May 19, 1970 W. F. ROBSON, JR 3,512,742

CABLE SPLICER'S SEAT

Filed March 12, 1968 2 Sheets-Sheet 1

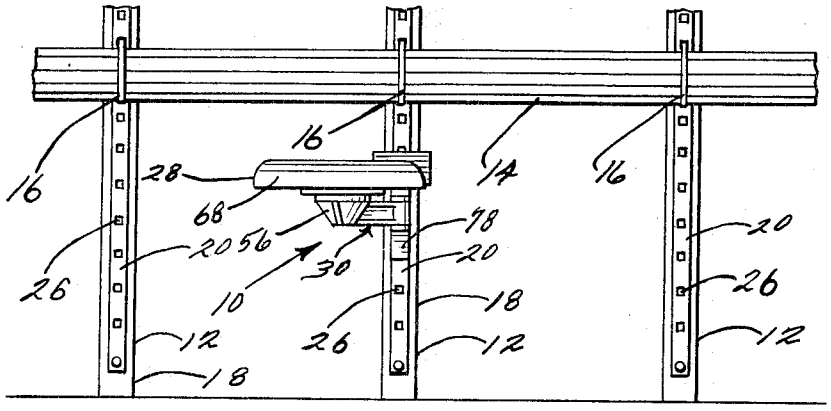


FIG. 1.

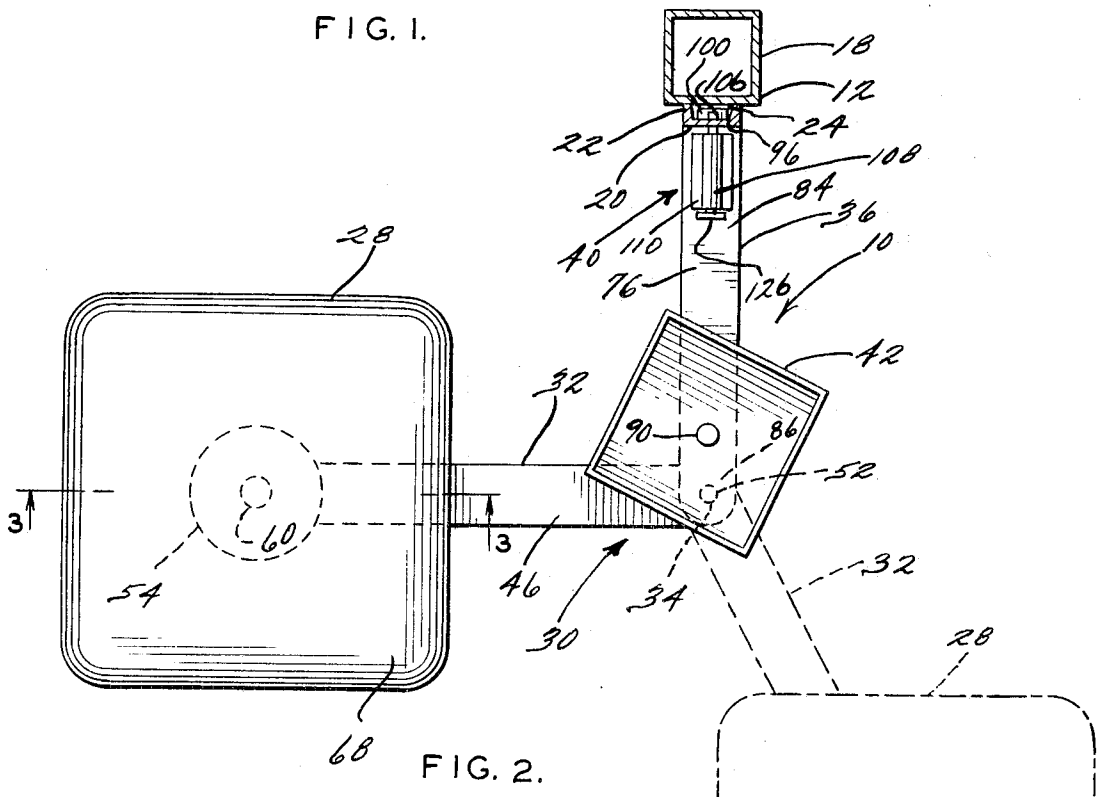


FIG. 2.

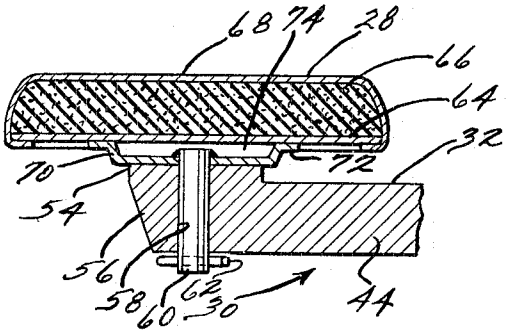


FIG. 3.

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CABLE SPLICER'S SEAT

Filed March 12, 1968 2 Sheets-Sheet 2

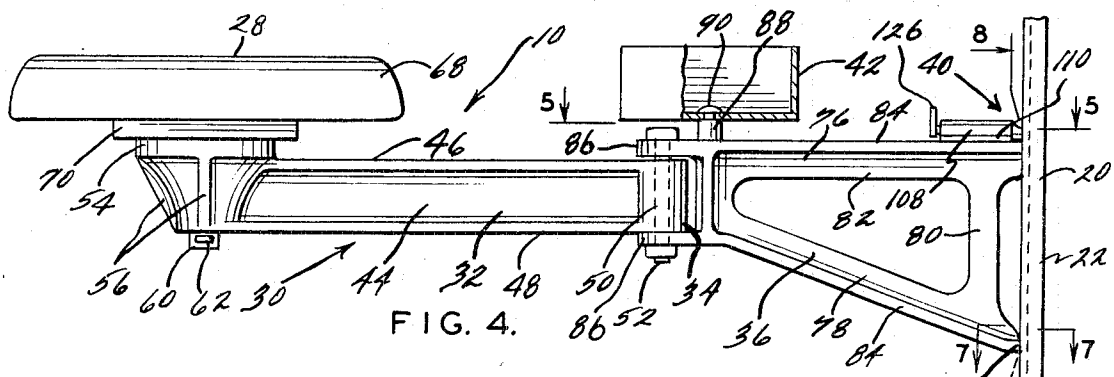


FIG. 4.

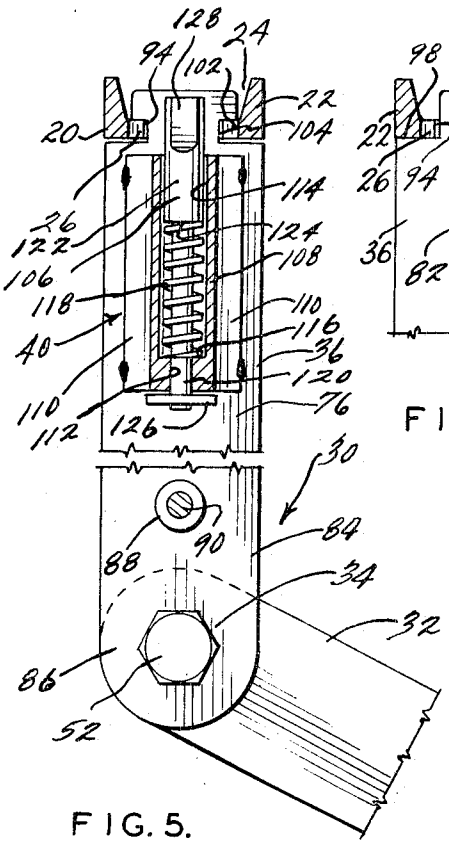


FIG. 5.

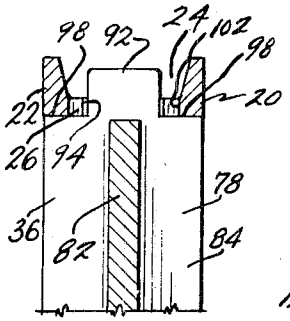


FIG. 7.

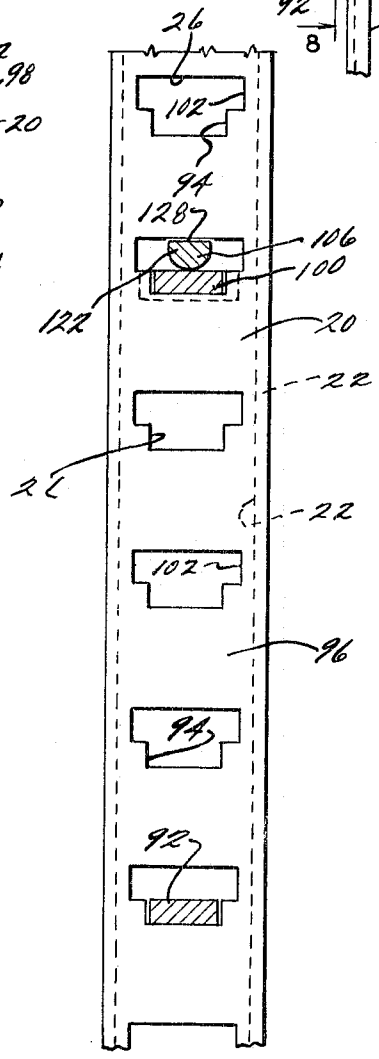


FIG. 8.

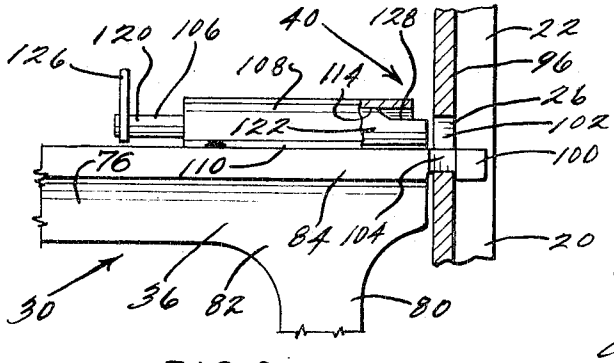


FIG. 6.

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3,512,742

CABLE SPLICER'S SEAT

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Int. Cl. A47c 3/20
U.S. Cl. 248—240 2 Claims

ABSTRACT OF THE DISCLOSURE

This invention relates to a seat pivotally-attached to one end of a horizontal articulated arm that adjustably-fastens into the uprights of cable-carrying racks.

Most large urban areas are honecombed by underground public utility tunnels that sometimes house water, gas and steam lines but, most often, electrical cables. Inside the tunnel are cable-carrying racks formed of spaced parallel uprights that have a series of equally-spaced apertures within which are fastened cable connectors that hold multi-conductor cables strung therebetween. Because of the ever-present possibility of ground and surface water seeping into the tunnels and standing in the bottom thereof, these cables are stacked in horizontal rows above ground level. In large tunnels, these cables may be as high as ten feet or more above the tunnel floor, making them most difficult to reach for maintenance and repair. Even those positioned for easy access oftentimes require many hours to splice, repair or install, and to do so becomes extremely tiring and uncomfortable for the electrician who must either stand all the time or utilize some makeshift arrangement as a stool. More often than not, there is nothing available that is just the right height.

It has now been found in accordance with the teaching of the instant invention that the aforementioned difficulties can be overcome and certain additional advantages obtained by providing the repair personnel with a small padded seat mounted on the end of an articulated arm that can be releasably-locked into one of the uprights of the cable rack at any desired height. The seat itself swivels on the arm so that the user can pivot from side-to-side and, in addition, cover a span along the cable of several feet by swinging the movable section of the articulated supporting arm around its pivotal connection to the fixed section thereof. As a refinement, the fixed section of the arm can be provided with a small removable parts tray for such needed items as tools, connectors, tape, solder, wire and the like.

Accordingly, it is the principal object of the present invention to provide a novel cable splicer's seat especially designed for attachment to a cable rack.

A second objective is to provide a unit of the type aforementioned that can be adjusted to any desired working height within the limits of the cable rack uprights.

Another object of the invention herein disclosed and claimed is to provide a rack-mounted repairman's seat that has an articulated arm which permits the user to swing the seat from side-to-side and, thus, reach areas of the cable between uprights.

Still another objective is to provide a pivoted seat that leaves the area therebeneath completely unobstructed and does not depend upon the ground for its support.

An additional object of the invention forming the subject matter hereof is to provide a seat wherein the cushion thereof is pivotally-attached to the movable portion of a horizontally-disposed articulated arm so that the user can turn from side-to-side at will.

A further object is to provide a splicer's seat that is lightweight, rugged, compact, inexpensive, versatile, comfortable, easy to attach and detach, and even decorative in appearance.

Other objects will be in part apparent and in part pointed out specifically hereinafter in connection with the description of the drawings that follows, and in which:

FIG. 1 is a front elevation showing the seat attached in place on the center upright of a cable rack carrying a multi-conductor cable strung horizontally therebetween;

FIG. 2 is a top plan view of the seat to a considerably enlarged scale;

FIG. 3 is a fragmentary section taken along line 3—3 of FIG. 2;

FIG. 4 is an enlarged side elevation, portions of the parts tray having been broken away and showing in section;

FIG. 5 is a still further enlarged fragmentary section taken along line 5—5 of FIG. 4 showing the latch mechanism, portions of the arm having been broken away to conserve space;

FIG. 6 is another fragmentary section to the same scales as FIG. 5 taken along line 6—6 of FIG. 4, portions of the latch pin housing having been broken away and shown in section to better reveal the latch pin;

FIG. 7 is a third fragmentary section drawn to the same scale as that of FIGS. 5 and 6 and taken along line 7—7 of FIG. 4; and,

FIG. 8 is still another fragmentary section taken along line 8—8 of FIG. 4 and revealing the connection between the fixed section of the articulated arm and the cable rack upright to the same scale as the preceding figures.

Referring now to the drawings for a detailed description of the present invention and, initially, to FIGS. 1–4, inclusive, for this purpose, reference numeral **10** has been employed to broadly designate the cable splicer's seat which is shown mounted on an upright **12** of a cable rack that is carrying a multi-conductor electrical cable **14** strung horizontally between the uprights and attached thereto by means of conventional cable hangers or clamps **16**. In the particular form shown, uprights **12** consist of hollow rectangular posts **18** having channel-shaped members **20** fastened to the outside thereof with the flanges **22** inturned so as to define a space **24** therebetween sized to receive the ends of the cable hangers and portions of the seat latch mechanism, which will be described in detail presently, that are inserted through the T-shaped apertures **26** that are located throughout the length thereof in equally-spaced relation to one another. Apertured members **20** are, of course, of conventional design and, under appropriate circumstances, they may be attached directly to the walls of the utility tunnel so as to dispense with posts **18** altogether.

Seat **10** includes a cushion **28** pivotally attached to one free end of an articulated arm that has been broadly designated by reference numeral **30** and which comprises a movable section **32** carrying the cushion that is pivotally-attached by hinged connection **34** to a fixed section **36** that releasably-fastens to selected apertures in one of the members **20** by means of a tongue and a spring latch mechanism that has been designated in a general way by numeral **40**, the latter elements having been shown more clearly in other figures of the drawing to which detailed reference will be made presently. The seat has been shown provided with a tool and parts tray **42** mounted on fixed section **36** of arm **30** adjacent the hinged connection.

FIGS. 2, 3 and 4, to which reference will now be restricted, best reveal the construction of seat cushion **28** and the movable section **32** of articulated arm **30**. The latter comprises a unitary casting having a web portion **44** reinforced both top and bottom by integral flanges **46** and **48** that cooperate with said web to define a generally I-shaped cross section. The end hingedly-connected to fixed arm section **36** contains an integral boss **50** having a vertical hinge pin aperture therethrough carrying hinge pin **52**. The other or free end of the movable sec-

tion 32 carries an integrally-formed circular platform 54 with integral radial webs 56 therebeneath that reinforce same. A vertical aperture 58 is also located in the free end of section 32 that receives seat cushion mounting post 60 which is fastened therein for rotational movement by cotter pin 62.

Seat cushion 28 comprises a generally-rectangular base 64 fabricated from a rigid material and overlaid with a sponge rubber or similar compressible pad 66 which is then covered by a wear-resistant fabric cover 68. In the particular form illustrated, the plate has a shallow cup-shaped element 70 bordered by a flange 72 fastened to the underside thereof that provides a space 74 within which to secure seat post 60 as by welding same as shown. The seat cushion can, of course, rotate on the end of arm section 32 about post 60 as the pivot.

FIG.S. 2–7, inclusive, show the fixed section 36 of arm 30 to consist of a unitary casting having, in this instance, a generally A-shaped configuration with the A lying on its side. The upper leg 76 of the A is horizontal, while the lower leg 78 slants downwardly to form a strut or brace. The cross bar 80 of the A is vertically-disposed and spaced inward slightly from the cable rack upright 12 which it parallels. This cross bar 80 forms a portion of the open integral web 82 which, once again, is bordered both top and bottom, as well as along the hinged end thereof, by integral flanges 84 to give each of the aforementioned legs a T-shaped cross section.

The outboard end of the fixed leg is bifurcated to provide vertically-spaced parallel projections 86 which receive the boss 50 of the movable arm therebetween and also have vertically-aligned apertures therethrough for hinge pin 52. Also, in the particular form illustrated herein, a collar 88 is attached to the flange 84 on the upper leg 76 of the fixed section 36 to receive pin 90 that mounts parts tray 42 thereon.

As can be seen most clearly in FIGS. 7 and 8, the lower leg 78 of the fixed section has a horizontally-disposed integral tongue 92 projecting horizontally therefrom that is sized to fit into the stem portion 94 of the T-shaped apertures 26 in the webs 96 of rack members 20. These tongues form integral continuations of flanges 84; however, the later elements are considerably wider so as to provide shoulders 98 (FIG. 7) adapted to engage the exterior surface of member 20 alongside said T-shaped apertures.

In FIGS. 5 and 6, it will be seen that the integral tongue 100 on the upper leg 76 is slightly different in that it is T-shaped so as to barely pass through the cross bar portion 102 of apertures 26 and then drop down into the narower stem portion 94 thereof so as to lock in behind the web 96. Both tongues 92 and 100 are spaced apart vertically so as to seat themselves in the stem portions 94 of two of the T-shaped apertures 26 when the articulated arm 30 is in place as shown in FIG. 8. Raising the arm up a fraction of an inch or so until the notches 104 in the side of tongue 100 clear the web 96 enables the fixed section 36 of the arm to be detached from the upright member 20 provided, of course, that the latch pin 106 of spring latch mechanism 40 has been retracted.

In FIGS. 2, 4, 5, 6 and 8, it will be seen that the spring latch mechanism 40 includes a latch pin housing 108 bordered on the bottom by flanges 110 that are used to weld or otherwise fasten same atop the flange 84 of the upper leg 76 of fixed arm section 36. This housing has an axial opening 112 therethrough aligned with the longitudinal centerline of tongue 100 and a larger counterbore 114 that terminates short to define an annular shoulder 116 that serves as a fixed abutment for one end of compression spring 118.

Latch pin 106 has a stem section 120 of reduced diameter that is slidably received for reciprocating motion in the axial opening 112 of the housing and which cooperates with the wall thereof enclosing the counterbore 114 to define an annular space for the compression spring 118.

The tailpipe 122 of the latch pin is of larger diameter than the stem section 120 thereof so as to define a second annular shoulder 124 at their junction that serves as the movable abutment for the other end of the compression spring 118. Tailpiece 122 is generally cylindrical and sized to move with a free-sliding fit in the counterbore. The other end of the latch pin 106 carries a head 126 that abuts the housing and provides a stop that prevents the spring from forcing same out of the counterbore, as well as producing a fingerhold to be used in retracting same.

Now, the tip of the tailpiece 122 has the upper surface thereof ground off to produce flat 128 that enables said head to pass into the cross bar portion 102 of the T-shaped apertures 26 and keep tongue 100 seated securely in the stem portion 94 thereof. Obviously, as clearly seen in FIG. 5, the tip of the latch pin, when the latter is released into extended operative position, projects out far enough to enter the cross bar portion of the T-shaped slot. With the flat 128 of the latch pin engaging the top of the slot 26 as seen in FIG. 8, it forms a stop that prevents tongue 100 from raising up out of the stem portion 94 of the T-shaped slot where it can disengage.

Finally, with brief reference to FIG. 2, it will be seen that the articulated arm 30 permits the user to work on either side of the upright to which it is attached. The quick-release connection enables the seat to be fastened at any convenient height. Even the rotatable nature of the seat cushion permits the repairman to always remain facing his work without readjusting his seated position thereon. Also, nothing associated with the seat gets in the way of the cables or interferes with the workspace above or below same.

Having thus described the several useful and novel features of the articulated cable splicer's seat of the instant invention, it will be seen that the several worthwhile objectives for which it was developed have been achieved.

What is claimed is:

1. The cable splicer's seat for use with a cable rack having transversely-spaced vertical uprights containing a series of T-shaped apertures which comprises: an articulated arm having a fixed section and a movable section, said movable section being hingedly connected at its front end to the rear end of said fixed section for pivotal movement about a vertical axis, said fixed section including a downwardly and forwardly inclined strut emerging from the underside thereof adjacent the hinged connection and a generally T-shaped tongue projecting from the front end thereof, the cross bar portion of said T-shaped tongue being adapted to enter the corresponding cross bar portion of a selected T-shaped aperture in a cable rack upright and move downwardly into the stem portion thereof so as to latch therebehind, and said strut having a second tongue projecting forwardly from the front end thereof positioned and adapted to enter the stem portion of a second T-shaped aperture located in spaced relation beneath said first T-shaped aperture containing the T-shaped tongue, means comprising a seat cushion attached to the rear end of the movable arm, and; a releasable latch means is mounted atop the fixed arm adjacent the forward end thereof, said latch means including a retractable pin mounted for longitudinal slidable movement between an extended operative position projecting forwardly atop the T-shaped tongue into the cross bar portion of the T-shaped aperture and a retracted position behind said tongue, said pin in extended position providing a stop adapted to prevent the removal of said T-shaped tongue from the T-shaped aperture.

2. The cable splicer's seat for use with a cable rack having transversely-spaced vertical uprights containing a series of T-shaped apertures which comprises: an articulated arm having a fixed section and a movable section, said movable section being hingedly connected at its front end to the rear end of said fixed section for pivotal movement about a vertical axis, said fixed section including a

downwardly and forwardly inclined strut emerging from the underside thereof adjacent the hinged connection and a generally T-shaped tongue projecting from the front end thereof, the cross bar portion of said T-shaped tongue being adapted to enter the corresponding cross bar portion of a selected T-shaped aperture in a cable rack upright and move downwardly into the stem portion thereof so as to latch therebehind, and said strut having a second tongue projecting forwardly from the front end thereof positioned and adapted to enter the stem portion of a second T-shaped aperture located in spaced relation beneath said first T-shaped aperture containing the T-shaped tongue, means comprising a seat cushion attached to the rear end of the movable arm, and; a releasable latch means is mounted atop the fixed arm adjacent the forward end thereof, said latch means including a retractable pin mounted for longitudinal slidable movement between an extended operative position projecting forwardly atop the T-shaped tongue into the cross bar portion of the T-shaped aperture and a retracted position behind said tongue, said pin in extended position providing a stop adapted to prevent the removal of said T-shaped tongue

from the T-shaped aperture and releasable latch means includes a spring connected to the latch pin and normally-biasing the latter into extended operative position.

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U.S. Cl. X.R.

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