G. E. RELLAY.

RAISING AND LOWERING MECHANISM.

APPLICATION FILED JUNE 20, 1912.

1,125,713.

Patented Jan. 19, 1915.

2 SHEETS—SHEET 1.

Fig. 3.

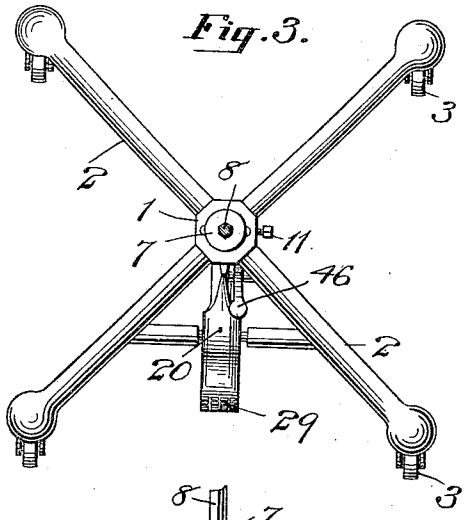


Fig. 1.

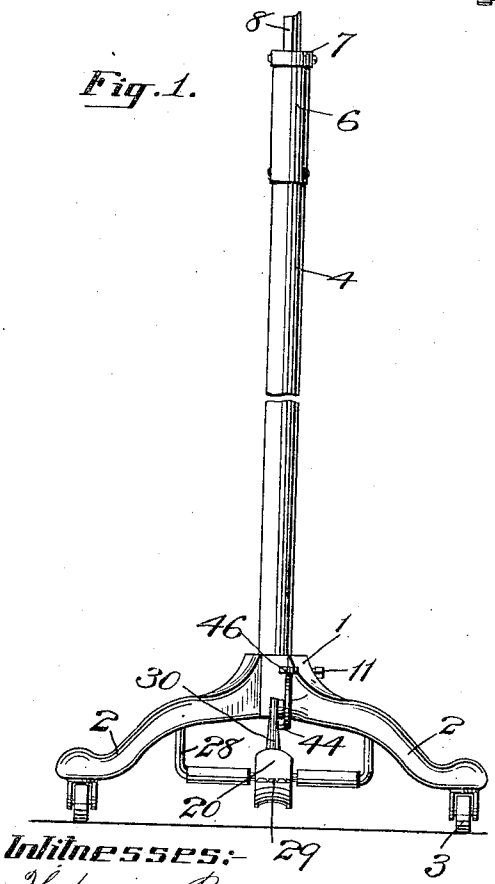
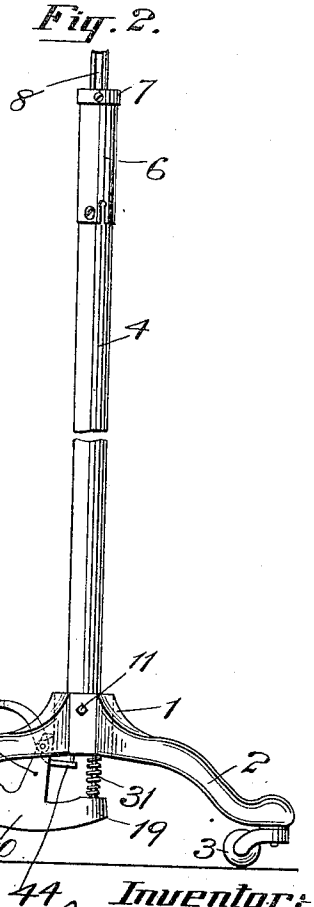


Fig. 2.



Witnesses:-
Hyperion Barry.
F. George Barry.

Inventor:
Geo. E. Rellay
By Brown & Durand
his Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 4.

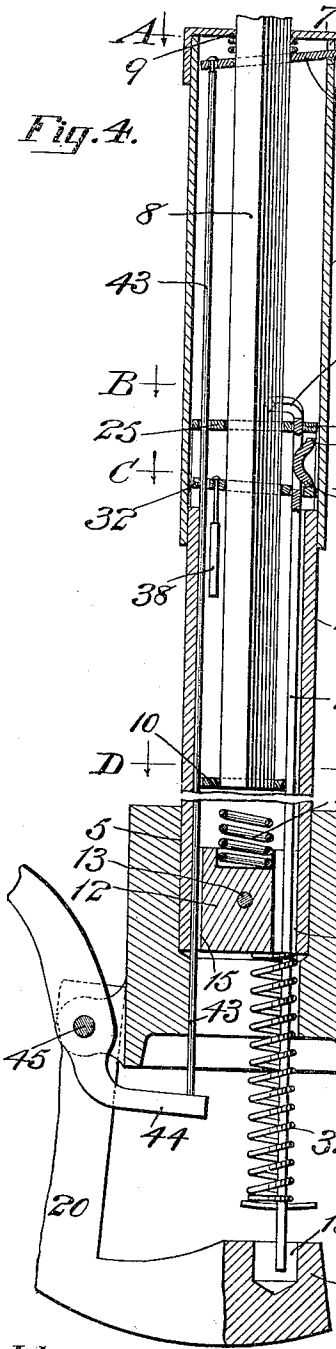


Fig. 6.

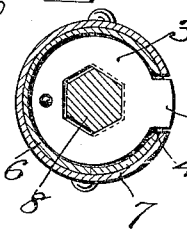


Fig. 7.

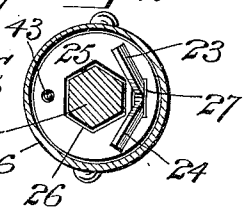


Fig. 8.

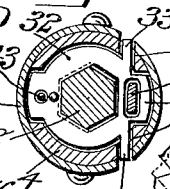


Fig. 9.

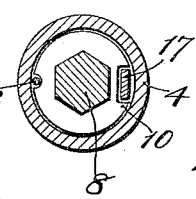
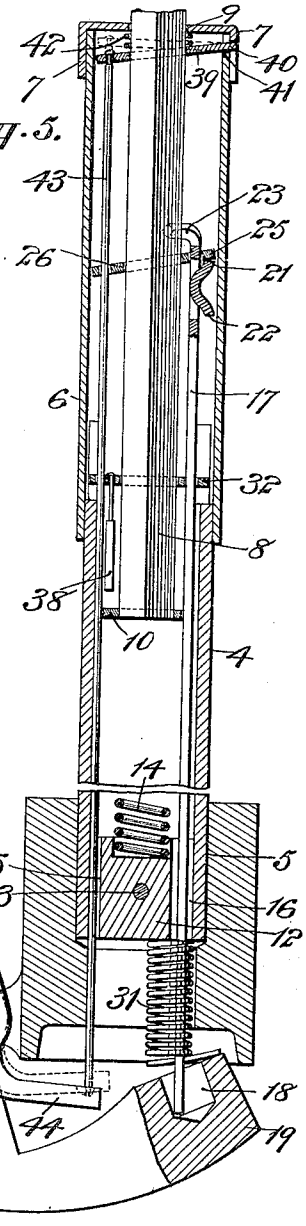


Fig. 5.



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Inventor:-

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UNITED STATES PATENT OFFICE.

GEORGE E. RELLAY, OF GUILFORD, CONNECTICUT.

RAISING AND LOWERING MECHANISM.

1,125,713. Specification of Letters Patent. Patented Jan. 19, 1915.

Application filed June 20, 1912. Serial No. 704,775.

To all whom it may concern:

Be it known that I, GEORGE E. RELLAY, a citizen of the United States, and resident of Guilford, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Raising and Lowering Mechanism, of which the following is a specification.

My invention relates to raising and lowering mechanism and more particularly to mechanism for raising and lowering a rod for supporting a dress form, seat or other article in different elevated positions.

In the accompanying drawings, Figure 1 represents an embodiment of my invention in front elevation, Fig. 2 is a similar view of the same in side elevation, Fig. 3 is a top plan view, Fig. 4 is an enlarged partial vertical section showing the parts in the position which they assume when the supporting rod is about to be raised, Fig. 5 is a similar view showing the position which the parts assume after the rod has been raised a step and the pedal is about to return for repeating the lifting operation. Fig. 6 is a transverse section in the plane of the line A—A of Fig. 4, Fig. 7 is a transverse section in the plane of the line B—B of Fig. 4, Fig. 8 is a transverse section in the plane of the line C—C of Fig. 4, and Fig. 9 is a transverse section in the plane of the line D—D of Fig. 4.

The pedestal which I have here shown as a support for the raising and lowering mechanism, consists of a hub portion 1, from which radiate a group of legs 2, in the present instance four legs, and these legs are shown as mounted on casters 3 for easily moving the mechanism from place to place. The hub 1 receives therein a tubular standard composed of a lower section 4, the lower end of which is received in a socket 5 in the hub 1, and an upper section 6, the lower end of which embraces the upper end of the lower section 4, the said upper section having at its top a cap plate 7. The sectional standard 4, 6, receives a supporting rod 8 which passes through an opening 9 in the cap 7, and at its lower end is provided with a collar 10 fitted to the interior wall of the lower section 4 of the tubular standard, the collar 10 and the wall of the opening 9 serving as guides for holding the supporting rod 8 in the desired position within the tubular standard 4, 6, with the exterior wall of the supporting rod spaced from the interior wall of the standard 4, 6.

The lower section of the standard 4 is held in its position in the socket 5, by means of a set screw 11, and the bore at the lower end of the section 4 is filled by a plug 12 held in position by a rivet 13. This plug 12 has seated in its upper end, a coil spring 14 which acts as a buffer to prevent jar and breakage in the event the supporting rod and the article supported thereby should unintentionally drop. The said plug 12 is also provided with openings 15 and 16 therethrough, the former for receiving a lowering rod and the latter for receiving a lifting rod, as will hereinafter appear. The supporting rod 8 is preferably made angular in cross section; in the present instance, hexagonal, to prevent it from rotating in the opening 9 in the cap 7.

The lifting rod 17, in the present instance, of oblong shape in cross section, as clearly shown in Fig. 8, extends from a socket 18 in the working end of a pedal 20, upwardly through the opening 16 in the plug 12, and thence through the guide 10, to a point above the top of the lower section 4 of the tubular standard, where it is provided with two shoulders, denoted respectively by 21 and 22. These shoulders 21, 22, may be conveniently formed by striking up the partially severed metal from the body of the lifting rod 17, as shown in Fig. 4. The upper end of the lifting rod 17 is provided with diverging branches 23, 24, which partially embrace the supporting rod 8 and serve to bring the disk 25 in a horizontal position relative to the rod 8.

A disk 25 provided with an opening 26 therethrough for receiving the rod 8 with an easy sliding fit, is carried by the lifting rod 17 between the branches 23, 24, and the shoulder 21, the said disk for this purpose being provided with an opening 27 for receiving the lifting rod 17. When in its lowermost position, the disk 25 rests on the upper end of the section 4 of the tubular standard. The pedal 20 is fulcrumed on a bracket 28 depending from the pedestal and the end 29 of the pedal for receiving the foot of the operator, is so near the floor that the toe of the operator may readily press downward on the pedal without any tendency to push the pedestal along the floor in working the pedal to lift the rod 17. To prevent the working end of the pedal 20 from dropping

too low, an upwardly extending lug 30 is provided, which, when the pedal has reached its lowermost position under the tension of the retracting spring 31, will engage the hub 1 and resist the further downward movement of the working end of the pedal. Below the disk 25, there is hinged a disk 32, by means of oppositely extended pintles 33, 34, which engage slots 35, 36, in the upper end of the tubular section 4. The lifting rod 17 passes through the disk 32 and the lower abutment 22 on the said rod is in position, when the lifting rod 17 is at its lowermost point, to rest on a projection 37 of the disk 32, which lies on the opposite side of the pintles 33, 34, from the body of the disk. This pressure tends to tilt the opposite part of the disk 32 upward when the rod 17 is in its lowered position, and so places the said disk 32 with relation to the rod 8, that it will nip the rod 8 and prevent it from being raised by any attempt to lift it from a point above the tubular standard section 6. The upwardly tilting part of the disk 32 is provided with a weight 38 which will promptly throw the disk 32 into a position at right angles to the rod 8, the moment the lifting rod 17 is raised so as to release the shoulder 22 from the extension 37 on the disk. A third disk 39 is hinged by means of a projection 40, in a slot 41 in the upper end of the tubular standard section 6, and is held in a downwardly tilted position by means of a spring 42 interposed between the cap 7 and the disk. This downward tilt of the disk 39 causes the disk to nip the supporting rod 8 and prevent the latter from any downward movement until the disk 39 is manipulated to bring it into position at right angles to the rod 8, or so nearly at right angles thereto as to release its grip on the rod. For the purpose of releasing the said disk 39 from the rod 8, and permitting the rod to lower, a lowering rod 43 is provided which loosely engages the free end of the disk 39 and extends thence downwardly through the disks 25 and 32 and through the guide 10 and the opening 15 in the plug 12, to the end of a pedal 44 fulcrumed at 45 to a bracket on the hub 1, and with its operating end 46 in convenient position to receive the foot of the operator standing in front of the machine. When the pedal 44 is operated by pressing its end 46 downwardly, it will lift the rod 43 and hence the free end of the disk 39, allowing the weight of the rod 8 to affect the disk 32 and release its grip on the rod 8, thereby permitting the said rod 8 and whatever may be carried thereby, to lower. When it is desired to raise the rod 8 and whatever may be supported thereon, the operator presses downwardly on the operating end of the pedal 20, thereby lifting the rod 17 which promptly releases the shoulder 22 from the disk 32, allowing the latter to come to a non-gripping position, and by means of the shoulder 21, tilts the disk 25 into position to grip the rod 8 and carry it and whatever it is supporting upwardly, this upward movement of the rod 8 tending to bring the disk 39 into a non-gripping position. When the pressure is released from the pedal 20, the rod 17 and the disk 25 thereon will slide downwardly freely along the rod 8, into the position shown in Fig. 4, while the disk 39 will promptly assume its tilted position shown in Fig. 4, to prevent the downward movement of the rod 8, and when the shoulder 22 impinges on the extension on the disk 32, the latter will be tilted into the position shown in Fig. 4, to prevent the rod 8 from upward displacement.

The above described raising and lowering mechanism operates step by step to elevate whatever may be supported by its supporting rod to the desired height and the same may be lowered whenever desired, to any extent desired within the limits of the mechanism, and this may be done by the foot of the operator while the hands are free to manipulate whatever is being raised and lowered. Furthermore, the movable parts of the raising and lowering mechanism are well housed and protected from dust and foreign matter and may be knocked down and assembled with great facility by unskilled as well as skilled workmen.

It is obvious that various changes might be resorted to in the form and arrangement of the various parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the structure herein shown and described, but

What I claim is:

1. A raising and lowering mechanism comprising a vertically movable supporting rod, a support for the rod, a tilting disk for nipping and releasing the supporting rod, a lifting rod engaged with the tilting disk for operating it, a pedal for operating the lifting rod and a tilting disk under the control of the said lifting rod to be thrown into position to nip the rod and prevent its upward movement when the pedal is at rest.

2. A raising and lowering mechanism comprising a vertically movable supporting rod, a tubular support for the rod, a lifting rod, a tilting disk carried by the lifting rod for nipping and releasing the supporting rod, a pedal for operating the lifting rod, a tilting disk under the control of the lifting rod for holding the supporting rod against upward displacement and a spring-actuated tilting disk for nipping and holding the supporting rod against downward displacement.

3. A raising and lowering mechanism comprising a vertically movable supporting rod, a tubular support for the rod, a lifting rod, a tilting disk carried by the lifting rod for nipping and releasing the supporting

rod, a pedal for operating the lifting rod, and a weighted disk hinged to the tubular support and under the control of the lifting rod for holding the supporting rod against upward displacement when the pedal is at rest.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this seventh day of June 1912.

GEO. E. RELLAY.

Witnesses:
EDW. C. SEWARD,
F. C. SPENCER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."