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SHOE OR PLATFORM RAISING DEVICE

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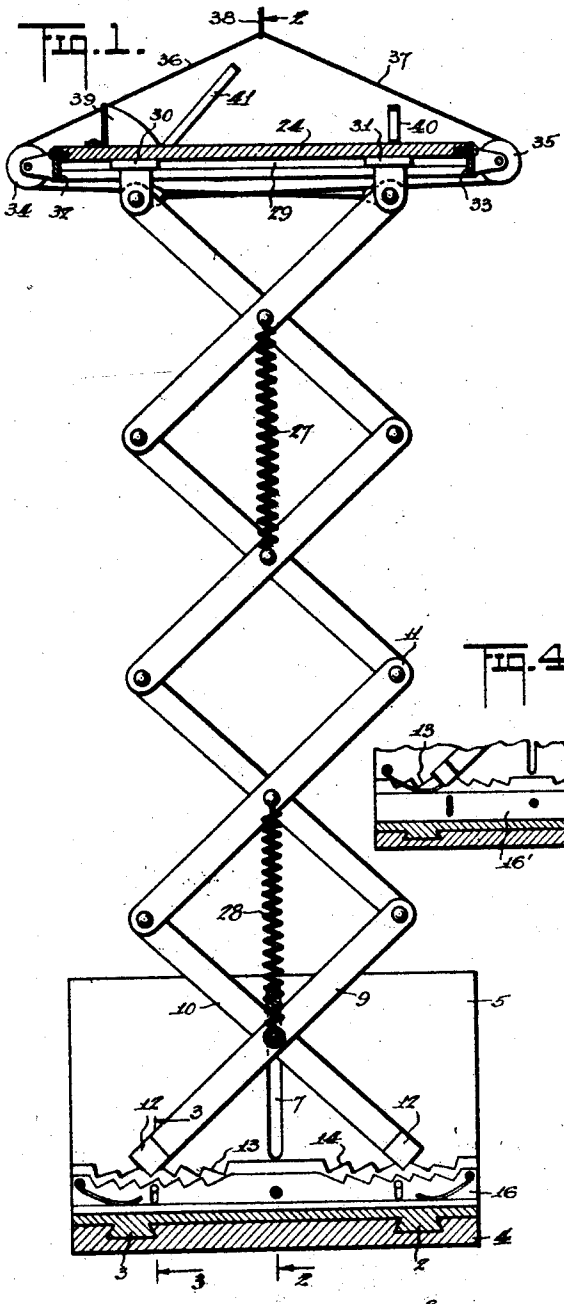


Fig. 1.

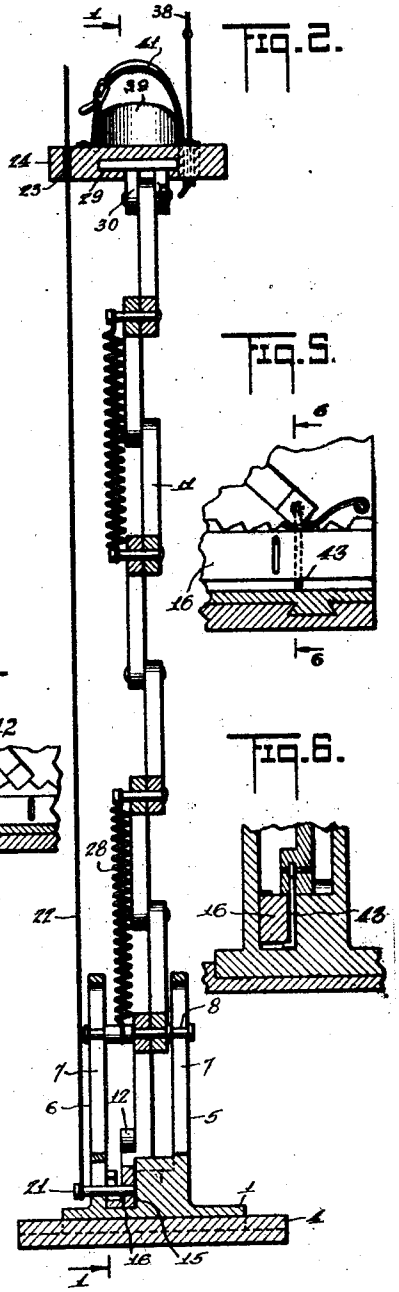


Fig. 2.

Fig. 5.

Fig. 4.

Fig. 6.

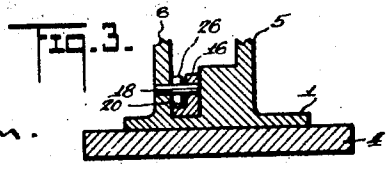


Fig. 3.

WITNESSES

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SHOE OR PLATFORM RAISING DEVICE.

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This invention relates to elevating devices capable of being used as substitutes for scaffolding and has for an object to provide a construction wherein individual elevating devices may be used on both feet by a workman or a single larger elevating device used to support one or more persons.

Another object of the invention is to provide an elevating device for workmen wherein the workmen may stand on the device and elevate themselves to different heights as may be desired.

A further object, more specifically, is to provide an elevating device for a workman capable of being connected to the respective shoes of the workman, the construction being such that either device may be actuated for elevating that particular shoe so that either or both shoes may be elevated to raise the workman and support him in an elevated position.

An additional object is to provide an elevating device wherein the lazy tongs and associated parts are used to elevate and support a workman, the structure including means operated by the workman for causing the lazy tongs to collapse or distend as the workman desires a higher or lower elevation.

In the accompanying drawing—

Figure 1 is a vertical sectional view through a device embodying the invention, the same being taken approximately on line 1—1 of Figure 2.

Figure 2 is a sectional view through Figure 1 on line 2—2.

Figure 3 is a detail fragmentary sectional view through Figure 1 on line 3—3.

Figure 4 is a detail fragmentary sectional view similar to the lower part of Figure 1 but showing a slightly modified construction for releasing the lazy tongs.

Figure 5 is a fragmentary sectional view similar to the lower right hand part of Figure 1 but disclosing a slightly modified construction.

Figure 6 is a sectional view through Figure 5 on line 6—6.

Referring to the accompanying drawing by numerals, 1 indicates a base provided with dove-tail members 2 and 3 on the lower surface, said dove-tail members fitting into similar shaped grooves in the base plate 4 which is slidingly fitted in position. The base plate 4 is held in place merely by friction and may be removed at any time when it is desired to store the device. The base 1 is preferably made from metal and a pair of side plates 5 and 6 are preferably cast integral therewith, said side plates being provided with vertical slots 7 to accommodate the pin 8 which extends through the lowermost bars 9 and 10 of the lazy tongs 11. The pin 8 extends through the bars 9 and 10 at their point of crossing and through the slots 7 whereby the direction of movement of the lazy tongs is determined. At the lower end, each of the bars 9 and 10 is provided with a foot or offset 12 adapted to fit into the respective racks 13 and 14 formed on the base 1. A slot or depression 15 is also formed in the base 1 and guides the vertical movable bar 16 in a limited up and down movement. Pins 17 and 18 extend from the base 1 through suitable slots 19 and 20 formed in the bar 16 whereby this bar is guided and limited in its up and down movement. An actuating pin 21 is connected to bar 16 near the center and to this is connected a cord or cable 22 of any desired kind extending upwardly through the aperture 23 in the foot piece 24. Suitable springs 25 and 26 act on the bar 16 to maintain the same in its lower position as shown in the drawing but these springs will yield as the cord or cable 22 is pulled and bar 16 moved upwardly. When this occurs, the bar 16 will engage the feet 12 on the bars 9 and 10 and will raise these feet out of engagement with the racks 13 and 14 whereby the lazy tongs 11 may be collapsed to any desired extent. When not in use, the lazy tongs are completely collapsed and the foot piece 24 is lowered to the side plates 5 and 6. In order to automatically cause a collapsing of the lazy tongs when released, suitable springs 27 and 28 are connected to the central pivot pins of certain of the bars. At the upper end of the device the foot piece 24 is formed with a substantially dovetail slot 29 in which the sliding feet 30 and 31 are positioned, said sliding feet being pivotally connected to the upper ends of the upper bars of the lazy tongs 11 as shown in Figure 1. When these feet are pulled toward each other, the lazy tongs will naturally be distended and when forced away from each other or permitted to move away from each other, the lazy tongs will be collapsed. Suitable mem-

bers 32 and 33 are arranged at the ends for preventing the feet from sliding out of the slot 29. These members also support suitable pulleys 34 and 35 over which the respective cables 36 and 37 pass. The cable 37 is connected to foot 30 while cable 36 is connected to foot 31. These cables are connected together and to a single cable 38 which extends upwardly and may be tied to the waist of the person using the device. The person using the device will place his foot on the foot support 24 with his heel against the heel base 39 and his toe under the strap 40. A suitable strap 41 is also provided for the ankle whereby the foot is properly held in place so that when the foot is raised, the entire device will also be raised. This will permit the person using the device to walk whenever desired.

When the device is in use and is substantially in the position shown in Figure 1 and it is desired to raise the feet somewhat, the person using the device will raise on one foot so as to relieve the weight on the other and on the foot so relieved, the cord 38 will be pulled. This will cause the lazy tongs 11 to be distended to a greater extent. After the desired distention or extension has been produced, cord 38 is released and the weight of the person again placed on the foot piece 24. The device on the other foot is then similarly treated and the desired elevation secured. If this elevation is not sufficient, the operation is repeated. Where it is desired to lower the device, the cord or cable 22 is pulled for raising bar 16 and then the cable 38 which has been previously grasped is allowed to gradually slide through the hand for allowing the foot pieces 30 and 31 to gradually separate. The downward movement of the foot piece 24 may be stopped at any time by lowering the bar 16 whereupon the members 12 will immediately engage certain of the teeth of the racks 13 and 14.

The shoe or platform raising device embodying the invention may be used for many purposes and is in a certain sense, a distensible stilt. It is adapted particularly for use by workmen in painting or otherwise operating on a ceiling in a room or other high place, though it may, as above suggested, be used for many other purposes.

In Figure 4, a slightly modified form of the invention is shown, said modification being in the bar 16′ which in this form of the invention, is provided with teeth 42 at each end normally beneath the teeth of racks 13 and 14. The teeth 42 present auxiliary racks and are offset from the teeth of racks 13 and 14 for about half the length of a tooth so that when the bar 16′ is raised, the bars 9 and 10 will be moved out of engagement with the racks 13 and 14 but will slide quickly into engagement with the teeth of bar 16′. When this bar is lowered, the end 12 will move into engagement with another tooth of the racks 13 and 14. Upon an up and down movement of the bar 16′, the lower ends of the bars 9 and 10 may be gradually moved apart and, consequently, the lazy tongs gradually collapsed for lowering the foot piece 24.

Figures 5 and 6 disclose another slightly modified structure wherein the bar 16 is tied to the lazy tongs by reason of a hook-shaped member 43 swingably connected with each of the bars 9 and 10. The hook 43 loosely engages the lower surface of the bar 16. As bar 16 is normally held depressed by the springs 25 and 26, this arrangement causes the feet 12 to always remain in engagement with the racks 13 and 14. This is desirable when the person using the device is walking from one place to another as it will not result in the elongation of the lazy tongs as the springs 25 and 26 are sufficiently strong to hold the parts in their fixed or adjusted position. It is, of course, understood that when the cord 21 is pulled, the springs 25 and 26 are overcome and the lazy tongs may be readily distended or contracted.

What I claim is:

1. A device of the character described, comprising a base, a collapsible and distensible member operatively connected with said base, a foot piece connected to said member at the end opposite to the base, means operable from the foot piece for distending said member, means for collapsing said member, and means operable from said foot piece for releasing said member whereby it may be collapsed.

2. A device of the character described, comprising a lazy tongs, a base formed with a pair of uprights, each of said uprights being formed with a slot, a pin extending through part of said lazy tongs and through said slots, said pin acting to guide the direction of movement of the lazy tongs, a rack structure co-acting with the lower end of the lazy tongs to hold the same in different distended positions, and a foot piece connected to the lazy tongs at the end opposite said base.

3. A device of the character described, comprising a lazy tongs structure formed with a foot on the lower end of each of the lower bars thereof, a base formed with a pair of rack sections co-acting with said feet for holding the lazy tongs in different distended positions, a foot piece connected to the lazy tongs at the opposite end to said base, means operable from the foot piece for distending said lazy tongs, and means operable from said foot piece for raising the lazy tongs off of said racks whereby the lazy tongs may be collapsed.

4. A edvice of the character described,

comprising a distensible and collapsible member, a foot piece connected to one end of said member, a base connected to the other end of said member, means carried by the base for holding said member in any desired distended position, manually actuated means for distending said member, means for releasing said distensible member, and automatically acting means for collapsing said member.

5. In a device of the character described, a lazy tongs formed with a pair of feet at one end, a base co-acting with said lazy tongs, a pair of oppositely facing rack members carried by said base and positioned to be engaged by said feet whereby the lazy tongs are held in different distended positions, a pair of sliding plates extending upwardly from said base, each of said plates being provided with a slot, a pin extending through part of the lazy tongs and through said slots whereby the direction of movement of the lazy tongs is determined, and means carried by the lower part of the base adapted to be manually actuated for moving the lazy tongs out of engagement with said rack whereby the lazy tongs may be collapsed.

6. In a device of the character described, a lazy tongs, a base operatively associated with one end of the lazy tongs, said base being provided with a pair of rack members engaging the lower end of the lazy tongs for holding the lazy tongs in different distended positions, a bar extending across said base, means for guiding said bar in a vertical movement, and manually actuated means for raising said bar, said bar being positioned so that when raised it will move the lazy tongs out of engagement with said rack members whereby said lazy tongs may be collapsed.

7. In a device of the character described, a lazy tongs, a base operatively associated with one end of the lazy tongs, said base being provided with a pair of racks for engaging the lower end of the lazy tongs and hold the lazy tongs in different distended positions and means for disengaging said lazy tongs from said rack, said means including a bar movable longitudinally of the lazy tongs, and manually actuated means for moving said bar, said bar being formed with teeth on the upper surface offset from the teeth in said rack whereby upon each elevation of said bar the lazy tongs will be lowered a certain extent.

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