

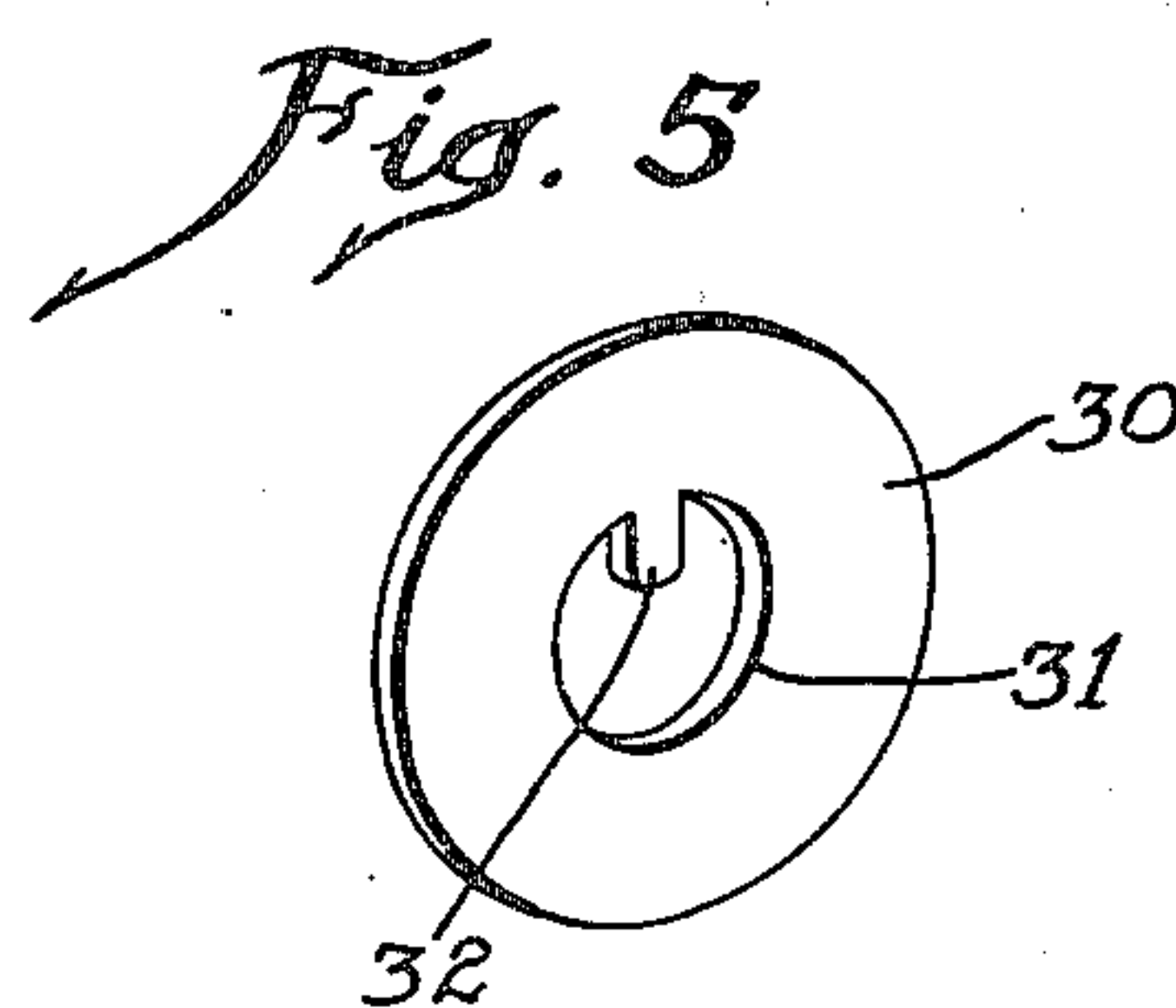
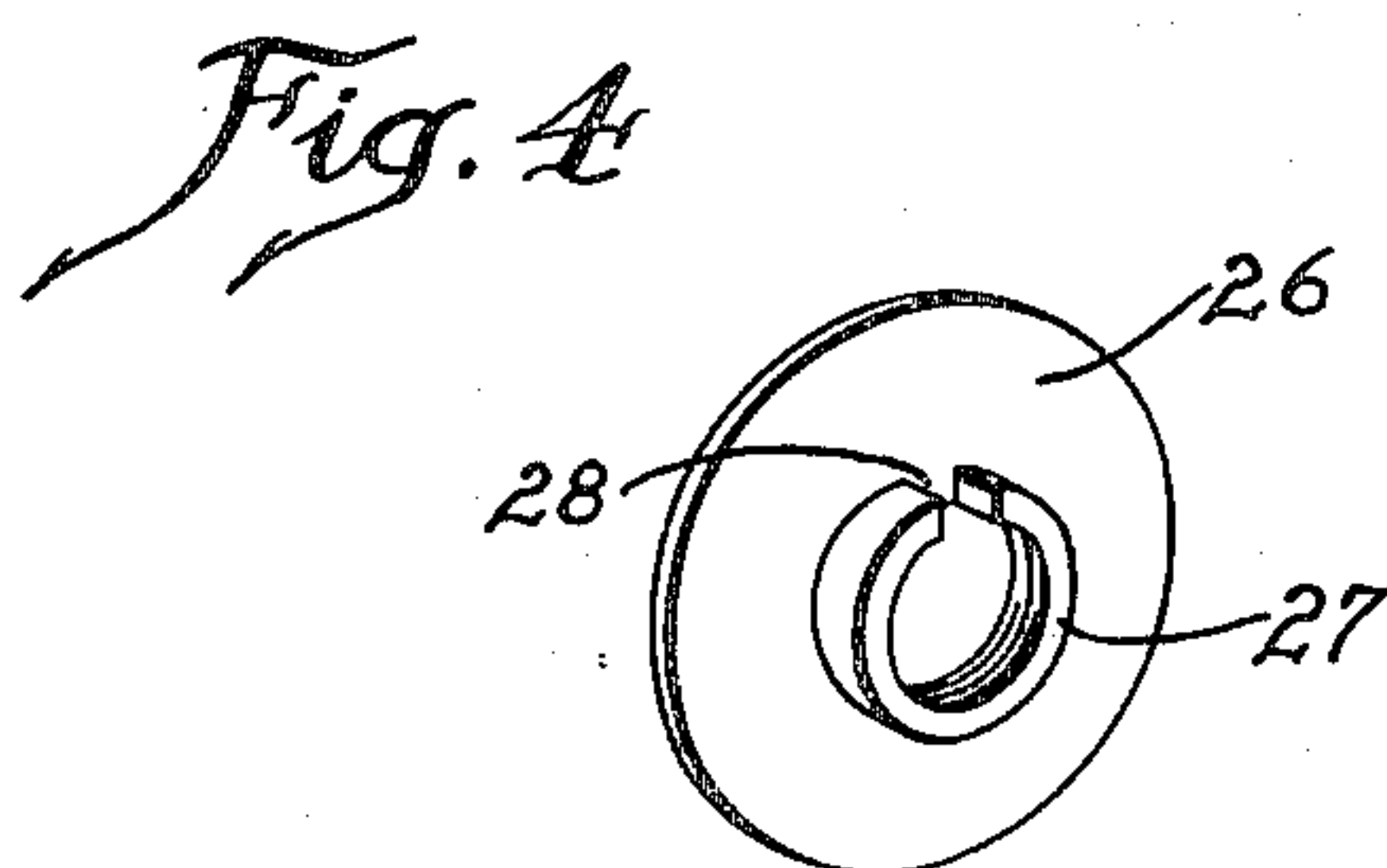
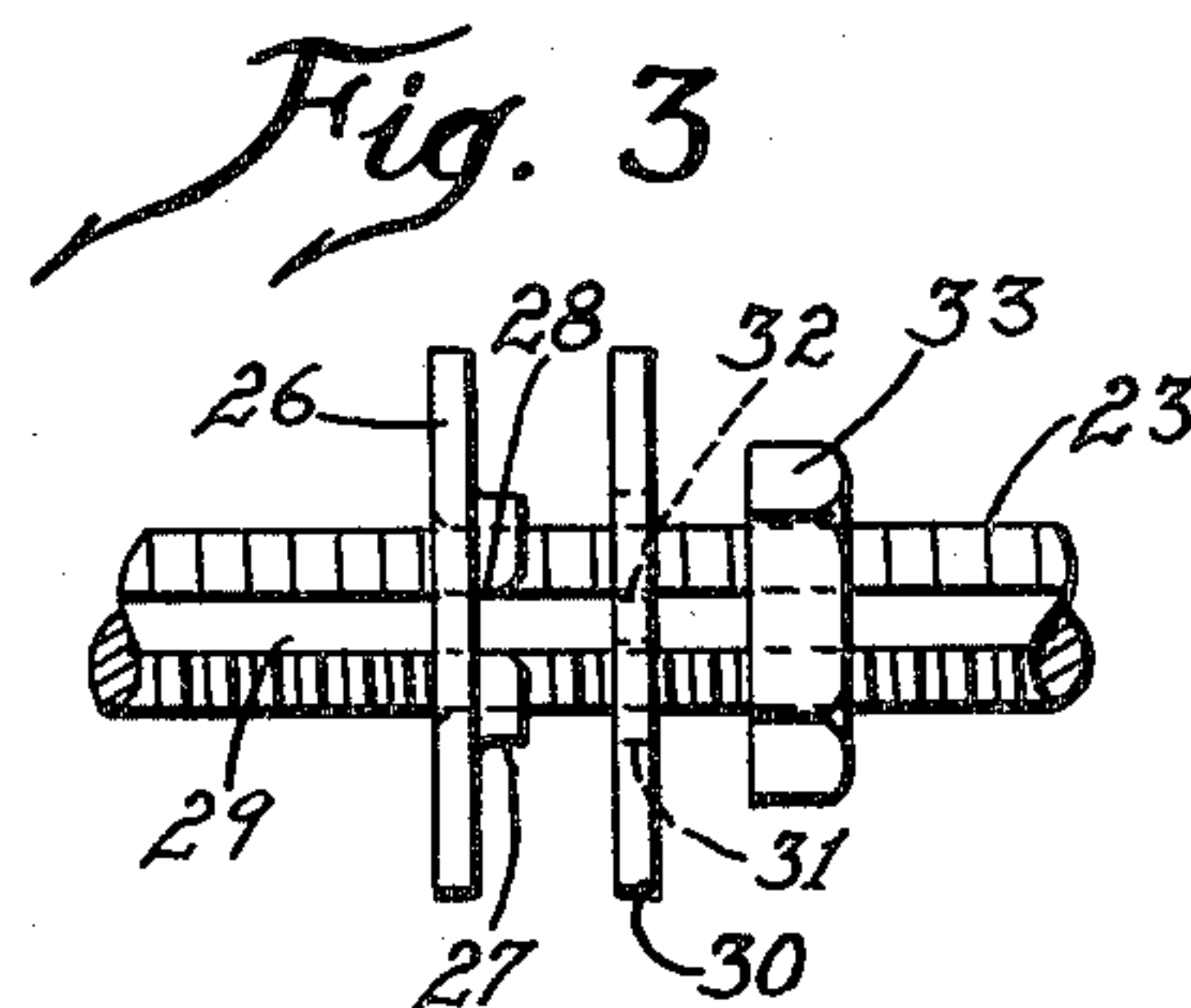
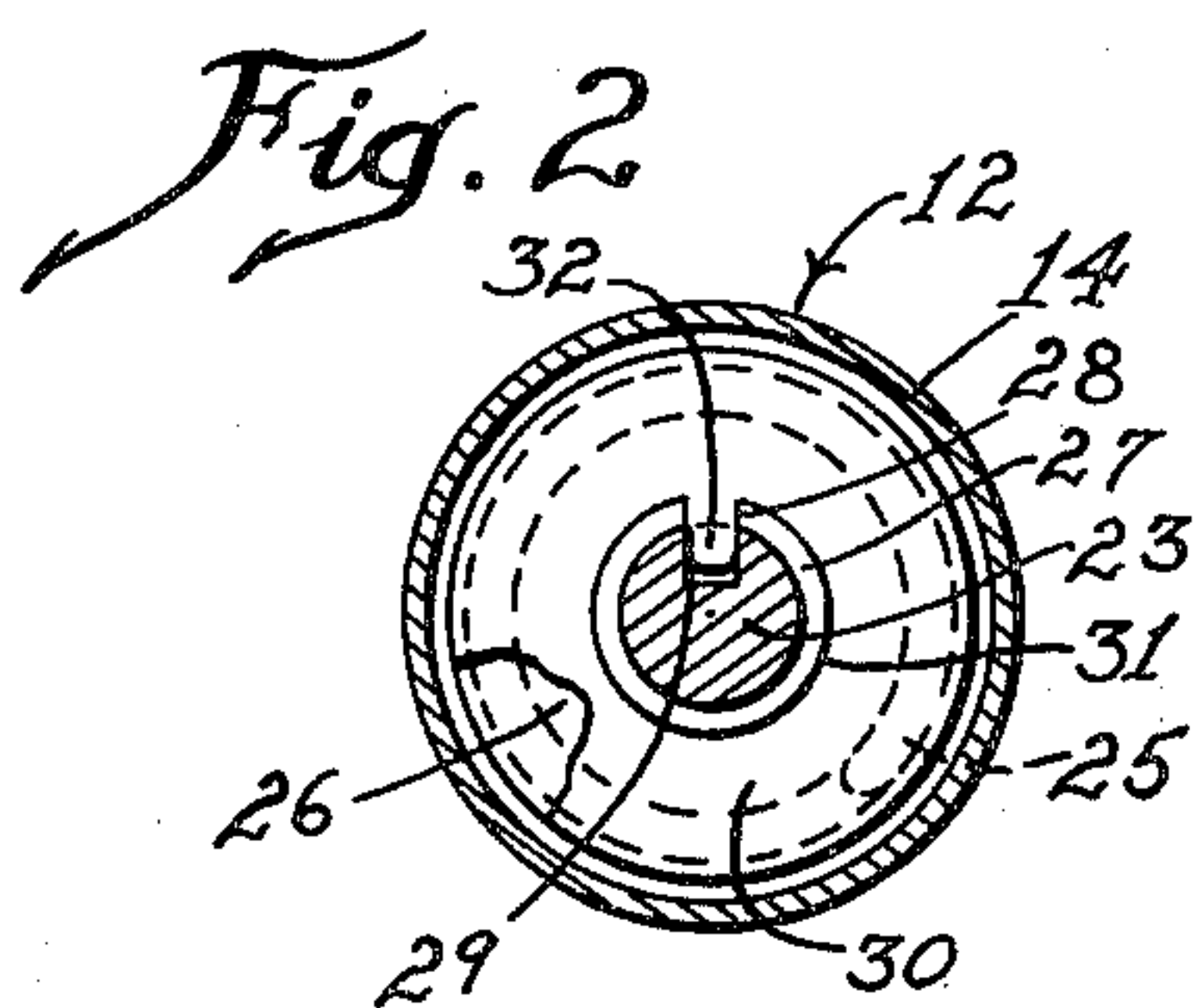
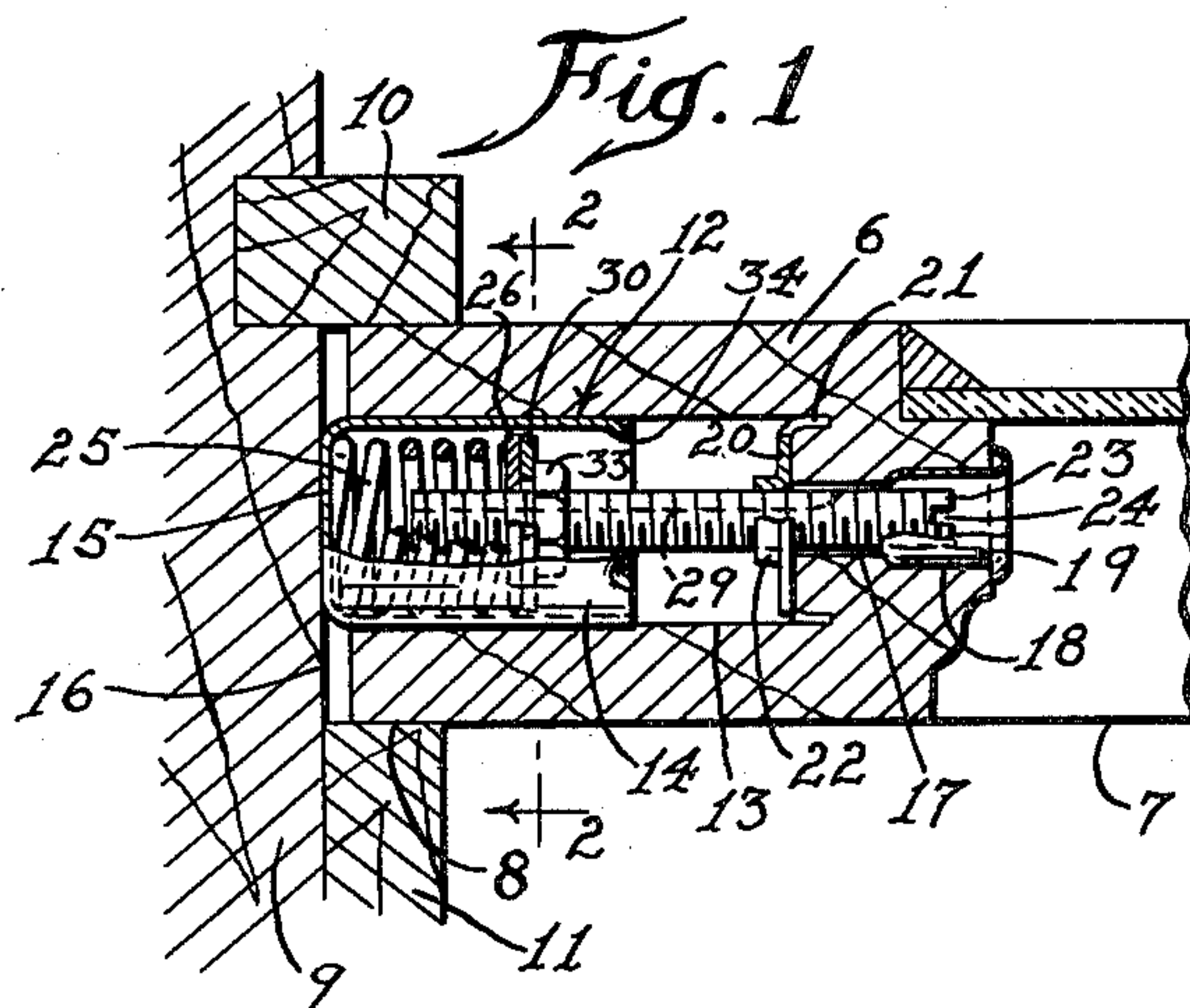
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WINDOW SASH HOLDER

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WINDOW SASH HOLDER

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This invention relates to a new and improved window sash holder.

More specifically, my invention relates to a sash holder of the spring-pressed plunger type affording enough sliding friction to hold the sash raised in any adjusted position, and has for its principal object the provision of a simple and economical construction, which, nevertheless, permits of a wide range of adjustment of the device to fit different sizes and makes of windows, while still permitting the desired extent of screw adjustment of spring pressure on the plunger, so as to insure satisfactory operation of the sash holder indefinitely, regardless of shrinkage or swelling or distortion of lumber in the window construction, and regardless of what slight amount of wear is apt to occur.

The invention is illustrated in the accompanying drawing, in which—

Fig. 1 is a horizontal section through the side rail of a sash and adjacent portion of the window casing, showing a sash holder made in accordance with my invention;

Fig. 2 is a cross-section through the sash holder on the line 2—2 of Fig. 1, showing the parts enlarged to approximately double size;

Fig. 3 is an exploded elevational detail of the screw, on the same scale as Fig. 2, showing the adjustable spring abutment washer in uncoupled relation to its lock washer and lock nut, as when adjusting the holder to fit a given sash, and

Figs. 4 and 5 are perspective views of the spring abutment washer and lock washer, respectively.

The same reference numerals are applied to corresponding parts throughout the views.

Referring to the drawing, the reference numeral 6 designates the side rail of a window sash 7, that is slidable up and down in the usual ways 8 in a window casing 9, the strip indicated at 10 being that provided in the usual way between the upper and lower sashes of a double-hung window, and the strip indicated at 11 being the molding usually provided on the inner side of the window casing. The sash holder of my invention is indicated generally by the reference numeral 12. A hole 13 is bored in the side rail 6 of a size large enough to accommodate the cup-shaped sheet metal plunger 14 with an easy working fit, the latter having its flat end wall 15 slidably engaging the flat inside face 16 on the window casing. A smaller hole 17, concentric with the bore 13, is drilled through the side rail of the sash and is suitably counterbored at the inner end, as indicated at 18, to receive a sheet

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metal ferrule 19 with a drive fit. A stamped sheet metal washer 20 having tangs or spurs 21 bent forwardly from the diametrically opposed edge portions thereof is pressed into the inner end of the bore 13, the tangs or spurs 21 being embedded in the wood so as to hold the washer securely against turning, so that it may function as a nut, the same being pierced centrally and extruded and tapped to provide the internally threaded hub portion 22 in which the adjusting screw 23 is threaded. This screw has its slotted end 24 extending through the hole 17 into the ferrule 19, so as to be easily accessible from the inside of the sash for adjustment whenever increase or decrease in spring pressure on the sash holder appears to be necessary or desirable. I am aware that sash holders answering to the general description thus far have been available heretofore, but they have not been as satisfactory as they might be, because they lacked the necessary adjustability to suit application of these devices to different makes and sizes of windows.

The coiled compression spring 25, seated against the end wall 15 of the plunger 14, has its outer end portion surrounding the adjacent end portion of the screw 23 and abutting a sheet metal washer 26. This spring abutment washer is pierced centrally and extruded and tapped, like the washer 20, to provide an internally threaded hub portion 27 in which the screw 23 is threaded for adjustment. A key-slot 28 is provided in the hub 27, and a key-way 29 is provided in the screw 23 extending throughout the major portion of its length, as clearly appears in Fig. 1. A stamped sheet metal lock washer 30 having a center hole 31 large enough to accommodate the hub 27 freely, so that the washer 30 may be slipped over the hub 27 into abutment with the washer 26, has a key-projection 32 slidable in the key-way 29, as clearly appears in Figs. 2 and 3, so that when the washer 26 is turned to bring its key-slot 28 in register with the key-way 29, the key 32 can be entered in the slot 28, as shown in Fig. 2, and thereby lock the spring abutment washer 26 against turning. It, therefore, requires only a lock nut 33, threaded on the screw 23 and arranged to jam against the hub 27, to hold the washers 26 and 30 in this assembled relation. Radial indentations 34 are provided on the inner edge of the skirt of the plunger 14 at three equally circumferentially spaced points to prevent displacement of the assembly from the plunger and yet allow quick and easy assembly of the parts by entering the washers 26 and 30 behind two of

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the indentations first and then forcing the washers inwardly against the resistance of the spring 25 while the washers are still cocked enough to get by the third indentation. The spring 25 expands enough to hold the washer 30 in abutment with the indentations 34 when the sash holder is not installed, so that the whole sash holder assembly shown in Fig. 1, with the exception of the ferrule 19, is maintained in assembled relationship under spring pressure and can be shipped in that form, and there is, therefore, no danger of parts being lost.

A carpenter will experience no difficulty in adjusting the sash holder to fit any given sash regardless of the width of the side rail 6. He merely loosens the nut 33 and retracts the lock washer 30, as indicated in Fig. 3, and then adjusts the screw 23 relative to the spring abutment washer 26, so that the overall length of the assembly is slightly greater than the distance from the face 16 in Fig. 1 to the inside edge of the side rail 6 where the ferrule 19 is shown, the additional length thus allowed for being for compression of the spring 25 when the sash holder is in place in the sash and abutting the casing, as illustrated in Fig. 1. Notice in that figure the extent to which the washer 30 is spaced from the indentations 34; this represents the amount of additional compression of the spring 25 over and above the preload pressure, and it is this dimension, more or less, which the carpenter must take into consideration in making his overall length adjustment of the sash holder. Having arrived at the overall length adjustment by adjusting the screw 23 in one direction, or the other, with respect to the washer 26, the carpenter then turns the washer 26 one way or the other just enough to bring the key-slot 28 in register with key-way 29, and then he slips the lock washer 30 over the hub 27, so as to enter the key-projection 32 that works in the key-way 29 in the slot 28 to lock the washer 26 against turning. Then the nut 33 is tightened, with or without a wrench, hand tightening being usually sufficient inasmuch as the lock washer 30 eliminates any danger of the washer 26 tending to turn. Thereafter, the screw 23 can be adjusted in the sash without any danger of changing the setting of the spring abutment washer 26 with respect to the screw 23, and, of course, the spring pressure on the plunger 14 may be increased or decreased as desired. The travel of the plunger 14 relative to the sash is so small in normal operation of the sash that the screw 23 may in some installations have its end quite close to the end wall 15 of the plunger without interfering at all with the proper functioning of the sash holder. In other words, the plunger 14, which is of appreciable length, affords an ample range of overall length adjustability and no advantage was heretofore taken of that fact, with the result that sash holders of this plunger type were not as widely used as they might otherwise have been.

It is believed the foregoing description conveys a good understanding of all of the objects and advantages of my invention. The appended claims have been drawn with a view to covering all legitimate modifications and adaptations.

I claim:

1. In a window sash holder of the character

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described, the combination of a hollow elongated cylindrical plunger element having an end wall closing one end thereof, a coiled compression spring in said plunger abutting said end wall at its one end, a screw coaxially arranged with respect to and extending into said plunger but ending in spaced relation to its end wall, an adjustable abutment washer in said plunger for supporting engagement with the other end of said spring, said washer being adjustably threaded at its center on said screw to vary the overall length of the assembly, said screw having a longitudinally extending key-way provided therein, a lock washer on said screw having a key-projection slidable in the key-way and also arranged to be entered in a key-slot provided in said first washer, whereby to lock said first washer against turning relative to said screw from adjusted position, a lock nut threaded on said screw and adapted when tightened toward said washers to hold the lock washer in locking position relative to said first washer, another washer outside said plunger in coaxially spaced relation to said first washer through the center of which the screw is adjustably threaded, and means to lock said latter washer against turning relative to the sash on which the same is adapted to be fixedly supported.

2. In a window sash holder of the character described, the combination of a hollow elongated cylindrical plunger element having an end wall closing one end thereof, a coiled compression spring in said plunger abutting said end wall at its one end, a screw coaxially arranged with respect to and extending into said plunger but ending in spaced relation to its end wall, an adjustable abutment washer in said plunger for supporting engagement with the other end of said spring, said washer having a central hub portion which is internally threaded and adjustably threadedly receives said screw to permit variation in the overall length of the assembly, said hub having a radial key-slot provided therein, said screw having a longitudinally extending key-way provided therein adapted to register with said slot, a lock washer on said screw having a radial key-projection slidable in the key-way and adapted to fit in said slot to lock the first washer against turning relative to said screw from adjusted position, said lock washer being of a size to fit over the hub on the first washer, a lock nut threaded on said screw and adapted to be jammed against said hub to retain the lock washer in locking position, another washer outside said plunger in coaxially spaced relation to said first washer through the center of which the screw is adjustably threaded; and means to lock said latter washer against turning relative to the sash on which the same is adapted to be fixedly supported.

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The following references are of record in the file of this patent:

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