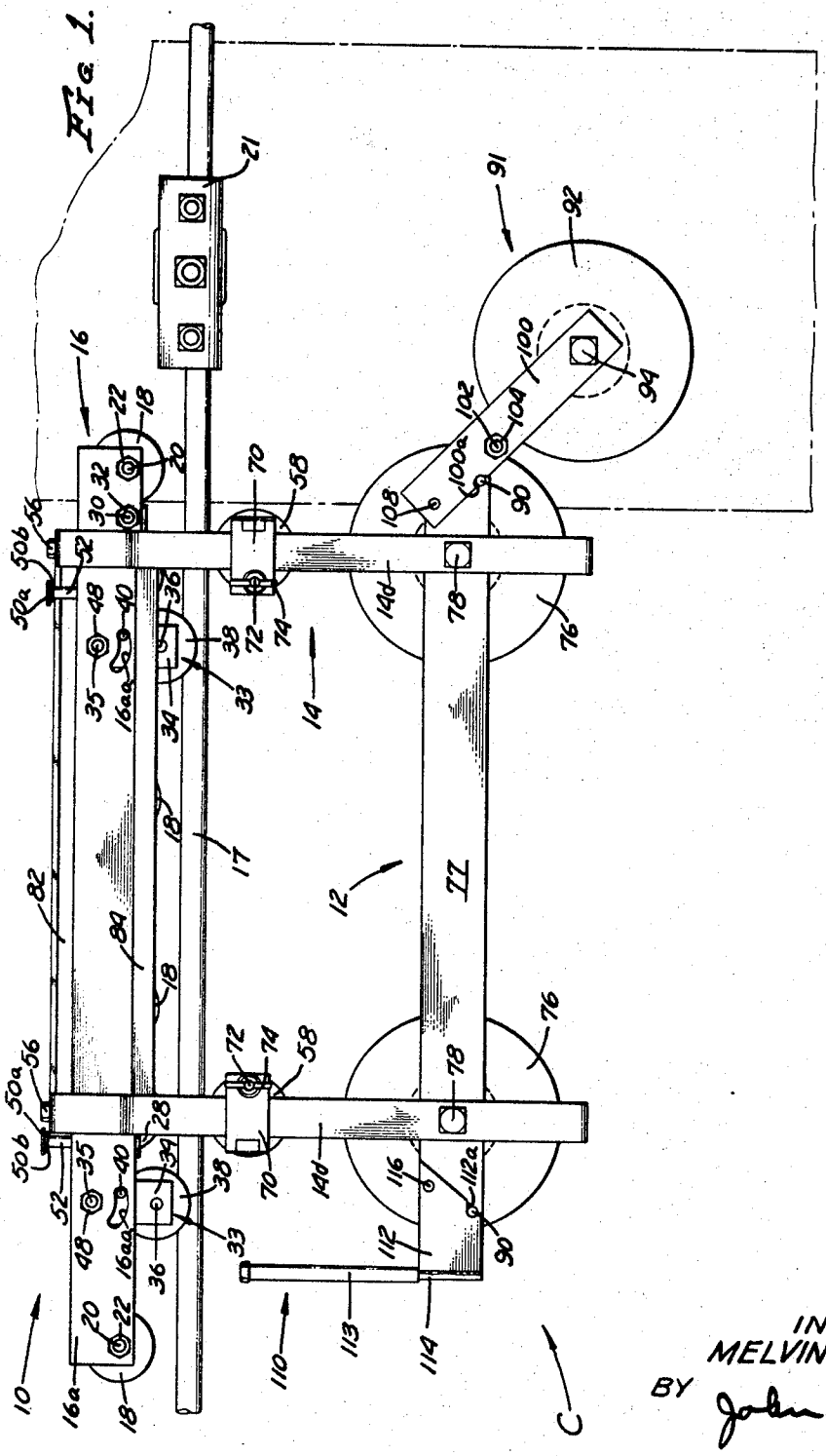
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CABLE GUIDE

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Fig. 1.



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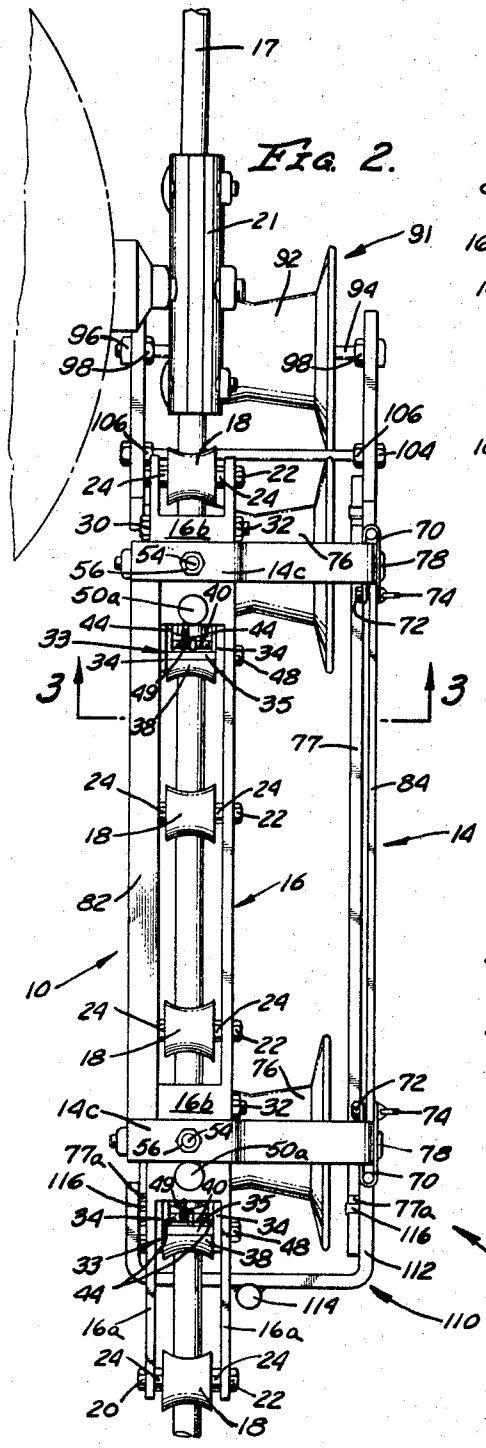


Fig. 2.

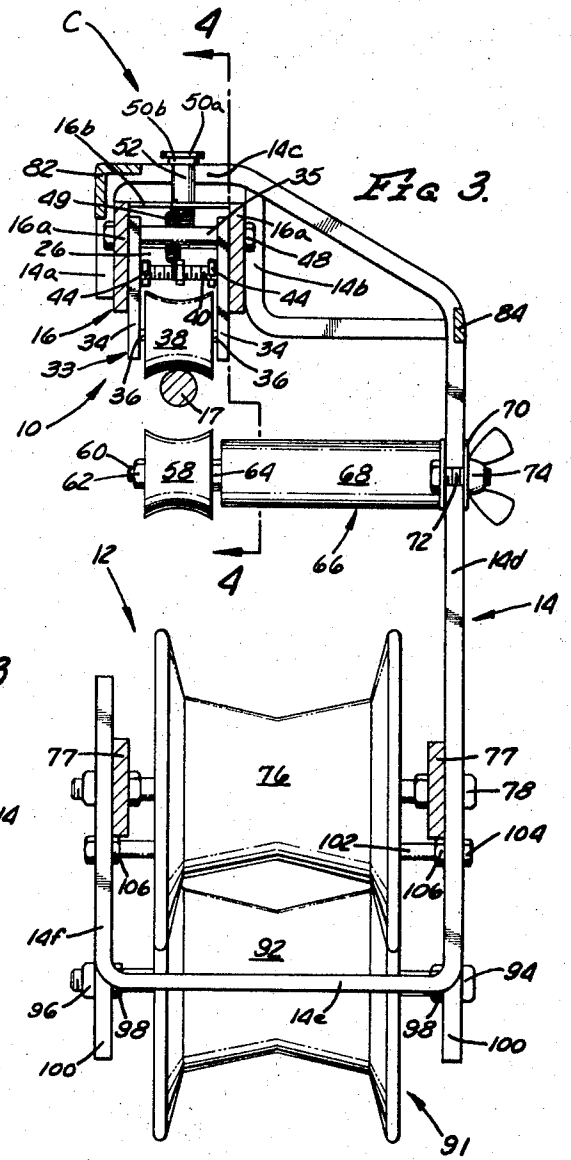


Fig. 3.

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Fig. 4.

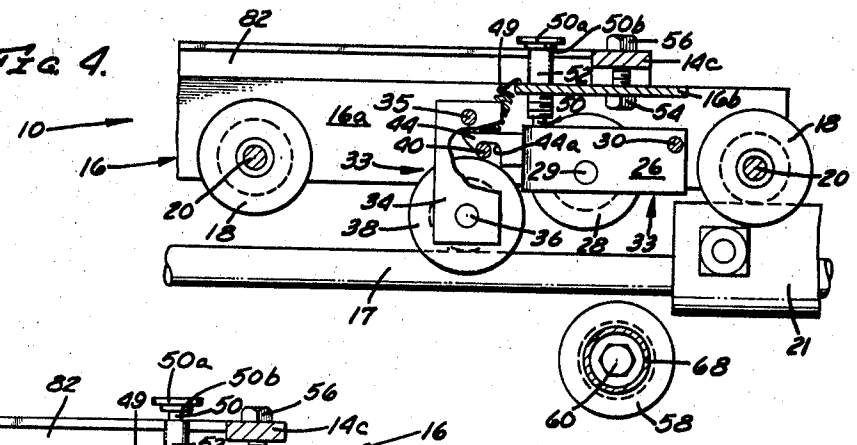


Fig. 5.

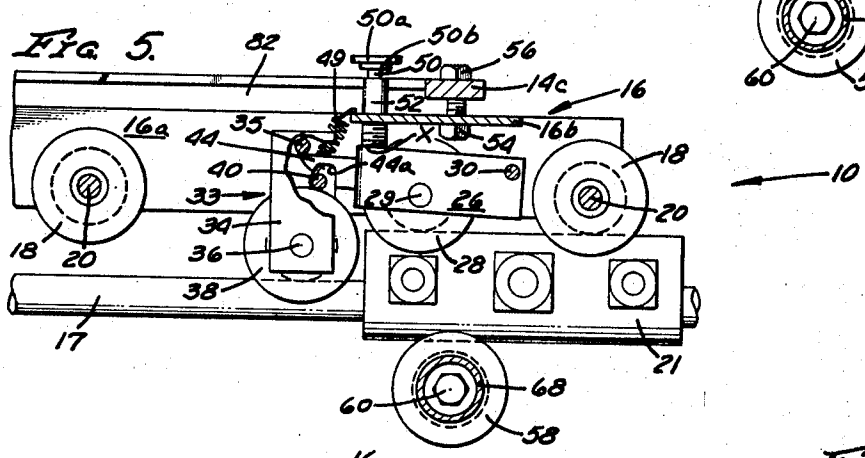


Fig. 6.

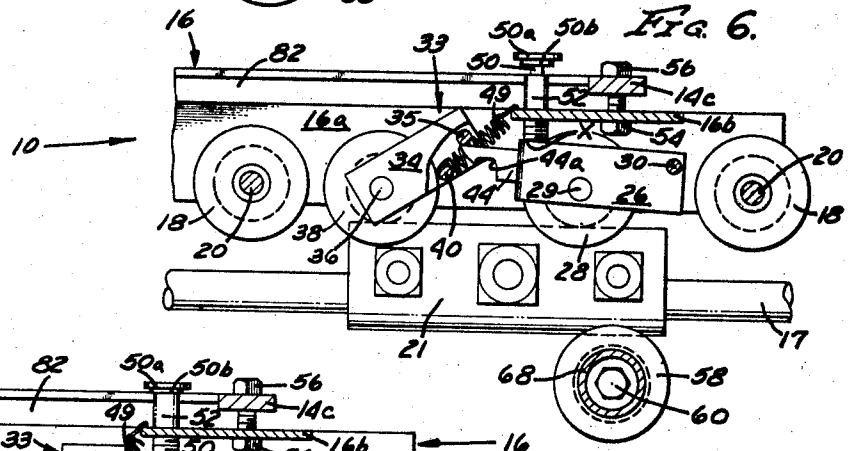
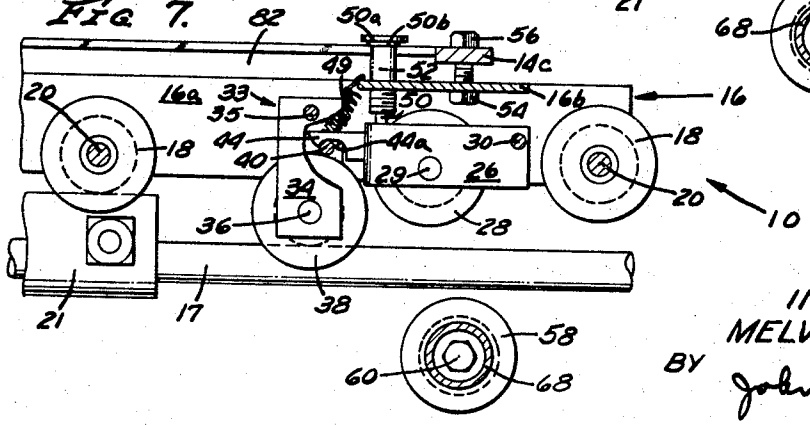


Fig. 7.



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3,437,314

CABLE GUIDE

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Filed Aug. 18, 1967, Ser. No. 661,668
Int. Cl. B66d 1/36; B61b 7/10
U.S. Cl. 254—134.3 10 Claims

ABSTRACT OF THE DISCLOSURE

An apparatus for guiding telephone cable from a lower source to sufficient proximity to a support strand to permit its lashing to the strand. The apparatus has upper trolley rollers which permit it to roll along the top edge of the strand, lower rollers positioned to support the cable underneath the strand and an interconnecting framework holding the two sets of rollers together. The upper rollers are mounted in multilevel, and partly pivotal, fashion so that they roll across connectors on the strand without disturbing the level of the lower rollers.

Background of the invention

This invention relates generally to means for guiding telephone cable, or the like, to proper parallelity with an elevated support strand to permit continuous lashing of the cable to the strand with a lasher or spinner. More particularly, the invention relates to such means adapted to ride the strand ahead of the advancing lasher and pass over connectors holding the strand to supporting telephone poles without difficulty.

Typically, telephone cable is strung on telephone poles by first affixing a strand, or messenger, to the poles at the desired cable elevation, the strand being connected to each pole by means of a connector which is firmly anchored to the pole and has a pair of elongate clamp members adapted to surround and hold (with the aid of associated tightening means) several inches of the strand in a tight grip. Typically, these clamp members extend for about 5¾ inches along the strand and form an obstruction rising to a height of almost an inch above it. The telephone cable is next brought into position underneath the strand and lashed thereto with a so-called lasher, the cable being fed as needed from a reel rotatably supported a little above ground level on a dolly, or the equivalent, movable in the appropriate direction and in such manner as to permit payout of the cable in such fashion as to supply the needs of the lasher as it progressively secures the cable to the strand.

As linesmen, and others skilled in telephone cable installation and maintenance activities, are aware, telephone cable typically varies from about half an inch to about four inches in diameter and is, even in its smaller sizes, heavy and cumbersome to handle. In the latter connection, the dragging weight of the cable compounds the difficulty of holding it aloft for lashing to carrying strands in the above-indicated manner. To alleviate this problem by minimizing the down pull of gravity on the cable, a so-called cable chute is conventionally employed to support the cable some distance ahead of the lasher and guide it into proper proximity to the strand for effective utilization by the lasher in its cable fastening functon.

The aforesaid cable chute comprises a trough-like member, through which the cable runs, and associated trolley means adapted to ride the strand and hold the trough-like member in suspension thereunderneath. When so supported, the trough-like member of the cable chute is substantially horizontal, except for a front portion which curves downwardly to receive cable from a feed reel at a lower level and guide it upwardly and into proper proximity to the strand to permit it to be lashed thereto in

the above-described manner. Ordinarily, during a typical cable stringing operation, the cable feed reel is moved on its dolly, or other carrying means, at a speed sufficient to assure an optimal rate of cable feed to a cooperating cable chute and lasher, the cable chute and lasher usually being pulled by tow lines attached to the cable reel.

Cable lashing operations generally proceed without difficulty along stretches of strand between telephone poles since obstructions capable of blocking movement of the cable chute are seldom encountered there. At each telephone pole, however, the lashing operation must be temporarily suspended while a lineman climbs the pole and wrestles the cable chute from one side to the other of the connector joining the strand to the pole. This constitutes hard and dangerous work since the weight of the chute and cable pull ordinarily total about 60 pounds and the lineman must hold the cable on his belt while attempting to maneuver the heavy cable chute past the connector while perched high on the pole. After the necessary transfer of equipment from one side to the other of the connector has been made, the cable lashing operation is resumed and continued in the above-described manner until the next pole is reached, at which time a lineman must climb the pole to the strand and again transfer the cable chute around a connector, this alternate lashing and equipment transfer procedure continuing until the cable has been completely strung.

Summary of the invention

I have now improvised a strand-riding, cable guiding device intended for use in lieu of the conventional cable chute of above reference but uniquely capable, as the latter is not, of substantially uninterrupted movement over connectors, and similar obstructions to the continuing strand riding movement of conventional trolleys, or the like. More specifically, and as will be seen, my new cable guiding device (hereinafter called a cable guide) is designed to ride a cable support strand on trolley wheels so uniquely mounted as to roll over strand holding connectors with scarcely a jar, thus obviating any necessity for manual lifting of the device around such connectors, as required in the case of the conventional cable chute. It will thus be apparent that my cable guide can be used for cable stringing purposes with much greater safety, and far less physical effort on the part of the lineman, than can the aforesaid cable chute. Additionally, the cable guide can be made directionally reversible, by which is meant in a form readily convertible for travel in either direction along a strand. This, as any telephone lineman will appreciate, is an advantage not possessed by conventional cable chutes, the latter being designed for strand-riding movement past a telephone pole in one direction only, thereby necessitating the use of separate chutes for cable stringing in opposite directions along any particular length of strand.

It is thus a principal object of this invention to provide strand-riding means for the continuous guidance of telephone cable from a lower source to a strand-riding lasher which is capable of proceeding past connectors and similar obstructions without having to be manually lifted thereacross.

It is another object of the invention to provide such means which is readily convertible for usage in either direction along a telephone cable strand.

Other objects, features and advantages of the invention will become apparent in the light of the complete description thereof to follow.

Brief description of the drawings

The structure, manner of operation and manner of functioning of my novel cable guide will be better under-

stood by reference to the accompanying drawings, of which:

FIGURE 1 is a side elevation of a preferred embodiment of the cable guide shown in mounted position on a telephone cable strand and in approaching proximity to a connector anchoring the strand to a telephone pole, the cable strand and pole being shown fragmentarily, the latter in phantom outline.

FIGURE 2 is a top view of the cable guide in its strand-mounted, FIGURE 1 position.

FIGURE 3 is a cross-sectional view, slightly enlarged, of the strand-mounted cable guide, taken along line 3—3 of FIGURE 2.

FIGURE 4 is a fragmentary sectional view, still further enlarged, of the cable guide taken along line 4—4 of FIGURE 3, but showing the guide situated to the right of its FIGURE 1 position on the cable strand to illustrate its first phase of progression past a connector, a part of the internal structure of the device being shown partially broken away to reveal important structural details otherwise hidden from view.

FIGURE 5 is a view similar to the FIGURE 4 view but showing the cable guide still farther to the right on the strand to illustrate the second phase of its progression past said connector.

FIGURE 6 is a view similar to the FIGURE 5 view but showing the cable guide still farther to the right along the cable strand to illustrate the next successive phase of its progression past the connector.

FIGURE 7 is a view similar to the FIGURE 6 view, but showing the cable guide as it appears in the last phase of its progression past the connector.

Description of the preferred embodiment

Considering now the drawings in greater detail, there is shown generally at C the above-referred-to embodiment of my cable guide comprising, in combination, a trolley assembly **10**, a cable guide assembly **12** and a frame **14** integrating the trolley and cable guide assemblies and holding them in properly spaced relationship for optimal functioning of the overall device. Trolley assembly **10** comprises an elongate roller mount **16** supporting two identical sets of four rollers each in universal alignment and in a manner subsequently to be described. Rolley mount **16** is made up of two parallel sections of strap metal **16***a* joined together at two places along their top edges by two metal web sections **16***b*, as best shown in FIGURE 2. FIGURE 1 shows the cable guide with its trolley assembly in rolling contact with a telephone cable strand **17**, this being its normal position of use and the positional reference for all subsequent statements herein relating to the positional orientation of the cable guide, or any of its component parts.

Rotatably supported between strap metal sections (hereinafter called side straps) **16***a* of roller mount **16**, on axles **20** running perpendicularly to the straps and through aligned openings near the bottom edges thereof, are four rollers **18**, two of these being the fore and aft ones of a first of the above-mentioned sets of four rollers, and the other two being the fore and aft ones of the second set of such rollers. Axles **20** are suitably sized bolts which extend completely through both of the side straps **16***a* sufficiently far to receive a pair of fastening nuts **22** snugly on their outer ends, all as shown in FIGURES 1 and 2. Drawn tightly against the inner surfaces of straps **16** on each of axles **20** are two nuts **24**, the rollers **18** being rotatably mounted on their respectively cooperating axles intermediate said nuts. Nuts **24** serve as spacers for rollers **18** and they, as well as the other parts of the trolley assembly, are so sized and shaped as to permit free turning movement of the rollers on their axles. The rollers **18** are peripherally grooved to permit their rolling engagement (for reasons later appearing) with the upper surfaces of connectors holding strand **17** to support poles, as well illustrated in FIGURE 2, which shows the shapes (obviously equivalent) of the resulting roller grooves, and FIGURES 4, 5 and 7, each depicting a roller **18** in rolling engagement with such a connector **21**.

Mounted respectively within a pair of similarly sized yokes **26** is a pair of peripherally grooved rollers **28**, individually equivalent in size and configuration to rollers **18**. Yokes **26** are U-shaped parts of strap metal construction, pivotally supported by a pair of pins **30** which pass respectively through appropriate openings in the arms, near the open end, of each, as shown in FIGURES 4 through 7. Pins **30** are bolts threaded at their outer ends but smooth for most of their lengths and are mounted in aligned openings in side straps **16***a* of the roller mount in perpendicularity to said straps, each pin being secured in place by a nut **32** drawn tightly thereon against the outer surface of the side strap which can be seen in FIGURE 1.

Each of the rollers **28** is mounted between the arms of its supporting yoke on a suitably sized axle **29** which is fixedly secured at its ends in appropriately located openings in said arms, the openings being so positioned as to align the axle in perpendicular relationship to the arms and the axle being of such length, and orientation relative to the arms, as to terminate flush with the outer surfaces of the latter, all for reasons subsequently appearing. Axles **29** are spaced sufficiently far from pins **30** to permit rollers **28** to turn free of contact with the pins, and the arms of yoke **26** are of suitable thicknesses to assure the positioning of rollers **28** in substantial alignment with rollers **18**.

As the drawings, and particularly FIGURES 4 through 7, show, yokes **26** are positioned respectively intermediate the two rollers **18** of each of the previously mentioned sets of rollers mounted between side straps **16***a* of roller mount **16**. Thus positioned, yokes **26** (and the rollers **28** carried thereby) function in a manner, and for a purpose, hereinafter to be explained. Although, as previously indicated, and the drawings, particularly FIGURES 4 through 7, show yokes **26** are pivotally movable around the pins **30**, their freedom of such movement is extremely limited. Thus, the yokes are constrained to arc movement between a substantially horizontal position, as illustrated in FIGURES 4 and 7, and a second position only slightly tilted therefrom, as illustrated in FIGURES 5 and 6, during operation of the cable guide. For a reason later made clear, the yokes are disposed directly underneath web sections **16***b* of roller mount **16**, respectively.

Pivotally suspended from a pair of pintles **35**, each passing through aligned holes in, and near the top of, side straps **16***a* of roller mount **16**, are two brackets **33**. Each of brackets **33** consists of a pair of metal strap sections **34** partially held together, in parallel relationship, by a round cross pin **40** fixedly secured in tight openings in the strap sections. Additionally, each of the brackets is suspended from its pintle **35** in such fashion as to hang substantially straight down (except when temporarily swung out of this position in a manner, and for a reason, subsequently to be explained), and its cross pin **40** is located off-center in the direction of the nearest of the yokes **26**, all as clearly illustrated in FIGURES 4 and 7 which show the relative positions of the here-involved parts. While, as indicated above, the cross pins **40** help to hold the strap sections of brackets **33** together, this is not their primary function, but only an incidental one, as will presently be seen.

Mounted in the respective lower ends of brackets **33** are two rollers **38**, individually similar in size and shape to rollers **18** and rotatably supported within said brackets by a pair of axle pins **36** which are fixedly secured at each end, and in perpendicular relationship, to appropriate strap sections of the brackets. Brackets **33** are of approximately the same width as yokes **26** to permit them to swing between the side straps **16***a* of roller mount **16** with the same degree of clearance as do the latter. Moreover, brackets **33**, similarly to yokes **26**, are so mounted as to pivot between two positions during normal functioning

of the cable guide, these being a first position obtaining during ordinary use of the guide between telephone poles (in which position the brackets extend downwardly from their support pintles to hold rollers **38** a critical distance below the level of rollers **18**, as illustrated in FIGURES 1, 4, 5 and 7), and a second position, illustrated in FIGURE 6, in which they are swung away (although not, as will be seen, at the same time) from the first far enough to raise rollers **38** to the same level as rollers **18** for connector crossing purposes as will subsequently be discussed in detail.

Fixedly secured, in perpendicularly outstanding relationship, to the enclosed ends of yokes **26** are two equivalently sized and shaped latch members **44**. Latch members **44** are of generally flat shape and blade-like character and oriented in edge-upstanding and parallel relationship, all as illustrated in the drawings. The latch members are characterized by forwardly extending tips, from which their lower edges curve respectively downwardly and rearwardly through cam-like segments to notches **44***a*, a representative one of which can be seen in FIGURES 4 through 7, of suitable size and shape to admit cross pins **40** of brackets **33** in the manner illustrated in FIGURES 4 and 7. The two notches **44***a* in the latch members on each yoke are, of course, in proper alignment to permit the simultaneous hooking of both members over a cooperating cross pin **40** when the latter is positioned as shown in FIGURES 4 and 7. It will thus be apparent that each set of interlocking latch members **44** and cross pins **40** serves, in latch-like fashion, to hold a bracket **33** in the first of its above-described positions of use, specifically as illustrated in FIGURES 1, 4, 5 and 7 and employed for normal strand-riding operation of the cable guide between telephone pole connectors. Supporting pintles **35** for brackets **33** are bolts of sufficient length to extend through the two side straps of roller mount **16**, smooth shanked for most of their lengths, and threaded on their outer ends to receive a pair of nuts **48**, which latter are tightened flush against appropriate outer surfaces of the side straps in the assembled cable guide, all as illustrated in FIGURES 1, 2 and 3 of the drawings.

Cross pins **40** joining the strap sections of brackets **33** extend sufficiently far beyond the strap sections at each end to intersect the side straps of roller mount **16**. To accommodate the resulting end extensions of the cross pins, arcuately shaped openings, or slots, **16***aa* are cut in said side straps, the openings being so sized and shaped as to permit free movement of the rod ends as they ride through their travel arcs corresponding to the range of movement of brackets **33**, and their associated rollers, during operation of the cable guide.

Two spiral springs **49** are each respectively connected, at one end, to a separate web section **16***b* at a point intermediate the ends of that edge closest to the nearest bracket **33**, and, at the other end, to the cross pin **40** of said bracket at a point intermediate the ends of the pin. The springs exert a sufficient biasing force on brackets **33** to hold them substantially vertical when unopposed and to return each to such orientation after an opposing force holding it out of the vertical in the manner illustrated in FIGURE 6 (and to which it is subject during the operation of the cable guide) has been released, all of which will be more clearly understandable in the light of subsequent disclosures herein.

Weldably rooted to the enclosed end of each of yokes **26**, so as to project inwardly intermediate its arms, is a flat metallic tongue having one surface disposed coplanarly with the upper edges of said arms. While neither tongue is visible on the accompanying drawings, the structure and position of each will be clear from this description considered conjunctively with the drawings. Disposed vertically above each tongue is a positioning sleeve **52** for lifting pin **50** for each of said yokes, the positioning sleeve being threaded for part of its length and screwed as far as possible into a suitably tapped opening in one of the web sections **16***b* of roller mount **16**, all as illustrated in the drawings, and particularly FIGURES 4 through 7.

The sleeves **52** serve to contain lifting pins **50** in vertically slidable relationship, for a reason hereinafter appearing. Each of the lifting pins **50** has a flat head **50***a*, by which it can be easily grasped, and a shaft which extends downwardly below its containing sleeve and through the underlying tongue of a cooperating yoke **26**. The lifting pins are each smooth-shanked except for a lower tip which is threaded to receive a nut (not shown) sufficiently tightly to serve as a means of support for the yoke, the tongue of which has an opening properly sized to permit sliding passage of the shaft of the lifting pin in its above-described position of use. Just beneath flat head **50***a* of each of the lifting pins is a shoulder around the shaft of the pin. The shoulder bears directly on the upper end of a sleeve **52** when the pin is in its normal position of rest, as illustrated in FIGURES 1, 3, 4 and 7. Such a shoulder is not, however, critically necessary and could, if desired, be omitted, in which case the lifting pin would merely come to rest with its head, rather than an adjacent shoulder, bearing on the sleeve.

The lower ends of positioning sleeves **52** terminate at a sufficient level above the tongues of yokes **26** to prevent any possibility of sleeve interference with the subsequently-described movements of the latter during normal usage of my cable guide. In this connection, and as will be seen, each of yokes **26** alternates between fixed limits of travel during periods of such cable guide usage under the partial control of lifting pins **50** in a way soon to be revealed.

Roller mount **16** is fitted upwardly into two U-shaped segments of frame **14** and fastened in place therein in a manner as hereinafter described. These segments have their open ends facing downwardly, and each comprises a pair of arms **14***a* and **14***b*, respectively, spaced for snug fitting embrace of side straps **16***a* (one set of such arms being shown in FIGURE 3), and an end enclosure **14***c* which transversely, and perpendicularly, overlies the side straps of the roller mount, the segments being disposed longitudinally coincidentally along the roller mount with its web sections **16***b*.

The roller mount **16** is removably secured to end enclosures **14***c* of the U-shaped segments of frame **14** by means of two bolts **54** which pass upwardly through web sections **16***b* of the roller mount and said end enclosures **14***c*, respectively. Bolts **54** are threaded along their shaft lengths, and web sections **16***b* of said roller mount have appropriately tapped openings running perpendicularly therethrough into which the bolts are threaded upwardly and tightened, with their heads snug against the undersides of the web sections as shown in FIGURES 4 through 7. The openings for bolts **54** in end enclosures **14***c* of the U-shaped segments of frame **14** are slightly larger in diameter than the bolts to permit loosely sliding fit of the latter therein.

Each of bolts **54** has a nut **56** tightened on its outer end to a sufficient extent to draw the roller mount far enough into the U-shaped segments of frame **14** to lock it suitably in place for use as taught herein. As the drawings make clear by contra example, it is not necessary for nuts **56** to be tightly enough drawn on bolts **54** to pull the roller mount web sections flush against end enclosures **14***c* of the U-shaped segments of frame **14** since the roller mount fit between the arms of the latter is sufficiently snug to permit its adequate support when only partly inserted in said segments, as, for example, to the extent illustrated in FIGURES 4 through 7. There is generally no reason, however, for not drawing the roller mount completely into the U-shaped segments, a result easily achieved, as indicated above, by a mere nut-tightening procedure. It is worthy of note, in connection with this feature of my invention, that the permissible leeway of fit of roller mount **16** within the U-shaped

segments of frame **14** provides a means for achieving adjustability of clearance between certain operating parts of the cable guide, an advantage which will be better understood in the light of disclosures to follow herein.

As FIGURES 2 and 3 illustrate, the U-shaped segments of cable guide frame **14** are offset to one side in the overall frame structure, the reason for which will subsequently appear. A more detailed description of the cable guide frame will be postponed for later consideration conjunctively with the description of cable guide assembly **12**, although it can presently be said that the frame has two upright members **14***d*, of similar size and configuration, integral with the U-shaped segments of said frame. Upright members **14***d* are strap-like in configuration, and equal in width and thickness to arms **14***a*, **14***b* and end enclosures **14***c* of said U-shaped segments.

Rotatably secured on a pair of axles **60** which extend outwardly from a pair of cantilever supports **66** attached to upright members **14***d* of frame **14** are two rollers **58** of the same size and shape as rollers **18**. Cantilever supports **66** extend to the left, as seen in FIGURE 3, from the upright members **14***d*, and are of the proper length to position the rollers **58** in the vertical plane occupied by (although at a lower elevation than) the above-described rollers of trolley assembly **10**, all as shown in FIGURE 3. While the cantilever support-roller **58** assemblies are physically separate from trolley assembly **10**, they serve a function augmentative to that of the latter and are hence logically classifiable as, and here considered to be, trolley assembly accessories, rather than independently, or otherwise differently, classifiable parts of the cable guide.

Cantilever supports **66** are identical, each being essentially a section of cylindrical pipe **68** having a flat closure permanently plugging its outer end, and having its inner end permanently attached, by any suitable means, to one strap of a truncated strap hinge **70**, hereinafter to be described in greater detail. Each of axles **60** is a bolt-like member, smooth for most of its length, sized to fit slidingly within the hub bore of a roller **58**, and firmly and concentrically secured to, in outward perpendicularity from, the flat closure in the outer end of cylindrical pipe section **68**, the latter as best shown in FIGURE 3. Additionally, each of the axles has threaded end sections flankingly adjacent that part of its shaft passing through a roller **58**, and two nuts, a spacer nut **64** and a holding nut **62**, are screwed respectively thereonto. The spacer nut **64** is drawn tightly against the flat end closure of the pipe section **68** to which the axle is secured, and, as its name implies, serves to maintain the roller **58** properly spaced on the axle to keep it in the substantially vertically coplanar relationship with the trolley assembly **10** rollers referred to above. As in the case of all previously described rollers, rollers **58**, while closely flanked by means to keep them properly positioned on their respective axles (i.e., holding and spacer nuts **62** and **64**) have sufficient hub clearance to permit their free and substantially unhindered turning during usage of the cable guide as taught herein.

As previously indicated, pipe sections **68** of cantilever supports **66** are fixedly secured at their inner ends to a pair of truncated strap hinges **70**, respectively, in such fashion as to permit their horizontal extension in the above-described, and drawing-illustrated, direction in the cable guide, the strap hinges being so fastened around upright members **14***d* of frame **14** as to assure this orientation of the cantilever supports. Each of the hinges **70** is fastened around its supporting member **14***d* by means of a bolt **72** and wing nut **74**, in the manner illustrated in FIGURES 1 through 3. Since the wing nuts **74** are adjustable by hand, it will be apparent that rollers **58** can be readily moved up or down by hand-loosening the nuts, as necessary, and sliding the hinges in the proper directions along members **14***d*. Such manual adjustability of the rollers **58** is not, however, a critical feature of my cable guide, and the guide can be effectively employed for purposes of the present invention without it.

Cable guide assembly **12** consists, for the most part, of two cable rollers **76** rotatably mounted on two axles **78**, respectively, and two metal side straps **77** between which the axles are, in turn, mounted. The axles are, of course, long enough to accommodate the rollers with sufficient room to permit their free rotation during use of the cable guide. Side straps **77** are supported in parallel relationship, and at the same level, by cable guide frame **14**, to which they are secured in the hereinafter-disclosed fashion. The cable rollers **76** serve to support telephone cable in underriding contact and are hence much larger than the above-described trolley assembly rollers, which latter are, as previously indicated, sized to roll matingly along the top edges of strand connectors such as connector **21**, the latter function requiring, as will be appreciated, a substantially smaller roller size than the former. Furthermore, and as will be seen, two of the trolley assembly rollers (rollers **38**) are adapted to roll along a cable supporting strand (such as strand **17**) during movement of the cable guide between strand connectors, the relatively small size of the strand here contributing to the necessity of utilizing rollers of substantially smaller size than rollers **76** in the trolley assembly. Additionally contributive to the size difference between the trolley assembly and cable rollers is the fact, not heretofore mentioned but later to be discussed in detail, that the latter are purposely made of large enough size to accommodate two cables at a time. As FIGURES 1 and 3 show, cable rollers **76** and side straps **77** are mounted in the lower portion of cable guide frame **14**, the reasons for which will become apparent in the light of subsequent disclosures herein.

Frame **14** has, as previously indicated, two upright members **14***d*, to which cantilever supports **66** for rollers **58** are attached. Above its point of juncture with the cantilever support, each of the upright members extends vertically upwardly for a short distance and then bends through a shallow arc, from which it inclines upwardly to the left, as viewed in FIGURE 3, after which it curves downwardly and straightens out to form the end enclosure **14***c* of one of the aforesaid U-shaped segments of the frame. The end enclosure **14***c* is integrally joined, at its left end, to downwardly depending arm **14***a* of the U-shaped segment through a 90° curve, all as illustrated in FIGURE 3. Arms **14***b* of the U-shaped segments are each formed by an upright leg of a brace member of generally right angular configuration which is affixed at its ends to an upright member **14***d* in such a way as to provide bracing support for the inclined upper segment of the latter, all, again, as illustrated in FIGURE 3. In the latter connection, it will, of course, be understood that while FIGURE 3 shows only one of the upright members **14***d*, including the just-described hardware integrally associated therewith, that figure is equally illustrative of the other upright member because of its previously-indicated similarity to the first-mentioned one. At their bottom ends, upright members **14***d* curve sharply inwardly, or to the left as viewed in FIGURE 3, to form two transverse segments **14***e*, and then sharply upwardly again to form two vertically upright arms **14***f*, of the cable guide frame, with the result that two U-shaped axle mounts, of sufficient width to receive rollers **76**, are provided in the lower portion of the frame, one such being illustrated in FIGURE 3.

The above-described portions of frame **14** serve to support trolley assembly **10** and cable roller assembly **12** in properly spaced orientation in the cable guide in a manner hereinafter to be described. To make frame **14** more rigidly stable, a tie, or brace, strap **84** is welded at its ends to the two upright frame members **14***d* near the point at which those members curve into their inclined segments near their upper ends, as best illustrated in FIGURES 1 and 3. The frame is further stabilized by the

presence of a channel section **82**, which has its ends fixedly secured to the above-described elements of the cable guide frame integrally inclusive of members **14***d* at the sharp bend points between arms **14***a* and end enclosures **14***c* of the previously described U-shaped segments of the cable guide frame receptive of roller mount **16** which, as will now be evident, form the upper portions of said elements.

The main portion of cable roller assembly **12**, consisting of cable rollers **76**, axles **78** and side straps **77**, is fixedly secured within the above-described U-shaped axle mount segments of the lower portion of the cable guide frame at the drawing-illustrated points of contact of the side straps with the upright portions of said axle mount segments, the latter (axle mount segments) being of such width as to snugly receive the cable rollers and side straps in a manner permissive of joinder of the involved parts in the indicated fashion. Axles **78** are long enough to pass through admissive openings, or passages, in the arms of the U-shaped axle mount segments of the cable guide frame, side straps **77** and the hubs of rollers **76** in the manner illustrated in the drawings, and particularly FIGURE 3, and extend outwardly from the sides of said axle mount segments far enough to permit them (the axles) to be secured in place in the below-described manner. The axles are long bolts, smooth-shanked for most of their lengths, headed at one end and so threaded at their ends as to permit their tightening in place, with suitable nuts, in the cable guide. The structural, and other, particulars of the cable rollers and their mounting means will, it is believed, be clearly comprehensible from the foregoing, considered conjunctively with the accompanying drawings.

Accessory to the main part of cable roller assembly **12**, as described above and referred to hereinafter as the stationary part of said assembly, are a removable guide roller assembly **91** and a cable divider assembly **110**. Guide roller assembly **91** is designed to ease and guide cable from a reel supported just above ground level into the forward part of the stationary part of the cable roller assembly. The guide roller assembly consists of two metal side straps **100** of equivalent size and parallelly disposed, and a brace bolt **102** so mounted as to hold them apart a distance sufficiently wider than that between side straps **77** to permit their snug embrace of the ends of said side straps in the manner best shown in FIGURE 2. Rotatably mounted between metal straps **100**, and near their forwardly disposed ends, on an axle **94** is a guide roller **92**, of the same size and shape as cable rollers **76**. Axle **94** is a bolt sufficiently long to fit through metal straps **100** and the hub of guide roller **92**, and project sufficiently far from the straps at its ends to permit its fastening in place as shown in FIGURES 1 through 3. The axle has a smooth shank except for threaded portions for short distances near its head and outer tip, and it is secured in place by means of a nut **96** drawn tightly against the outer surface of an appropriate one of said metal straps and two lock nuts **98** drawn tightly against the inner surfaces of each of said metal straps. Brace bolt **102** is threaded in the same manner as axle **94** and locked in place in the same manner as that axle by means of a nut **104** on its outer end, which is tightened against the outer surfaces of an appropriate one of said metal straps, and two lock nuts **106**, drawn tightly against the inner surfaces of said metal straps.

Side straps **77** of cable roller assembly **12** are characterized by the presence of four notches **77***a* in their upper edges, the notches being separately situated near the four ends of the straps and each being spaced the same distance from the nearest end of the strap in which it occurs. Fixedly secured in transverse alignment within guide roller assembly **91**, near the ends of its metal side straps opposite those ends nearest axle **94**, are two inwardly extending pins **108**. Set back from these same ends of the straps a distance significantly greater than the distance of pins **108** therefrom, are two notches **100***a* in the lower edges of said straps. Outwardly projecting from the outer surfaces of side straps **77**, near the lower edges of said straps and closer to their ends than notches **77***a*, are four pins **90**, fixedly secured, in perpendicular relationship, thereto. The relative positions of all of the above-mentioned notches and pins is such that guide roller assembly **91** can be placed at either end of the stationary part of the cable roller assembly with its inwardly extending pins **108** fitted into notches **77***a* and the outwardly extending pins of side straps **77** fitting into notches **100***a* in the lower edges of metal straps **100**. Thus emplaced, guide roller assembly **91** assumes the inclined position shown in FIGURE 1, whereat it serves its cable guide function in a manner believed obvious in view of present teachings.

Cable divider assembly **110** is intended for use in helping to keep two telephone cables undergoing simultaneous processing by cable guide C apart, the cable guide being capable, as previously indicated, of handling two such cables at the same time. Essentially, cable divider assembly **110** comprises a wide, shallow, U-shaped section of strap metal **112** and an upright metal finger **114**, the finger being weldably secured to the outer surface of the enclosed end of the U-shaped strap section in the manner shown in FIGURES 1 and 2. The ends of U-shaped strap section **112** are beveled downwardly, at equal angles, from the upward edges of the section as it is seen in FIGURE 1. Fixedly mounted in appropriate openings in U-shaped strap section **112** are two pins **116** which extend inwardly from points on its arms near the upper edges and pointed tips thereof. Near the bottom ends, respectively, of the beveled edges of the arms of U-shaped strap section **112** are two notches **112***a* sized to receive two of the pins **90** extending outwardly from side straps **77** of the stationary part of cable roller assembly **12**. All involved parts, pins and notches are so arranged as to permit emplacement of the cable divider assembly on either end of the stationary part of cable roller assembly **12** with its inwardly extending pins **116** fitted into two of notches **77***a* in the tops of side straps **77** of the cable roller assembly and two of the pins **90** extending outwardly from side straps **77** fitted into notches **112***a* in U-shaped strap section **112**, and with the two arms of said strap section disposed at the same horizontal level as side straps **77**, but flankingly offset therefrom in the manner illustrated in the drawings, and particularly FIGURE 2. Upright finger **114** is so positionally affixed to the U-shaped strap section **112** as to project vertically upwardly at the center of the cable receiving area of cable guide assembly **12** when the cable divider assembly is attached to the stationary part thereof in the above-mentioned way.

In use, cable divider assembly **110** is affixed to the rearwardly disposed end, and guide roller assembly **91**, as previously indicated, to the forwardly disposed end, of the stationary part of the cable guide assembly, all as illustrated in FIGURES 1 and 2 of the drawings. With the cable divider assembly thusly positioned, upright finger **114**, as will be seen, serves to keep two cables occupying the cable receiving area of the cable guide sufficiently apart to prevent their entanglement while simultaneously undergoing the cable handling treatment of this invention.

When in use, cable guide C rides most of the time along the top of a strand, such as strand **17**, on the rollers **38** of its trolley assembly, while supportively guiding telephone cable from a feed reel below over its guide rollers **92** and cable rollers **76**, in that sequence, to sufficiently close parallelism with the strand to permit lashing of the cable thereto in the conventional manner. As previously indicated, the main difference between my cable guide and the conventional cable chute of previous reference is the ability of the former to ride uninterruptedly over connectors holding cable supporting strands to telephone poles, thereby avoiding connector-by-passing difficulties of the type encountered during usage of the later in cable stringing operations.

The cable guide of this invention has its rollers **38** locked in their heretofore-described lowermost positions when riding stretches of strand between connectors, or other obstructions, by pressing interfit of cross pins **40** of its roller supporting brackets **33** in notches **44***a* of latch members **44**, the forces holding the cross pins and latch members **44** thusly together deriving from the downbearing weights of yokes **26** (and the rollers **28** carried thereby), to which said latch members are, as heretofore explained, attached, and the upward pull of spiral springs **49** (for reasons obvious from antecedent teachings herein), on the cross pins. When parts of the cable guide are thusly oriented for strand riding operation, its yokes **26** are disposed substantially horizontally and the rollers **28** mounted therein depend slightly below rollers **18** of the trolley assembly **10**, as best illustrated in FIGURES 4 and 7 of the drawings.

Attention is now particularly directed to FIGURES 4 through 7 which illustrate key stages of the traversal of a representative part of cable guide C past connector **21** in the right hand direction, as there shown, the representative part comprising fragmentary sections of trolley assembly **10** incorporating the forwardmost of its two above-described sets of respectively identical rollers. FIGURE 4 illustrates the first of these stages of connector traversal by depicting the cable guide as it appears shortly after its leading roller (the forwardmost of its rollers **18**) comes even with connector **21**. That roller (as well as the other rollers **18** of the cable guide), is mounted at the proper height above strand **17** to roll smoothly onto the upper edge of the connector from an approach such as that here involved, and ride it in the manner illustrated in FIGURE 4.

From its FIGURE 4 position, the cable guide moves to the right, in its traversal of connector **21**, until its forwardmost roller **28** comes even with the connector. Rollers **28** are, as previously indicated, mounted to ride slightly lower than rollers **18** when the cable guide is travelling a telephone cable strand between connectors so that its lower part comes into contact with the rear end of each connector as it draws even therewith in the above-described manner. Continued movement of the cable guide to the right from this position of initial contact between the roller **28** and connector **21** causes the former to ease itself into a riding position on the upper edge of the latter, as illustrated in FIGURE 5 showing the cable guide as it appears at this stage of the connector crossing operation. This mounting movement of the roller **28** on connector **21** is made possible by the pivotal support of the yoke **26** in which the roller is housed, all in accordance with previous teachings herein. In this connection, the yoke **26** pivots slightly as a result of the aforesaid mounting movement of the roller **28**, thereby causing two latch members **44** fixedly secured to, and extending leftwardly, as seen in FIGURE 5, from, the enclosed end of the yoke to rise upwardly and free the cross pin **40** of a bracket **33** from notches **44***a* of the latch members in which it (the cross pin) had theretofore been held in the above-described manner, this cross pin freeing action of the involved parts being well illustrated in FIGURE 5.

Continued movement of the cable guide in the forward direction (to the right as seen in FIGURE 5) soon brings the leading roller **38** of its trolley assembly into contact with connector **21**, after which further cable guide movement causes that roller to swing backwardly in the aforesaid bracket **33**, in which it is mounted, until it is high enough to roll onto the top edge of the connector, after which it rides the latter, in the manner illustrated in FIGURE 6, as the cable guide continues to move ahead. The swinging movement of the roller **38** and bracket **33** is made possible by the unlatching of the cross pin **40** of the latter and latch members **44** of the yoke **26** as a result of the above-described pivoting of the yoke upon contact of its associated roller **28** with the connector **21**.

At some point in the forward movement of cable guide C, the leading roller **18** of its trolley assembly clears the forward end of the connector **21**, after which that roller remains suspended above strand **17** the same distance it was before, and during, traversal of the connector by the cable guide, FIGURE 6 showing the roller in such a state of suspension after its clearance of the connector. As will be apparent, the cable guide remains partially supported on connector **21** after the aforesaid roller **18** has cleared it through downbearing contact of its leading roller **28** therewith, the latter roller being maintained, during such contact, at substantially the same elevation above the strand as the former by abutment of the previously-mentioned web section joining the upper edges of the arms of its associated yoke **26** with the lower end of the sleeve **52** in which the lifting pin **50** for said yoke is confined, as shown at *x* on FIGURES 5 and 6. In this connection, the sleeve **52** is designed and installed in the cable guide so that its lower end is at a level consistent with the above-indicated purpose.

Sometime after the leading roller **18** of cable guide C clears connector **21**, the roller **28**, following, also clears the connector. By this time, however, the roller **38** following the latter is in rolling contact with the top edge of the connector to maintain the cable guide trolley assembly at the same elevation above the strand as theretofore, the roller being held in the proper position for this by retention of the ends of the cross pin **40** of its support bracket **33** in the left ends, as seen in FIGURE 1, of curved slots **16***aa* for those pin ends in the side straps **16***a* of the roller mount of the cable guide, the curved slots so terminating at their left ends, again as seen in FIGURE 1, as to prevent movement of the cross pin **40** beyond a point representative of a roller **38** elevation substantially greater than that of the rollers **18**.

After the roller **28** clears the forward end of connector **21** during the forward movement of cable guide C, its weight, and that of its associated yoke **26**, causes the left end, as seen in FIGURES 4 through 7, of the yoke to drop to the position shown in FIGURES 4 and 7, further downward movement being prevented by a nut, previously referred to, on the lower end of the lifting pin **50** cooperatively associated with the yoke, which nut catches and holds the aforesaid web section joining the upper edges of the arms of the yoke at the desired elevation as the latter drops from its connector-riding position.

Continued forward movement of the cable guide, after the roller **38** following the aforesaid roller **28** has been urged to riding position on the connector, soon brings the roller **18**, situated to its rear, even, and then in rolling contact, with said connector, the latter roller being, as is its counterpart situated forwardly of said roller **28**, rotatably secured at the proper height above strand **17** to roll naturally onto the upper edge of the connector, as it comes even therewith. As will be evident, although not heretofore specifically mentioned, the bracket **33** supporting the aforesaid roller **38** is, in its above-described and drawing-illustrated (FIGURE 6) connector riding position, subjected to a certain amount of pull from its associated spring **49**, previously described, which, as a result of being stretched by the swing displacement of the bracket from its vertical, or strand-riding, to the aforesaid connector riding position, exerts a constant pulling force on the bracket.

Continuing movement of the cable guide along strand **17** after the roller **18** to the rear of the aforesaid roller **38** has reached connector **21** soon carries the latter past the forward end of the connector, after which its holding bracket **33** swings down, under the influence of gravity and the above-noted pulling effect of the spiral spring **49** thereon, to the vertical, or strand-riding, position referred to above, and illustrated in FIGURE 7. As the bracket nears the bottom of its swing, its cross pin **40** contacts the curving lower edges of a pair of latch members **44** between their outer tips and notches **44***a*, the latch

members being those of the yoke **26** with which said bracket mechanically cooperates in the manner taught herein to maintain its associated roller **38** in the aforesaid strand-riding position. The momentum of the swinging bracket now causes the latch members to ride upwardly, in cam-like fashion, onto its cross pin **40** until it (the bracket) is in a position of substantial verticality at which point the cross pin and notches **44***a* of the latch members come into coincidence. When this occurs, the latch members drop and catch the cross pin in their notches **44***a* to lock the bracket in place with its associated roller **38** disposed in the strand-riding position referred to above and illustrated in FIGURE 7.

During the interval of swinging movement of the roller **38** from its connector-riding position to its strand-riding one, the roller **18** mounted to its rear is disposed in rolling contact with the top edge of the connector to provide support for the front part of the cable guide at this particular stage of the connector-traversing procedure. Once the roller **38** is locked in its strand-riding position, however, it is capable of providing such support and continued movement of the cable guide in the forward direction, or to the right as seen in any of FIGURES 4 through 7, carries the last-mentioned roller **18** clear of the front end of connector **21**, from which point until its next encounter with a connector the front part of the cable guide is supported on the strand by said roller **38**.

Part of the time while the above-described roller movements are taking place, the forward one of the rollers **58** of the cable guide (that depicted in FIGURES 4 through 7) rolls in contact with the bottom edge of connector **21** to provide additional stability for the cable guide during this particular phase of its strand riding activity. In this connection, it should be emphasized that although the principal function of the rollers **58** is to stabilize the course of the cable guide while it is in the process of traversing strand connectors such as connector **21**, those rollers are, by virtue of their previously-mentioned adaptability for adjustment in the vertical direction, readily positionable for underriding contact with obstructions on the strand other than connectors, such as corner clamps or the like, or even the strand itself, to provide stability for the cable guide at other than its actual connector traversing times. As will, of course, be obvious in view of present teachings, this vertical adjustability of the rollers **58** permits their easy movement for the accommodation of connectors, corner clamps, etc. of differing sizes.

After those trolley assembly rollers shown in FIGURES 4 through 7 have passed connector **21** in the above-described fashion, the second set of such rollers, previously described and shown in the left part of the trolley assembly in FIGURE 1, approaches and passes the connector in precisely the same way.

As previously indicated, roller mount **16** can be readily removed from the U-shaped segments of frame **14** of the cable guide by merely loosening the nuts **56** from bolts **54** which pass upwardly through web sections **16***b* of the roller mount and end enclosures **14***c* of the U-shaped segments, and then pulling the roller mount down out of the U-shaped segments. Doing this, then reinstating the roller mount in the U-shaped segments with its ends reversed (this being made possible, as will be apparent from the foregoing description, considered conjunctively with the accompanying drawings, by appropriately permissive design of the involved parts) converts the cable guide to a form adaptable for travel along the strand in a direction opposite to its previously disposed one. The reason for this concurrence of roller mount and cable guide directional reversibility will be apparent from an understanding of the structural and functional particulars of the cable guide and its component parts. The directional reversibility is, incidentally, the same as that referred to earlier in this description as an optional feature of the cable guide.

Increased ease of effecting the aforesaid roller mount, and hence cable guide directional, reversibility can be achieved by replacement of nuts **56** (which are, as the drawings show, ordinary hexagonal nuts requiring a wrench for tightening or loosening operations) with wing nuts which can be tightened or loosened by hand, without a wrench. As will be obvious in view of present teachings, guide roller assembly **91**, as well as cable divider assembly **110**, is attached to a separate end of the stationary part of cable roller assembly **12** for each of the reversed positions of roller mount **16** in the aforesaid U-shaped segments of the cable guide frame. For this reason, all involved parts of the cable guide are designed to permit interchangeability of attachment of the guide roller assembly to the opposite ends of said stationary part of the cable roller assembly, the same thing, of course, being true with respect to the cable divider assembly.

Although the frame, and other, parts of the cable guide of this invention can be made of any suitable metal, or the like, aluminum is a preferred material for the construction of these parts because of its relatively high strength and light weight, the latter quality being of particular importance in that it results in a cable guide much easier and less dangerous to handle than one made largely of steel or other heavy metal. Although the various roller components of cable guide C have been described and illustrated herein as of the friction bearing type, ball bearing rollers could, of course, be substituted therefor within the scope of this invention and would, in fact, be normally preferred to friction bearing rollers because of their longer wearing qualities and greater convenience of use.

My cable guide can vary in size, either in its component parts or overall dimensions, within the scope of this invention, preferred or optimal sizes of the parts and/or overall dimensions being matters of easy selection to those skilled in the art having the present teachings to guide them. In this connection, I have designed, built and successfully tested a working model of a cable guide generally similar in all significant respects to that depicted in the drawings and intended primarily (although not exclusively) for use on a telephone cable strand of ½-inch diameter fastened to support poles by connectors of 5½-inch length, and, to give an idea of parts sizes and cable guide dimensions which I have found satisfactory under these circumstances, those rollers on the model corresponding to cable rollers **76** of cable guide C were 3¼ inches in width and the distance corresponding to that between rollers **38** of the latter cable guide, as seen on FIGURE 1, was 12½ inches. The latter dimension was found to be optimal for use in traversing the previously mentioned 5½-inch connectors with the cable guide.

The aforesaid working model of my cable guide would have been more versatilely suited to the handling of telephone cable of the larger sizes had a 4¼-inch width rollers been substituted for the above-mentioned 3¼-inch ones. Such a roller substitution would have been possible since the cable guide model had been designed with sufficient roller axle, and other, room to receive the larger rollers similarly to the way cable guide C would permit the substitution of larger rollers for cable rollers **76** as a result of spare axial, and other, room, the latter as evident in FIGURES 2 and 3.

It will be appreciated that the particular version of the cable guide of this invention illustrated in the accompanying drawings is merely exemplary of a preferred embodiment thereof and that there are many variations of the cable guide within the scope of the invention. Some of these variations have already been touched upon and others will appear to those skilled in the art in the light of present teachings.

I claim:

1. Rolling means adapted to travel along a substantially horizontal path and roll uninterruptedly over obstacles

rising to a fixed height above the path and having tops level to rolling traversal thereby, said rolling means comprising, in combination:

(a) a plurality of rotatably mounted wheels and mounting means therefor;

(b) first frame means adapted to maintain said rotatably mounted wheels in position, one behind another;

(c) said plurality of rotatably mounted wheels and mounting means therefor comprising:

(1) a first wheel assembly comprising a first wheel and first associated means for rotatably supporting same, said first associated means being so pivotally attached to said frame means as to permit swinging movement of said first wheel through a slight arc;

(2) a second wheel assembly comprising a second wheel and second associated means for rotatably supporting same, said second associated means being so pivotally attached to said frame means as to permit swinging movement of said second wheel between extreme upper and extreme lower positions differing in elevation by a distance substantially equal to the height of said obstacles above said path; and

(3) a third wheel and third associated means for supporting same in a position of rotation at the same elevation as the extreme upper position of said second wheel;

(4) the first, second and third wheels being mounted in tandem with the first wheel disposed slightly below the level of the third one when the former is in its lowermost arcuate position, and at substantially the same level as the third wheel when it is in its uppermost arcuate position; and

(d) latching means for latching the first and second wheel assemblies together with the first wheel in an intermediate, and the second wheel in its lowermost, position of permissible movement, said latching means being so constructed, associated with the first and second wheel assemblies and operable as to automatically unlatch when said first wheel is moved to its uppermost arcuate position;

(e) all parts of said rolling means cooperating to adapt it for rolling movement along the aforesaid path on its second wheel with its first and second wheel assemblies latched together by means of said latching means until one of the aforesaid obstacles is reached, and to thereafter permit the rolling of its first wheel onto the top of said obstacle whereby the downbearing weight of the rolling means forces that wheel into its uppermost position of arcuate movement and whereby this movement of the first wheel from an intermediate to its uppermost position brings about automatic disengagement of said latching means to free said second wheel assembly from interlock with the first wheel assembly, and whereby continued forward movement of said rolling means brings said second wheel assembly into contact with said obstacle as a result of which that assembly is urged to a position of maximum upward displacement by said obstacle with continued forward movement of the rolling means, and whereby the upward displacement of said second wheel causes it to roll onto the top of said obstacle;

(f) whereby at least one of said rotatably mounted wheels bears on the top of said obstacle at all times during the rolling movement of said rolling means thereacross to support at least some of the weight of the rolling means, and any load carried thereby, and the obstacle is traversed by the rolling means in relatively smooth and effortless fashion.

2. Rolling means in accordance with claim 1, in which:

(a) said first frame means comprises a pair of parallel side straps interconnected at their upper edges by web means adapted to hold them in properly spaced relationship;

(b) said first wheel assembly comprises a first pin supported perpendicularly between said parallel side straps and a generally U-shaped yoke having said first wheel rotatably mounted between its arms, said yoke being pivotally supported on said first pin so that it swings around its open end, and having tongue means extending intermediate its arms from its enclosed end to a point short of contact with said first wheel;

(c) said rolling means has a lifting pin adapted to pass through an opening large enough to freely admit it in the tongue means of each of said yokes, said lifting pin having enlarged lower end means to prevent its upper passage through the opening in said tongue means, and provide resting support for the latter; and cylindrical guide means for said lifting pin fixedly secured in a receptive opening in the web means interconnecting the side straps of said frame means; said lifting pin having enlarged upper end means adapted to rest on the upper end of the cylindrical guide means and prevent downward passage of the pin through the guide means, and said cylindrical means having its lower end so oriented above said tongue means as to provide a stop to prevent upward movement of the tongue means therebeyond when the rolling means is in its normal position of use whereby said tongue means rests on the enlarged lower end means of said lifting pin when the latter is in its lowest permissible position of use and said first and second wheel assemblies are unlatched, and upward movement of said lifting pin is permitted only to the point at which said tongue means contacts the bottom of said cylindrical guide means, beyond which further upward movement of said lifting pin and the U-shaped yoke supported, through its tongue means, thereby is blocked by said cylindrical guide means;

(d) said second wheel assembly comprises a second pin supported perpendicularly between said parallel side straps, a pair of parallelly spaced wheel bracket members, a third pin perpendicularly secured between said bracket members to hold them a fixed distance apart and serve the latch-bar purpose hereinafter revealed and said second wheel rotatably mounted between the bracket members; said bracket members being so pivotally supported on said second pin and having said second wheel so positioned therebetween as to permit said swinging movement of the latter between said extreme upper and lower positions; said third pin being sufficiently long to intersect the spaces occupied by said parallel side straps and said side straps having arc-shaped slots so sized and positioned as to receive the ends of said pin and permit movement thereof consistent with said swinging movement of said second wheel between its extreme upper and extreme lower positions; and

(e) said latching means comprises blade-like means integral with the enclosed end of said U-shaped yoke and extending outwardly therefrom in the direction of said third pin, said blade-like means being characterized by at least one cam-like edge with a notch so sized and positioned therealong as to permit riding of the blade-like means up onto said third pin to coincidence of said pin and said notch and latching together of the blade-like means and third pin with the pin caught in the notch until the blade-like means is lifted to a sufficient extent to free it therefrom.

3. Rolling means in accordance with claim 2, having spring biasing means so characterized and so connecting said third pin and an edge of said web means interconnecting said parallel side straps as to continuously urge said second wheel assembly to a position consistent

with the extreme lower position of said second wheel when the rolling means is in operation.

4. Rolling means in accordance with claim 3, having a fourth wheel and associated means for supporting same in a position of rotation at an elevation equivalent to that of said third wheel, said fourth wheel and means for supporting same being disposed in tandem with said first, second and third wheels, and forwardly of said first wheel, in the operating rolling means.

5. Rolling means in accordance with claim 4 particularly adapted to roll along the top edge of a support strand for telephone cable, representing said substantially horizontal path, and roll uninterruptedly over connectors holding the strand to telephone poles, representing said obstacles rising to a fixed height above said path, said plurality of rotatably mounted wheels being peripherally grooved to permit good rolling contact between them and said strand and connectors.

6. Rolling means in accordance with claim 5 in which said plurality of rotatably mounted wheels and mounting means therefor consists of duplicate sets of wheels and mounting means, each set, in turn, consisting of four wheels and mounting means, said duplicate sets of wheels and mounting means being so aligned as to maintain said frame means in substantially horizontal position on, and substantially parallel to, any telephone strand on which the rolling means is positioned for use.

7. Rolling means in accordance with claim 6, comprising, in addition to said plurality of rotatably mounted wheels and mounting means therefor and said first frame means, a pair of peripherally grooved cable supporting rollers, each sized to receive at least one telephone cable in its peripheral groove, and second frame means having an upper portion designed for interlocking engagement with said first frame means, a lower portion adapted to rotatably support said cable supporting rollers in aligned positions underneath, but laterally eccentric with respect to, said duplicate sets of wheels and mounting means, and an intermediate portion integrating the upper and lower portions thereof, said intermediate portion being laterally offset from said duplicate sets of wheels and mounting means in a direction consistent with the direction of lateral eccentricity of said cable supporting rollers with respect thereto; whereby said rolling means serves to support and guide telephone cable to lashing proximity to a cable support strand for cable stringing purposes by rolling along said strand on two of its rotatably mounted wheels and channelling the cable to such lashing proximity to said strand with its cable supporting rollers; and whereby said rolling means is adapted to traverse connectors holding said strand to telephone poles while so supporting and guiding said telephone cable.

8. Rolling means in accordance with claim 7 having a pair of peripherally grooved wheels disposed directly underneath said duplicate sets of wheels comprising said plurality of rotatably mounted wheels and mounting means therefor; the pair of wheels being so individually sized and rotatably mounted as to permit each to roll in peripheral engagement with the under edge of a connector being traversed by a separate one of said duplicate sets of wheels during traversal of the connecter by said rolling means to help lend stability to the latter during this phase of its operation.

9. Rolling means in accordance with claim 8 having separately adjustable mounting means for each wheel of said pair of wheels, the mounting means being so characterized as to permit vertical adjustment of the functioning position of the wheel in the rolling means whereby said rolling means can be operated with said wheel at any of a plurality of vertical levels corresponding to levels of rolling contact with the under edges of telephone cable support strands, connectors holding such strands to telephone poles, and the like.

10. Rolling means in accordance with claim 7, in which:

(a) said second frame means is interlockingly engageable with said first frame means with its intermediate portion offset either side of the latter;

(b) each of the pair of cable-supporting rollers is sized to hold two parallelly disposed telephone cables in its peripheral groove during operation of said rolling means;

(c) said rolling means is characterized by the presence of a rigid finger, adapted to keep said telephone cables separated during operation of the rolling means and integral holding means therefor, said finger and holding means being attachable to said second frame means with the finger vertically disposed outboard of either end of the cable guideway formed by said cable supporting rollers in their working orientation and in transversely central relationship with respect to said guideway, whereby said finger is positionable aft of said cable guideway to keep separate strands of telephone cable being simultaneously fed through said rolling means for cable stringing purposes divided; and

(d) said rolling means is still further characterized by the presence of a third cable supporting roller and associated means for rotatably supporting same, the latter being so attachable to said second frame means as to station said third cable supporting roller outboard of either end of said cable guideway and below the level of the pair of cable supporting rollers forming same to form an inclined approach to the guideway through which telephone cable from a lower level can be routed during operation of said rolling means;

(e) whereby the rolling means can be assembled for travel in either direction along a telephone cable support strand held aloft by telephone poles through connector means, by interlockingly engaging said second frame means with said first frame means in such fashion that the intermediate portion of the former extends laterally outwardly from the latter in a direction opposite to the direction of the telephone poles therefrom when the rolling means is positioned for travel in the desired direction along said strand, attaching said cable dividing finger and holding means therefor to said second frame means so that the finger is positioned outboard of the aft end of the aforesaid cable guideway, relative to the direction of travel of said rolling means along said strand, and attaching said third cable supporting roller and associated means for rotatably supporting same to said second frame means so that its roller is situated outboard of the fore end of said guideway, relative to the direction of travel of said rolling means along said strand.

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