(No Model.)

A. K. BERKMAN.

SAFETY LADDER ATTACHMENT.

No. 535,346. Patented Mar. 12, 1895.

Fig. 4.

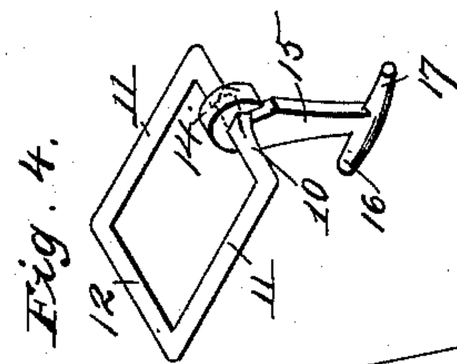

Fig. 5.

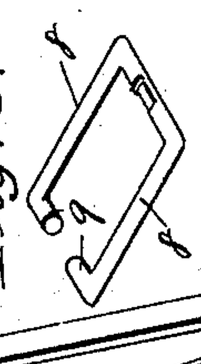

Fig. 3.

Fig. 2.

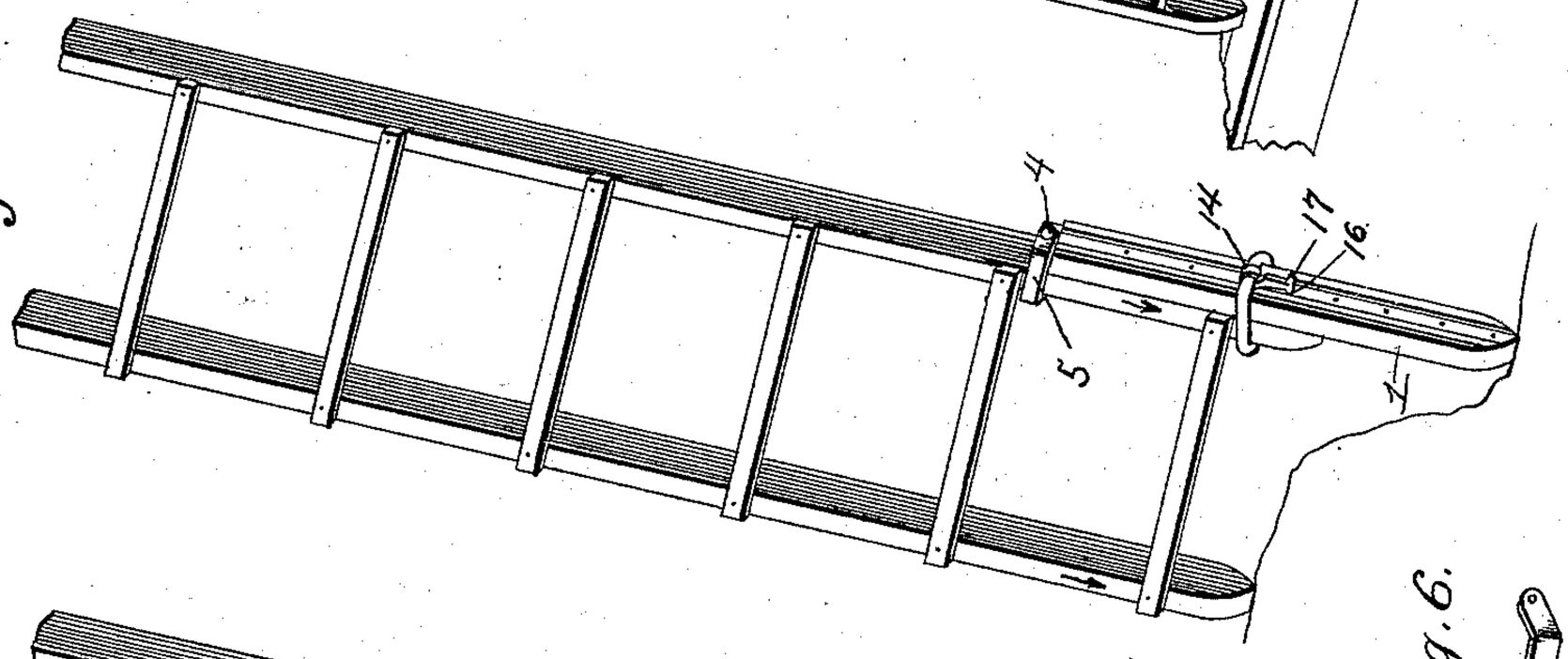

Fig. 6.

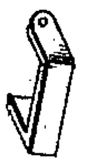

Fig. 1.

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SAFETY LADDER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 535,346, dated March 12, 1895.

Application filed November 5, 1894. Serial No. 527,924. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER K. BERKMAN, of Kansas City, Wyandotte county, Kansas, have invented certain new and useful Improvements in Ladder Attachments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to attachments for ladders, and the object of the same is to produce an attachment of this character which may be easily and quickly adjusted to accommodate the ladder to the irregularities or unevenness in the surface of the ground or other base upon which it is to be erected; furthermore, to provide an attachment of this character which is simple, strong, durable, and inexpensive of construction.

With these objects in view, the invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1. represents a perspective view of a ladder of ordinary construction, provided with adjustable attachments embodying my invention. Fig. 2. represents a perspective view of an ordinary two by four ladder, provided at one side with one of my adjustable attachments. Fig. 3. represents a perspective view of a step-ladder, which is also provided at one side with attachments embodying my invention. Fig. 4. is a perspective view enlarged of a device for securing said attachment at any desired point in its adjustment. Fig. 5. is a perspective view of one form of clip carried by my adjustable attachment. Fig. 6. is a perspective view of a different form of clip.

Similar numerals refer to corresponding parts in all the figures, in which—

1 designates a bar, which is reinforced at the margins of one side with the wear-plates or strips 2, 2, and is provided in the same side with a longitudinal series of recesses or holes 3. A guide clip or semi-sleeve 4, approximately U-shaped, is pivoted at one end by a screw or by any other suitable means to the side of each bar 1, occupied by the reinforce-strip 2. The body-portion 5 extends transversely of the bar 1 and the corresponding side of the ladder, and the opposite end 6 embraces the inner side of the said side-bar of the ladder. To cause this clip 4 to engage or release the ladder, it is operated upon its pivot. The said bar also may, or may not, as preferred, be provided with a second guide-clip or sleeve, which is formed preferably of a cylindrical rod and is bent to approximately rectangular shape, so as to comprise a body-portion which is rotatably or pivotally mounted in the bearing 7 carried by the bar 1 at the side provided with the reinforce-strips hereinbefore described, the parallel arms 8 projecting from the oppoiste ends of said body-portion, and the inwardly projecting flanges 9.

The construction just described is applicable only to ladders where the steps or rounds connect the side-bars about midway their width, such ladders, for instance, as are used by the various fire departments throughout the country, and as shown in Fig. 1.

When the attachment is to be used in connection with a two by four ladder the rectangular guide sleeves or clips previously described are dispensed with, because the flanges 9 would not permit them to be engaged with the side-bars of a two by four ladder, because the steps are nailed or otherwise secured to one edge of each side-bar, as shown in Fig. 2, or with a step-ladder where the side-margins of the steps are flush or approximately flush with the edges of the side-bars, as shown in Fig. 3. To overcome this difficulty I provide the attachments destined for use particularly with two by four ladders and step ladders with clips 4, similar to those in Fig. 1, which are pivoted at one end to the upper ends of said attachments. In this case, however, the clip must be sufficiently large to permit of the required amount of pivoted movement to disengage the inwardly projecting flange 6 from the side-bar of the ladder,—or in other words the edge of the portion 5 of

the clip must not come in contact with the ladder until the portion 6 has ceased to overlap the same at its inner side, so that a bar, 1, may be placed side by side with one of the side-bars of the ladder and the clip 4 caused to embrace one edge and the inner side of said side-bar, as clearly shown in Figs. 2 and 3, so as to hold the bar 1 firmly against the side of the ladder.

With the construction first described, it is necessary to cause the rectangular guide sleeve or clip to be secured in position by first fitting the same upon the lower end of the ladder and then sliding the attachment up to the required position. The reason for the difference of construction of the clips or sleeves carried by the attachments for different ladders will now be apparent, because a clip or sleeve of the rectangular construction employed in Fig. 1, could not be slipped up to the required position on the ladders shown in Figs. 2 and 3, because the steps thereof would interfere.

Referring now to the fastening device employed in connection with all of the attachments, 10 and 12 designate the end-portions of a rectangular frame, and 11 the side-bars thereof, which connect said end-portions 10 and 12. The end-portion 10 carries rotatably thereon the segmental head 14 of an arm 15, and said arm is provided at its opposite end with the oppositely projecting pin 16 and handle 17. To secure the attachment firmly after once being placed in position as shown in the figures of the drawings, the rectangular frame comprising the portions 10, 11 and 12 is slipped over the lower end of the attachment (which will be about four feet long) and over the lower end of the side-bar of the ladder, and with the arm 15 projecting upwardly. Immediately this position is attained and the ladder raised to the position required, and the sustaining power removed the weight of the same causes a slight downward movement, as indicated by the arrows in the drawings, and this downward movement being, of course, resisted by the bar 1, which rests at its lower end upon a stationary base or support, causes a corresponding upward movement or the equivalent thereof of the bar upon the ladder, and these opposite movements cause the frame to assume an oblique position, so as to bear frictionally against the inner side of the ladder and the reinforce-strips at the outer side of the bar 1. This operation, due to the friction of the segmental head 14 upon the outer or perforated side of said bar, causes the arm 15 to swing downward to the position shown in the drawings, when the pin 16 will automatically engage the first opening with which it registers as the sliding movement of the said bar and ladder continues, or the pin may be forced in the hole securely by the hand. It will now be seen that the weight of the ladder holds said pin securely within the opening. When it is desired to disengage this fastener from the recess or hole engaged by the pin 16, it may be grasped by the handle 17 and pulled outward. In connection with the fire-ladder I employ two such attachments, so that in case of irregularity of the ground or base upon which the ladder is to be supported, it will only be necessary to adjust longitudinally one or the other of said attachments, so as to obtain a square and firm support for the ladder. In connection with ladders for ordinary use, where time is not such an object, only one of the attachments need be employed, because in case the base or support for the ladder is irregular at one side or the other the ladder may be either turned around, or the attachment transferred from one side-bar to the other. With step-ladders attachments must be employed upon one side-bar and the corresponding brace-bar of the ladder, as shown in Fig. 3, so that in case work is to be done adjacent to a platform or step, the side-bar and brace-bar at one side of the ladder may rest upon said platform or step, and the attachments at the opposite side adjusted the proper distance to rest squarely upon the ground or floor, and thus afford a safe and substantial support for the ladder.

From the foregoing, it will be apparent that I have produced an adjustable attachment for ladders which may be easily and expeditiously secured in position or transferred from one side of the ladder to the other, and which is simple, strong, durable, and inexpensive of construction.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a ladder, of a bar fitting against the side of the same, a guide sleeve or clip carried by the side-bar and embracing the side of the ladder, a rectangular frame embracing the side of the ladder at its lower end and the said bar, and an arm carried by said frame provided with a pin engaging a hole or recess in the side of said bar, substantially as set forth.

2. The combination with a ladder, a bar provided with a longitudinal series of recesses or holes, and a guide sleeve or clip carried by said bar and embracing the side-bar of the ladder, of a rectangular frame embracing the side-bar of the ladder and the said bar, an arm rotatably mounted upon said rectangular frame and provided at said engaging end with a segmental head which frictionally engages the side of said bar, and provided at its opposite end with a pin engaging one of the apertures of said bar, substantially as set forth.

3. The combination with a ladder, a bar provided with a longitudinal series of recesses or holes, and a guide sleeve or clip carried by said bar and embracing the side-bar of the lad-

der, of a rectangular frame embracing the side-bar of the ladder and the said bar, an arm rotatably mounted upon said rectangular frame and provided at said engaging end with a segmental head which frictionally engages the side of said bar, and provided at its opposite end with a pin engaging one of the apertures of said bar, and having a handle projecting outwardly from said arm, substantially as set forth.

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

ALEXANDER K. BERKMAN.

Witnesses:

M. R. REMLEY,

G. Y. THORPE.