

April 30, 1968

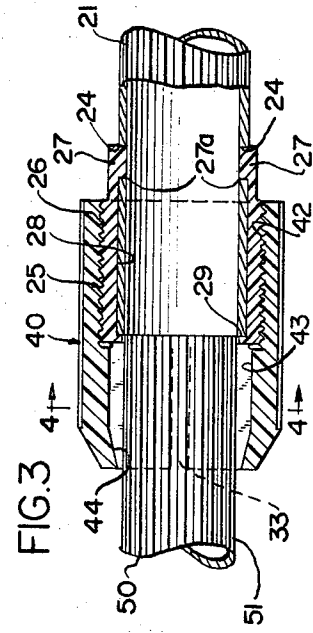
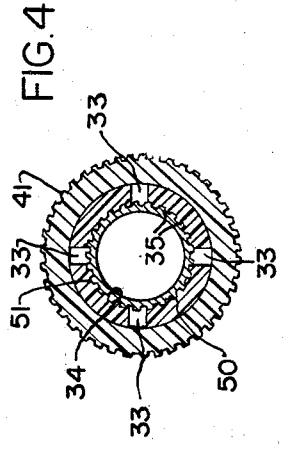
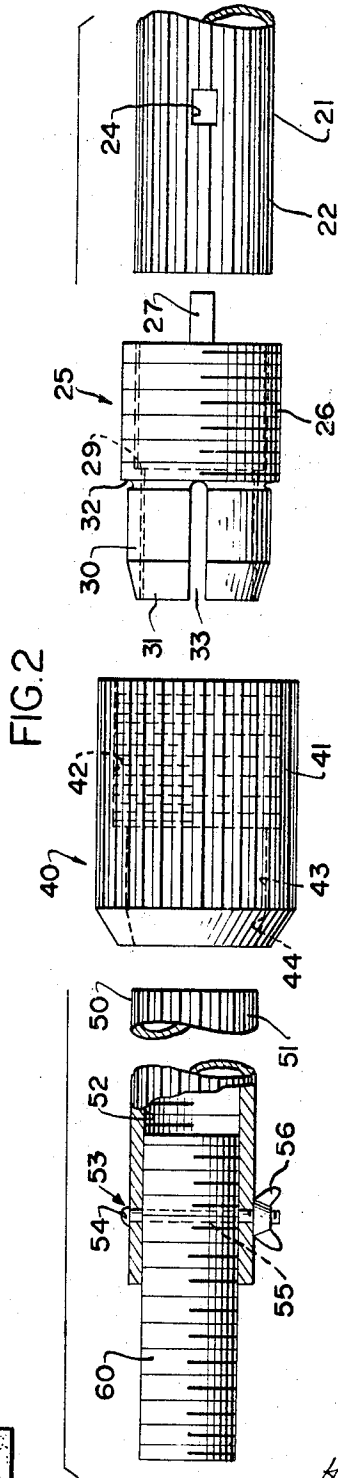
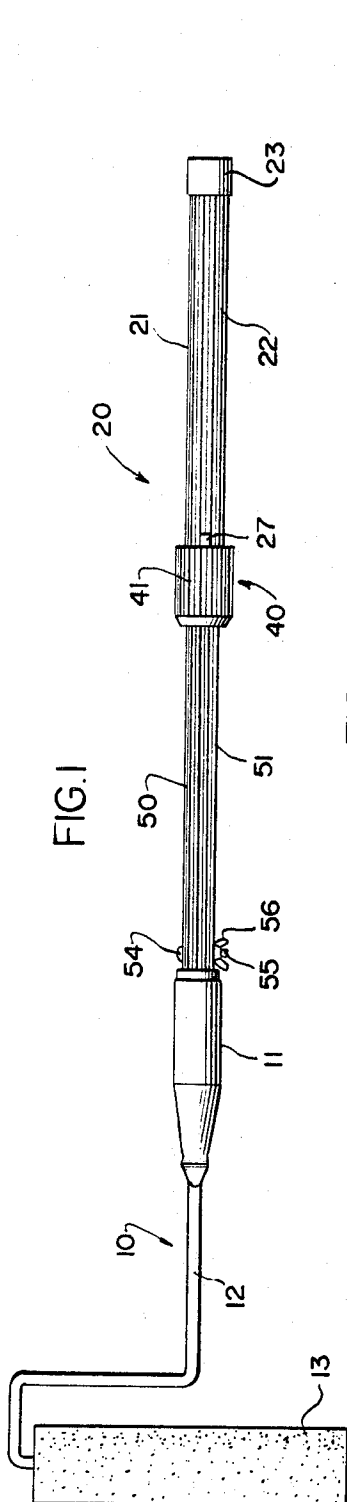
J. A. PHARRIS

3,380,097

EXTENSION HANDLE FOR PAINT ROLLER

Filed July 24, 1967

2 Sheets-Sheet 1



INVENTOR
 JOHN A. PHARRIS
*Hofgren, Wegner, Allen,
 Stillman & McCord*
 BY
 ATTORNEYS

April 30, 1968

J. A. PHARRIS

3,380,097

EXTENSION HANDLE FOR PAINT ROLLER

Filed July 24, 1967

2 Sheets-Sheet 2

FIG. 5

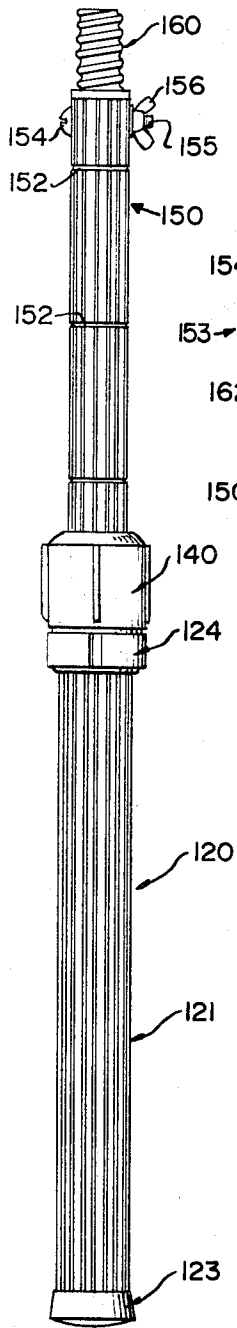


FIG. 6

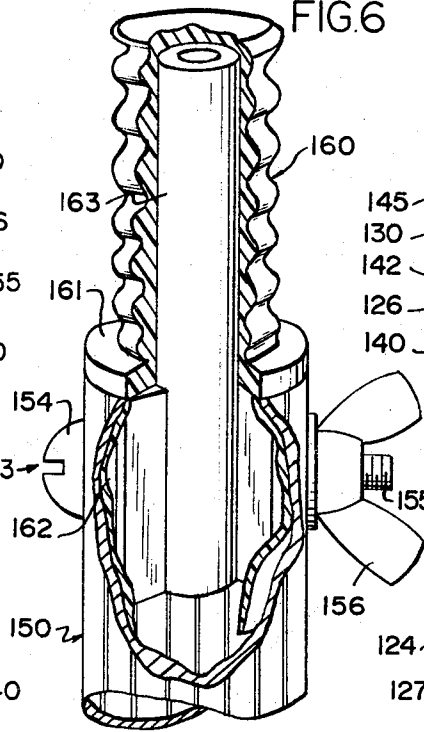


FIG. 7

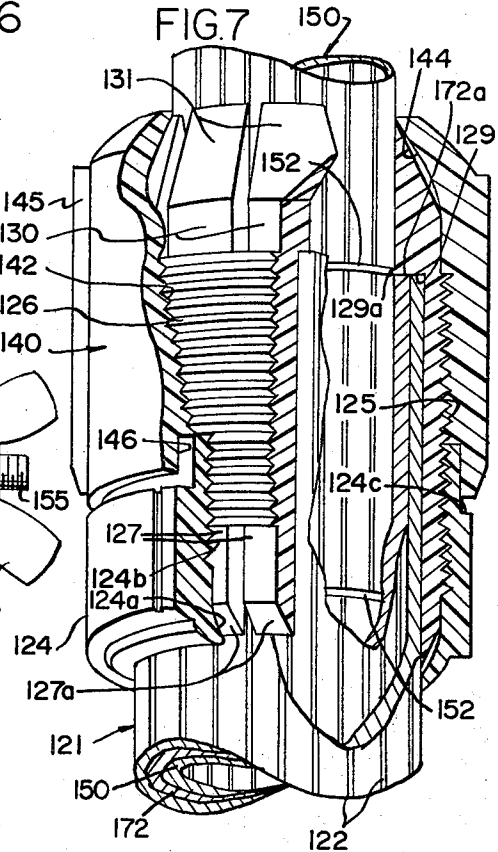
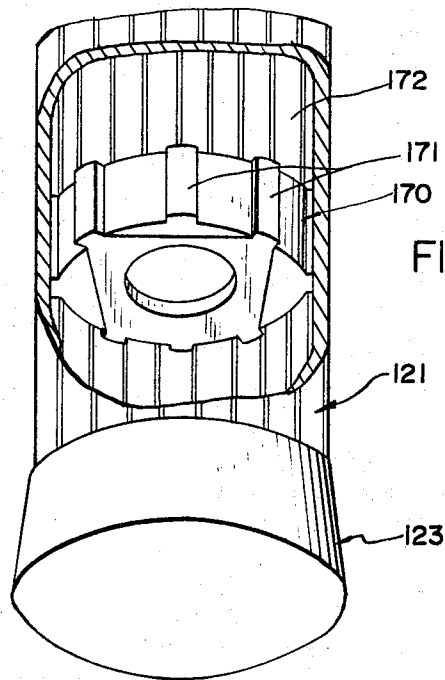


FIG. 8



1

2

3,380,097

EXTENSION HANDLE FOR PAINT ROLLER

John A. Pharris, Milwaukee, Wis., assignor to E Z Painter Corporation, a corporation of Delaware
 Continuation-in-part of application Ser. No. 500,744, Oct. 22, 1965. This application July 24, 1967, Ser. No. 659,283

15 Claims. (Cl. 15-145)

ABSTRACT OF THE DISCLOSURE

An extension handle for a tool, such as a paint roller or the like, wherein a second handle member is telescopically movable relative to a first handle member and is positively lockable at desired positions of extension relative to the first member. The locking means includes a first sleeve held against rotational and axial movement relative to the first member and having a plurality of radially inwardly compressive gripping fingers that are moved into clamping engagement with the second member when a second sleeve is threaded onto the first sleeve to move a surface on the second sleeve into engagement with camming surfaces on the gripping fingers.

This application is a continuation-in-part of application Ser. No. 500,744, filed Oct. 22, 1965, now abandoned.

One of the major problems encountered by those skilled in the paint roller art is the difficulty of painting ceilings, or other relatively inaccessible areas, such as at the upper portion of a wall. This often necessitates the use of a ladder, which is time consuming to move about, and which provides only a limited work area in the range of the ladder. Accordingly, the general purpose of the present invention is to provide an extension handle for a paint roller, so that normally inaccessible areas can be painted without the use of a ladder.

In the past, it has been proposed to provide extension handles for paint rollers, however, none has been completely satisfactory for one reason or another. Such prior art endeavors are typified by the constructions illustrated in U.S. Patent Nos. 2,845,647, 2,984,853 and 3,138,814. In one formerly proposed arrangement, a special painting tool is provided with an extension handle, and this arrangement has the obvious drawback that the extension device is not suitable for use with a conventional paint roller. In other types of proposed constructions, cumbersome and ineffective means have been provided in an attempt to positively retain the paint roller against rotation and axial movement relative to the extension handle. In providing an extension handle for a paint roller, it is extremely important to provide means for positively holding the paint roller against movement relative to the extension handle, so the movement of the paint roller can be controlled during painting. Accordingly, one of the principal objects of the present invention is to provide an extension handle for a paint roller which obviates the problems encountered in connection with devices proposed in the past.

An object of the present invention is to provide a lightweight extension handle construction which is adapted for use with a conventional paint roller, so that formerly inaccessible areas can be painted quickly without tiring the painter and without need of a special paint roller.

Another object of the invention is to provide an extension handle as set forth in the preceding paragraph with means whereby the amount of extension can be readily varied.

A further object of the invention is to provide an extension handle as set forth above wherein the paint roller

is positively and fixedly held against axial and rotary movement relative to the extension handle.

Still another object of the invention is to provide a lightweight extension handle construction for a paint roller, which is comprised to tubular telescoping handle parts and lightweight plastic sleeve members.

These and other objects of the invention will hereinafter become more fully apparent from the following description taken in connection with the annexed drawing, wherein:

FIG. 1 is a side elevational view of a paint roller having a preferred embodiment of the extension handle connected thereto;

FIG. 2 is an exploded, fragmentary view of the extension handle, with certain elements being shown in section;

FIG. 3 is a central sectional view showing the novel locking sleeve arrangement for the extension handle;

FIG. 4 is a sectional view taken generally along line 4-4 of FIG. 3;

FIG. 5 is a side elevational view of a further embodiment of the extension handle;

FIG. 6 is a perspective cutaway view of the upper end of the extension handle illustrated in FIG. 5;

FIG. 7 is a perspective cutaway view of the locking sleeve structure of the extension handle embodiment illustrated in FIG. 5 in the fully extended and locked position; and

FIG. 8 is a perspective cutaway view of the lower end of the extension handle embodiment illustrated in FIG. 5 but in the collapsed position.

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail an embodiment of the invention and a modification thereof with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiments illustrated. The scope of the invention will be pointed out in the appended claims.

Referring now to FIG. 1, a paint roller 10 of generally conventional design is shown to include a handle 11, a rod 12 fixedly secured to handle 11, and a paint applying member 13 mounted for rotary movement on rod 12. Handle 11 is preferably formed of light-weight plastic material, and has an internally threaded bore in the lower, or right-hand end, thereof as viewed in FIG. 1.

An extension handle 20 is provided for paint roller 10, to, in effect, increase the length of the arm of the individual utilizing the paint roller. The extension handle 20 includes a first tubular member 21. Member 21 has a plurality of circumferentially spaced, axially extending ribs 22 on the exterior thereof to facilitate manual gripping of the member, and a suitable protective sleeve 23 is provided at the lower or right-hand end of member 21 as viewed in FIG. 1. A pair of diametrically opposed slots 24 are provided adjacent the left-hand or upper end on handle member 21, and slots 24 define means by which a first sleeve 25 is secured to the member 24.

Sleeve 25 includes an externally threaded rear portion 26, and a pair of hook members 27 extend rearwardly from threaded portion 26 at diametrically opposed sides of the sleeve 25. The internal bore 28 of sleeve 25 slides over the upper end of member 22, and hook portions 27 engage the slots 24 to hold the sleeve member 25 against axial and rotary movement relative to the member 21. In this respect, it will be noted from an examination of FIG. 3, that the hook portions 27 each include a surface 27a that engages the upper end of slots 24 to prevent axial movement of the sleeve forwardly of the member 21. An annular shoulder 29 is provided at the upper end of

bore 28 in sleeve 25, and engages the upper end of member 21. Shoulder 29 cooperates with the rearward end of hooks 27 which engage the lower end of slot 24 to prevent movement of the sleeve member 25 rearwardly of the handle member 21. Sleeve 25 further includes a radially compressive portion at the upper or left-hand end thereof, and this compressive portion is defined by a plurality of circumferentially spaced apart fingers 30. A circumferential groove 32 is provided in the external periphery of the sleeve 25 adjacent the rear or base portion of the fingers 30 to increase the radial flexibility of the fingers. Four fingers have been shown in the illustrated embodiment, and each of these fingers is separated by a slot 33. It will be readily understood to those skilled in the art, that a greater or lesser number of fingers may be provided, if desired. Each finger includes an inclined camming surface 31 at the upper end thereof, the purpose of which will hereafter appear. A plurality of equally circumferentially spaced, axially extending ribs 34 are provided on the inner surface of fingers 30, and ribs 34 extend from the upper end of the fingers to the shoulder 29. It will be understood that ribs 34 define a corresponding number of circumferentially spaced, axially extending grooves 35 therebetween. Ribs 34 and grooves 35 define means by which a second tubular handle member 50 may be telescopically received within the first handle member 21, and positively held against rotation relative thereto.

Handle member 50 is tubular, and includes a plurality of circumferentially spaced, axially extending ribs 51 thereon which correspond in number to and are slightly smaller than the grooves 35 in sleeve 25. The outer diameter of member 50 is smaller than the inner diameter of member 21 so that the member 50 may be inserted into the member 21 through the sleeve 25 and moved axially with respect thereto. The interengagement of the ribs 51 with the grooves 35 positively prevents rotation of the handle member 50 with respect to the sleeve 25 and the handle member 21.

A second sleeve 40 is provided for locking the handle member 50 against axial movement with respect to the handle member 21, and sleeve 40 includes an internally threaded bore 42 that threadably engages the externally threaded portion 26 of sleeve 25, as can be best seen in FIG. 3. Sleeve 40 includes a further bore portion 43 forwardly of portion 42, which is received over the rearward portions of the fingers 30. An inclined camming surface 44 is provided at the forward end of bore 43, so that as the sleeve 40 is threaded upon the sleeve 25, the camming portion 44 will engage the surfaces 31 on the fingers 30 to compress the same inwardly about their reduced base portions 32. Fingers 30 will provide a tight grasp upon the outer surface of handle member 50 to effectively prevent axial movement of member 50 relative to sleeves 25 and 40, and member 21.

A third sleeve 60 is held within the bore 52 of member 50 as by a screw 53 having an enlarged head 54 bearing upon one side of handle member 50, a shank 55 extending through suitable clearance openings in diametrically opposed portions of the member 50, and a wing nut 56. The third sleeve 60 is adapted to be threadably received within the internally threaded portion in the paint roller handle 11.

Thus, the extension handle 20 may be easily and quickly attached to and detached from the paint roller 10 by merely threading the sleeve portion 60 into the paint roller handle 11. If it is desired to change the length of the extension handle 20, it is necessary merely to loosen the second sleeve 40, and the handle members 21 and 50 can then be moved axially relative to one another to a desired position. It is then necessary merely to retighten the sleeve 40 so that the camming surface 44 thereon again engages the camming portions 31 on the fingers 30 to hold the members 50 and 21 against axial relative movement to one another.

Referring now to FIGS. 5-8, a second embodiment of the invention is illustrated which is similar to the embodiment illustrated in FIGS. 1-4, and the reference numerals that have been used in FIGS. 5-8 to designate the elements that are similar to those illustrated in FIGS. 1-4 have been increased by the sum 100. The extension handle 120 includes a first tubular member 121 having a plurality of circumferentially spaced, axially extending ribs 122 on the exterior thereof, and a protective sleeve 123 (FIG. 8) is provided at the lower end of member 121. A locking nut 124 is loosely received on member 121, and includes an inclined internal camming surface 124a at the lower end thereof for a purpose to hereafter appear. The upper end of nut 124 is internally threaded at 124b, and a circumferential shoulder 124c extends around the outer periphery of the nut.

A first sleeve 125 is longitudinally slidably mounted upon member 121, and sleeve 125 includes an externally threaded intermediate portion 126. A plurality of circumferentially spaced fingers 127 are provided at the lower end of sleeve 125, and the lower ends of fingers 127 include inclined faces 127a that are engaged by the cam surface 124a when the locking nut 124 is threaded upon the sleeve 125 to compress the fingers 127 radially inwardly and positively lock the sleeve 125 against axial movement relative to the member 121. Sleeve 125 includes a transverse shoulder 129 that seats against the upper end of member 121 to positively prevent the sleeve 125 from moving downwardly relative to the member 121. As with the embodiment of FIGS. 1-4, sleeve 125 includes a plurality of longitudinally extending, circumferentially spaced grooves in the internal surface thereof that slidably engage the ribs 122 on member 121 to prevent the sleeve 125 from rotating relative to the member 121. A radially inwardly extending, circumferentially spaced bead or lip 129a is provided on sleeve 125 inwardly of shoulder 129 for a purpose to hereafter appear.

A plurality of axially extending, circumferentially spaced fingers 130 are provided at the upper end of sleeve 125 and embrace the outer periphery of a second extension handle member 150. Fingers 130 include inclined cam faces 131 at the upper end thereof that are engaged by a correspondingly inclined cam surface 144 on a second sleeve 140 having an internally threaded portion 142 threadably engaged with the externally threaded portion 126 of sleeve 125. Member 150 includes a plurality of axially spaced, circumferentially extending grooves 152 which cooperate with lip 129a to positively hold member 150 against axial movement relative to member 121. Cam surface 144 is provided at the upper end of sleeve 140 on the interior thereof, and compresses fingers 130 radially inwardly as the sleeve 140 is threaded upon sleeve 125, so that the lip 129a on sleeve 125 will be forced into locking engagement with a groove 152 on member 150 to positively prevent axial movement of the member 150 relative to the member 12. Sleeve 140 includes a plurality of longitudinally extending radially outwardly projecting ribs 145 to facilitate manual manipulation of the sleeve, and in a preferred embodiment four ribs 145 are provided. The lower end of sleeve 140 is counterbored at 146 to fit over the portion of reduced diameter of nut 124 above shoulder 124c.

A third externally threaded sleeve 160 is provided at the upper end of member 150 for connection with an internally threaded bore in a tool, such as a paint roller; and sleeve 160 includes an enlarged flange 161 that seats upon the upper end of member 150 and a skirt 162 that extends downwardly into the upper end of member 150. Reinforcing means, in the form of an elongate rigid tubular rod 163, is provided in sleeve 160 to prevent breakage of the sleeve. Sleeve 160 is removably mounted upon the member 150 by a transversely extending screw 153 having an enlarged head 154 and a shank 155 that extends through aligned clearance holes in member 150 and rod 163, with a wing nut 156 being threadable upon the exposed end of screw 153.

5

An end cap 170 is provided on the lower end of member 150 and includes a plurality of radially outwardly extending centering and guiding fingers 171, each of which presents a relatively large contact area to the surrounding wall of member 121, so that the member 150 will be properly centered and guided during telescopic movement of member 150 relative to member 121. Cooperating means are provided at sleeve 125 and member 150 for preventing withdrawal of member 150 from member 121, and in the illustrated embodiment, the cooperating means include a further tubular member 172 received over the lower end of member 150 and resting upon end cap 170. The cooperating means further include the shoulder 129 on sleeve 125 which extends radially inwardly a sufficient amount to provide a stop surface that is engageable with the upper end 172a of member 172 to positively prevent axial withdrawal of the member 150 from the member 121.

I claim:

1. An extension handle for a tool such as a paint roller or the like comprising: a first tubular member; a first sleeve mounted on said member, and having an externally threaded portion, a compressible portion adjacent said threaded portion, and rotation preventing means on the interior thereof; cooperating means for preventing rotary and axial movement between said first sleeve and said first member; a second member telescopically received in said first member, and having means engaging the rotation preventing means of said first sleeve, whereby said second member is held against rotation relative to said first member; means on said second member for mounting a tool thereon; and a second sleeve having an internally threaded portion engaging the externally threaded portion of said first sleeve and cam means for engaging the compressible portion of said first sleeve, whereby said second member can be held against axial movement relative to said first member by threading said second sleeve on said first sleeve until said cam means engages said compressible portion to force the latter into tight gripping engagement with said second member.

2. An extension handle as defined in claim 1 wherein said cooperating means includes at least one opening in said first member, hook means on said first sleeve received in said opening for preventing rotation of said first sleeve relative to said first member in both directions and for holding said first sleeve against axial movement relative to said first member in one direction, and shoulder means in said first sleeve engaging the outer end of said first member for preventing axial movement of said sleeve relative to said first member in an opposite direction.

3. An extension handle as defined in claim 2 wherein diametrically opposed openings are provided in said first member, and hook means are provided at diametrically opposed sides of said first sleeve.

4. An extension handle as defined in claim 1 wherein the compressible portion of said first sleeve is formed by a plurality of circumferentially spaced fingers at the upper end of the sleeve.

5. An extension handle as defined in claim 4 wherein the thickness of each finger is reduced at the base thereof.

6. An extension handle as defined in claim 4 wherein each finger has an inclined cam surface, and the cam

6

means on said second sleeve is defined by a camming surface having an inclination corresponding to the inclination of said finger cam surfaces.

7. An extension handle as defined in claim 1 wherein the rotation preventing means in said first sleeve is defined by a plurality of axially extending circumferentially spaced ribs, and the means on said second member engaging the rotation preventing means is defined by a corresponding plurality of axially extending circumferentially spaced grooves slidably engaged with said ribs.

8. An extension handle as defined in claim 7 wherein said ribs and grooves are spaced equally around said first sleeve and said second member respectively.

9. An extension handle as defined in claim 1 wherein said second member is tubular, and said means on said second member for mounting a tool thereon includes an externally threaded third sleeve received in said second member and adapted to have the internally threaded handle of a tool threadably received thereon.

10. An extension handle as defined in claim 9 wherein a reinforcing member is provided in said third sleeve.

11. An extension handle as defined in claim 1 in which said second member includes a plurality of longitudinally spaced circumferentially spaced grooves, and wherein said first sleeve includes a portion movable into one of said grooves as said second sleeve is threaded onto said first sleeve.

12. An extension handle as defined in claim 11 wherein said first sleeve portion is an internal rib extending circumferentially around the interior of the sleeve.

13. An extension handle as defined in claim 1 wherein said cooperating means includes a plurality of circumferentially spaced fingers around the lower end of said sleeve adjacent the threaded portion of the sleeve, said fingers embracing said first member, said cooperating means further including a locking member on said first member having an internally threaded portion engageable with the externally threaded portion of the first sleeve and cam means for compressing said fingers radially inwardly into clamping engagement with said first member.

14. An extension handle as set forth in claim 1 wherein centering means is provided on said second member for guiding the same in its telescopic movement relative to the first member.

15. An extension handle as set forth in claim 1 in which stop means is provided on said first sleeve and wherein an abutment is provided on said second member that is engageable with said stop means to prevent withdrawal of said second member from said first member.

References Cited

UNITED STATES PATENTS

618,639	1/1899	Bullard	-----	287—58
2,820,290	1/1958	Porter.		
2,984,853	5/1961	Williams	-----	15—230.11 XR
3,096,989	7/1963	Fallon	-----	279—48
3,138,814	6/1964	Carrona	-----	15—98
3,284,114	11/1966	McCord et al.	-----	287—58

FOREIGN PATENTS

852,779 11/1960 Great Britain.

DANIEL BLUM, *Primary Examiner.*