D. L. STERNER.

ADJUSTABLE CASTER.

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1,417,640. **Patented May 30, 1922.**

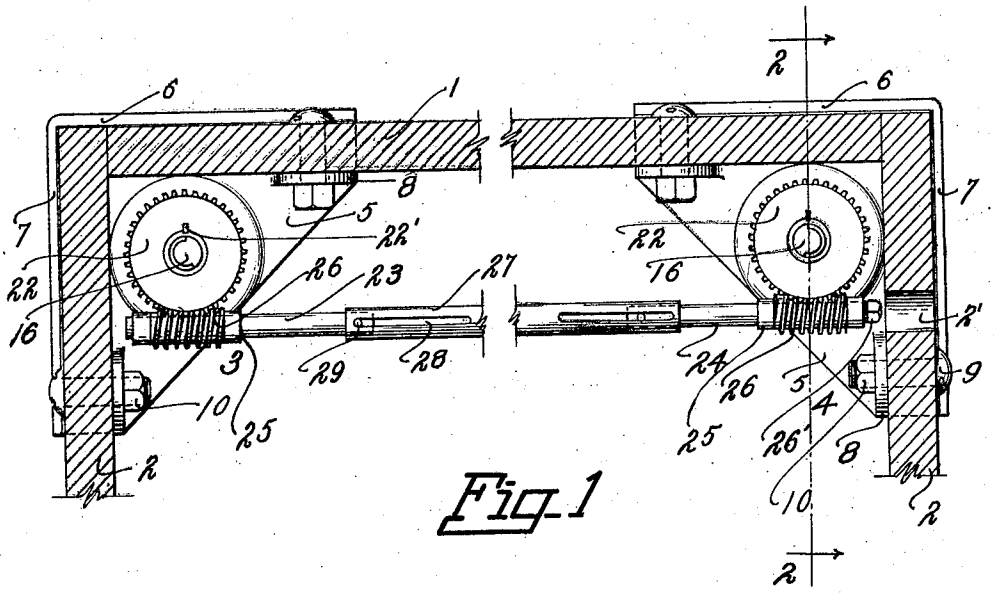
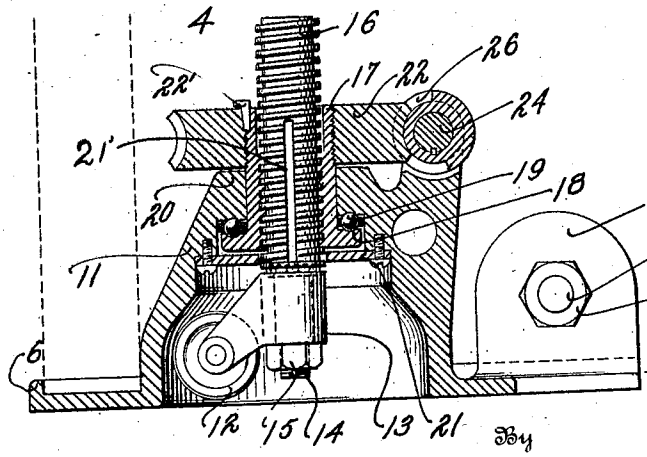


Fig. 1

Fig. 2



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ADJUSTABLE CASTER.

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To all whom it may concern:

Be it known that I, DANIEL L. STERNER, a citizen of the United States, residing at Spokane, in Spokane County and State of Washington, have invented certain new and useful Improvements in Adjustable Casters, of which the following is a specification.

My present invention relates to improvements in adjustable casters for use in connection with show cases for stores, and other similar articles of furniture. As is well known most show cases now in use are largely constructed of glass, and are of such a nature and so cumbersome as to render them unsuited for lifting or moving as they are subject to danger of breaking or destruction. By the utilization of my invention, a show case or other article of furniture may be elevated sufficiently to clear the floor and be supported in such manner as to be readily moved without danger of breaking the glass structure, and without likelihood of marring the floor over which the show case is transported.

For attaining these results I have devised specially constructed corner plates or supports to rest upon the floor and support the show case in normal position, and combined therewith adjustable casters and means for elevating the show case preparatory to moving it to transfer the weight of the show case to the casters, in order that the case may be moved as desired, and to this end the invention consists in certain novel combinations and arrangements of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention, wherein a pair of elevating devices are jointly used, and the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principles of my invention.

Figure 1 is a horizontal, sectional view through the walls at the end of a show case or other article of furniture, showing a pair of the devices of my invention in top plan that may be jointly operated to elevate one end of the show case.

Figure 2 is a vertical sectional view through one of the complementary devices, on line 2—2 of Figure 1.

To show the relation of parts I have illustrated a portion of a show case at one end thereof and designated the end wall 1 and the two side walls 2, 2, which walls may be of wood or other suitable material and securely joined together.

The combined elevating devices and casters are used, preferably in pairs at each end of the show case, and the complementary devices of the pair are indicated as a whole by the numerals 3 and 4 in Figure 1, and inasmuch as the construction of these devices is similar, the description of one will suffice for both.

The foot or corner plate 5 is made of suitable metal and preferably triangular in form, to rest solidly upon the floor or other supporting surface for the show case, and is provided with flanges or edge ribs 6 and 7 disposed at right angles, or at other angles, to engage the outer edge of the end wall and side wall of the show case, as indicated by dotted lines in Figure 2.

For securing these floor plates to the show case I utilize a pair of angularly disposed, integral ears 8 that rise from the plate and are perforated to receive bolts 9 that are passed through the ears and wall of the show case, and are secured by nuts 10. The ears are located in such position as to engage the inner face of the wall and the bolts are passed through the wall from the outer side thereof in order that the nuts may be hidden from sight, and present a neat and finished outside appearance at the corners of the show case.

Each floor plate is fashioned with a housing 11 cast integral therewith and disposed in position to be located within one corner of the show case, and the housing encloses the caster as shown in Figure 2. The caster employed is of the wheel type, having its wheel 12 swiveled by the swivel head 13 on the pintle 14 and the head is secured against displacement by the nut 15 as usual. The pintle or journal for the swiveled caster is formed as a reduced extension of the screw bar or bolt 16, which is threaded into an exteriorly and interiorly threaded bushing 17, which bushing performs the function of a traveling nut when the show case is being elevated or lowered. At its lower end the bushing has a circular base flange 18 to support the ball bearings 19 disposed in a race formed between this flange and the housing head 20 in which the traveling nut is journaled to revolve. A retaining plate 21 may be utilized between the caster and the

bushing, through which the bolt 16 is passed, and attached as by screws to the housing as shown.

Above the housing is located a worm wheel 22 screwed on the exterior threaded part of the bushing and secured therewith by means of a key 22′ in order that the bushing may revolve with the worm wheel, and the two wheels 22 of the pair of devices, are revolved synchronously from their worm shafts 23 and 24, which are journaled in their respective bearings 25 on the housings as best seen in Figure 1. Each shaft is provided with a worm or screw 26, and both of the shafts may have a squared end as 26′ adapted to receive a key socket or other tool introduced through an opening 2′ in the wall of the show case. The two shaft sections are joined by a tubular section 27 which receives the adjoining ends of the shafts 23 and 24 and the joint is extensible by action of the slots 28 in the tubular section and the pins 29 on the sections 23 and 24. Thus it will be apparent that the sectional worm shaft may be extended or contracted as desired to accommodate it to various widths or depths of show cases and the elevating mechanism of the pair of devices be operated synchronously from the squared end 26′.

As the extensible shaft is revolved, the action of the worm screws and worm wheels causes the bushings 17 to revolve in their bearings, and the initial movement results in lowering the non-rotatable bolt 16 and the caster supported thereon, until the latter rests upon the floor. The retaining plate 21 may have a lug thereon to engage in the vertically disposed groove 21′ in the bolt 16 to prevent turning of the bolt, and as the caster is lowered the weight of the show case is transferred to the caster and withdrawn from the corner plates. Upon continued movement of the extensible shaft, the bushing now becomes a traveling nut, carrying with it the housing, plate and supported show case, and the show case is thus bodily elevated. After having been sufficiently lifted and with the load on the rollers or wheels of the casters, the show case may be shifted or moved, rolling on the wheels in usual manner to the desired position. When the proper destination has been reached, the movement of the extensible shaft is reversed, the load lowered, and the weight of the case again transferred to the plates at the corners thereof.

Changes and alterations may be made in the devices, within the scope of my claims without departing from the spirit of the invention, as for instance, the securing bolts 9 and nuts 10 may be dispensed with and the ribs 6 and 7 be depended on, together with the ears 8 to hold the plates in place. Both ends of the extensible shaft are squared in order that the pair of devices may be adapted for either right, or left hand use, or the devices may be used singly if desired.

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

1. The combination with a base plate having angular retaining means and an integral housing, of a rotatable bushing in the housing and a non-rotatable screw shaft threaded in said bushing, a caster within the housing journaled on said shaft, and means for revolving the bushing to perform the functions of a traveling nut.

2. The combination with a base plate having angular retaining flanges and an integral housing, of a rotatable bushing in the housing, an annular flange on the lower end of the bushing and an antifriction bearing between said flange and housing, a screw shaft threaded in said bushing, a retaining plate below the annular flange and having means engaging said shaft to hold it against rotation, a caster on the shaft within the housing, and means for revolving the bushing.

3. The combination with a pair of elevating devices each comprising a caster and its threaded non-rotatable shaft, a rotatable bushing in each device co-acting with the threaded shaft, a worm wheel on each bushing, an extensible shaft, having bearings in said devices, and worm screws on said extensible shaft engaging said wheels, for the purpose described.

In testimony whereof I affix my signature.

DANIEL L. STERNER.