

Aug. 16, 1960

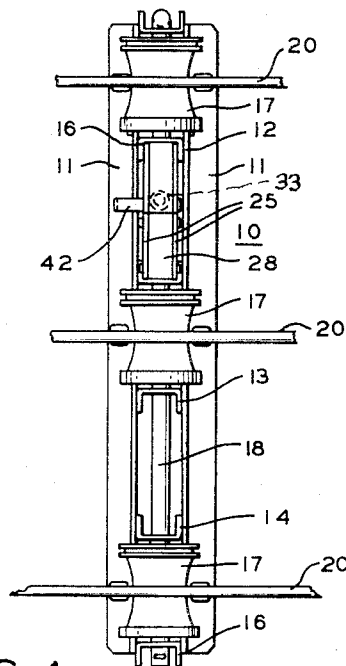
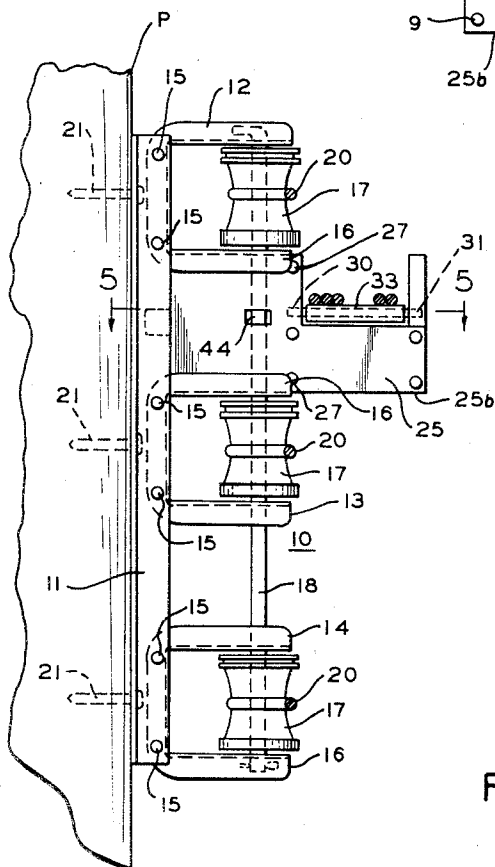
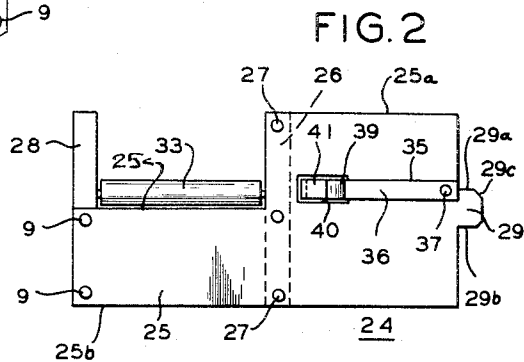
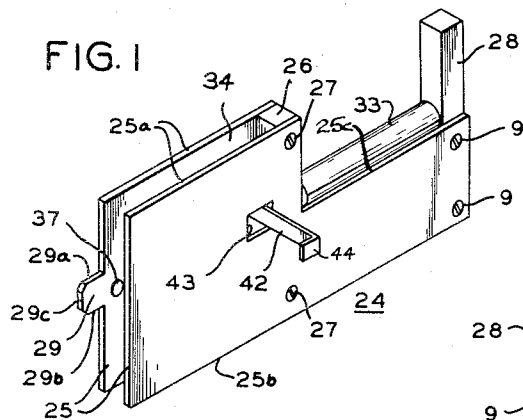
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SECONDARY RACK GUIDES

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

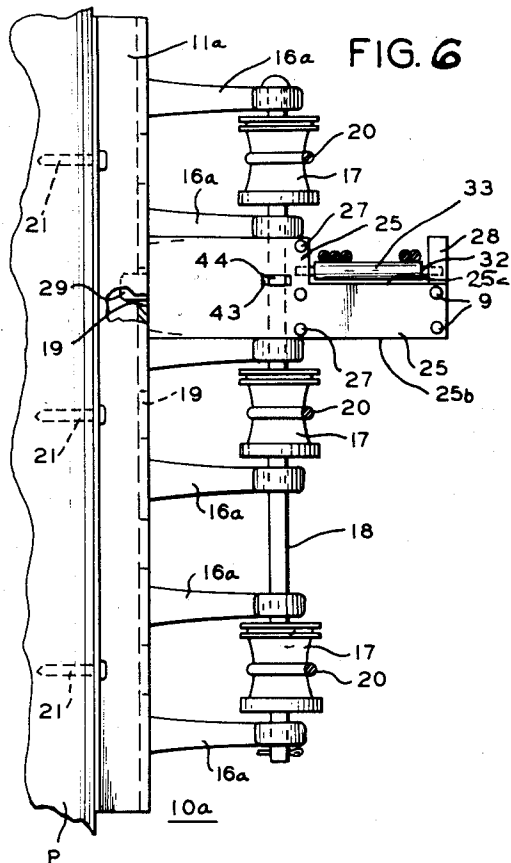


FIG. 6

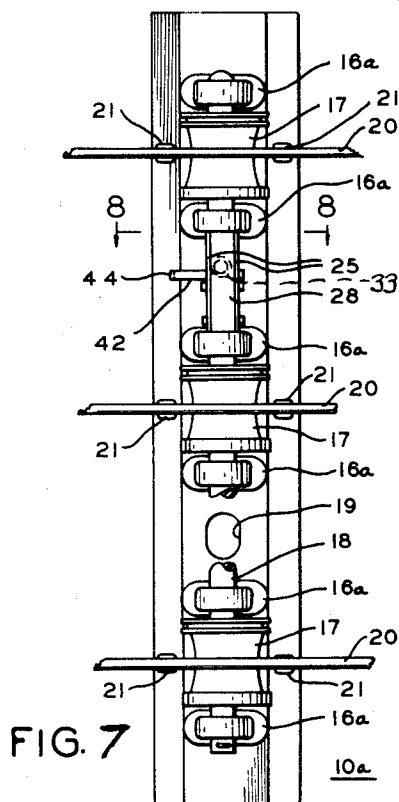


FIG. 7

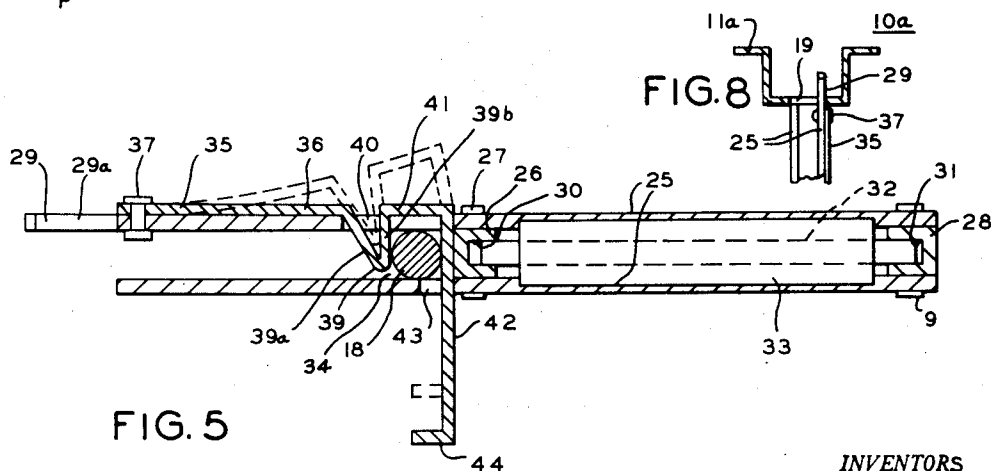


FIG. 5

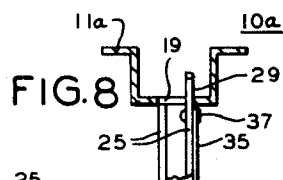


FIG. 8

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SECONDARY RACK GUIDES

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8 Claims. (Cl. 248—65)

This invention relates to secondary rack guides.

Three wire secondary transmission lines are commonly employed in electrical distribution systems and are supported on poles or other supports by means of metal racks in which three or more insulators are carried in predetermined spaced relation.

Difficulty has heretofore been encountered during installation or maintenance, particularly of bare energized wires attached to these racks, and no satisfactory equipment has heretofore been available to facilitate such installation or maintenance.

In accordance with the present invention a secondary rack guide is provided which can conveniently support a block and tackle while pulling up slack in the wire, or while attending to other operations which require holding the strain of the wire from either or both directions.

In accordance with the present invention also, a secondary rack guide is provided which is particularly adapted for temporary attachment to a secondary rack, the rack guide remaining in the desired position for the time period required to pull in the wire or perform the desired or required work.

In accordance with the present invention, also, a secondary rack guide is provided which includes a supporting roller to facilitate handling a conductor or the ropes of a block and tackle.

In accordance with the present invention, also, a secondary rack guide is provided which can be applied or removed by a workman using only one hand and with a glove on the hand employed for this purpose.

In accordance with the present invention, also, a secondary rack guide is provided which is of simple but effective construction, which is strong and sturdy, and free from likelihood of trouble or failure in use and which may be easily handled by a workman.

In accordance with the present invention, also, a secondary rack guide is provided which is suitable for use with different types of insulator racks now in use.

Other objects and advantageous features of the invention will be apparent from the description and claims. The nature and characteristic features of the invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part thereof, in which:

Figure 1 is a view in perspective of a secondary rack guide in accordance with the invention;

Fig. 2 is a side elevational view of the secondary rack guide as seen from the opposite side from that of Fig. 1;

Fig. 3 is a side elevational view showing the rack guide in position on one type of secondary insulator rack;

Fig. 4 is an outer end elevational view showing the rack guide in position on the secondary insulator rack of Fig. 3;

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Fig. 5 is a horizontal sectional view, enlarged, taken approximately on the line 5—5 of Fig. 3;

Fig. 6 is a side elevational view showing the rack guide in position on another type of secondary insulator rack;

5 Fig. 7 is an outer end elevational view showing the rack guide in position on the secondary insulator rack of Fig. 6; and

Fig. 8 is a horizontal fragmentary sectional view taken approximately on the line 8—8 of Fig. 7.

10 It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes can be made in the structure disclosed without departing from the spirit of the invention.

15 Like numerals refer to like parts throughout the several views.

Referring now more particularly to Figs. 3 and 4 of the drawings, a secondary insulator rack 10 is illustrated which includes vertical side rail sections 11 formed of structural angles with a plurality of C-shaped brackets therebetween, the brackets including an upper bracket 12, a middle bracket 13 and a lower bracket 14. The brackets 12, 13 and 14 can be secured to the side rail sections 11 by rivets 15, in vertically spaced relation. 20 The brackets 12, 13 and 14 each have opposed and channeled outwardly concaved horizontal bracket arms 16.

Each pair of bracket arms 16 of the brackets 12, 13 and 14 has therebetween a spool-like insulator 17, preferably of ceramic material. The insulators 17 are held in position between the horizontal bracket arms 16 by a vertical bar or pin 18 extending from top to bottom and held in place in any desired manner. 30

The secondary insulator rack 10 just described is known and has heretofore been in use, the rack 10 being secured in position on poles P or other supports at the locations at which the secondary conductors 20 are to be mounted. For this purpose, a plurality of lag screws 21 may be employed. 35

The secondary insulator rack 10a shown in Figs. 6 and 7 is similar to that shown in Figs. 3 and 4 except that an upright channel section 11a has a plurality of generally horizontal bracket arms 16a extending therefrom. The channel section 11a has spaced openings 19 extending through the central web thereof. 40

In accordance with the present invention, a rack guide 24 is provided which includes a pair of spaced side panels or plates 25 of any desired material, and preferably insulating or non-electrical conductive material, such as wood, synthetic plastic bonded glass fibers, or the like. 45

The panels 25, at the central portion thereof are maintained in spaced relation by a central upright 26, a plurality of screws or rivets 27 extending through the panels 25 and the upright 26 to aid in retaining the panels 25 in position. 50

At the outer end of the panels 25 and end upright 28 is provided which retains the panels 25 in spaced relation, a plurality of screws or rivets 9 extending through the panels 25 and into the upright 28 to aid in retaining the panels 25 in position. 55

The panels 25 to one or the inward side of the central upright 26 have upper and lower margins 25a and 25b which are spaced so as to be insertable between for engagement with opposed facing portions of respective pairs of horizontal bracket arms 16 of the brackets 12 and 13 and the brackets 13 and 14, respectively. (See Figs. 3 and 4.) 60

One of the panels 25 is provided on the inward side

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with a tongue 29 having upper and lower margins 29a and 29b and a tapered end 29c for easy insertion between side rail sections 11 of racks 10 of the type shown in Figs. 3 and 4, or for insertion in gripping engagement in the appropriate opening 19 of a rack 10a as shown in Figs. 6 and 7. The panels 25 to the other or outward side of the central upright 26 and extending to the outer end upright 28 have upper margins 25c below the levels of the margins 25a. The uprights 26 and 28 have aligned sockets 30 and 31 for the reception of a roller pin 32 having a horizontal roller 33 mounted thereon.

The panels 25 on the inward side of the central upright 26 are in spaced relation to provide a socket 34, the spacing preferably being such as to permit of the easy reception and accommodation of the pin 18 of the secondary rack 10 or 10a.

A latch 35 is provided which may be of any desired type but is preferably such that the same may be readily actuated to released position with one hand of the user, and with said hand encased in a protective glove. For this purpose, the latch 35 includes a horizontal resilient spring strip 36 connected at one end to one panel 25 in any desired manner, such as by a rivet 37, and extending along the exterior of one of the panels 25 with a projecting portion 39 extending through an opening 40 in the panel 25 into which the rivet 37 extends. The projecting portion 39 preferably includes a part 39a at an obtuse angle with respect to the horizontal portion 36 to facilitate insertion, and with a part 39b perpendicular to the longitudinal axis of the horizontal portion 36 to provide a stop to engage the pin 18 (see Fig. 5), thereby to prevent undesired dislodgment. The part 39b extends inwardly between the panels 25 at least as far as the axis of the pin 18, so that pressure on the part 39b exerted by the pin 18 will always be normal to the contiguous face of the part 39b.

The strip 36 preferably also includes a side portion 41, and a transversely extending portion 42 which is extended through an opening 43 in the opposite panel 25 and with a turned end 44 for facilitating movement manually from a clamped position to a released position.

The mode of operation will now be pointed out.

When it is desired to use the rack guide 24, the glove encased hand of the user is employed to grip the rack guide 24 by its outward end and it is then pushed into the space between a pair of the brackets, for example the brackets 12 and 13, with the panels 25 on each side of the pin 18. When the part 39a of the spring 36 engages the pin 18 further pressure cams the projecting portion 39 outwardly through the opening 40 and permits the rack guide 24 to move inwardly to the innermost end of the socket 34, whereupon the portion 39 will return to the normal and gripping and holding position as shown in solid lines in Figure 5.

With the rack guide 24 in position on the pin 18, the rack guide 24 will be restrained and held where a rack of the type shown in Figs. 3 and 4 is employed by the engagement of the upper and lower margins 25a and 25b with opposed facing portions of the channeled bracket arms 16. When rack guides 10a are employed the upper and lower margins 29a and 29b of the tongue 29 will engage with the upper and lower opposed faces on the boundary wall of the opening 19.

The rack guide 24 may also be attached to the rack 10 or 10a by depressing the end 44 with the thumb which will permit inserting the rack guide 24 to the position with the pin 18 at the innermost end of the socket 34. Upon removing the pressure on the end 44, the latch 35 will, by reason of its resiliency move to a position with the part 39b preventing separation from the pin 18.

It will be noted that the outer face of the panel 25 acts as a stop to limit the movement of the portion 36 of the latch 35 toward the interior of the socket 34.

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It will thus be seen that to obtain the desired locked engagement, the rack guide 24 is moved to position the panels 25 between adjacent facing bracket arms 16 as illustrated in Figs. 3 and 4 and to position the panels 25 on opposite sides of the pin 18. Then for purposes of attaching the rack guide 24 to the rack 10 or 10a the latch 35 is released manually or is forced to open position by pressure of the pin against the latch part 39. Upon closing of the latch 35 with the pin 18 at the inner end of the socket 34, the rack guide 24 will be held firmly in position for use.

The roller 33 facilitates the tensioning of conductors 20, as desired, and is available to support the ropes of a block and tackle employed for taking up slack and tensioning the conductors 20 for their attachment to the insulators 17. The rack guide 24 can, of course, be inserted either between the upper bracket 12 and middle bracket 13 or between the middle bracket 13 and the lower bracket 14, dependent upon the location at which the desired operations are to be performed.

When it is desired to remove the rack guide 24, it is grasped with the palm of the gloved right hand engaging the roller 33 and with the thumb of the user brought to a position to engage the latch end 44. With the thumb in this position the user can press the latch 35 to permit the part 39 to be moved outwardly of the opening 40 and release its engagement with the pin 18 so that rack guide 24 may be withdrawn from the rack 10.

It will be noted that by reason of the simplicity of its construction, the rack guide 24 can be readily applied or removed by a glove protected hand to reduce shock hazard but will be firmly held in locked position.

We claim:

1. A secondary rack guide for engagement with a secondary rack having spaced substantially horizontal bracket arms and opposed faces between bracket arms and a vertical pin at the outer end of said arms comprising a pair of spaced panels at least one of which has upper and lower margins for engagement with said faces, a central upright between said panels and providing with said panels a socket for the reception of the rack pin therein, an outer upright between said panels, said panels having upper marginal portions between said uprights spaced below said upper margins, and a resiliently impelled latching member carried by said panels for engagement with said rack pin.

2. A secondary rack guide as defined in claim 1 in which said latching member has an operating portion accessible from the exterior of said panels.

3. A secondary rack guide as defined in claim 1 in which said latching member includes a resilient strip secured to one of said panels and having a portion projecting into the space between said panels.

4. A secondary rack guide as defined in claim 1 in which said latching member includes a resilient strip secured to one of said panels and has a portion projecting beyond the other of said panels for releasing said latching member.

5. A secondary rack guide for engagement with a secondary rack having vertically spaced substantially horizontal bracket arms with vertically aligned apertures therethrough adjacent their outer ends and a pin extending through said apertures comprising a pair of spaced panels having a central upright and an outward end upright separating said panels and providing inwardly of said central upright a socket for the reception of said pin therein, cooperating portions on said rack and said guide for supporting said guide in upright position and for preventing rotation of said guide about said pin when said pin is engaged in said socket, and resiliently impelled latching means on said guide for releasably engaging said pin.

6. A secondary rack guide as defined in claim 5 in which said latching means has a portion in engagement

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with said pin and retaining said guide in locked position when said pin is fully inserted in said socket.

7. A secondary rack guide as defined in claim 5 in which said latching means includes a manually operable member accessible from the exterior of said panels for positioning said latching means in pin releasing position.

8. A secondary rack guide as defined in claim 5 in which said latching means has a portion in engagement with said pin and retaining said guide in locked position when said pin is fully inserted in said socket and includes

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a manually operable member accessible from the exterior of said panels for releasing engagement of said latching means from said pin whereby upon operation of said member said guide may be readily withdrawn from said rack.

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