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HANGER ROD

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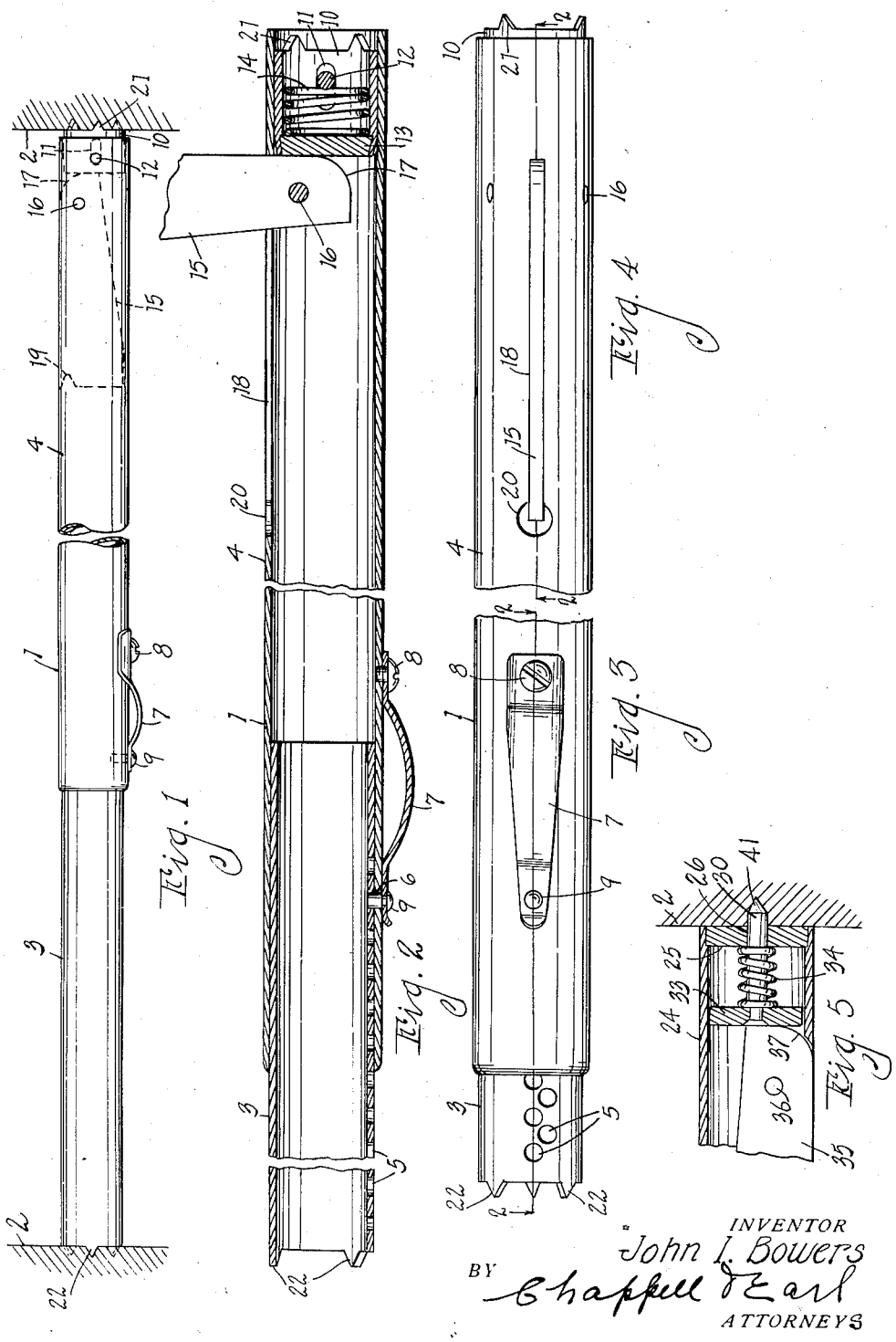


Fig. 1

Fig. 2

Fig. 4

Fig. 3

Fig. 5

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HANGER ROD

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13 Claims. (Cl. 156—19)

The main objects of my invention are:

First, to provide an improved hanger rod for drapes, curtains, clothes, and the like, which is adjustable in length and may be quickly and readily set up and taken down.

Second, to provide a hanger rod of this class which may be quickly and securely positioned or mounted without the aid of tools or fastenings and without serious injury to the supporting surfaces.

Third, to provide a hanger rod of this character comprising a pair of tubular sections telescoped for longitudinal adjustment and having improved means for holding the sections in adjusted position.

Fourth, to provide a hanger rod having a spring retracted cam actuated plunger in one end for extending the effective length of the rod between fixed supports, the outer ends of the plunger and rod having teeth for engaging such supports when the plunger is advanced.

Fifth, to provide a hanger rod having the above desirable features and characteristics, which is simple and economical in its parts and very efficient and effective in operation.

Objects relating to details and economies of my invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary view in side elevation of a hanger rod embodying the features of my invention, the supports being shown in section.

Fig. 2 is an enlarged fragmentary longitudinal section showing the plunger in retracted position, the section being taken on line 2—2 of Figs. 3 and 4.

Fig. 3 is a fragmentary view of one end showing the major adjusting means.

Fig. 4 is a fragmentary view showing the plunger extended and its actuating lever.

Fig. 5 is a fragmentary longitudinal section of a modification.

Referring to Figs. 1 to 4, inclusive, of the drawing, there is illustrated a rod 1 embodying the features of my invention arranged between the spaced fixed supports 2, 2 such as the side walls of a closet or the casing of a window frame or door frame. My hanger rod comprises a pair of tubular sections 3 and 4 telescoped for longitudinal adjustment. The section 3 is provided with a series of staggered apertures 5, alternate apertures being staggered for the purpose of preserving the strength of the section without unduly spacing the longitudinal distance between the apertures. The section 4 has a single opening 6 for registry with a selected one of said apertures.

A spring clip 7 is secured to the section 4 by the screw 8 and has a detent or pin 9 on its free end for coaction with the opening 6 to engage the selected aperture 5 to hold the sections 3 and 4 in adjusted position.

A cylindrical plunger 10 is slidably disposed in the outer end of the section 4 and has longitudinal diametrically opposed slots 11 for the cross pin 12 which is secured to the section. The cross pin coacts with the slots to limit the movement of the plunger. A head 13 is fitted within the plunger which is preferably a piece of tubing such as that from which the section 3 is formed. The coiled compression spring 14 is disposed between the head and cross pin within the plunger for urging the same to retracted position.

The lever 15 is pivoted at 16 within the section 4 and has a cam 17 coacting with the head of the plunger to advance the same when the lever is moved into the section which is slotted at 18 to receive the lever. The outer end of the lever is provided with a finger notch 19 facilitating the opening of the lever the slot 18 being enlarged at 20 for this purpose.

The outer ends of the plunger and the section 3 have integral outwardly projecting teeth 21 and 22 respectively for engaging the opposed supports 2, 2 when the plunger is advanced.

The hanger rod is installed by first raising lever 15 to the position shown in Fig. 2. The tubular sections then extend to the desired length by lifting the free end of clip 7 outwardly and pulling out the inner section 3 until the outer ends of the sections abut the supports 2, 2. The sections are locked in adjusted position by releasing the clip 7 and allowing the detent 9 to engage the nearest aperture. Finally, with the rod arranged in the desired location between the supports 2, 2, the lever 15 is pushed back into the tubular section 4, thereby advancing the plunger 10 and causing the teeth 21 and 22 at opposite ends of the rod to penetrate the supports and locking the rod in position.

The rod is released from the supports 2, 2 by raising the lever 15 to the position shown in Fig. 2. On the raising of the lever, the compression spring 14 moves the plunger to retracted position.

In installing the hanger rod, the tubular sections should be extended to such a length that

a substantially close fit is provided between the rod and the supporting walls before the lever is closed. This insures the clamping engagement of the teeth with the opposed supporting walls.

Referring to Fig. 5 of the drawing, there is illustrated a modification of my invention wherein the tubular section 24 has an end plate 25 fitting within its outer end, the plate having a central bore 26 for the passage of the plunger 30. The plunger has a head 33 slidably disposed within the section 24. The compression spring 34 on the plunger 30 between the head 33 and end plate 25 acts to urge the plunger to its retracted position. The lever 35 is pivoted within the section 24 at 36 and has a cam 37 coacting with the head to advance the plunger when the lever is moved into the section as illustrated. The outer end of the plunger is provided with an integral conical tooth or prong 41 for engaging the support 2 when the plunger is advanced. Otherwise, the hanger rod of the modification of Fig. 5 is similar to that of Figs. 1 to 4, inclusive.

I have illustrated and described my improvements in embodiments which I have found very practical. I have not attempted to illustrate or describe other embodiments or adaptations, as it is believed this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A hanger rod comprising a pair of tubular sections telescoped for longitudinal adjustment, means for holding said sections in adjusted position, a cylindrical plunger in the outer end of one of said sections and having longitudinal diametrically opposed slots, a cross pin in the section and coacting with said slots to limit the movement of the plunger, a head fitted within said plunger, a coiled compression spring disposed between said head and cross pin within the plunger for urging the plunger to retracted position, and a lever pivoted within said section and having a cam coacting with said head to advance the plunger when the lever is moved into the section which has a slot for the passage thereof, the outer ends of said plunger and the other section each having integral outwardly projecting teeth for engaging opposed supports when the plunger is advanced.

2. A hanger rod comprising a pair of sections telescoped for longitudinal adjustment, means for holding said sections in adjusted position, a plunger in the outer end of one of said sections and having longitudinal diametrically opposed slots, a cross pin in the section and coacting with said slots to limit the movement of the plunger, a compression spring for urging the plunger to retracted position, and a lever pivoted within said section and having a cam coacting with said plunger to advance the plunger when the lever is moved into the section, the outer ends of said plunger and the other section having integral outwardly projecting teeth.

3. A hanger rod comprising a pair of tubular sections telescoped for longitudinal adjustment, one of said sections having a series of staggered apertures, the other section having an opening for registry with a selected one of said apertures, a spring on said last named section and having a detent coacting with said opening for engaging the selected aperture to hold the sections in adjusted position, a wall engaging plunger in the outer end of one of said sections, said one section having a lever receiving slot therein, a spring urging said plunger to retracted position, and a lever pivoted to said last named section and having a cam for coaction with said plunger to advance said plunger when the lever is moved into said section through said receiving slot, and a wall engaging part on the outer end of the other section.

4. A hanger rod comprising a tubular section having a lever receiving slot therein, a cylindrical plunger in the end of said section and having longitudinal diametrically opposed slots, a cross pin in the section and coacting with said slots to limit the movement of the plunger, a head fitted within said plunger, a coiled compression spring disposed between said head and cross pin within the plunger for urging the same to retracted position, and a lever pivoted within said section and having a cam coacting with said head to advance the plunger when the lever is moved through said receiving slot, the outer end of said plunger having integral outwardly projecting teeth for engaging a support when the plunger is advanced.

5. A hanger rod comprising a tubular section having a lever receiving slot therein, a toothed plunger in the end of said section, a spring for urging the plunger to retracted position, and a lever pivoted within said section and having a cam coacting with said plunger to advance the plunger when the lever is moved into the section through said receiving slot.

6. A hanger rod comprising a pair of tubular sections telescoped for longitudinal adjustment, a plunger in the outer end of one of said sections and having a wall engaging prong, a spring urging said plunger to retracted position, said one section having a lever receiving slot therein, and a lever pivoted to said last named section and having a cam for coaction with said plunger to advance said prong when the lever through said receiving slot, is moved into said section, and wall engaging teeth on the outer end of the other tube.

7. A hanger rod comprising a pair of tubular sections telescopically related for longitudinal adjustment, one of said sections having a tooth at its outer end and a series of apertures, alternate apertures being staggered, the other section having a longitudinal slot and an opening for registry with a selected one of said series of apertures, a spring on said last named section and having a detent coacting with said opening for engaging the selected aperture to hold the sections in adjusted position, a toothed plunger in the outer end of said last named section, means limiting the movement of said plunger relative to said section, a spring urging said plunger to retracted position within said section, and a lever pivoted to said section for passage through said slot and having a cam for coaction with said plunger to advance the same when the lever is moved into the section.

8. A hanger rod comprising a pair of sections telescopically related for longitudinal adjustment, one of said sections having a tooth at its outer end and a series of apertures, the other section having an opening for registry with a selected one of said series of apertures, a spring clip on said last named section and having a detent coacting with said opening for engaging the selected aperture to hold the sections in adjusted position, a toothed plunger in the outer

end of said last named section, means limiting the movement of said plunger relative to said section, a spring urging said plunger to retracted position within said section, and a lever pivoted to said section and having a cam for coaction with said plunger to advance the same.

9. A hanger rod comprising a plurality of telescopically related tubular sections, means for holding the sections in adjusted position, a toothed plunger in the outer end of one section, a spring urging said plunger to retracted position within said section, and means for advancing said plunger and securing it in such position.

10. A hanger rod comprising a pair of tubular sections telescoped for longitudinal adjustment, means for holding said sections in adjusted position, an end plate in the outer end of one of said sections and having a central bore, a plunger in said bore and having a head slidably engaging said section, said one section having a lever receiving slot therein, a coiled compression spring on said plunger between said head and end plate for urging said plunger to retracted position, and a lever pivoted within said section and having a cam coacting with said head to advance the plunger when the lever is moved into the section through said receiving slot, the outer ends of said plunger and the other section having integral outwardly projecting teeth for engaging opposed supports when the plunger is advanced.

11. A hanger rod comprising a pair of sections telescoped for longitudinal adjustment, means for holding said sections in adjusted position, an end plate in the outer end of one of said sections and having a central bore, a plunger in said bore and having a head slidably engaging said section, said one section having a lever receving slot therein, a compression spring on said plunger between said head and end plate for urging said plunger to retracted position, and a lever pivoted within said section and having a cam coacting with said head to advance the plunger when the lever is moved into the section through said receiving slot, the outer ends of said plunger and the other section having integral outwardly projecting teeth for engaging opposed supports when the plunger is advanced.

12. A hanger rod comprising a section, an end plate in the outer end of said section and having a central bore, a plunger in said bore and having a head slidably engaging said section, a coiled compression spring on said plunger between said head and end plate for urging said plunger to retracted position, and a lever pivoted within said section and having a cam coacting with said head to advance the plunger the outer end of said plunger having an integral outwardly projecting tooth for engaging a support when the plunger is advanced.

13. A hanger rod comprising a plurality of sections telescoped for longitudinal adjustment, means for holding said sections in adjusted position, an end plate in the outer end of one of said sections and having a bore, a plunger in said bore and having a head slidably engaging said section and a pointed outer end, a spring urging said plunger to retracted position, and means for advancing said plunger and securing it in such position.

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