

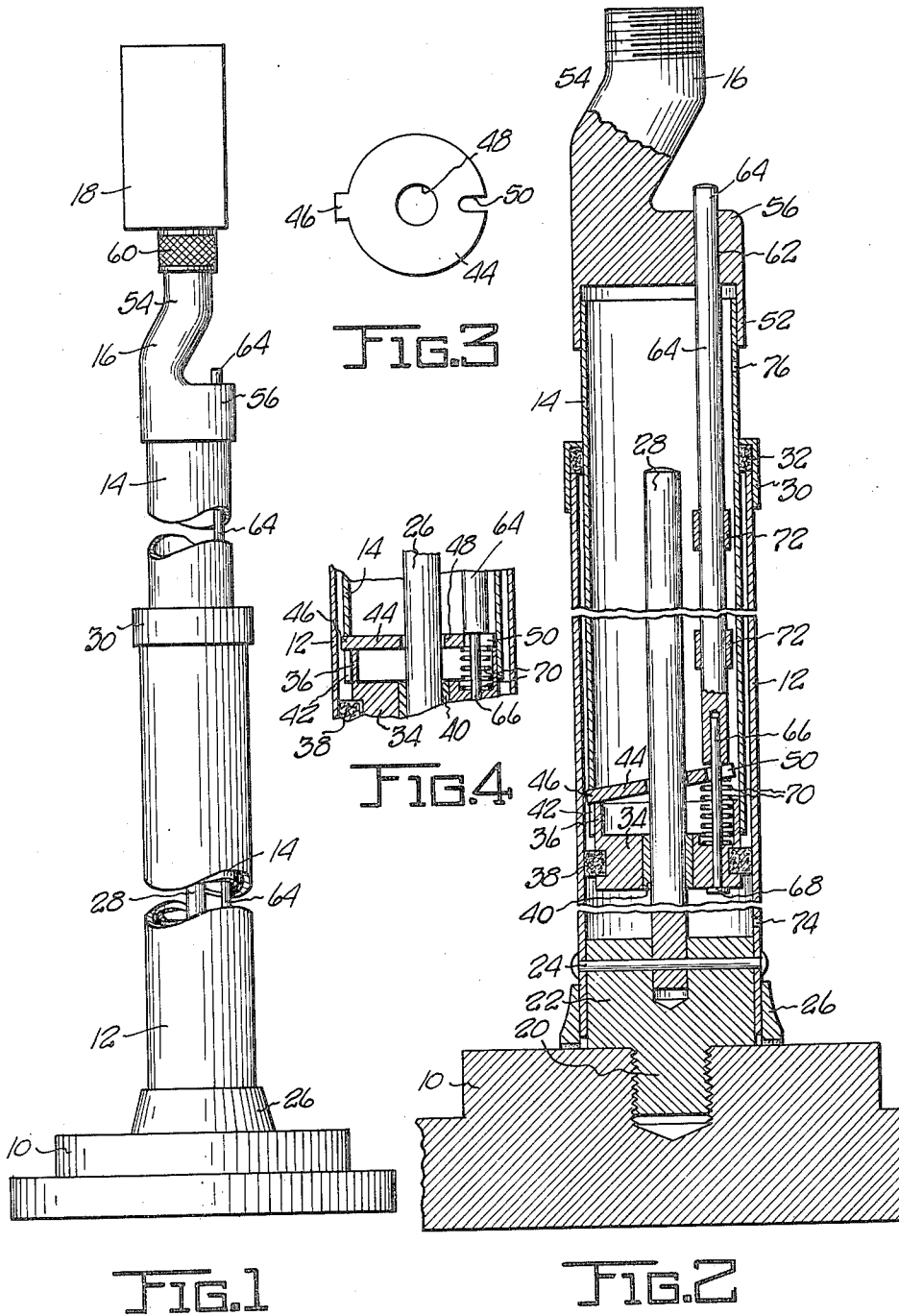
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EXTENSIBLE STANDARD

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EXTENSIBLE STANDARD

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3 Claims. (Cl. 248—161)

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This invention relates to improvements in extensible standards, such as microphone stands, music stands, lamp standards, tripod legs, and the like.

The primary object of the invention is to provide a standard which is simple in construction, which locks positively in any adjustment, which is adjustable by one hand, which is controlled by a push button, which is noiseless, which accommodates swiveling of the extensible portion thereof, and which may be of any desired decorative appearance.

A further object is to provide a device of this character which has a pair of telescoping tubes completely confining therein the locking mechanism therefor which is independent of the fit of the tubes to permit the use of tubes of different sizes and shapes without requiring snug sliding fits therebetween.

A further object is to provide a standard of this character which may be extended to any position by a manual pull thereon and locks automatically in the desired extended position, and which requires only the operation of a push button to permit retraction thereof to any desired position at which it locks automatically when the button is released.

Other objects will be apparent from the description and appended claims.

In the drawing:

Fig. 1 is a side view of the device with parts broken away.

Fig. 2 is an enlarged fragmentary longitudinal sectional view of the device.

Fig. 3 is a detail face view of the locking member.

Fig. 4 is an enlarged fragmentary sectional detail view showing the locking member in released position.

Referring to the drawing, which illustrates the preferred embodiment of the invention, the numeral 10 designates the base of the standard which mounts an outer telescoping tube 12. An inner extension tube 14 fits telescopically within tube 12 and mounts a fitting 16 upon its upper end. A microphone 18 or other article to be supported is mounted upon the fitting 16.

The base 10 may be of any character desired, i. e., either a solid base as shown or an extensible and collapsible base of suitable construction. The base has a central vertical screw-threaded bore which receives a reduced screw-threaded stud 20 projecting from the lower end of a cylindrical member 22 whose lower marginal shoulder preferably bears against the upper surface of the base to be solidly anchored thereto. The lower end of the outer tube 12 fits snugly around the member 22 and is fixedly secured thereto, as by a pin or rivet 24 extending diametrically through said tube and member. A ring 26 encircles the

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lower end of tube 12 and bears against the top of base 10. This ring serves as a trim member and also assists in holding the parts in desired relation. The member 22 has an axial bore in its upper end and an elongated rigid rod 28 fits snugly in said bore and is anchored by the pin 24 which passes therethrough.

The upper tube 14 fits freely and slidably within the outer tube 12, and preferably has a slight clearance therein, as shown. A retaining ring 30 is secured to and projects from the upper end of tube 12 and confines a fiber ring or washer 32 which encircles and engages the upper tube 14. A cup-shaped member having a thick base 34 and a cylindrical flange 36 is screw-threaded or otherwise secured in the lower end of tube 14. A portion of base 34 projects below the tube 14 and has a circumferential groove in which a fiber ring or washer 38 seats and from which said ring projects for engagement with tube 12. Base 34 has an axial bore receiving a bearing 40 which fits snugly and slidably around the rod 28. The lower end of tube 14 has a longitudinal slot 42 formed therein.

A locking member 44, of the construction best shown in Fig. 3, fits within the tube 14. This member comprises a rigid circular plate or disc whose outer diameter is slightly less than the inner diameter of the tube 14. An ear 46 projects radially outwardly from member 44 and projects through the slot 42 in said tube. The slot 42 is of a length to project slightly above the upper edge of flange 36, whereby said ear rests upon said flange and is free to shift between horizontal and tilted positions. Member 44 has a central aperture 48 of a diameter slightly greater than rod 28. This diameter is calculated to accommodate free sliding of the member 44 upon the rod 28 when positioned horizontally, as shown in Fig. 4, and to bear firmly against the rod at diametrically opposed points when the member 44 is tilted as shown in Fig. 2. In diametrically opposed relation to the ear 46, a recess 50 is formed in member 44 for purposes to be described.

The fitting 16 mounted upon the upper end of the upper tube 14 has a marginal cylindrical depending flange 52 which fits around and is secured to the end of tube 14. A reduced diameter neck portion 54 projects upwardly from the base 56 of the fitting and is located eccentrically of said base. The lower portion of neck 54 inclines upwardly and inwardly and the upper portion 58 thereof is preferably vertical and concentric with base 56. The portion 58 is screw-threaded at its upper end to cooperate with a threaded sleeve or nut 60 which serves to secure in place the microphone or other article 18 which the standard is intended to support. The base of the fitting has a vertical bore 62 therethrough adjacent

its margin and diametrically opposite from the neck 54.

An elongated vertical rod 64 fits slidably in the bore 62 and normally projects a short distance above the base 56 as illustrated. The rod is somewhat shorter than tube 12 and terminates slightly above the member 44. The lower end of rod 64 has a central bore in which the upper end of a pin 66 is anchored. Pin 66 depends from rod 64 and passes through the slot 50 in member 44 and through a vertical aperture in member 34. A head 68 is formed on the lower ends of pin 66 and is adapted to engage the bottom of member 34. It will be understood, however, that pin 66 may constitute an integral reduced diameter extension of rod 66 and may be provided at its lower end with any suitable form of stop other than a head. A coil spring 70 encircles the pin 66 and bears at its opposite ends against the member 34 and the member 44 to normally tilt the latter upwardly as illustrated in Fig. 2.

A plurality of fiber washers 72 preferably encircle the rod 66 at longitudinally spaced points thereof to constitute anti-rattlers. An air vent 74 is formed in the outer tube 12 just above the level of the member 22, and an air vent 76 is formed in the upper tube 14 just below the flange 52 of the fitting 16.

The normal position of the parts of the device is illustrated in Fig. 2. Note that the spring 70 holds the member 44 in upwardly tilted position whereby diametrically opposed edge portions of the cylindrical wall defining the aperture 44 have a firm frictional locking engagement with the rod 28 which serves automatically to lock the tubes in selected position. Any downward pressure upon the tube 14 is resisted by said locking engagement of the parts. Reverse or upward movement of tube 14 is not so resisted, however. Thus, as tube 14 is raised, any tendency of the member 44 to grip the rod 28 entails a tilting of said member toward horizontal position, thereby automatically disengaging the lock. The lock 44 automatically re-seats as soon as upward movement of tube 14 stops, thus insuring locking of the parts without manipulation thereof. For downward adjustment of the standard, it is only necessary to depress the rod 64 against the action of spring 70 to position the lock 44 substantially horizontal as shown in Fig. 4. This is accomplished by grasping the tube 14 near its upper end and depressing the rod 64 with one finger, such as the thumb. As long as the rod 64 is depressed, the tube 14 may be moved freely, but as soon as the rod 64 is released the lock automatically anchors the tube against further downward movement. Hence, it will be apparent that one of the primary advantages of the device is that the user may adjust it by use of only one hand.

The device has many other advantages. The absence of metal to metal contact, except at the locking parts, results in substantially noiseless operation. The absence of interlocking action between the telescoping tubes accommodates freedom or ease of operation and adjustment. The centering and anchoring of the upper tube at the central rod permits clearance between the tubes and eliminates need for testing of tube fits. Also, it permits tubes of fluted or other decorative con-

tours to be used. The only exposed part of the locking mechanism is the short projecting end of the lock releasing rod which is easy to operate and does not detract from the appearance of the device. The device permits rotation of the upper tube within the lower tube without releasing or interfering with the lock. It will also be noted that the inner tube and the locking plate and releasing rod can be assembled as a unit and inserted in the outer tube. Release of sleeve 30 permits quick disassembly of the device for repair or replacement of parts.

It will be understood that while the construction described and illustrated is preferred, the invention may be modified and embodied in other forms utilizing the same combination and arrangement of parts as herein claimed.

I claim:

1. An extensible standard comprising a base, a tube secured to said base, a rod secured to said base and positioned within said tube, a second tube fitting slidably within said first tube, a tilt plate carried by said second tube and having an aperture fitting around said rod, resilient means normally tilting said plate to interlocking engagement with said rod at said opening, and means for shifting said plate to horizontal position.

2. An extensible standard comprising a base, a pair of spaced concentric elongated inner and outer members secured to said base, a tube slidable between said members and having a longitudinal slot at its inner end, an apertured member slidable on said inner member and secured to the inner end of said tube to close the lower end of said slot, a circular apertured plate slidable on said inner member and tiltably supported on said apertured member, said plate having an ear projecting through said slot, and spring means carried by said apertured member and acting on said plate opposite said ear to tilt said plate to grip said inner member.

3. An extensible standard comprising a base, spaced concentric elongated inner and outer members secured to said base, a tube fitting slidably between said members, end members spanning the opposite ends of said tube and having aligned apertures eccentric thereof, the inner end member having an aperture slidable on said inner elongated member, a rod slidable in said aligned apertures with its upper end projecting above said upper end member, a plate tiltably carried by said tube, and a spring for tilting said plate to grip said inner elongated member, said rod being longitudinally slidable to tilt said plate to a position slidable on said inner elongated member against the action of said spring.

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