" (i. e., closer together at the ends of the U configuration than at the back) to create the tendency to grip the rails more firmly. The engagement of the sides of the U-shaped sections **30** and **31** will prevent the rotation of the unit with respect to the ladder, and will also transfer the bearing forces from the supporting wall over to the ladder.

The particular embodiments of the present invention which have been illustrated and discussed herein are for illustrative purposes only and are not to be considered as a limitation upon the scope of the appended claims. In these claims, it is my intent to claim the entire invention disclosed herein, except as I am limited by the prior art.

I claim:

1. A support for positioning the upper end of a ladder at a distance from a wall, said ladder having rungs and rails, comprising: spaced opposite resilient leg means connected adjacent one end thereof; first ladder-engaging means, said first ladder-engaging means being connected to one of said leg means and including means for engaging a rail at spaced points along said ladder on one side thereof and a rung adjacent said spaced points, said rung being engaged on the opposite side of said ladder from said spaced points by a loop portion of said first ladder-engaging means extending between said spaced points to lock said leg means in position against movement with respect to said ladder; and second engaging means, said second engaging means being connected to the other of said leg means and adapted to engage a rung and also the opposite rail of said ladder from that engaged by said first engaging means, said engaging means being engageable with said ladder only on deflection of one of said leg means with respect to the other.

2. A support for positioning the upper end of a ladder at a distance from a wall, said ladder having rung means and rail means, comprising: spaced opposite resilient leg means connected adjacent one end thereof; and ladder-engaging means on said leg means for stabilizing said support, said engaging means including a loop portion engageable with said rung means to limit movement of said support in either direction along said ladder, parts of said loop portion being formed outwardly to engage said rail means on opposite sides thereof, said engaging means being engageable with said rung means and said rail means only on deflection of one of said leg means with respect to the other.

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