Aug. 25, 1925. 1,551,395

H. F. HUSTED

ADJUSTABLE FOOT DEVICE FOR LADDERS

Filed April 11, 1925

Fig. 1.

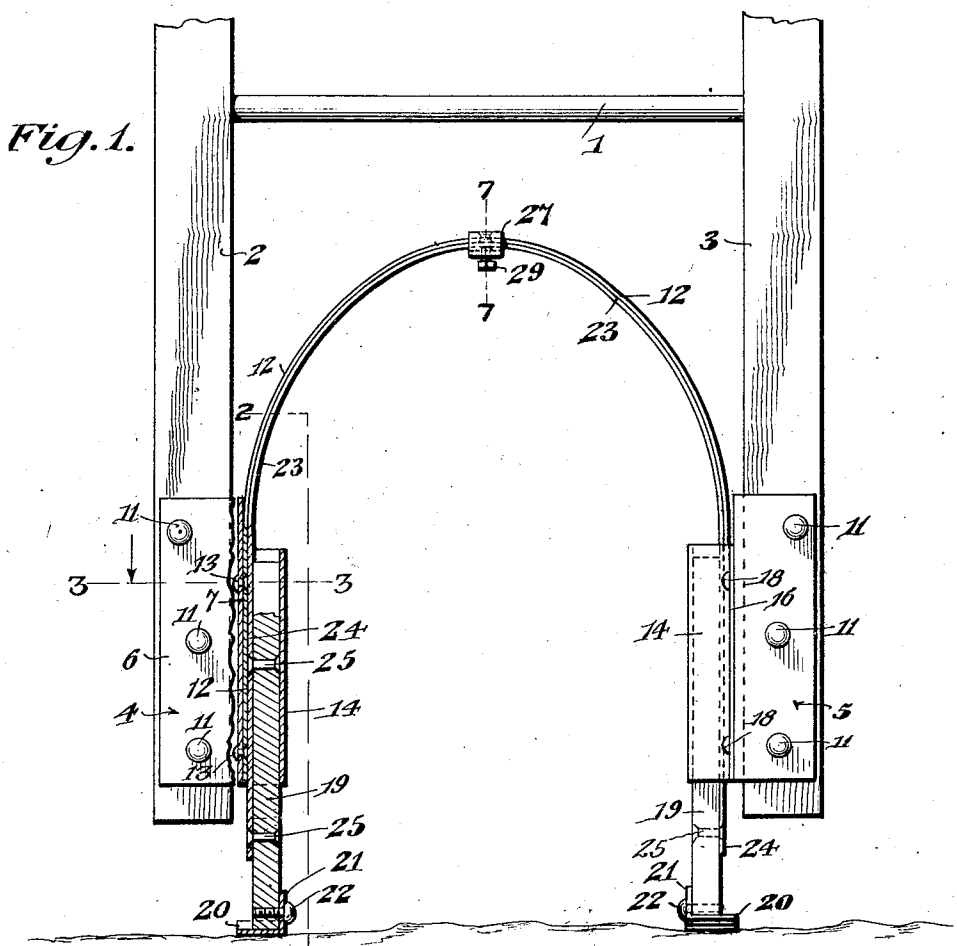

Fig. 2.

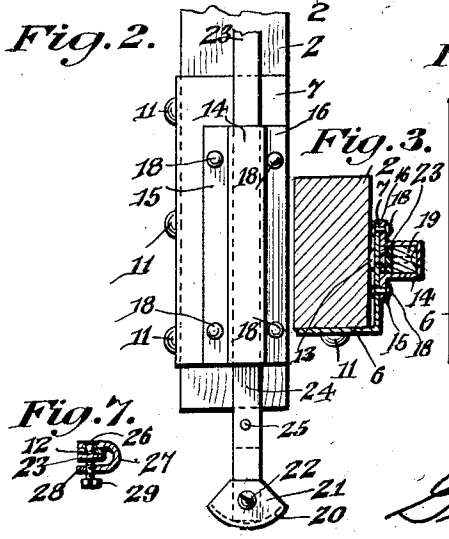

Fig. 3.

Fig. 4.

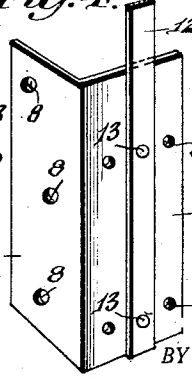

Fig. 5.

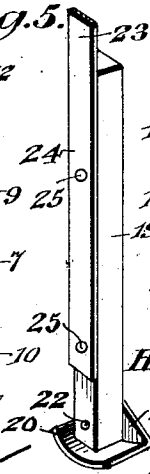

Fig. 6.

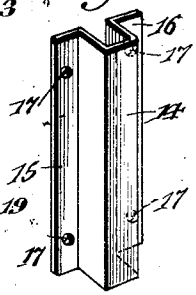

Fig. 7.

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UNITED STATES PATENT OFFICE.

HARRY F. HUSTED, OF DALLAS, PENNSYLVANIA.

ADJUSTABLE FOOT DEVICE FOR LADDERS.

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To all whom it may concern:

Be it known that I, HARRY F. HUSTED, a citizen of the United States, residing at Dallas, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Adjustable Foot Devices for Ladders, of which the following is a specification.

This invention relates to an adjustable foot device for ladders, and has for its object to provide, in a manner as hereinafter set forth, a device of such class with means to prevent the body of the ladder from inclining in a transverse direction from the vertical, thereby maintaining the ladder equalized when the device is mounted on an inclined or irregular shaped supporting surface.

A further object of the invention is to provide, in a manner as hereinafter set forth, an adjustable foot or equalizing device for a ladder, including means for locking the device in adjusted position to maintain the ladder equalized when the device is mounted on an inclined or irregular shaped supporting surface.

A further object of the invention is to provide, in a manner as hereinafter set forth, a foot or equalizing device for a ladder, including a bodily shiftable carrier capable of being adjusted to equalize the position of the ladder when the carrier is mounted on an inclined or irregular shaped supporting surface.

Further objects of the invention are to provide, in a manner as hereinafter set forth, an equalizing device for ladders, which is simple in its construction and arrangement, strong, durable, compact, conveniently installed with respect to the lower end of a ladder, thoroughly efficient in its use, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts, as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claim hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a fragmentary view, in front elevation, of the lower portion of a ladder showing the adaptation therewith of an adjustable foot or equalizing device, in accordance with this invention, and with the device illustrated in sectional elevation.

Figure 2 is a fragmentary view, in side elevation, of the device.

Figure 3 is a section on line 3—3, Figure 1.

Figure 4 is a perspective view of one of the connecting members and further illustrating a portion of the coupling member which couples the connecting members together.

Figure 5 is a fragmentary view, in perspective, illustrating one of the equalizing members.

Figure 6 is a perspective view of an equalizing member guide.

Figure 7 is a sectional detail illustrating the locking member.

Referring to the drawings in detail, 1 denotes the lower round and 2, 3 the side bars of a ladder, and connected to, arranged between and projecting from the lower ends of said side bars is an adjustable foot or equalizing device, in accordance with this invention.

The foot or equalizing device comprises a pair of ladder connecting members, as indicated at 4, 5 and each of which is in the form of an angle iron consisting of an outer leg 6 and an inner leg 7. The leg 6 is provided with a series of openings 8, and the leg 7 with a pair of superposed rows of openings 9, 10. Each row of openings is arranged between the transverse center and an end of the leg 7 and consists of a pair of outer and an intermediate opening. The leg 6 of each of the connecting members is positioned against the front of a side bar of a ladder at the lower portion thereof, and said leg is fixedly secured to the side bar by a series of hold-fast devices 11. The leg 7 of each of the connecting members is positioned in parallelism to the inner side of a side bar and further in close proximity thereto, as shown in Figure 3.

The member 4 is coupled to the member 5 by a bow or arch-shaped coupling member 12 formed from a strap of spring metal and one end terminal of the member 12 is positioned against the outer face of the leg 7 of the member 4, and the other end terminal of the member 12 is positioned

against the outer face of the leg 7 of the member 5. The end terminal portions of the coupling member 12 extend at the longitudinal center of the leg 7 of said members 4 and 5, and each end terminal of the member 12 is fixedly secured to a leg 7 by hold-fast devices 13, which extend through said member 12 and also through the intermediate openings of the rows of openings 9 and 10. The coupling member 12 has its end edges flush with the lower edges of the legs 7 of the connecting member.

Secured to the leg 7 of each of the connecting members is a vertically disposed channel-shaped guide 14 of less height than the height of the leg, and said guide 14 is positioned against the leg 7 so that its bottom edge will be flush with the bottom edge of the leg and its top edge positioned at a point below the top edge of the leg. The guide 14 is provided throughout with a pair of oppositely extending laterally disposed flanges 15, 16, each provided with opening 17 for the passage of the hold-fast devices 18 to secure the guide 14 to a leg 7. The hold-fast devices 18 extend through the outer openings of the said pairs of openings 9 and 10. When the connecting members 4, 5 are secured to the side bars of the ladder, the heads of the hold-fast devices abut against the inner sides of the side bars 2, 3. When the guides 14 are secured in position the opposed inner side faces thereof abut against the side edges of the terminal portions of the member 12, or in other words, the guides 14 enclose the end terminal portions of the coupling member 12.

Slidably mounted in each guide 14 is an equalizing member and which consists of a bar 19 of greater length than and conforming in contour to the shape of the guide 14 in which it operates. Secured to the lower end of the bar 19 is an arcuate foot piece 20, provided with an upstanding flange 21. The lower end of the bar 19 seats on the upper face of the foot piece 20, and the flange 21 abuts against one of the side faces of the bar 19 and is secured to the bar by the hold-fast device 22. The flange 21 is quadrangular in contour and the length of the foot piece 20 is such as to project from the front, rear and outer side of the bar 19. The flange 21 is positioned against the inner side of the bar 19 and the latter permanently projects below a connecting member and a guide 14.

The equalizing members are coupled together through the medium of a bow or arch-shaped coupling member 23, formed from a strap of spring metal, and said member extends into each of the guides 14 and rides against the fixed terminal portions of the coupling member 12. The end terminal portions of the coupling member 23 are indicated at 24 and each is positioned against the outer side of a bar 19, as well as being secured to the bar by the countersunk hold-fast devices 25. The end terminal portions 24 of the coupling member 23 are so positioned and secured to the bars 19 that the said bars 19 will project a substantial distance below the termini of the coupling member 23.

The coupling member 23 has a normal tendency to expand and which provides for frictional engagement between the end terminal portions 24 and the end terminal portions of the coupling member 12 and further the normal tendency of the member 23 is to provide for it frictionally engaging with the coupling member 12 throughout.

Secured by the hold-fast device 26 to the coupling member 12, at its transverse center, as well as depending from the latter, is a yoke 27, which is disposed transversely with respect to the coupling member 12 and has its closed end projecting rearwardly therefrom. The width of the yoke 27 is greater than the combined thickness of the coupling members 12 and 23, and the lower arm 28 of the yoke 27 is positioned below and extends transversely with respect to the coupling member 23. Carried by the arm 28 is a binding screw 29, which is employed for the purpose of locking the members 12 and 23 together so as to prevent the shifting of the member 23 relative to the member 12. The member 23 is locked to the member 12 after the equalizing members have been adjusted.

For the purpose of equalizing the position of the ladder, when the adjustable foot or equalizing device is mounted on an inclined or irregular shaped supporting surface, the member 23 is released and one of the equalizing members vertically adjusted within its guide so as to position the ladder in a vertical position, or rather to position the ladder so that it will not incline in a transverse direction from the vertical, and after the equalizing member has been vertically adjusted the coupling member 23 is locked to the member 12 and under such conditions the ladder is maintained in the position to which it has been set.

It is thought that the many advantages of a foot or equalizing device for ladders, in accordance with this invention, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:—

An equalizing device for ladders comprising a pair of angle-shaped connecting members each adapted to have one leg thereof secured to a side bar of a ladder, an arch-shaped resilient coupling member having its

ends secured to the other legs of said connecting members, a guide secured to the last mentioned leg of each of said connecting members, an equalizing member slidably mounted in each of said guides and permanently depending therefrom, and an arch-shaped resilient coupling element connected to said equalizing members, extending upwardly from said guides and bearing against said coupling member.

In testimony whereof, I affix my signature hereto.

HARRY F. HUSTED.