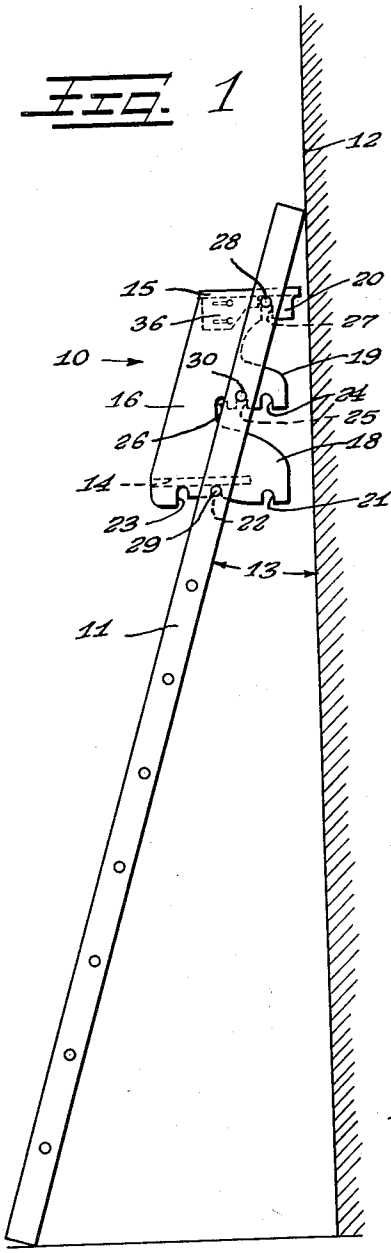
Aug. 9, 1960 J. W. REDDY 2,948,349

FOOT REST AND WORK PLATFORM ATTACHMENT FOR LADDERS

Filed Oct. 6, 1958 2 Sheets-Sheet 1

Fig. 1



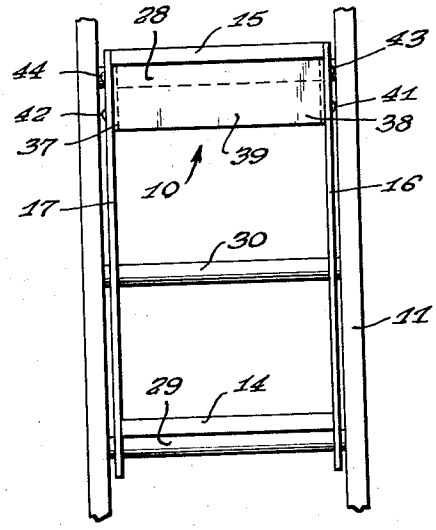


Fig. 2

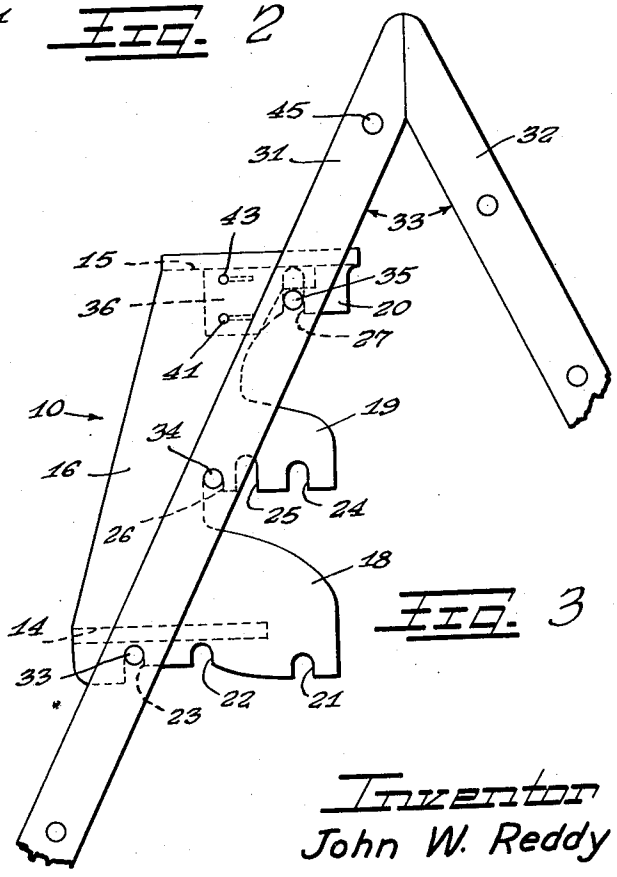


Fig. 3

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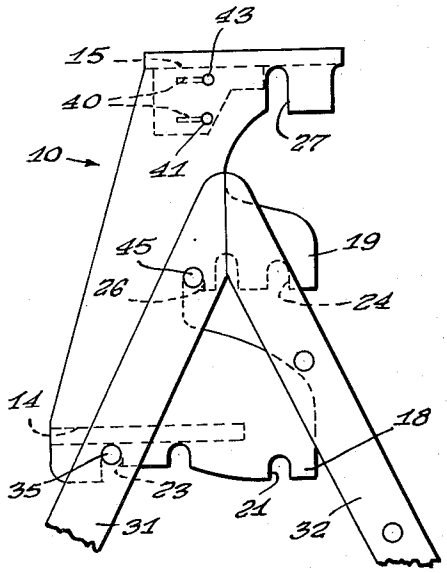


FIG. 4

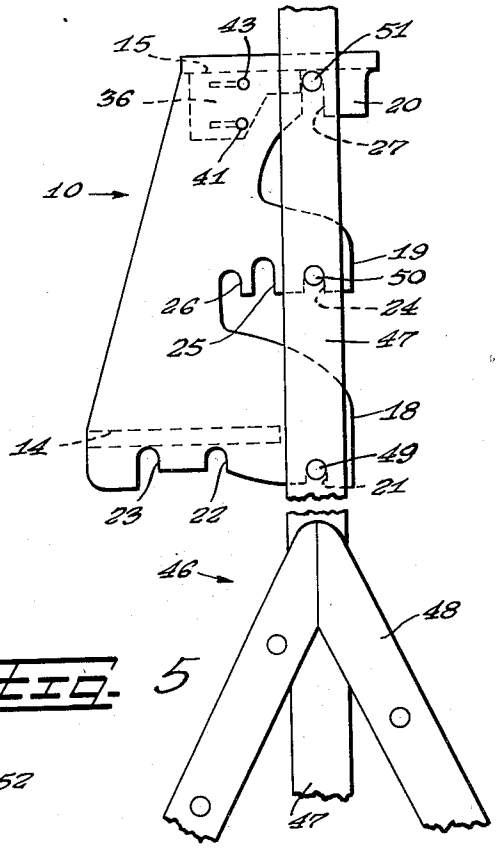


FIG. 5

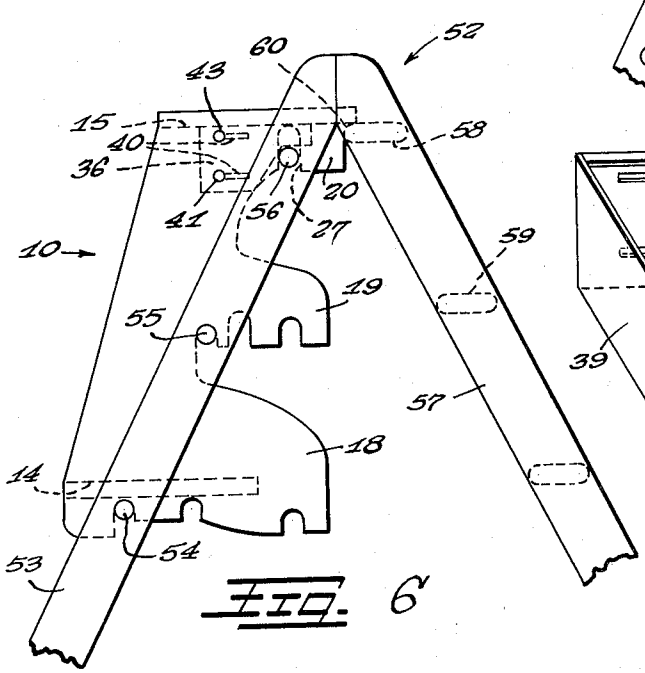


FIG. 6

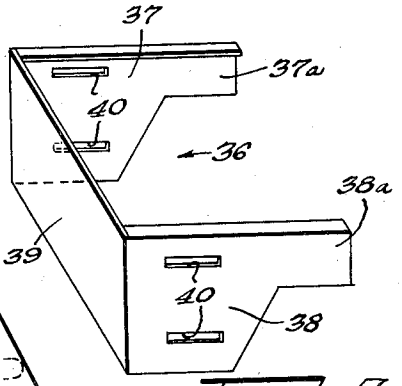


FIG. 7

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2,948,349

FOOT REST AND WORK PLATFORM ATTACHMENT FOR LADDERS

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6 Claims. (Cl. 182—121)

This invention relates to a ladder attachment. More particularly, this invention relates to a ladder attachment having a foot rest platform and a work equipment supporting platform which attachment may be readily secured to various types of rung ladders in various angular positions so that the foot rest platform will rest directly on a rung of the ladder which thereby receives the load on the platform directly.

It is a feature of the present invention to provide a first generally rectangular foot rest platform and a second similarly shaped work equipment supporting platform disposed in generally spaced parallel relationship to each other and connected by side wall members which have three projecting flange portions in which are located one or more rung receiving slots to secure the attachment to the ladder in such a fashion that the foot rest platform on which the user of the ladder may stand more comfortably than on a rung is nonetheless supported in load bearing position directly on one rung of the ladder. The work equipment receiving platform, which may for example be dimensioned to receive a bucket or pail of paint or any other desired working equipment, is preferably spaced above the foot rest platform by a distance equal to the space between three rungs of the ladder so that the two platforms each rest on a different rung of the ladder which rungs are separated by one intermediate rung. The side wall members which connect the two platforms have three projecting flange portions each of which has at least one rung receiving slot therein so that the attachment may be mounted on three consecutive rungs of the ladder. Preferably, the top flange portion immediately beneath the work equipment supporting platform need be provided only with a single slot whereas the second or intermediate flange portion is preferably provided with three slots any one of which is adapted to receive the intermediate rung in different angular positions of the ladder so as to maintain the platforms in horizontal position. The bottom flange portion is similarly provided with three appropriately spaced slots to cooperate with the intermediate flange in supporting the attachment in any desired one of the three angular positions of the ladder. Of course, it will be understood, that if desired, a greater number of slots could be provided in the intermediate and bottom flange portions to accommodate a greater number of angular ladder positions. By the provision of the intermediate flange portion, the over all stability of the attachment in its normal position is enhanced and this intermediate flange portion also makes it possible to secure the attachment to the top two rungs only of the ladder by means of the intermediate and the bottom flange portions so that the work supporting platform extends above the top of the ladder.

It is thus an object of the present invention to provide an attachment for a ladder wherein a foot rest platform and a work equipment supporting platform may be supported by the ladder in any one of a plurality of angular positions of the ladder.

It is a further object of this invention to provide such an attachment for a ladder wherein the platforms are both bottomed to rest directly on the rungs of the ladder so that the weight of any load on the platforms is borne directly by the rungs rather than by the side wall members of the attachment which may thus be made of very light weight material.

It is a further object of this invention to provide such a ladder attachment having a flat bottom surface so that it will remain in upright free-standing position when not in use on the ladder.

It is a further object of this invention to provide such a ladder attachment which is so dimensioned that a person standing on the foot rest or equipment standing on the work platform will always stand outside of the ladder rungs but inside of the ladder base so as to insure the over-all stability of the ladder and attachment.

It is a further object of this invention to provide such an attachment which is proportioned and dimensioned for weight balance so that it will easily drop in place on the rungs and will naturally assume a position in which the platforms are horizontal.

Other objects, features, and advantages of the present invention will be more fully apparent from the following detailed description taken in connection with the accompanying drawings in which like reference characters are used to refer to like parts throughout and wherein:

Figure 1 is a side elevational view showing the device of the present invention attached to a rung type ladder which is leaning against a vertical surface such as the side of a building at an angle of 15° therewith.

Figure 2 is a front elevational view of the ladder attachment device shown in Figure 1.

Figure 3 is a side elevational view showing the ladder attachment device illustrated in Figure 1 attached to a trestle-type rung ladder wherein the total angle included between the two portions of the ladder is 50° and wherein the angle made with the vertical by the portion of the ladder to which the device is attached is 25°.

Figure 4 is a side elevational view similar to Figure 3 but showing the attachment device secured to the two top rungs of one side of the trestle ladder so that the foot rest platform rests on the next to the top rung and the work equipment supporting platform projects above the top of the ladder.

Figure 5 is a side elevational view showing the attachment device of the present invention attached to the vertical extension portion of a trestle extension ladder.

Figure 6 is a side elevational view showing the attachment device of the present invention secured to the top three rungs of an electrician's type trestle ladder and illustrating the manner in which the upper work equipment supporting platform and its associated flange mates with the step members on the other portion of the trestle ladder.

Figure 7 is a perspective view of the bracket member shown included in the attachment device in Figures 1 and 2, which is adjustable to different positions to accommodate different angular positions which the ladder may assume.

Turning now to the drawings, and in particular to Figures 1, 2 and 7 thereof, there is shown a ladder foot rest and work equipment platform attachment indicated generally by the reference character **10**. In Figures 1 and 2, the attachment device **10** is shown secured to a ladder **11** of the rung type which is leaning against the vertical side **12** of a building or the like. In Figure 1, the angle **13** between the ladder and the vertical surface **12** is shown by way of example as being equal to 15°.

The attachment device **10** comprises a first foot rest platform **14** and a second work equipment supporting platform **15** positioned in generally parallel spaced rela-

tionship by first and second side members **16** and **17** respectively, which are each attached to opposite edges of each of the platforms **14** and **15** so that the side members **16** and **17** are preferably in generally parallel relationship with each other and in generally perpendicular relationship to each of the platforms **14** and **15**. The side members **16** and **17** may be rigidly secured to each of the two platforms **14** and **15** by any convenient means such as screws and glue or by any well-known joint making method in conjunction with any other suitable securing means. Each of the platforms **14** and **15** is generally flat and rectangular in plan view and each is of such a width that when assembled between the side members, the device is dimensioned for ready insertion between the side rails of a ladder of standard commercial dimensions. The two platforms **14** and **15**, as noted above, are held in generally parallel spaced relationship by the side members **16** and **17** and are preferably positioned a distance apart such that the distance between the bottom surfaces of the two platforms is substantially equal to the vertical distance between the first and third of three consecutive rungs of the ladder when the ladder is positioned in the fifteen degree angular position shown in Figure 1. It will, of course, be understood that the choice of this basic angular position could be made for any other desired angle but that the 15° angle is shown by way of example since it corresponds to the most commonly used angular position of ladders of the type shown in Figure 1.

It will be noted from Figure 1 that in the preferred exemplary embodiment shown therein, the top of the side wall members **16** and **17** terminates flush with the top surface of the upper or work equipment supporting platform **15** whereas the bottom of the side wall members **16** and **17** projects below the bottom surface of the lower foot rest platform **14** for a purpose presently to be described. It will, of course, be understood that the side wall members could, if desired, project slightly above the upper platform **15** in order to form a portion of a guard rail for equipment placed thereon. It will be noted that each of the side wall members **16** and **17** is provided with a first projecting flange portion **18**, a second projecting flange portion **19**, and a third projecting flange portion **20**. The lower or first flange portion **18** is provided with three rung receiving slots **21**, **22** and **23**, the intermediate flange portion **19** is also provided with three slots dimensioned to receive a rung of the ladder, the slots being indicated at **24**, **25** and **26**, and similarly, the third or upper flange **20** is provided with a single rung receiving slot **27**. In Figure 1, rung **28** of ladder **11** is shown received within slots **27** of flange **20** and rung **29** of ladder **11** is shown received within slot **22** of flange **18**, whereas rung **30** of the ladder is shown received within slot **25** of the intermediate flange **19**.

It will be noted that slot **27** extends upwardly in the flange **20** so that the top of the slot is aligned with the bottom surface of the work equipment supporting platform **15** and that similarly, the slots **22** and **23** in flange portion **18** which flange extends downwardly below the foot rest platform **14** extend upwardly in the flange so that the top of the slots **22** and **23** are aligned with the bottom of the foot rest platform **14**. Due to this arrangement, it will be noted from Figures 1 and 2 that when the attachment **10** is secured to the ladder by inserting the rungs of the ladder in the slots, the bottoms of both platforms rest directly on the rungs. Since the foot rest platform **14** is bottomed directly on the rung **29** as noted, a heavy man standing on this platform will in effect be standing insofar as the load is concerned, directly on the rung. Of course, the greater width of the footrest platform affords considerably greater comfort and ease in standing on the ladder, but the fact that the platform rests directly on the rung, places the load directly on the ladder rather than on the side wall members **16** and **17**.

It will be noted that the slots **22**, **25** and **27** in flanges **18**, **19** and **20**, respectively, have their centers aligned on a straight line which makes a 15° angle with a vertical line passing perpendicularly through the platforms **14** and **15** so that when the ladder **11** is positioned as shown in Figure 1 at a 15° angle to the vertical side wall **12**, the attachment **10** when secured to the ladder by insertion of rungs **28**, **29** and **30** in the associated slots will have its platforms **14** and **15** positioned in a horizontal plane.

In Figure 3, the ladder attachment device **10** is shown mounted on one portion **31** of a trestle ladder having its second portion **32** positioned at a total included angle **33** of 50° with respect to portion **31**. The portion **31** of the trestle ladder is thus at a 25° angle with the vertical. In order to accommodate attachment of the device **10** at the 25° angle while still maintaining the platforms **14** and **15** in a horizontal position, the device is attached to the three consecutive rungs **33**, **34**, and **35** of the portion **31** of the trestle ladder by inserting these rungs respectively in the slot **23** of flange member **18**, the slot **26** of flange member **19**, and the slot **27** of flange member **20**. It will be noted that slots **22** and **23** in the lower flange member **18** both extend up to the bottom of the platform member **14** and are therefore both necessarily at the same horizontal level. It will further be noted that slot **26** in flange member **19** is not as deep, that is, does not extend as far upwardly into the flange member as the slot **25** which is used when the ladder angle is 15°. This difference in depth or height of the slots is, of course, necessary in order to accommodate the greater slant distance which exists in the 15° position for a reason which will be explained presently. It will further be noted that the slot **27** is used to receive the top rung **28** in Figure 1 and **35** in Figure 3 for either angular position of the ladder. If, however, the top slot is to be common to different angular positions, it is apparent that the slant distance from the top to the different bottom slots in different positions of the ladder will have to be different in order to maintain the platforms horizontal in any one of the positions.

In order to accommodate this difference in distance, the attachment device **10** is provided with an adjustable bracket member shown generally in dotted lines in Figures 1 and 2 and shown in perspective view in Figure 7. The bracket member **36** consists of a pair of side wall members **37** and **38** and a front wall member **39** to which the side wall members are prependicularly attached so as to form a generally U-shaped bracket. Each of the side wall members **37** and **38** is provided with a narrowed end portion or flange **37***a* or **38***a* which has a depth exactly equal to the above-discussed differences in slant distance between the top and bottom platforms **15** and **14**, respectively, in the 15° and 25° positions of the ladder. The width of the front member **39** is such that the bracket is slidably received between the side members **16** and **17** of the attachment device **10**. Each of the side members **37** and **38** of the bracket **36** are also provided with a pair of slots **40** to facilitate adjustable attachment of the bracket to the side wall member. As may best be seen in Figure 2, the side wall members **16** and **17** of the attachment device may conveniently be provided with bolts **43** and **44**. These bolts are positioned to be received in the slots **40** as may be best seen in Figure 2 so that the top edges of the front and sides of the bracket rest securely under the work equipment supporting platform **15**. The bolts are each provided with a wing nut which may be loosened so that the bracket member **36** may be adjusted by sliding the bracket so that the bolts ride to different positions in the slots **40**. More particularly, it will be noted that when the bracket member **36** is in what may be called the retracted position shown in Figure 1, the end portions **37***a* and **38***a* of the bracket member are positioned forwardly of the slot **27** so that the rung **28** seats fully in the slot and directly against the work supporting platform **15**. On

the other hand, when a 25° ladder angle is to be accommodated, the bracket **36** is positioned in what may be termed its inserted position by loosening the wing nuts and sliding the bracket inwardly so that the end members **37***a* and **38***a* slide over the top of the slot **27** so that the rung **35**, for example, will seat against the bottom edge of the portions **37***a* and **38***a* of the bracket member **36** rather than directly against the work platform **15** thereby reducing the slant distance between the horizontal platforms **15** and **14** in order to accommodate the smaller slant distance between the associated rungs in the 25° position. The necessity for this adjustment can be most easily visualized by considering the center of the slot **27** as the center from which an arc is struck having a radius equal to the distance between alternate rungs on a standard commercial ladder. It is apparent that where the top rung is held in a fixed position and the ladder is rotated to various angles from this position, the three slots **21**, **22** and **23** in flange **18** should lie on the above noted arc. Since this cannot be done and still maintain the tops of the slots immediately adjacent the bottom of the foot rest platform **14**, the adjustable bracket is provided to compensate for the difference in distance at various angles. In the preferred embodiment of the invention shown, the bracket is actively used in its inserted position only for the 25° ladder position shown in Figure 3. The bracket is retracted as shown in Figure 1 for the 15° position illustrated therein and, as will be discussed in detail below, the bracket is also retracted to accommodate a vertical ladder position as shown in detail in Figure 5.

In Figure 4 there is illustrated the manner in which the attachment **10** may be positioned on the same ladder shown in Figure 3 but using the two top rungs **35** and **45** of the trestle ladder and positioning the attachments so that the work equipment supporting platform **15** extends above the top of the ladder. In Figure 4, it will be noted that the device **10** has simply been moved upwardly, the next to the top rung **35** of the ladder being seated in the slot **23** of flange **18**, and the top rung **19** of member **31** of the ladder being seated in slots **26** of intermediate flange **19**. In this position or in this use of the device, of course, the work equipment platform **15** is supported solely by the side wall members **16** and **17**. However, the load on this platform will not normally be as great as that on the foot rest platform **14** which as may be seen in Figure 4, still bears directly on the rung **35** of the ladder.

In Figure 5, there is shown an extension trestle ladder **46** which has a vertically positioned extension portion **47** supported by the lower trestle portion **48**. In order to position the attachment device **10** so that the platforms **14** and **15** are in a horizontal position when the device is attached to the vertical extension portion **47**, three consecutive rungs **49**, **50** and **51** of the vertical extension portion **47** are positioned or received respectively within the slots **21** of flange **18**, **24** of flange **19**, and **27** of the uppermost flange **20**. It will be noted that in this position the bracket **36** is retracted so that the top rung **51** seats directly against the top platform **15**. It will also of course be noted that the slots **27**, **24**, and **21** are positioned on a straight line which line is perpendicular to both the platforms **14** and **15** in order to accommodate a horizontal position of the platforms when the device is attached to the vertical extension **47**. Similarly, it will be noted that slots **27**, **25** and **22** are also positioned on a common straight line passing through the centers of the slots and making an angle of 15 degrees with the first mentioned vertical line in order to accommodate the 15° position of the ladder shown in Figure 1. Also, slots **27**, **26**, and **22** are similarly positioned so that their centers lie on a common straight line which line makes an angle of 25° with the first mentioned vertical line in order to accommodate the 25° position shown in Figure 3. It will, of course, be apparent that although the preferred illustrated embodiment shows provision for accommodating three different angular positions, provision could readily be made to accommodate either a greater or smaller number of angular positions in accordance with the needs of any particular application. If a greater number of angular positions are to be accommodated so that it is necessary to use the bracket member in more than one of these positions, the bottom edges of the end members **37***a* and **38***a* of bracket **39** could, of course, be slanted with respect to the top edge rather than being parallel to it as shown in Figure 7 so that the exact amount of distance compensated for by the bracket would depend upon the distance the bracket is inserted from its fully retracted position. That is to say, the bracket could in effect act as a wedge member.

In Figure 6, which is a side elevational view similar to Figure 3, the platform attachment device **10** is shown mounted on an electrician's type trestle ladder **52**. It will be noted that the member **53** of ladder **52** is provided with rungs such as the rungs **54**, **55** and **56** on which the device is mounted with the bracket **36** inserted to accommodate the 25° position. On the other hand, the member **57** of ladder **52** is in this type of ladder commonly provided with steps such as the steps **58** and **59** of the type commonly found in step ladders. It will be noted that the end of the flange member **20** is so dimensioned and is provided with a rounded portion **60** which permits the mating of the end of flange **20** with step **58**. In the position of the ladder attachment shown in Figure 6, it will of course be apparent that the work equipment supporting platform **15** is accessible from either side of the ladder **52**. That is to say, the attachment **10** provides the foot rest platform **14** for the member **53** of the ladder whereas the normal ladder steps of the member **57** may also be used if desired.

It will thus be seen that I have provided a foot rest and work equipment supporting platform attachment which is adaptable for a wide variety of uses with different types of rung ladders and which is simple in construction yet sturdy, stable, and convenient in use. Although it is presently preferred to construct the attachment device **10** of a suitable hard wood material, it will of course be understood that any suitable material of either metal or wood or the like could equally well be used. It should also be understood that although the illustrated preferred embodiment shows the device adapted for mounting between the first and third of three consecutive rungs of a standard commercial ladder, the device could also be constructed for mounting between a lesser or greater number of rungs in accordance with the needs of any particular application. For example, if it is desired to place the platforms **14** and **15** on two immediately adjacent rungs, the intermediate flange **19** could be omitted and the device so dimensioned as to achieve this end. On the other hand, the platforms **14** and **15** could equally well be mounted on the first and fourth of four consecutive rungs of a ladder simply by extending the length of the side wall members and preferably including a fourth flange member. Of course, in any one of these various possible modifications, the number of slots provided in each of the flanges other than the top flange will determine the number of different angular ladder positions which may be accommodated. It will be obvious that the number of different angular positions desired will depend upon the particular application for which the attachment is intended and that any reasonable desired number of slots could be used. In any arrangement of slots, however, it is preferred to retain the use of only the single slot **27** in the top flange **20** as illustrated in the drawing. This is not, however, a necessary limitation since a greater number of angular adjustments could obviously be achieved by the use of more than one slot in the top flange **20** if there is no objection to the resulting difference in relative positions with respect to the ladder of the plat-

forms 14 and 15 which would result from the use of more than one slot in the top flange 20.

While a preferred exemplary embodiment of the invention has now been described in detail, it will be understood that modifications and variations therein may be effected without departing from the spirit and scope of the novel concepts of the present invention as defined by the following claims:

I claim as my invention:

1. A foot rest and work platform attachment for a rung type ladder comprising, a first foot rest platform and a second work equipment supporting platform both being dimensioned for insertion between the side rails of a ladder, a first and second side wall members, said first side wall member being secured to one edge of each of said first and second platforms, said second side wall member being secured to the opposite edge of each of said first and second platforms, each of said side wall members having three projecting flange portions each having at least one rung receptive slot means dimensioned and positioned to receive one of three consecutive ladder rungs respectively, the first and third of said projecting flange portions being positioned beneath said first and second platforms respectively, the second projecting flange portion being positioned between said first and second platforms so that said attachment may be secured to the top two rungs of said ladder by said first and second projecting flange portions only so that said second work supporting platform projects above the top of said ladder.

2. A foot rest and work support platform attachment for a rung type ladder comprising, a first foot rest platform and a second work equipment supporting platform both being generally rectangular in shape and dimensioned for insertion between the side rails of a ladder, first and second side wall members secured to and positioning said first and second platform members in generally parallel spaced relationship to each other, each of said side wall members having three projecting flange portions, the first of said flange portions having three rung receptive slots therein, two of said slots extending upwardly and terminating immediately adjacent the bottom surface of said first platform, the second of said flange portions also having three rung receptive slots therein, the third of said flange portions having a single rung receptive slot therein, said slot extending upwardly and terminating immediately adjacent the bottom surface of said second platform, said slots in said flanges being positioned and dimensioned to receive three consecutive rungs of a ladder therein in any one of three pre-selected angular positions of said ladder so as to position said platforms horizontally for said pre-selected angular position of said ladder, and a bracket member adjustably attached to said side wall members and movable from a first position in which a portion of said bracket overlaps the top of said single slot in said third flange member to a second position in which said portion does not overlap said slot.

3. A foot rest and work platform attachment for a rung ladder comprising, a first foot rest platform and a second work equipment supporting platform both being dimensioned for insertion between the side rails of a ladder, first and second side wall members secured to and positioning said first and second platform members in spaced relationship to each other, each of said side wall members having a plurality of projecting flange members, each of said flange members having at least one rung receptive slot means dimensioned and positioned to receive a rung of said ladder, and a bracket member adjustably mounted between said side wall members and adjustable from a first position in which said bracket overlaps a slot in one of said flange members to vary its depth to a second position in which said bracket member does not overlap said slot.

4. A foot rest and work platform attachment for a rung ladder comprising, a first foot rest platform and a second work equipment supporting platform both being dimensioned for insertion between the side rails of a ladder, first and second side wall members secured to and positioning said first and second platform members in generally parallel spaced relationship to each other, each of said side wall members having at least two projecting flange portions, each of said flange portions having at least one rung receptive slot means dimensioned and positioned to receive a rung of said ladder to secure said attachment to said ladder, a single rung of said ladder being received within a pair of corresponding slots one in each of two flange members of which one projects from one side wall and the other from the other side wall, at least two of said pairs of corresponding slots being positioned and dimensioned so that both of said platform members may rest directly on rungs of said ladder, and one flange portion on each of said side wall members extending below said first foot rest platform a predetermined maximum distance which is the same at at least two points of said flange said distance being the same for the flange of each side wall to afford a four point level base on which said attachment may stand freely in an upright position when detached from said ladder.

5. A foot rest and work platform attachment for a rung ladder comprising, a first foot rest platform and a second work equipment supporting platform both being generally rectangular and dimensioned for insertion between the side rails of a ladder, first and second side wall members secured to and positioning said first and second platform members in generally parallel spaced relationship to each other, each of said side wall members having three projecting flange portions, a first of said flange portions having one rung receptive slot means, a second and a third of said flange portions each having three rung receptive slot means, each of said slot means being dimensioned and positioned to receive one of three consecutive rungs of said ladder to secure said attachment to said ladder, a single rung of said ladder being received within a pair of corresponding slots one in each of two flange members of which one projects from one side wall and the other from the other side wall, at least one said pair of corresponding slots being positioned and dimensioned so that at least one of said platform members rests directly on a rung of said ladder, and an adjustable bracket member secured between said side wall members and movable from a first position in which a portion of said bracket overlaps said slot in said first flange portion to a position in which said portion of said bracket does not overlap said slot.

6. A two plaform forming attachment for various selected rungs of a ladder comprising a rigid elongated frame having a height substantially equal to the spacing of at least three rungs of a normal ladder, said rectangular frame comprising two side rail members defining the height thereof and spaced apart to be parallel to, and be received between, the side rails of a normal ladder, the top and the bottom of said rigid rectangular frame comprising only two flat, wide members rigidly connected between said side rail members to provide upper and lower weight supporting platforms directly over, and supported by, the rungs of said ladder in normal use, and the side rails of said rectangular frame being wide and flat and having integral inwardly extending portions each with downwardly opening rung engaging slots therein, there being at least three pairs of said inwardly projecting portions spaced apart to match the spacing of three adjacent rungs of a normal ladder and to be engaged over three rungs or over two rungs thereof.

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