

Dec. 25, 1956

E. W. HAGADORN

2,775,489

SCAFFOLD

Filed May 20, 1955

3 Sheets-Sheet 1

Fig. 1

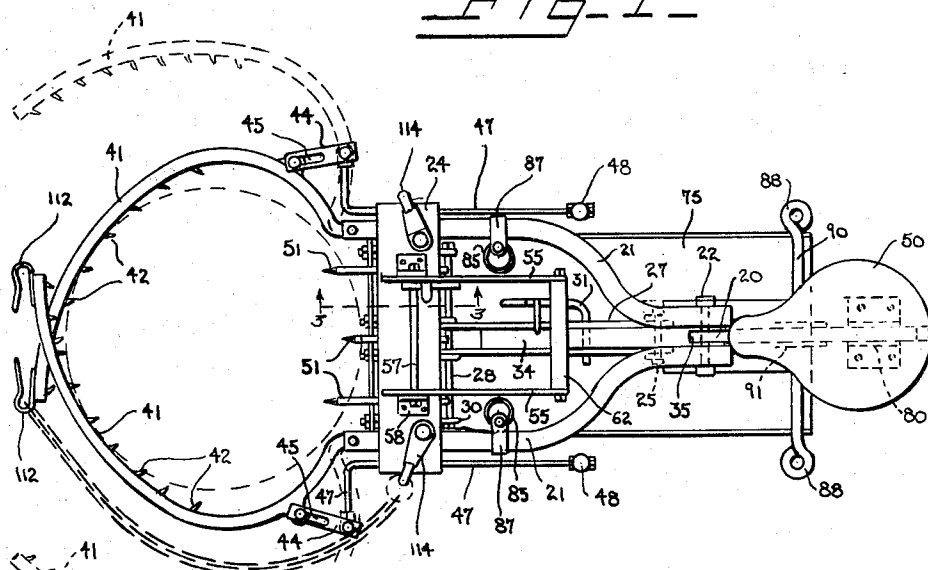
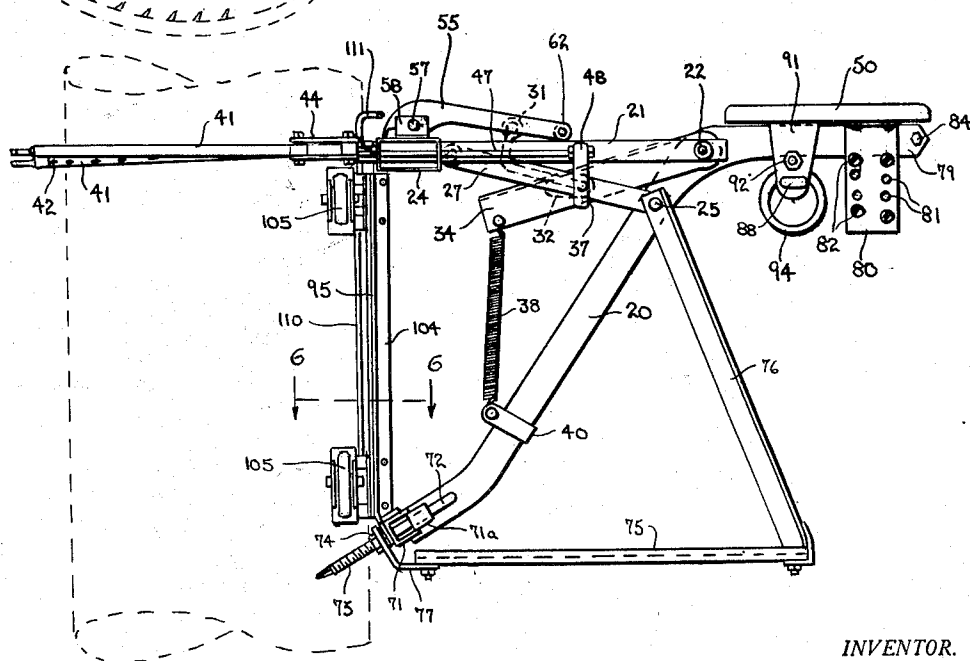


Fig. 2

INVENTOR.
ELMORE W. HAGADORN

BY

Richard von K. Brunn
ATTORNEY.

Dec. 25, 1956

E. W. HAGADORN

2,775,489

SCAFFOLD

Filed May 20, 1955

3 Sheets-Sheet 2

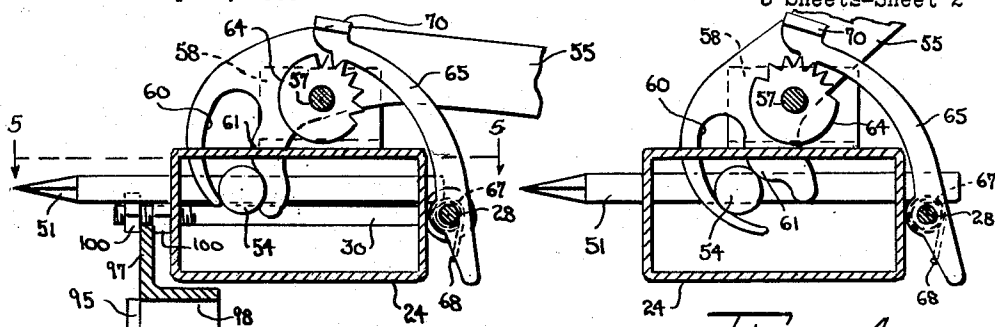


Fig-3-

Fig-4-

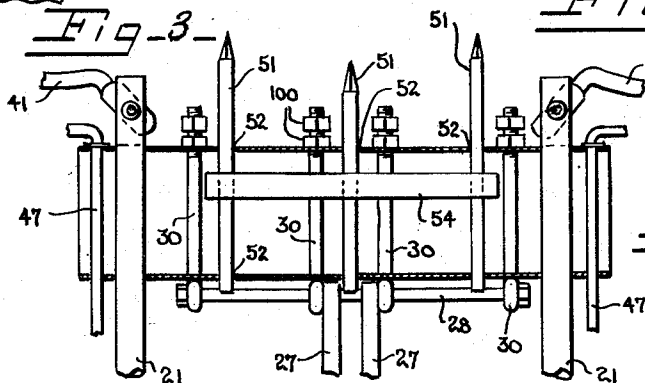


Fig-5-

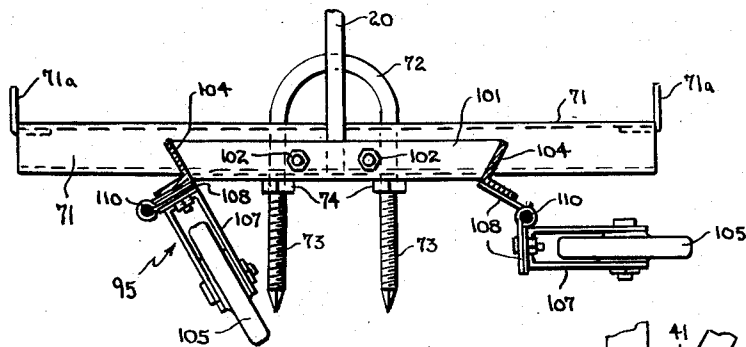


Fig-6-

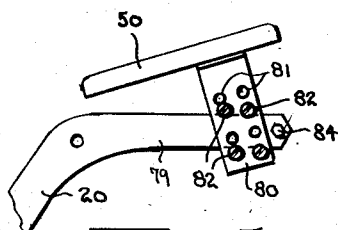


Fig-7-

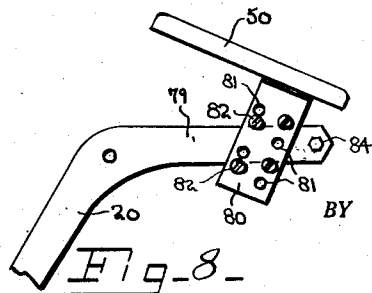


Fig-8-

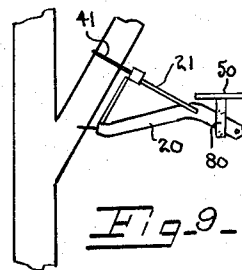


Fig-9-

INVENTOR.
ELMORE W. HAGADORN
BY
Richard von K. Brauns
ATTORNEY.

Dec. 25, 1956

E. W. HAGADORN

2,775,489

SCAFFOLD

Filed May 20, 1955

3 Sheets-Sheet 3

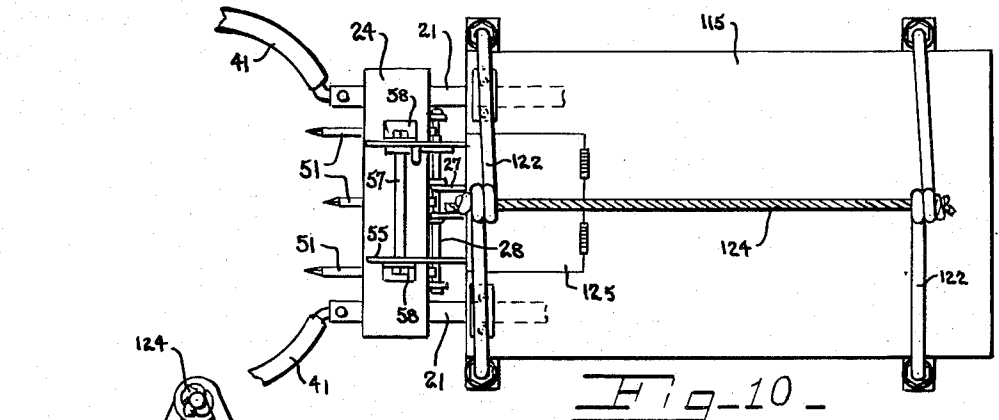


Fig-10-

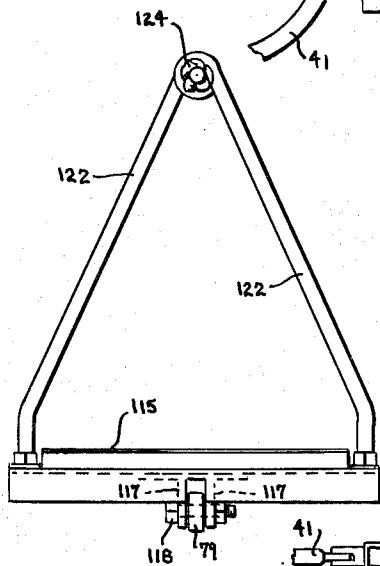


Fig-11-

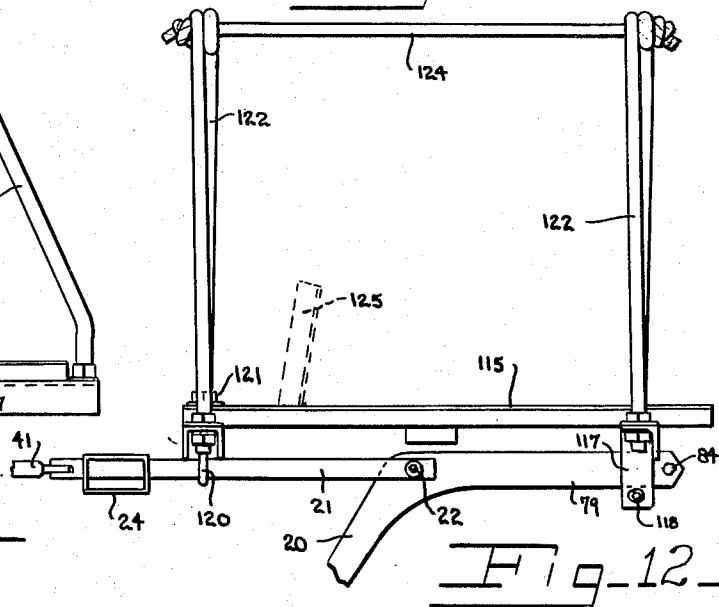


Fig-12-

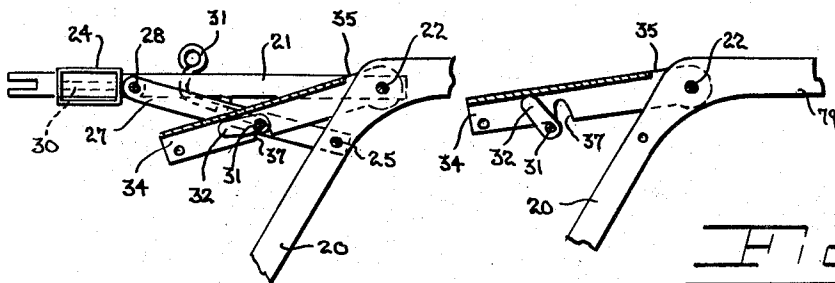


Fig-13-

Fig-14-

INVENTOR.

ELMORE W. HAGADORN

BY

Richard von K. Bruns
ATTORNEY.

1

2,775,489

SCAFFOLD

Elmore W. Hagadorn, Solvay, N. Y., assignor to Finishine Laboratories, Inc., Syracuse, N. Y., a corporation of New York

Application May 20, 1955, Serial No. 509,891

15 Claims. (Cl. 304—28)

This invention relates generally to scaffold constructions, and has particular reference to a novel scaffold or temporary support for workmen engaged in tree surgery, telephone or power line work, steeple repair work, and the like.

At the present time, it is usually the practice for workmen operating in elevated positions on trees, telephone poles and the like to support themselves by means of boot spurs and waist harnesses. The boot spurs or irons are thrust into the tree or pole and bear most of the workman's weight while the waist harness or strap is fastened around the pole and holds the workman in a substantially upright position so that his arms and hands are free to perform his task. This arrangement leaves much to be desired since the spur support places a great strain on the workman's legs, and the waist strap exerts an uncomfortable pressure on the kidney area of his back. As a result, the average workman can not remain at his station for extended periods of time but must descend to the ground at frequent intervals to rest and relax his muscles.

Since it is necessary for the workman equipped with boot spurs and a waist harness to frequently interrupt his work for rest periods, it will be apparent that the time necessary to complete the work and the cost of the labor are both greater than they would be if the work could be performed continuously. This inefficiency has led to various attempts in the past to provide an improved support means for this type of work, and several devices having a seat type support for the workman have been developed. Most of these devices, however, have proved to be of limited utility or have not had sufficient stability to enable the workman to use them with any confidence or comfort. At the other extreme, a special truck has been developed which is equipped with a hydraulically operated platform that can lift a workman to an elevated position adjacent a power line or the like and support him in safety and comfort while he performs his work. This equipment, however, represents a relatively large capital investment and at the present time is used chiefly only by large telephone and power companies since it is beyond the means of most small companies and independent operators.

With the foregoing and other considerations in view, it is the primary object of the present invention therefore to provide a greatly improved scaffold for workmen engaged in tree surgery, telephone or power line work, and the like, which scaffold provides a very safe and comfortable support for the workmen and yet can be manufactured at a moderate cost.

Another very important object of the present invention is to provide a scaffold for tree surgeons, telephone or power linemen, and the like, which enables a workman to sit or stand comfortably while performing his work, without any undue strain on his legs or back, so the work can be performed continuously without the necessity for frequent rest periods.

A further important object of the invention is to pro-

2

vide a scaffold for tree surgeons, linemen, and the like, which can be attached to a tree, pole or other upright support in such a manner that it is extremely stable and can safely support the weight of several workmen.

5 Still another important object of the invention is to provide a scaffold for tree surgeons, linemen, and the like, which is easily portable and can be carried and operated by one man.

A still further important object of the invention is to provide a scaffold for tree surgeons, linesmen, and the like, which is strong and durable and has utility in a large number of applications.

A more specific object of the invention is to provide a scaffold for the purposes described which is readily collapsible so that it is easy to transport and will fit into a relatively small space when not in use.

A further specific object of the invention is to provide a scaffold for the purposes described which can be hoisted up on a tree, pole or other fixed support while the workman is on the scaffold.

Another specific object of the invention is to provide a scaffold for the purposes described which can be attached to a tree, pole or other fixed support at any height and at substantially any angle, the scaffold being adapted for attachment to supports having a wide range of cross sectional areas.

Still another specific object of the invention is to provide a scaffold for the purposes described having an interchangeable saddle seat and platform arrangement, the platform being adapted to support up to three workmen in a standing position.

Other objects and advantages of the invention will become apparent from the following detailed description thereof read in conjunction with the accompanying drawings which illustrate a preferred embodiment of the invention for the purpose of disclosure.

In the drawings:

Figure 1 is a top plan view of an improved scaffold embodying the invention;

40 Figure 2 is a side elevation of the scaffold shown in Figure 1;

Figure 3 is a vertical section taken along line 3—3 of Figure 1, showing one position of the movable spikes and cam actuator therefor;

45 Figure 4 is a section corresponding to the section of Figure 3, showing another position of the movable spikes and cam actuator;

Figure 5 is a horizontal section taken along line 5—5 of Figure 3;

50 Figure 6 is a horizontal section taken line 6—6 of Figure 2;

Figure 7 is a fragmentary side elevation showing an alternative position of the adjustable saddle seat;

55 Figure 8 is an elevation corresponding to Figure 7, showing another alternative position of the adjustable saddle seat;

Figure 9 is a diagrammatic elevation showing a possible method of attaching the scaffold to a tree branch or other obliquely extending fixed support;

60 Figure 10 is a fragmentary top plan view of the scaffold with the work platform mounted thereon in place of the saddle seat;

Figure 11 is an end elevation of the work platform shown in Figure 10;

65 Figure 12 is a fragmentary side elevation of the scaffold and platform shown in Figure 10;

Figure 13 is a detail view, partly in section, showing the scaffold frame lock and cam release therefor; and

70 Figure 14 is a detail view corresponding to Figure 13 showing the frame lock in released position.

Having reference now to the drawings, wherein like reference numbers designate the same part in all the

3

views, Figures 1 and 2 show the scaffold or temporary support in operable position on a tree or pole indicated in dash lines. The main strength member of the scaffold frame is a strut 20, Figure 2, of some material such as aluminum, the strut being in the form of a reverse or S-curve. At the upper curve of the strut 20 a pair of tubular yoke members 21 is secured thereto as by a pivotal connection 22. Members 21 extend forwardly from the strut and the forward, spaced apart ends thereof pass with a sliding fit through aligned bores in an open-ended, rectangular box structure 24 which serves to hold the yoke members in fixed relation to one another in the same plane.

Secured to opposite sides of the strut 20 as by a pivotal connection 25 is a pair of links 27 which extend forwardly and upwardly, the forward ends thereof being pivotally secured to a rod 28 which is mounted on the box structure 24 by means of eye bolts 30, Figures 1, 2 and 5. An actuating lever or rod 31 passes through aligned bores in the links 27 with a free fit and a cam element 32, Figures 13 and 14, is fixed on the lever between the links. A narrow channel shaped member 34 is pivotally secured to the strut 20 by means of the same connection 22 which secures the yoke members thereto, the channel member bottom being cut away as at 35 to permit the member to straddle the strut inside the yoke members. The channel member 34 extends forwardly and downwardly between the links 27 and is formed with aligned slots 37 in its sidewalls which receive the actuating lever 31 when the scaffold is in extended, operable position as shown in Figures 1, 2 and 13.

A tension spring 38 extends between the forward end of the channel member and a strap 40 on the strut 20, Figure 2, and this spring exerts a downward force on the member which normally holds the lever or rod 31 in engagement with the slots 37. This locking arrangement prevents the yoke members 21 and strut 20 from swinging together and collapsing the scaffold frame but it can be released when desired by pulling upwardly on the handle portion of the actuating lever. Upward movement of the lever causes the cam element 32, positioned between the sides of the channel member, to rotate in a clockwise direction, Figures 13 and 14, and force the member upwardly so that the lever 31 becomes disengaged from the slots 37. This permits the yoke members and strut 20 to swing together, the links 27 causing the box structure 24 to slide forwardly on the yoke members during such movement, so that the scaffold frame occupies a smaller area and is more compact for carrying or storing.

Pivotally secured to the forward extremity of each yoke member 21 is a grab arm 41, Figure 1, which is preferably formed of steel and is substantially arcuate in shape. The grab arms are provided with a plurality of sharp teeth 42 which are adapted to engage the tree, pole or other upright support upon which the scaffold is mounted, the teeth being angularly disposed at predetermined angles with respect to the arms in order to bite into the support in the most effective possible manner. One end of a link 44 is secured to each grab arm 41 by means of a lost motion connection 45, and the other ends of these links are pivotally secured to the forward ends of L-shaped pull rods 47 which are slidably supported by the box structure 24. The pull rods extend rearwardly from the box and terminate in operating handles 48 within easy reach of the workman's saddle seat 50, to be described in greater detail hereinafter. By pushing or pulling on the handles 48, the workman can swing the grab arms into or out of engagement with trees and poles of various diameters as will be more fully explained presently.

Positioned between the forward extremities of the yoke members 21 are a plurality of spikes 51 which are adapted to engage the portion of the upright support that is directly adjacent the scaffold. In the embodiment

4

of the invention illustrated, there are three such spikes, the center spike being slightly shorter than the two outer spikes so that the points of the spikes lie on a curved line which conforms roughly with the curved surface of the support. Spikes 51 are slidably mounted in transversely aligned bores 52 in the side walls of the box structure 24, Figure 5, and are fixedly secured to a common bar 54 positioned longitudinally within the box. The bar 54 is moved laterally in the box structure, to move the spikes into or out of engagement with the upright support, by means of a pair of actuating arms 55, Figures 1-4, which are swingably mounted on a rod 57 supported by brackets 58 secured to the top wall of the box structure. The forward end portions of the arms 55 extend through slots in the top wall and are formed with arcuately shaped cam openings 60 which engage with opposite end portions of the bar so that swinging movement of the arms imparts lateral movement to the bar and spikes, the spikes being projected into engagement with the support when the arms are swung downwardly, or clockwise as viewed in Figures 3 and 4, and retracted out of engagement when the arms are swung upwardly. The rear sides of the arcuate cam openings 60 are formed with cam lobes or projections 61 which engage bar 54 when the arms are being swung downwardly and impart an added thrust to the spikes entering the support. These cam lobes also help to maintain the spikes in position when they are fully engaged as indicated in Figure 3.

The actuating arms 55 are operated in unison by means of an operating handle 62 which joins the rear ends of the arms and is located so that it is within easy reach of a workman seated on the saddle seat 50. In order to positively lock the arms in down position when the spikes are engaged with the upright support, a ratchet and pawl structure is provided comprising a ratchet wheel 64 and a pawl 65. Wheel 64 is mounted on rod 57 and is fixed to one of the arms so as to turn therewith. Pawl 65 is swingably mounted on rod 28 and is normally urged into engagement with the ratchet wheel by a coil spring 67 which is also positioned on rod 28 and has a hooked end extension engaging the pawl as at 68, Figures 3 and 4. The ratchet and pawl operate in the usual manner with the pawl tooth sliding on the teeth of the ratchet wheel during downward movement of the actuating arms but preventing upward movement of the arms until it is lifted out of engagement with the wheel by means of the tab 70 formed on the pawl for that purpose.

Having reference now to Figures 2 and 6, the lower end of the main strength member or strut 20 has secured thereto as by a welded interlocking connection an elongated tube 71 of square cross-section, the tube being disposed in substantially perpendicular relation to the longitudinal axis of the strut. The tube 71 serves as a footrest for the workman seated on the saddle seat 50 and is provided with small end plates 71a to keep the workman's feet from sliding off the tube. A U-shaped rod 72 is passed through a transverse bore in the strut 20 and aligned bores in the side walls of the tube so that the ends 73 of the rod extend outwardly from the front side of the tube as shown. The ends of the rod are threaded so that nuts 74 may be positioned thereon to secure the rod in position, and the extremities thereof are sharply pointed making the rod ends into spikes which are adapted to engage the upright support at a point spaced below the grab arms 41 and slidably mounted spikes 51, as indicated in Figure 2. Since it may, in certain instances, be more convenient for the workman to work in a standing position, a platform 75 of sufficient size to enable a workman to stand comfortably thereon is provided adjacent the footrest tube 71. Platform 75 is supported at its rear end by means of a pair of links 76 secured to the strut 20 at the pivotal connection 25.

5

The forward end of the platform is supported by means of a bracket or angle iron 77 which is secured to the ends of the rod 72 as by the nuts 74.

The workman's saddle seat 50 is adapted to be positioned on the rear end portion 79 of the strut 20, this portion of the strut being in substantially horizontal position when the scaffold is attached to a vertical or upright support as shown in Figure 2. The seat is provided with a pair of depending parallel plates 80 which are spaced apart to permit the end portion 79 of the strut to be received therebetween with a free sliding fit. The plates are formed with a plurality of aligned bores 81 which coact in various arrangements with a plurality of bolts 82 to enable the seat to be adjustably positioned at different angles on the strut. Thus, if the bolts are placed in the top pairs of bores, Figure 2, the end portion 79 of the strut will be positioned between the bolts and seat bottom so that the seat is mounted in a horizontal position, or parallel to the end portion of the strut. If, on the other hand, the bolts are arranged in the bores as shown in Figure 7, the end portion of the strut will be positioned between the bolts so that the seat has a forward tilt with respect thereto. Similarly, an arrangement as shown in Figure 8 will permit the seat to have a backward tilt with respect to the end portion of the strut. In all of these arrangements the bolts are removably secured in the bores by means of wing nuts (not shown), and the seat 50 is prevented from sliding off the rear end of the strut by means of a bolt and nut positioned in a bore 84 in the end of the bar. One reason for providing for angular adjustment of the saddle seat is shown diagrammatically in Figure 9 wherein the scaffold is attached to an obliquely extending tree limb and it is desirable to have the seat in a substantially horizontal position even though the scaffold frame necessarily tilts downwardly.

The scaffold is adapted to be hoisted up into position on the upright support by means of a sling (not shown) which cooperates in the usual manner with a block and tackle arrangement. The sling is preferably attached to the scaffold at four points whose location has been predetermined so that the scaffold will be in balance during the hoist, remaining in substantially the same position as shown in Figure 2 at all times. The attachment points are at the rings 85 secured by brackets 87 to the yoke members 21, Figure 1, and at the eyes 88 in the ends of an elongated rod 90 disposed at right angles to the bar 20. Rod 90 is supported by a U-shaped bracket 91 which is slidably mounted in inverted position on the end portion 79 of the strut 20, Figure 2. The bracket is provided with a nut and bolt arrangement 92 which is adapted to draw the sides of the bracket together and thus secure it in any adjusted position on the strut. If desired, the bracket can be inverted from its Figure 2 position and mounted on the end portion of the strut behind the saddle seat 50 so that the rod 90 is positioned above the strut. This may be of advantage if the workman is seated on the scaffold during the hoisting since the ropes secured to the eyes 88 in the rod will then pass on either side of his body giving him added support. A ring 94 is mounted on the rod 90 between the sides of the bracket 91 so that, after the scaffold has been attached in the desired position on the upright support, a line may be passed therethrough to haul up tools, supplies and the like.

In order to facilitate hoisting the scaffold up into position on the upright support, particularly when the workman is already seated thereon during the hoisting, an auxiliary dolly 95, Figures 2 and 6, may be attached to the scaffold, the dolly having wheels which engage the side of the support to reduce friction and space the spikes 51 and 73 outwardly therefrom. Dolly 95 is essentially comprised of a rectangular angle iron frame which is secured to the scaffold by positioning the flange 97 on the top member 98 of the frame between double nuts

6

100 on the eye bolts 30, Figure 3, and attaching the bottom member 101 of the frame to the footrest tube 71 as by bolts 102, the bottom member being obliquely disposed with respect to the main plane of the frame in order to fit in overlying relation with the tube as shown in Figure 2. The side members 104 of the frame are obliquely disposed with respect to the top and bottom members, Figure 6, so that the wheels 105 will squarely engage the curved surface of the upright support. The yoke 107 which rotatably supports each wheel is mounted on one leaf of a hinge member 108, the other leaf being secured to the frame side member. The two hinge members 108 on each side member are provided with a single elongated hinge pin 110 which extends upwardly from the frame and terminates in a handle 111 above the box structure 24, Figure 2. The hinge pins are keyed to yoke supporting hinge leaves so that the handles 111 can be turned to swing the wheels 105 out of engagement with the upright support as indicated on one side in Figure 6. A spring (not shown) engages the upper portion of each hinge pin, however, and normally holds it so that the hinge leaves are together with the wheels in support engaging position. The two wheels 105 at the bottom of the dolly frame are preferably slightly larger than the two upper wheels to allow for the taper of a tree or pole and also to space the bottom of the scaffold frame away from the support so that the bottom spikes 73 will clear during hoisting. When the auxiliary dolly 95 is attached to the scaffold, it will be understood that the latter can not be collapsed as previously described even though the locking arrangement is disengaged by the actuating lever 31.

In operation, a sling is attached to the scaffold as previously explained, and the scaffold is hoisted up to the desired work position on the upright support. With a proper block and tackle arrangement the workman can sit on the scaffold and pull himself up, or others on the ground can pull him up. In the alternative, the workman can stay on the ground and hoist the scaffold into position and then climb up himself using his spurs in the usual manner. In any case, once the scaffold is in position and while the sling is still attached, the handles 111 are turned to swing the wheels 105 out of engagement with the support. The bottom spikes 73 will then engage the support and if the workman is already seated on the scaffold they will penetrate deeply due to his weight. The grab arms 41, which are usually wide open during the hoisting as shown in dash lines in Figure 1, are then swung into engagement with the support by means of the operating handles 48. Thereafter, the slidable spikes 51, which are in retracted position during the hoisting, are forced into engagement with the support by swinging the actuating arms 55 downwardly with the operating handle 62. The scaffold is then securely attached to the support with the bottom spikes 73 in effect serving the same purpose as the workman's boot spurs and the grab arms 41 serving the same purpose as his waist harness in the old, uncomfortable supporting arrangement. The slidable spikes 51 provide added security and stability since they not only firmly engage the upright support but positively prevent any slipping or twisting of the scaffold as well. With this arrangement, the weight of the workman and any additional weight supported by the scaffold only causes the teeth 42 on the grab arms and the bottom spikes 73 to penetrate the upright support more deeply.

The scaffold is adapted for use with upright supports of varying diameters since the grab arms 41 can be used in their wide open position as shown in dash lines in Figure 1 and engage a support having a diameter as large as 30", or the arms may be overlapped to engage a support having a considerably smaller diameter. When the arms are used in their open position, it is usually desirable to supplement them with a chain which can be passed around the support and have its ends fastened to

hooks 112 on the ends of the arms, Figure 1, or two chains can be used, each extending between the hook on one of the grab arms and a snap connection 114 on the opposite side of the scaffold frame as shown in Figure 1. The chain or chains can, of course, be used in many other ways and can, if desired, even be used when the grab arms 41 are used in overlapping relation on a relatively small support.

Figures 10-12 show a platform 115 which may be secured to the scaffold frame in place of the saddle seat 50 and which will support as many as three standing men at one time. The platform is fastened at its rear end to the end portion 79 of the strut 20 by means of depending parallel plates 117 which are spaced apart to receive the end portion therebetween, the plates having aligned bores so that a bolt 118 can be passed therethrough to draw the plates into tight engagement with the end portion. The front end of the platform 115 is fastened to the yoke members 21 by means of U-bolts 120 which pass around the members and extend up through holes in the platform so that nuts 121 can be secured to the ends thereof to hold the parts together. An angular bar 122 is mounted on each end of the platform, the bars providing substantially triangular end supports as shown. A rope or line 124 may be stretched between the bars 122 to provide a knee grip or support for a standing workman if desired. Since the platform is necessarily positioned over the actuating arms 55 and operating handle 62 for the slidable spikes 51, a hinged panel 125 is provided in the platform to permit operation of these parts when the platform is mounted on the scaffold.

While the invention has been particularly described with relation to a work support for workmen such as tree surgeons and telephone or power company linemen, it will be apparent that the scaffold herein described can be used for many other purposes. For example, the spikes and teeth can be provided with friction-gripping hard rubber covers so that the scaffold can be used on metal upright supports such as flagpoles, masts and the like. The scaffold with platform and a protective cover could also be used in a tree as a deer hunter's watch post or military sniper's post. Two or more scaffolds can be attached to an upright support at substantially the same level so that planks can be secured thereto to provide a larger work station for a number of workmen. Other applications will undoubtedly occur to those skilled in the art, and all such applications are intended to be included within the scope of the invention.

This invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The embodiment disclosed is therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims.

What I claim is:

1. A device of the character described comprising a frame, a pair of grab arms pivotally secured to said frame, mechanical means to move said arms into or out of engagement with an upright support, a plurality of spikes slidably mounted on said frame, mechanical means to move said spikes into or out of engagement with the upright support, and a plurality of spikes fixedly secured to said frame and engageable with the support at a point below said arms and slidably mounted spikes.

2. A device of the character described comprising a frame, means to support a workman on the frame, a pair of arcuate grab arms pivotally secured to said frame and swingable into and out of engagement with an upright support, mechanical means operable from points adjacent said workman's support to actuate the swinging movement of said arms, a plurality of spikes mounted on said frame for slidable movement into and out of engagement with the upright support, mechanical means operable from a point adjacent said workman's support to actuate the sliding movement of said spikes, and a

plurality of fixed spikes secured to said frame and engageable with the upright support at a point below said arms and slidably mounted spikes.

3. A device of the character described comprising a collapsible frame, locking means to maintain said frame in extended operable condition, means detachably secured to said frame to support a workman, a pair of arcuate grab arms pivotally secured to said frame, said arms being swingable into and out of engagement with an upright support in a plane normal to the axis of the support, mechanical linkage operable from points adjacent said workman's support to actuate the swinging movement of said arms, a plurality of spikes mounted on said frame in substantially the same plane as said grab arms, said spikes being slidably movable into and out of engagement with the upright support in a plane normal to the axis of the support, means operable from a point adjacent said workman's support to actuate the sliding movement of said spikes, foot rests secured to said frame at a point spaced below the plane of said arms and slidably mounted spikes, and a fixed spike secured to said foot rests and engageable with the upright support at an angle oblique to the axis of the support.

4. A device as defined in claim 3 wherein said workman's support is a saddle seat.

5. A device as defined in claim 3 wherein said workman's support is a substantially flat platform.

6. A device as defined in claim 3 together with guide roller means on said frame adapted to engage the upright support while the frame is being hoisted up into position on the support.

7. A device of the character described comprising a frame, means to support a workman on the frame, a pair of arcuate grab arms pivotally secured to said frame and swingable into and out of engagement with an upright support, actuating means for said arms positioned adjacent said workman's support, means operably connecting said arms to said actuating means, a plurality of spikes mounted on said frame for slidable movement into and out of engagement with the upright support, a cam actuator positioned adjacent said workman's support and operable to effect the sliding movement of said spikes, means to lock said cam actuator in any one of a number of predetermined operating positions, and a plurality of fixed spikes secured to said frame and engageable with the upright support at a point below said arms and slidably mounted spikes.

8. A device as defined in claim 7 together with means on said grab arms to attach an auxiliary chain thereto.

9. A device as defined in claim 7 together with means on said frame to attach an auxiliary chain thereto.

10. A device of the character described comprising a collapsible frame, releasable locking means to hold said frame in extended operable condition, means detachably secured to said frame to support a workman, a pair of arcuate grab arms pivotally secured to said frame, said arms being swingable into and out of engagement with an upright support in a plane normal to the axis of the support, actuating means for said arms positioned adjacent said workman's support, means operably connecting said arms to said actuating means, a plurality of spikes mounted on said frame in substantially the same plane as said grab arms, said spikes being slidably movable into and out of engagement with the upright support in a plane normal to the axis of the support, a cam actuator positioned adjacent said workman's support operable to effect the sliding movement of said spikes, means to lock said cam actuator in any one of a number of predetermined operating positions, foot rests secured to said frame at a point spaced below the plane of said arms and slidably mounted spikes, and a plurality of fixed spikes secured to said foot rests and engageable with the upright support at an angle oblique to the axis of the support.

11. A device as defined in claim 10 wherein said workman's support is an angularly adjustable saddle seat.

9

12. A device as defined in claim 10 wherein said workman's support is a substantially flat platform.

13. A device as defined in claim 10 together with guide roller means on said frame adapted to engage the upright support while the frame is being hoisted up into position 5 on the support.

14. A device as defined in claim 10 together with means

10

on said grab arms and frame to attach an auxiliary chain thereto.

15. A device as defined in claim 10 wherein each of said grab arms includes a plurality of angularly disposed teeth.

No references cited