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[54] **EXTENDIBLE TUBE ASSEMBLY**

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Related U.S. Application Data

[63] Continuation of Ser. No. 186,085, Oct. 4, 1971, abandoned.

[52] **U.S. Cl.** ..... **254/62,** 287/58 CT

[51] **Int. Cl.** **A47g 27/04**

[58] **Field of Search** ..... 254/62, 63, 114, 116, 119; 287/58 CT; 138/114, 155

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[57] **ABSTRACT**

An extendible and locking assembly of telescoping tubular members is described which can be secured in a carpet stretcher system to provide a unique and highly efficient action in use of the stretcher. The assembly comprises a pair of telescoping tubes, one of which bears a lock tube and the other bears a sliding lock that fits about the tube and prevents retraction of the members. Manual release means are provided on the sliding lock to permit its release when the members are to be retracted. When used in a carpet stretcher assembly a unique "pump and pull" action results in which the stretcher head or the tubes can be extended simply by depressing and reaising the handle of the stretcher. This avoids the conventional and tedious shifting and relocating of the stretcher head. The assembly is preferably used in combination with a ratchet lock power stretcher.

9 Claims, 8 Drawing Figures

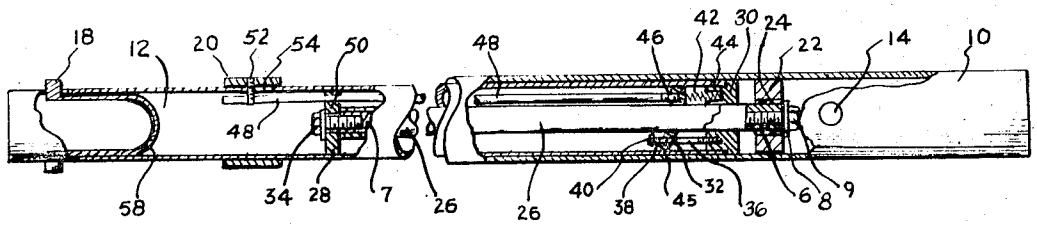


FIG. 1

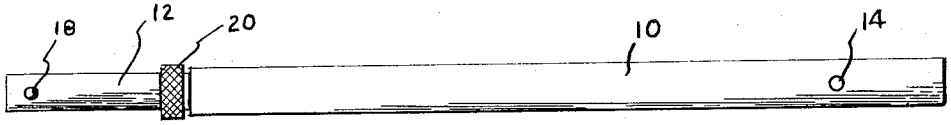


FIG. 4

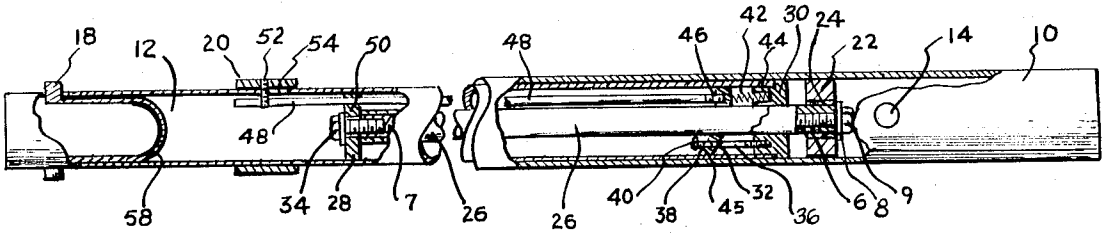


FIG. 5

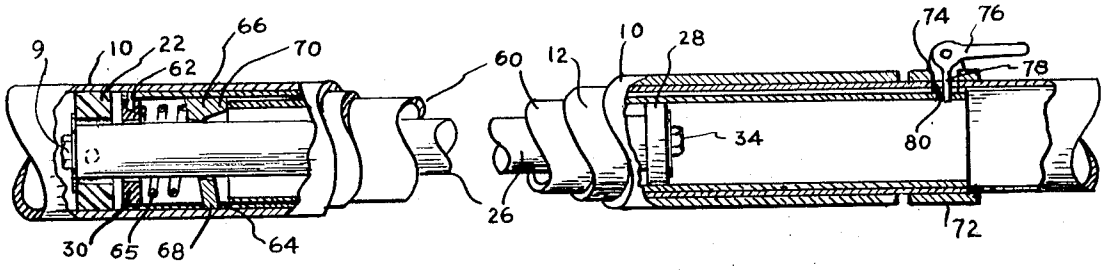
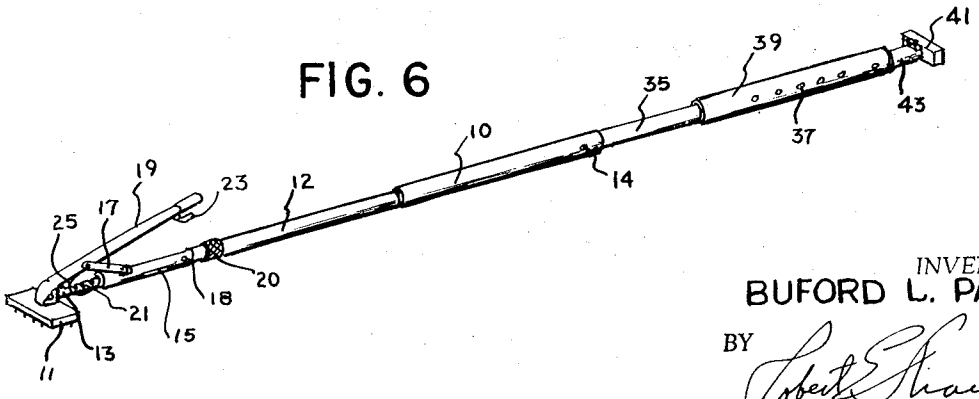


FIG. 6



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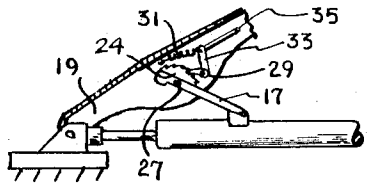


FIG. 3

FIG. 2

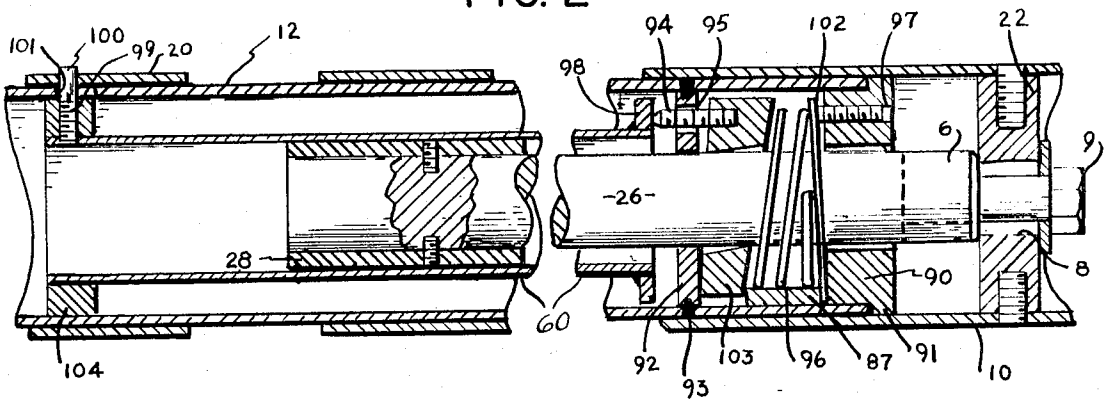
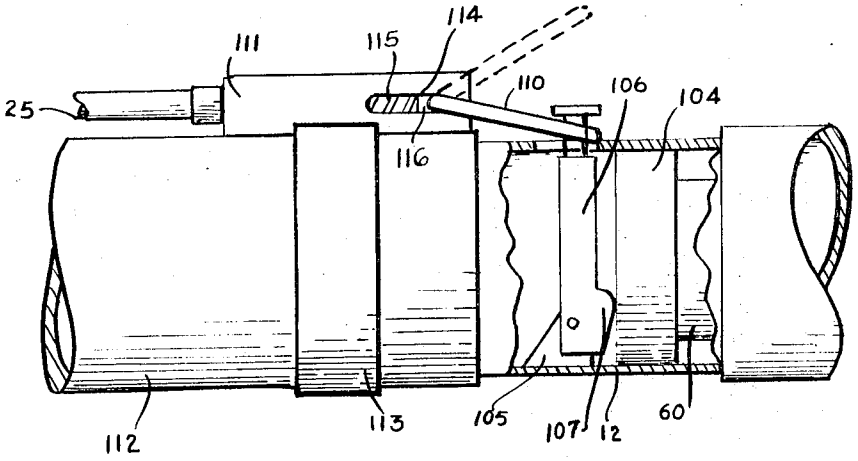


FIG. 8



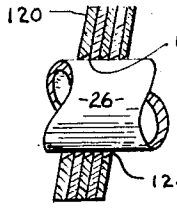


FIG. 7

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EXTENDIBLE TUBE ASSEMBLY

This is a continuation of application Ser. No. 186,085, filed Oct. 4, 1971 and now abandoned.

DESCRIPTION OF THE INVENTION

The invention relates to a locking, telescoping tubular member assembly and, in particular, to such an assembly for use with carpet installation equipment.

Carpet is commonly installed by stretching it across a floor with tools that have a head which grips the carpet and a pole which extends to a base or wall plate that is placed against a wall to provide the support for the stretcher. The pole is commonly formed of steel tubes which are furnished in units of two concentric tubes which are approximately 3½ feet long. These tubes can be extended and interlocked at set intervals up to about 5 to 6 feet. The inner tube carries a pair of spring biased buttons at each end while the outer carries apertures at its ends so that the tubes can be connected, head-to-tail, to provide a rigid load bearing pole.

This conventional construction prevents the most efficient use of the stretcher equipment. The tubes can be interconnected only at certain lengths which are determined by the location of the apertures. For maximum usefulness, a stretcher head should be capable of being located at any point from the base, however, the limitation of the extensions to distances that are fixed by the location of the apertures often results in gaps or blind spots where the head can not be located.

The conventional stretcher head has a tube for connection to the pole extension that has rows of several apertures to be engaged by the buttons of the pole. Frequently, as the head is moved along the wall, the buttons of the pole unit must be reset to extend the head and/or the base must be moved along the opposite wall. The resetting of the head using the buttons to interlock the stretcher head to the pole unit or by moving the base is time consuming.

With conventional stretchers, the pole must be set at the proper distance to position the head with a tolerance of only a few inches. The head must then be engaged in the carpet to the correct bite that will provide exactly the desired tension when the stretcher handle is fully depressed. Accordingly, a considerable degree of skill is required and even skillful operators frequently must reset the head or the pole units before the desired tension is achieved.

This invention eliminates the aforedescribed failings of the prior pole units for carpet stretchers by providing an extendible pole assembly which has a locking action at all points throughout its extension. The invention, furthermore, provides a slip and lock action whereby the head and/or pole units of the stretcher can be moved across the floor by a simple pumping action on the handle or by pulling on the tube behind the head. The pole assembly also improves the efficiency in operation of the stretcher. Contrary to the frequent resetting of the head which is necessary with conventional stretchers to obtain the correct bite, this invention permits the operator to simply drop the head at a position close to its desired or final position. At this point the base can be away from the opposite wall and the stretcher handle can be pumped to extend the pole while retaining the head in place or the end of the pole can simply be pulled by hand until the base has been moved into position against the opposite wall. No difficulty is experienced in obtaining the exact bite for the head because it can be placed anywhere near the edge of the carpet, preferably sufficiently near the edge that no substantial area will remain unstretched. The stretcher handle can be operated throughout its use in the lower portion of its arc where the maximum lever advantage exists and, if the carpet is stretched taut before the handle is fully depressed to a lock position, the excess or remaining arc can be taken up by the sliding lock of the pole assembly of this invention. When the pole assembly is used in the preferred combination which includes the ratchet locking handle, the sliding lock need not be used to take up the excess of the head bite, but instead, the head can be locked at any of many of its extensions.

The invention comprises an assembly of inner and outer concentric tubular members which, preferably, are compatible with the tubes commonly used in stretcher poles, i.e., are of the same shape and diameters and bear at their outboard ends, the standard interconnecting means such as the aforedescribed spring buttons and mating apertures. The assembly has internal lock means formed of an elongated lock member that is secured with one of its ends attached, preferably with self aligning means, to one of the tubular members adjacent the outboard end of such member and which projects along the length of the members. The other of the tubular members supports lock means comprising a collar which surrounds the lock member by attachment means which, preferably, are also self aligning and which permit the collar to tilt between a first, locking position against the lock member and a second, releasing position. Resilient means are provided between seat means carried on the other of the tubular members and the collar in a biasing position to urge the collar into the first, locking position. Release means are also provided to engage the collar with link means to the outside of the assembly to permit manual unlocking of the assembly.

The invention will now be described by reference to the Figures of which:

FIG. **1** illustrates the assembly of the invention;

FIG. **2** illustrates the assembly in a carpet stretcher assembly;

FIG. **3** illustrates the details of a preferred ratchet locking stretcher to be used with the assembly of the invention;

FIG. **4** is a cross sectional view of the assembly of FIG. **1**;

FIG. **5** is a view of an alternate embodiment of the invention; and

FIGS. **6** through **8** show various alternate embodiments.

Referring now to FIG. **1**, the device is shown as an assembly of two concentric tubular members, outer tube **10** and inner tube **12** which telescopes within tube **10.** Preferably these tubes are compatible with the conventional carpet stretcher tubes and tube **10** is 1.785 inches outside diameter and 1.645 inches inside diameter. Tube **12** is 1.625 inches outside diameter and 1.495 inches inside diameter. The tubes are formed of steel, typically 10 –24 or 10–15 rolled mild steel with welded seams. The tubes are commonly chrome plated. Lighter weight aluminum or aluminum alloy tubes can also be used and such tubes can be provided with a hard coating by anodizing or by the Sanford process.

Any of various means to interlock the tubes can be used and such means are carried at the ends of the tubes.

As illustrated, however, the outer tube **10** bears the conventional apertures **14** at its free end which are spaced at 180° in the same plane and are positioned about 3.75 inches from the end. These are female interlocking means to provide attachment whereby the tube can be interlocked to smaller diameter tubes of pole units which bear male interlocking means comprising opposed and spring biased buttons at their ends to engage the apertures. One or more sets of such apertures can be provided at the standard spacings from the end of the tube to insure the universal compatibility of the assembly with all stretcher poles.

The small diameter tube **12** bears, at its free end, a pair of spring biased buttons **18.** These buttons are conventional in structure and purpose; they are the male interlocking means to permit the tube assembly to be interconnected with standard stretcher components. The buttons have a diameter of about 0.375 inch and project through opposed apertures spaced about 1.25 inches from the free end of the smaller tube. The buttons are commonly secured to the free ends of a bifurcated, resilient leaf spring which fits into the end of the tube.

The remainder of the tube assembly, externally, appears the same as the conventional extendible units of stretcher systems except for the absence of many apertures along the length of tube **10** and except for the tube lock release means which is shown as collar **20.** As will be described in greater detail hereinafter, the collar **20** can be urged toward the tube **10** to unlock the assembly and permit tube **12** to telescope into or be withdrawn from tube **10.**

Referring to FIG. **2,** the assembly is shown in a carpet stretcher unit. The stretcher head unit comprises a plate **11** bearing teeth to engage the carpet. The plate is attached to shaft **13** which slides within tube **15.** This tube is the base of the head unit and has a link member **17** pivotably attached thereto. The other end of the link member is attached to lever **19** to provide a fulcrum support therefor. The end of lever **19** is pivotably attached to head plate **11.**

Preferably, the head unit has means to permit locking shaft **13** at any of a multiple of extension in tube **15** such as disclosed in my copending application, Ser. No. 173,779 now U.S. Pat. No. 3,693,936, filed on Aug. 23, 1971. Such means can comprise rack means **21** shown cut into shaft **13** with pawl means carried by tube **15** which also carries spring means to bias the pawl into engagement with the rack means and actuation means, lever **23** carried by lever **19** with linking means such as cable **25** that is operative to retract the pawl from the rack. Preferably such rack and spring means are carried internally of tube **15** in the manner described in the aforedescribed application. A head unit such as described herein is commercially available as the KT-175 model from the Kindead Industries Inc., Chicago, Illinois.

Alternatively, arcuarate rack means can be positioned on link **17** adjacent its pivotable connection to lever **19** and the pawl and spring means can be carried by lever **19.** Such a construction is shown in FIG. **3** where the arcuate rack **24** is placed on link **17** on a radius about pin **27** and pawl **29** is pivotably connected between the sidewalls of lever **13** and biased into engagement with the rack by spring **31** which is secured to arm **33** that is rigidly linked to the pawl. A push rod **35** extends to lever **33** to retract the pawl **29.**

Referring again to FIG. **2,** the remainder of the stretcher unit comprises one or more of the extendible tube assemblies of this invention, tubes **10** and **12.** Although the assembly can be interlocked in the pole unit at any place in its length, it is preferred to place one of the assemblies of the invention directly behind the stretcher head unit so that the manual release means can be readily available to the operator of the stretcher. The forward end of tube **12** is interlocked by its buttons **18** into the end of tube **15** of the head unit. Tube **10** is also connected to a tube extension that is shown as a conventional extendible tube unit formed of inner tube **35** which bears a first set of spring biased buttons to interlock in apertures **14** and a second set of buttons to interlock within any set of a plurality of apertures **37** along outer tube **39** of the unit. The tubes are shown in FIG. **2** with a disproportionately large diameter for ease of illustration.

A conventional wall block or plate **41** is carried at the end of tube **39** by shaft **43** which fits within tube **39** and which also has a pair of spring biased buttons to interlock within the last of apertures **37** in this tube. Preferably, shaft **43** is attached to plate **41** with bracket means permitting it to pivot in a horizontal plane relative to plate **41.**

Referring now to FIG. **4,** the assembly of this invention is shown in longitudinal section. The outer tube **10** carries a block **22** intermediate its length, preferably adjacent one end as shown and spaced inwardly from apertures **14** sufficiently to avoid any interference with the end of a mating tube and thereby permit interlocking by buttons carried by such tube engaging apertures **14.** Typically, this distance is from 1.25 inches to about 2 inches from the apertures. Block **22** comprises a cylindrical member that fits inside tube **10** and is secured thereto by suitable means such as set screws, welding or equivalent means. The block has means for the attachment of the locking elongated member which is in the form of tube **26.** A solid shaft is shown for this member, however, it is preferably tubular. The cross section of this member can also be of any shape, e.g., square, oval, etc.

The preferred attachment means to secure member **26** to block **22** has means that permits a limited radial displacement of tube **26.** This is preferred since the assembly of the tubes to an exact axial alignment requires a high precision in manufacture. If however tube **26** is free to "float" slightly while still secured to block **22** the manufacture is easier. The means permitting this radial displacement of the tube assembly comprises end plugs **6** and **7** in tube **26** which are bored and threaded along the centerline of the tube. Block **22** bears a large diameter bore **8** and a screw **9** having a shank of lesser diameter than bore **8.** The screw extends through the bore and into threaded engagement with the threaded bore in plug **6** and the tolerance between the shank of the screw and the bore in plug **22** provides the limited degree of radial movement to tube **26** which imparts a self-aligning action to the entire assembly.

The free end of tube **26** projects substantially the entire length of tube **10** and is concentrically disposed within inner tube **12.** The free end of this tube, preferably but not necessarily, bears a short sleeve **28** that can

be formed of brass, aluminum, or more preferably of a plastic having a low coefficient of friction such as Nylon, Teflon or Deldrin. This sleeve has a diamter sufficient to engage the inner wall of tube **12,** and is attached to tube **26** by screw **34** and plug **7,** the latter being secured to the tube by set screws, welding or equivalent means. As with block **22,** the bore through sleeve **28** is slightly oversized to permit self alignment of the tube assembly.

As thus described, the unit has two concentric and telescoping tubular members with the inner tubular member being supported by an internal bearing sleeve carried by a central member that is secured at one end to the outer tube. While this construction could be reversed, the illustrated embodiment is preferred. This construction provides a telescoping assembly having a very smooth action with little or no tendency for the elements to bind or become misaligned even at full extension.

Sleeve **28** also servies as means limiting the extension of the tubular members to prevent their separation. The rear face of this sleeve will butt against the fore face of collar **32** and stop further extension of the assembly when its full extension is reached.

The inner tubular member carries the lock means which engages the elongated locking member **26** in a slip and hold manner. The lock means comprises a collar **32** which surrounds tube **26.** This collar is free to tilt to a slight angle, e.g., from 2° to about 30° to a plane perpendicular to tube **26.** One solid collar can be used as shown or a stack of several thin collars can be stamped from sheet metal and used for this purpose.

One side of the collar **32** is fixed in the assembly. This is accomplished by attachment means comprising an aperture in tube **12** and providing a finger or projection on one side of the collar **32** that extends into the aperture. Alternately, the attachment means shown can be used wherein the collar is bored and a pin such as **36** can be placed through the bore and turned into a threaded engagement with fixed means such as collar **30** that is also carried by tubular member **12.** Pin **36** has a shank **38** of reduced diameter that passes through bore **45** and a head **40** to provide retaining means for the edge of collar **32** and thereby permit the collar to tilt slightly about this retaining attachment means between a first, tilted position where it engages tube **26** in a lock that prevents retraction of tubular member **12** within member **10** and a more tilted position where it releases tube **26** and permits tubular member **12** to retract within member **10.**

A resilient means such as spring **42** is provided to bias collar **32** into its tilted, locking position. The spring seats against seat means carried by tubular member **12,** e.g., collar **30** and a bore **44** can be provided in the face of this collar to secure the spring. The face of collar **32** is also bored and threaded at **46** and the threaded end of rod **48** is turned into this bore. This rod comprises the release means operative to unlock collar **32** and it extends substantially the length of tubular member **12** and terminates adjacent collar **20.**

Sleeve **28** is bored at **50** and rod **48** extends through this bore. The rod is attached to collar **20** by screw **52** and tubular member **12** bears an elongated aperture **54** through which screw **52** extends. Screw **52** is secured to rod **48** by suitable means, e.g., by passing it through a mating aperture in the rod. This aperture permits sliding of collar **20** for a slight distance on tubular member **12** and, through rod **48,** the retraction of the free edge of collar **32** against the bias of spring **42.**

The abutment or seat means for spring **42** comprises the collar **30** which has a diameter slightly greater than tubular locking member **26** and which is secured to tubular member **12** adjacent its inside end in the assembly with set screws, welding or equivalent means.

The set of spring biased buttons **18** which comprise the male interconnecting means for attachment of the assembly to conventional stretcher tubes are shown at the left of tubular member **12.** The member bears opposed apertures and buttons **18** project through these apertures. The buttons are supported at the free ends of bifurcated leaf spring **58.** The latter is conventional in construction, and any other means for spring biasing buttons **18** can be used such as by mounting the buttons in a sleeve with a compression spring positioned between the inboard ends of the buttons, etc.

An alternate embodiment of the invention is shown in FIG. **5.** This embodiment uses a concentric tube rather than the rod **48** and a lever rather than collar **20** of the embodiment of FIGS. **1** and **4.** As illustrated, outer tubular member **10** is to the left of FIG. **5** and bears block **22** and inner locking elongated member **26** with sleeve **28** and screws **9** and **34,** all identical to those of FIG. **4,** with exception that sleeve **28** is of slightly lesser diameter to fit within tube **60.** As with the embodiment shown in FIG. **4,** the inner tube **26** has attachment means permitting radial movement of the individual tubes, thereby insuring that the assembly is in axial alignment. These means are the same as those described with regard to FIG. **4.**

The inner tubular member **12** and collar **30** supported thereon by set screws such as **62** are also identical to the same elements of FIG. **4** with the exception that tubular member **12** bears an aperture **64** near its inboard end. Collar **66** is slipped over member **26** and fits within tubular member **12** and has a tail **68** that fits into aperture **64.** A single large diameter compression spring **65** is placed between collars **30** and **66** and comprises the resilient means to bias collar **66** forward into a locking position on tube **26.**

The forward face of collar **66** has a maximum height above the face of the collar on the side opposite finger **68.** Tube **60** which engages against the leading edge of rim **70** and projects forward in tubular member **12** terminates therein near the opposite end of this member. At the extreme outboard end of the tubular member **12,** not shown, are positioned female interlocking means such as buttons **18** and spring **58** shown in FIG. **4.**

A collar **72** is fitted on tubular member **12** and secured thereto by set screws, welding or equivalent means. This collar bears bracket means **74** for the pivotable support of lever means **76.** Lever **76** has a pin **78** or equivalent finger means which projects through an elongated aperture **80** in and a similar aperture in tubular member **12.** The free end of pin **78** projects into engagement with tube **60** which can have a small aperture in which the pin is seated. The lever means and tube **60** thus comprise release means whereby the locking engagement of collar **66** about tube **26** can be disengaged. Pressing down on lever **76** will move tube **60** inwardly and force collar **66** against the bias of spring **65.**

Referring now to FIG. 6, a preferred embodiment of the invention is shown. In this embodiment, the outer tube 10 bears block 22 by set screws. The block is the same as that described with regard to FIG. 4 and it supports the elongated lock member, tube 26 with radial adjustment means comprising oversized bore 8 in block 22 and cap screw 9. The screw 9 is engaged in a threaded bore of plug 6 which is secured to the end of tube 26. Tube 26 projects within the tube assembly and bears a short sleeve 28 which serves as a bearing support for the tube.

The inner tube 12 carries end plate 90 which has a rim 91 that bears against the end of tube 12 and a body which fits within the tube and is locked thereto by set screws, welding or equivalent means. A second plate 92 is positioned transversely within tube 12 a short distance from the end of this tube and secured thereto by any convenient attachment means such as plug welds 93. Both plates 90 andd 92 have a central, large diameter aperture which surrounds tube 26 with a sufficient tolerance to permit the tube to be slightly displaced in a radial direction in the assembly, e.g., the diameter of this aperture is from 0.065 inch to about 0.125 inch greater than the outside diameter of tube 26. Collar 28 has a greater diameter than the aperture in plate 92 to provide means to limit the extension of the assembly when the rear face of sleeve 28 butts against plate 92. The locking tube 26 is preferably formed of hardened alloy steel, e.g., 4130 alloy steel which has been heat treated to a high hardness. The tube could also be a solid shaft, however, a hollow tubular member is preferred to minimize the weight of the assembly. The locking collar can be cast iron, cast steel or forged steel that is preferably case hardened to a thickness of about 0.010 to 0.020 inch.

Collar 103 is a generally circular plate having a central aperture which is at a slight angle, e.g., from 5° to about 30°, preferably, from about 2° to 8°, to its face. This aperture fits loosely about tube 26. A pin 94 is placed in a bore on one face of the collar 103. This face of the collar 103 can be slightly raised as shown, however, this is not critical. Plate 92 also has an aperture 95 which is placed at the same radial distance from the center of plate 92 as pin 94 is from the center of collar 103 so that the pin will project through the plate when collar 103 is placed within the tube 12 as shown in FIG. 6. The aperture 95 should be of suffucient diameter to permit pin 94 freedom of movement as collar 103 is moved between its varied angular positions in the assembly. If desired, pin 94 need not be secured on collar 103, but instead, it could be placed in aperture 95 and be provided with a head of larger diameter than aperture 95 to prevent the pin from being displaced from this aperture. The head end of the pin would then bear against the collar 103.

A plate 87 is placed within tube 12 and this plate bears against the side and edge of collar 103 which are opposite from pin 94 so that the extremity of collar 103 is locked between this plate and transverse plate 92. Resilient means, compression spring 96 is placed around tube 26 and the lock housing is closed by securing plate 90 to tube 12. Plate 90 has one or more tapped bores 97 that are spaced at the radius of spring 96 and set screws can be inserted into these bores to urge washer 102 against the tension of spring 96 and thereby serve as means for adjustment of the tension of this spring.

The free end of pin 94 projects through plate 92 and is engaged by the inboard end of tube 60 which surrounds tube 26. The inboard end of this tube can bear a plate such as 98 that serves to align the tube and to bear against the end of pin 94. The opposite end of tube 60 bears collar 104 which is bored and fitted at 99 with pin means 100. The latter projects through an elongated aperture 101 of tube 12 and serves as the manual release or as a linking member to the manual release.

Various modifications can be made in the illustrated embodiments. FIG. 7 shows a stack of thin sheets 120 which can be cut or stamped from sheet metal and which can be assembled on tube 26 rather than collar 103. These sheets would provide a multiple of gripping edges as shown at 123 and 124 and thus could improve the locking action of the device. After stamping the sheets are preferably heat treated by conventional methods, e.g., by selective hardening wherein the metal sheets are heated to a high temperature and then quenched in an oil bath or cooled rapidly in air. Other methods such as nitriding or carburizing can also be used.

FIG. 8 shows an alternate manual release which has a less sensitive or less of a "hair trigger" action than that shown in FIG. 4. In this embodiment, tube 12 carries bracket means 105 on its inside surface adjacent the end of tube 60. A lever 106 is mounted on the bracket and has a cam 107 which bears against collar 104 of tube 60. The free end of lever 106 projects through an elongated aperture in tube 12 to serve as the manual release so that movement of the lever will, through cam 107, urge tube 60 rearwardly and release the locking collar 32.

FIG. 8 also illustrates use of a link 110 which is carried by the stretcher unit and which can be connected to the manual release to achieve remote actuation. In this embodiment, a cable such as 25 is extended from a hand lever such as 23 shown in FIG. 2 that is carried by the stretcher handle. The cable extends to a housing 111 which is attached to the end tube 112 of the stretcher by means such as band 113.

Housing 111 has a slot 114 in its side walls and link 110 passes through the slot and into the housing where it is secured to the end of cable 25. The opposite end of link 110 can be dropped over the end of lever 106 so that retraction of the cable will actuate the lever and force the tube 60 rearwardly against the bias of the spring, e.g., spring 96, and unlock the collar.

Housing 111 also can contain a spring means 115 shown through slot 114 which biases the link rearwardly. This spring is shown biased against slide means in the form of block 116 within the housing with link 110 being passed through a bore in this block. Cable 25 is secured to this block, either directly or by a shaft or pin.

In the illustrated embodiments, the pole extension is shown as a separate unit that can be removably attached to a stretcher as shown in FIG. 2. The extension unit, however, could be an integral portion of the stretcher, e.g., tube 15 could be the same as tube 12 as shown in FIG. 2.

The operation of a stretcher equipped with a pole extension of this invention is farily apparent from the preceding discussion. The stretcher assembly as shown in FIG. 2 can be placed in approximately the desired position on the carpet to be stretched with the head of

the stretcher dropped close to the final position. The operator can then pull on the outer tube of the assembly to move the base plate against the opposite wall. The teeth of the stretcher can then be engaged in the carpet and the handle can be pumped to take up the slack in the carpet. No difficulty is experienced in setting the exact bite necessary for the last movement of the handle since if an excessive bite is taken and the carpet is stretched taut before the handle is fully depressed, the operator can simply touch the manual release of the pole unit and the remaining arc of the handle movement can be taken up by the sliding or retraction of the pole assembly. The operator also need not repeatedly engage and reset the teeth in the carpet while taking up the slack in the carpet since the telescoping tube assembly will provide ample extension with a single setting, e.g., from about 20 to 40 inches or more can be obtained, depending on the overall length of the assembly in use. Since the sliding lock on the unit permits locking of the assembly against retraction at any point along its extension, the handle of the stretcher can be used throughout the last portion of its arc, e.g., during the last 45° to 15° of its arc where the maximum lever advantage exists. As the operator moves across the room, resetting the head in successive steps along the wall, the base plate can remain set at its original position against the opposite wall and the increasingly greater lengths of the pole that are required can simply be obtained by extending the sliding pole assembly. This increase in length of the pole can be made almost unconsciously by the operator simply by picking up the head, moving it to the new position and dropping it into the carpet at the new position. The weight of the pole extension and the base will generally be sufficient to retain the base against the wall during this operation; if the base should be dragged from the wall, it can be easily returned by pulling on the outer tube of the assembly or by pumping on the handle of the stretcher.

The invention has been described with reference to the presently preferred and illustrated embodiments. It is not intended by this illustration that the invention be unduly limited but rather it is intended that the invention be defined by the means and their obvious equivalents set forth in the following claims.

I claim:

1. An assembly of extendible, telescoping tubular members having lock means preventing their retraction which comprises:

an outer tubular member;

an inner tubular member concentric in said outer tubular member;

an elongated locking member secured at one of its ends in one of said members with its opposite end projectintg within the other tubular member and extending a substantial distance therealong;

lock means comprising a collar about said elongated member and loosely carried by the other of said members by attachment means to one edge of said collar to provide a free edge thereof that is movable to permit tilting of said collar between a first position in locking engagement with said elongated locking member to prevent relative movement in one direction between said tubular members and a second position releasing said collar from said elongated locking member and permitting relative movement between said tubular members in a direction opposite to said one direction;

resilient means engageable by seat means carried by said other of said tubular members and biased against said collar to urge it into said first position; and

release means engageable with said collar whereby the collar can be manually moved from its said first to its second position.

2. The assembly of claim **1** wherein said elongated locking member is secured to said outer tubular member and said lock means is carried in said inner tubular member.

3. The assembly of claim **1** wherein said elongated locking member is secured to said one of said members by attachment means permitting a limited degree of radial movement of said tubular and elongated locking members whereby said members will be in axial alignment.

4. The assembly of claim **2** wherein said elongated member has at said opposite end a bearing means in contact with the inner periphery of said inner tubular member and wherein said bearing means is attached to said elongated locking member by locking member attachment means permitting a limited degree of radial movement of said tubular and elongated locking members whereby said members will be in axial alignment.

5. The assembly of claim **4** wherein both said elongated locking member attachment means comprises a plug carried by said outer member adjacent one end thereof, a central bore through said plug and a screw of lesser diameter than said bore projecting therethrough and into a threaded tap in the end and on the centerline of said elongated member.

6. The assembly of claim **1** wherein said release means comprises a rod extending along the inner member and eccentric thereto and having one end engageable with the free edge of said collar, actuating means carried adjacent the free end of said inner member and link means interconnecting the opposite end of said rod with said actuating means.

7. The assembly of claim **1** wherein said release means comprises a third tubular member concentrically disposed within said inner tubular member with one end thereof engageable against the free edge of said collar, hand lever means carried at the free end of said inner member, and link means interconnecting the opposite end of said third tubular member with said lever means.

8. The assembly of claim **1** wherein said seat means comprises a second collar surrounding said elongated locking member in a freely sliding relationship and attached rigidly to said inner tubular member.

9. The device defined by claim **1**, in which one of the tubular members is attached to the base of a power carpet stretcher having a carpet engaging head, a handle pivotably attached to said head, a link member having one end attached at one end in a fulcrum relationship to said handle and pivotably attached at its other end to said base, said handle having adjacent its outer end a hand lever attached by a cable to the release means of the assembly and movable to operate said release means.

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