June 19, 1962 B. W. EDWARDS 3,039,561

BOOM SEAT

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Fig. 1

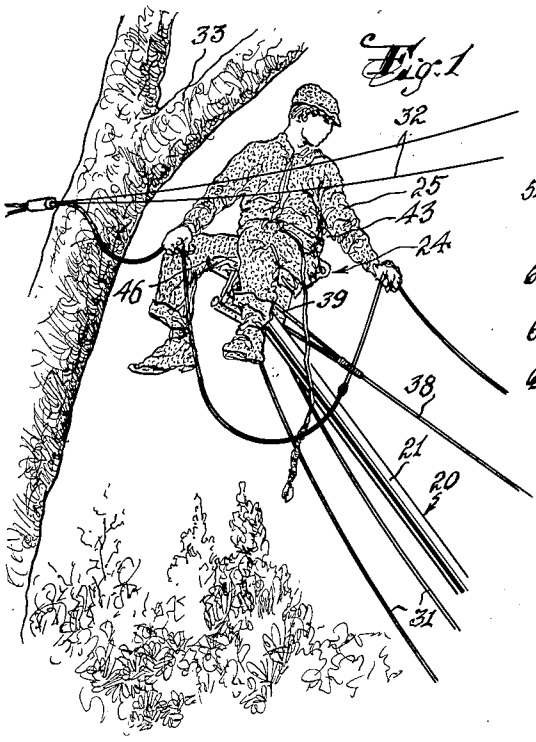


Fig. 6

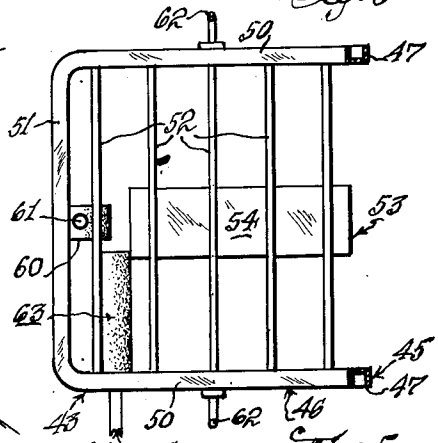


Fig. 5

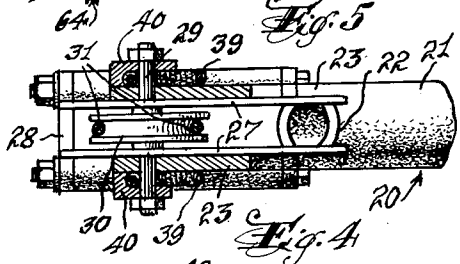


Fig. 4

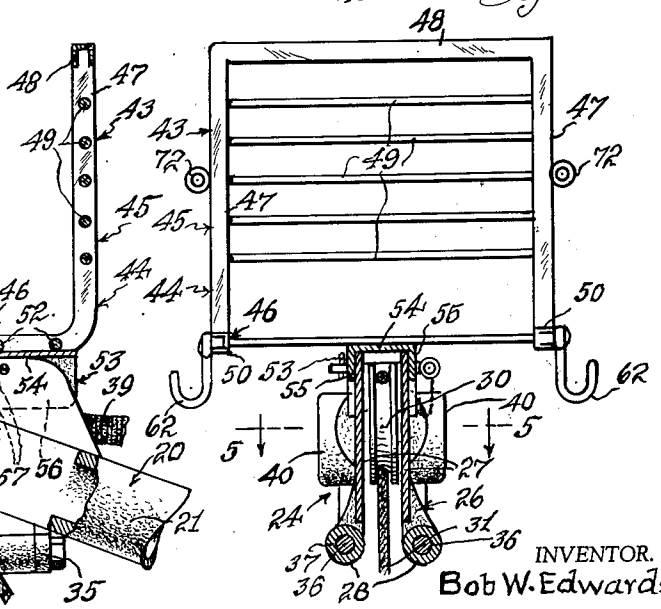
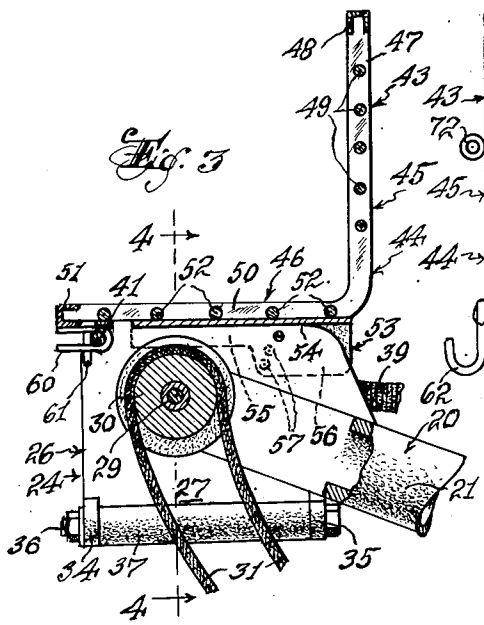


Fig. 3



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Fig. 2

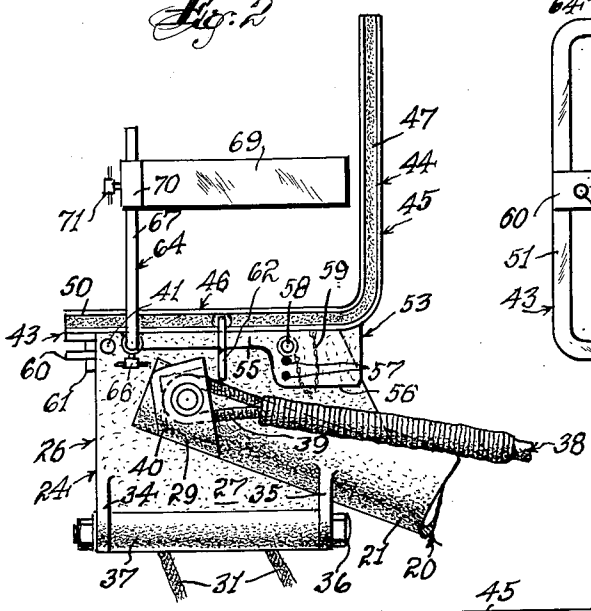


Fig. 7

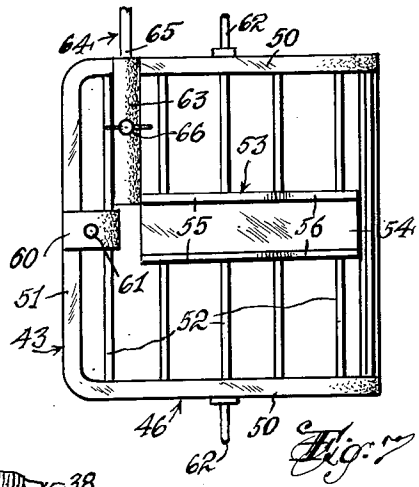


Fig. 9

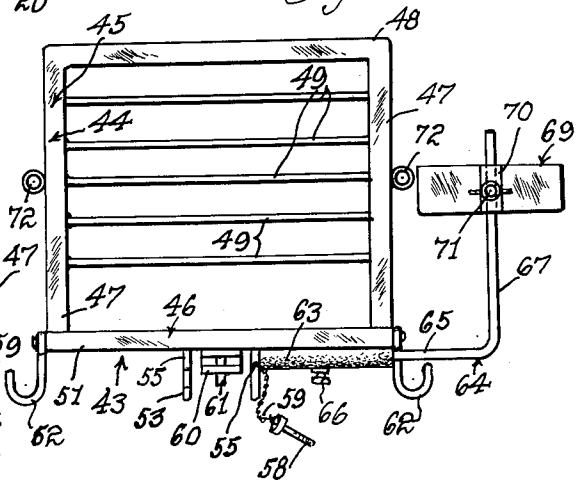


Fig. 8

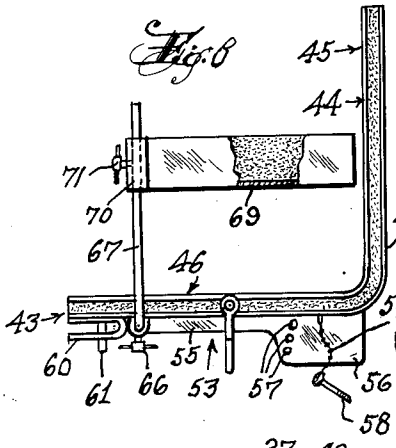
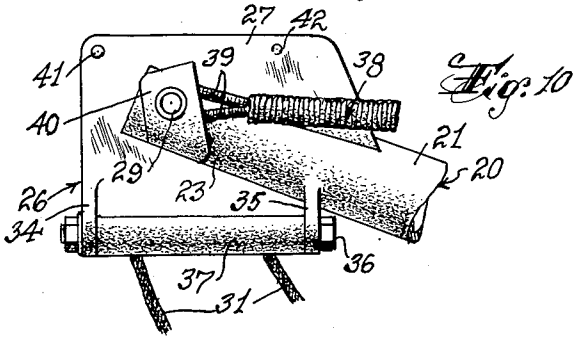


Fig. 10



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BOOM SEAT

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The present invention relates to a boom, and more particularly to a supporting unit or seat for a boom.

The primary object of the present invention is to provide a boom seat which is adapted to be used by workmen performing various sorts or types of tasks, so that with the attachment or accessory of the present invention mounted on a conventional boom, a workman can conveniently be supported on the seat and elevated or moved to a desired location in order to facilitate the carrying out of various types of repair work on utility lines or the like.

A further object of the present invention is to provide a boom seat which includes a means for conveniently adjusting the angle of the seat supporting section so that the workmen can comfortably and safely be supported thereon, and wherein according to the present invention there is also provided a means for facilitating the elevation of tools or other articles as for example from a ground level position to a raised or elevated position contiguous to the workmen on the boom seat of the present invention.

Another object is to provide an apparatus of the character described that may be utilized speedily and with precision by even inexperienced operators.

Further objects and advantages are to provide improved elements and arrangements thereof in a device of the character described that is economical to produce, durable in form, and conducive to the most economical use of materials and uniformity of members formed therefrom.

Still further objects and advantages will become apparent in the subsequent description in the specification.

In the drawings:

FIGURE 1 is a perspective view showing the boom seat of the present invention in use.

FIGURE 2 is an enlarged side elevational view of the boom seat of the present invention, and with parts broken away and in section.

FIGURE 3 is a vertical sectional view taken through the boom seat.

FIGURE 4 is a sectional view taken on the line 4—4 of FIGURE 3.

FIGURE 5 is a sectional view taken on the line 5—5 of FIGURE 4.

FIGURE 6 is a top plan view, with parts broken away and in section.

FIGURE 7 is a bottom plan view of the support unit, with parts omitted and broken away for clarity of illustration.

FIGURE 8 is a side elevational view of the seat chassis or support unit, with parts broken away and in section.

FIGURE 9 is a front elevational view of the device of FIGURE 8.

FIGURE 10 is a side elevational view of the head which is attached to the end of the boom.

Referring in detail to the drawings, the numeral 20 indicates a portion of a conventional boom that includes a movable leg 21, and the boom 20 may be operated from a suitable structure such as a truck, vehicle or the like. As shown in FIGURE 5 the outer or upper portion of the boom leg 21 is recessed or cut away as at 22 so as to define bifurcated portions 23, for a purpose to be later described.

According to the present invention there is provided a support element which is indicated generally by the

numeral 24, and the support unit 24 is adapted to be used for supporting a workman such as the workman 25 who may be performing various types of work or tasks, as for example the workman 25 may be repairing utility lines 32, FIGURE 1, or the workman may be performing work in connection with a tree 33, and it is to be understood that the present invention is not restricted to any particular type of work being done and is solely concerned with the structure and use of the support unit 24.

As shown in FIGURE 10, the support unit 24 comprises a head which is indicated generally by the numeral 26, and the head 26 includes a pair of spaced parallel vertically disposed side plates 27 which have their lower front portions joined or interconnected as for example by means of a wall member 28. The numeral 29 indicates a shaft which extends between the side plates 27, FIGURE 3, and a sheave or pulley 30 is interposed between the side plates 27, and the sheave 30 is mounted on the shaft 29. The numeral 31 indicates a cable which is arranged in engagement with the sheave 30, and the cable 31 is adapted to be used for conveniently elevating tools or other articles from a lower position to an elevated or raised position contiguous to the workman 25.

Depending from the lower side portions of the side plates 27 and secured thereto or formed integral therewith are spaced apart lugs 34 and 35, FIGURE 10, and bolts or pins 36 extend between the lugs 34 and 35 and are connected thereto, and the numeral 37 indicates rollers which are mounted on the pins 36.

As shown in the drawings there is provided a lifting cable which is indicated generally by the numeral 38, and the lifting cable 38 includes the looped end portions 39 which are arranged in engagement with the outer end portions of the shaft or pin 29, and there is provided brackets 40 which extend over the outer end portions of the shaft 29, and these brackets 40 are secured to adjacent portions of the boom leg 21 as by welding.

The numeral 41 indicates a securing element or bolt or pin which extends through the upper front corner portions of the side plates 27. There is provided in the upper rear portions of the side plates 27 registering openings or apertures 42, FIGURE 10.

The support unit 24 of the present invention further includes a body unit that is indicated generally by the numeral 43, and the body unit 43 includes a frame 44 which is shaped to comprise a back section 45 and a seat section 46, and the sections 45 and 46 are arranged at right angles with respect to each other, as shown in FIGURE 8.

The back section 45 embodies spaced parallel side elements 47 which have their upper ends joined by a top piece 48, and there is provided a plurality of spaced parallel rods 49 which extend between the side elements 47 and which are secured thereto as by welding.

As shown in FIGURE 6 for example, the seat section 46 includes a pair of spaced parallel side pieces 50 which are joined at their front ends by a crosspiece 51, and there is provided a plurality of spaced parallel rods 52 which extend between the side pieces 50 and which are secured thereto as by welding.

The numeral 53 indicates a base member which is arranged below the seat section 46 and which is secured thereto as by welding, and the base member 53 includes an upper wall section 54 which has a pair of spaced parallel guide members 55 depending therefrom, FIGURES 4 and 8. The rear portions of the guide members 55 are enlarged as at 56, and there is provided in the enlarged portions 56 a series or plurality of spaced apart openings or apertures 57 which are adapted to selectively register with the openings 42 in the side plates 27, and

the numeral 58 indicates a retaining pin which is adapted to selectively engage these registering openings so as to maintain the body unit 43 immobile in its different adjusted positions. The retaining pin 58 can be connected to the adjacent supporting structure by means of a chain or the like as indicated by the numeral 59 so as to prevent accidental loss of the retaining pin 58 when the pin is disengaged or removed from the openings.

As shown in FIGURE 3, there is provided a generally U-shaped clevis 60 which is secured to the lower front portion of the seat section 46, and the clevis 60 is adapted to receive therein the securing element or pivot pin 41 when the parts are in their proper assembled position, and there is provided a removable locking pin 61 which extends through the clevis 60 for selectively maintaining the securing element 41 engaged in the clevis 60.

As shown in FIGURE 9, hangers 62 are adapted to be connected to the side portions of the seat section 46 so as to provide a convenient means for supporting tools or the like within easy reach.

The numeral 63 indicates a sleeve which is secured to the lower portion of the seat section 46 in any suitable manner as for example as by welding, FIGURE 7, and there is provided an L-shaped support element 64 which includes a horizontally disposed portion 65 that is adjustably arranged in engagement with the sleeve 63, and a set screw 66 is provided for maintaining the portion 64 stationary in its different adjusted positions in the casing 63. The support element 64 further includes an upstanding portion 67, FIGURE 9, and the numeral 69 indicates a box or tray which has a bushing or collar portion 70 integral therewith, and the bushing 70 is arranged in engagement with the upstanding portion 67, and there is provided a set screw 71 for maintaining the tray 69 immobile in its various adjusted positions on the upstanding portion 67. As shown in the drawings, rings 72 may be secured to the back section 44 whereby a safety belt or the like can be arranged in engagement with the rings 72 in order to help hold a person such as the workman 25 in place on the support unit 24 of the present invention.

From the foregoing, it is apparent that there has been provided a boom support or seat accessory or attachment, and in use with the parts arranged as shown in the drawings, it will be seen that the support unit 24 of the present invention is adapted to be connected to the end of a leg 21 of a boom 20, whereby a person such as the person or workman 25 can be conveniently and safely supported on the support unit 24 so as to permit various types of work to be conveniently performed. The boom blade 21 is of the type that can be moved up or down or swung from side to side as desired or required, and a conventional actuating means is adapted to be provided for moving the boom blade 21 in order to position or move the support unit 24 with the individual 25 thereon whereby the individual 25 can be supported or positioned in a desired location to facilitate the work being done. The present invention is especially suitable for use in connection with repair of utility lines or the like and the present invention can also be used conveniently wherever it is necessary for a person to be supported in a raised elevation or difficult to reach location, and with the present invention the use of ladders or the like is eliminated and also the person's hands are free to perform the various jobs which are to be accomplished.

The support unit 24 includes the head 26 which is secured as by welding to the leg 21, and interposed between the side plates 27 of the head 26 is the sheave or pulley 30 which has the cables 31 arranged in engagement therewith. The cables 31 can be used as a convenient means for elevating various types of articles, tools or the like from a lower level to the vicinity of the person 25, and for example such articles can be suitably clamped onto the cable 31 and then the cable 31 can be moved to raise the articles at which time the articles can be disengaged from the cables and used or positioned wherever desired or required.

It is to be noted that the support unit 24 includes the head 26 as well as the separate body unit 43, and when the support unit is being used the parts 43 and 26 are assembled and connected together, as for example as shown in FIGURES 2 and 3 and 4. It is to be noted that with the parts assembled as shown in these views, the clevis 60 receives the securing element 41, and the pin 61 is then inserted through suitable openings in the clevis 60 in order to prevent accidental separation or disengagement of the securing element 41 from the clevis 60. When the parts are to be disassembled, the pin 61 can be removed in order to permit disengagement of the securing element 41 from the clevis 60.

In addition, the pin 58 is adapted to be extended through certain of the registering openings or holes 57 and through the registering openings 42 in order to provide a further means for connecting the body unit 43 and head 26 together. Due to the provision of the plurality of spaced apart openings 57, it will be seen that the user can pivot or adjust the body unit 43 to different positions relative to the head 26, and after the body unit 43 has been adjusted to the desired position, the pin 58 can be extended through the registering openings 57 and 42 in order to maintain the body unit 43 immobile in its adjusted positions. This is advantageous because it provides a means whereby the body unit 43 can be set at a desired angle in order to compensate for different positions that the support unit 24 may be arranged in as for example when the support unit 24 is moved to an elevated or lowered position so that the workman can be supported in the most convenient and comfortable and safe manner.

The looped portions 39 of the lifting cable 38 are arranged in engagement with the ends of the shaft or rod 29 so as to provide a means for facilitating the lifting of the device, and the lifting cable 38 is adapted to be operatively connected to a suitable winch or other conventional mechanism on a truck or vehicle in order to actuate the lifting cable 38 in the usual manner.

It is to be noted that with the parts arranged as shown in the drawings a compact rugged construction is provided and wherein the seat section can be adjusted to different angularly positions as for example due to the provision of the pin 58 and pivot axis 41, and also the cable 31 is conveniently arranged to permit the workmen to readily grasp articles being elevated or lowered thereby. Furthermore the lifting cable 38 is connected in such a manner that movement of the device is facilitated as or when desired or required.

As shown in the drawings other accessories are mounted on the support unit 24. and for example the ring elements 72 are adapted to be suitably secured to the sides of the back section 45 whereby a safety belt can be connected to the ring element 72 in order to help insure that the workman 25 will be supported in the most safe manner.

Also, the tray 69 is supported in a convenient location whereby tools, parts or the like can be conveniently supported in the tray or box 69, and the tray 69 can be either adjusted up or down by loosening the set screw 71, and after the set screw is loosened the tray 69 can be moved to the desired location, and the set screw 71 can be tightened to prevent accidental movement thereof. Similarly, by loosening the set screw 66, the element 64 which supports the tray 69 can be shifted in or out and this provides a further adjusting means of properly positioning the tray 69.

There is also provided a hanger 62 which can be used for conveniently supporting various types of tools or other equipment or article.

The brackets 40 are arranged so as to help prevent a person's clothing from accidentally catching in the end of the shaft 29 or associated parts, and the brackets 40

also provide a shield or cover for the ends of the shaft **29** and looped portion **39**.

The parts can be made of any suitable material and in different shapes and sizes.

Due to the angular adjustment that is possible for the body unit **43**, the parts can be positioned to permit various types of work to be carried out or accomplished with a greatest amount of efficiency or convenience.

The box **69** can be used for holding tools or the like which the workman may use while seated on the device. Suitable braces, washers, bearings or the like can be used wherever desired or required. The hangers **62** are arranged so that the tools will swing or be suspended freely to hang straight at any level of adjustment for the device.

The present invention is especially suitable for use by utility repair personnel or the like such as telephone, electric utility repairmen or other personnel. When the device is not being used it can be readily disconnected or disassembled and conveniently carried in the back of a utility truck or the like until the same is needed. The sheave **30** serves to insure that the cable **31** will work or move freely. The cable **38** is used for holding the boom up and is also used to raise and lower the boom. The working line cable **31** is adapted to be used for setting poles, pulling poles, carrying a post hole digger or the like. The rollers **37** are provided to keep from cutting the working lines **31** on the sides of the boom head **26**. The securing element **41** functions as a pivot as for example when the body unit **43** is being adjusted to different angular positions, and in addition the securing element **41** helps prevent the body unit and head from accidentally separating. The pin **58** functions as a locking pin whereby the back of the device can be set at different positions and then locked or held in place. The fastener or pin **61** functions as a safety element to help prevent accidental separation of the clevis **60** and securing element **41**.

The present invention provides a means whereby a person can sit on the end of a boom as for example when such a boom is mounted on the front or back of a truck or other vehicle. This permits the person to be raised to any desired height so that various types of work can be carried out more conveniently and quickly. For example, after a wind storm or sleet storm or snow storm, broken tree limbs can be taken off of a telephone cable and other repair work such as repair work in connection with open wires or lines can be taken care of, and such work can be accomplished without the necessity of climbing a telephone pole or the like. Also, the present invention provides a means whereby a telephone pole that is sitting in water can be conveniently reached, and other types of repair work such as splicing can be accomplished, and maintenance work in connection with trees, utility equipment or the like can be readily accomplished when using the present invention. The support unit **24** can be made to fit different types of booms with only a small amount of modification, and the device can be assembled or disassembled quickly and easily.

Minor changes in shape, size and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

What is claimed is:

1. In a device of the character described, a boom including a leg having a recess in an end thereof which defines a bifurcated portion on the end of the boom leg; a support unit including a head embodying a pair of vertically disposed spaced parallel side plates having portions thereof engaging said recess and said side plates being affixed to said leg, a wall member extending between front portions of said plates and affixed thereto, a shaft extending through said plates, a sheave mounted on said shaft and interposed between said side plates, a cable arranged in engagement with said sheave, spaced apart lugs depending from the lower outer portions of said side plates, a pair of spaced apart pins connected to said lugs, a pair of spaced parallel rollers mounted on said pins, a lifting cable having looped portions connected to said shaft, brackets extending over the outer end portions of said shaft and said brackets being affixed to said boom, a securing element extending through the upper front corner portions of the side plates, there being registering openings in the upper rear portions of the side plates; a body unit comprising a frame shaped to include a seat section and a back section, said back section including spaced parallel side elements which have their upper ends joined by a top piece, a plurality of spaced parallel rods extending between said side elements and affixed thereto; said seat section comprising a pair of spaced parallel side pieces joined at their front ends by a crosspiece, a plurality of spaced parallel rods extending between said side pieces and affixed thereto, a base member affixed to the lower portion of said seat section, said base member including an upper wall section having a pair of spaced parallel guide members depending therefrom, said guide members including rearwardly arranged enlarged portions which have a series of openings therein that are adapted to selectively register with the openings in the upper rear portions of the side plates, a retaining pin for engaging said registering openings, a U-shaped clevis secured to the lower front portion of said seat section for receiving said securing element therein, and a locking pin extending through said clevis for selectively maintaining said securing element and clevis connected together.

2. The structure as defined in claim 1 and further including hangers connected to the side portions of said seat section.

3. In a device of the character described, a boom including a leg having a recess in an end thereof which defines a bifurcated portion on the end of the boom leg; a support unit including a head embodying a pair of vertically disposed spaced parallel side plates having portions thereof engaging said recess and said side plates being affixed to said leg, a wall member extending between front portions of said plates and affixed thereto, a shaft extending through said plates, a sheave mounted on said shaft and interposed between said side plates, a cable arranged in engagement with said sheave, spaced apart lugs depending from the lower outer portions of said side plates, a pair of spaced apart pins connected to said lugs, a pair of spaced parallel rollers mounted on said pins, a lifting cable having looped portions connected to said shaft, brackets extending over the outer end portions of said shaft and said brackets being affixed to said boom, a securing element extending through the upper front corner portions of the side plates, there being registering openings in the upper rear portions of the side plates; a body unit comprising a frame shaped to include a seat section and a back section, said back section including spaced parallel side elements which have their upper ends joined by a top piece, a plurality of spaced parallel rods extending between said side elements and affixed thereto; said seat section comprising a pair of spaced parallel side pieces joined at their front ends by a crosspiece, a plurality of spaced parallel rods extending between said side pieces and affixed thereto, a base member affixed to the lower portion of said seat section, said base member including an upper wall section having a pair of spaced parallel guide members depending therefrom, said guide members including rearwardly arranged enlarged portions which have a series of openings therein that are adapted to selectively register with the openings in the upper rear portions of the side plates, a retaining pin for engaging said registering openings, a U-shaped clevis secured to the lower front portion of said seat section for receiving said securing element therein, and a locking pin extending through said clevis for selectively maintaining said securing element and clevis connected together, hangers connected to the side portions of said seat section, a

sleeve secured to the lower portion of said seat section, an L-shaped support element including a horizontally disposed portion engaging said sleeve, and said support element further including an upstanding portion, and a tray adjustably connected to the upstanding portion of said support element.

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