Nov. 17, 1925.

1,561,576

H. G. TIFFANY

STAND

Filed Oct. 2, 1922

2 Sheets-Sheet 1

Fig. 1.

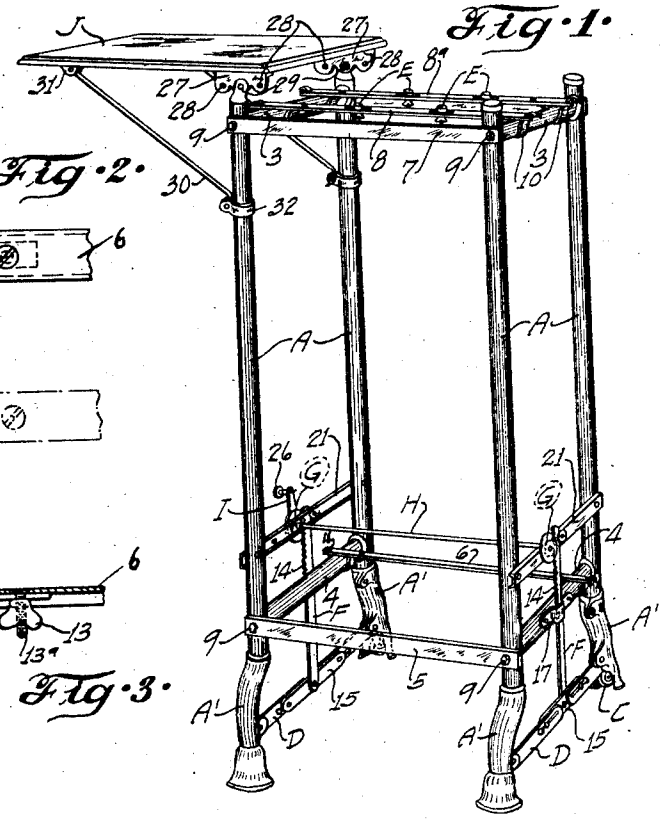
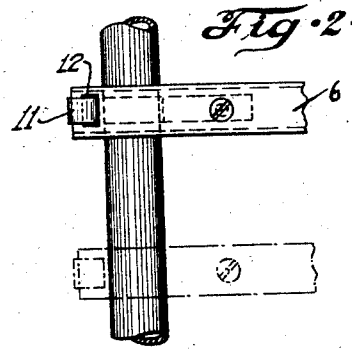


Fig. 2.



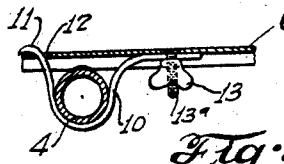


Fig. 3.

Fig. 4.

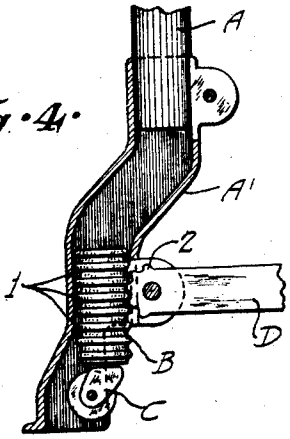
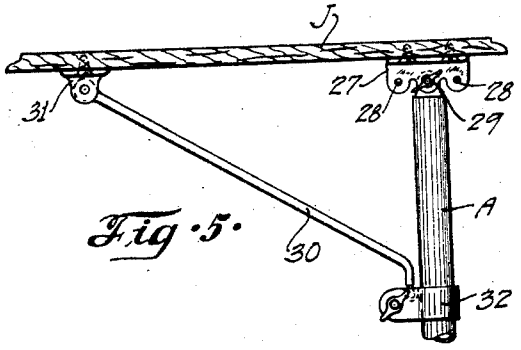


Fig. 5.



INVENTOR

Hiero Gillas Tiffany.

BY Bakewell & Church

ATTORNEYS

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Fig. 6.

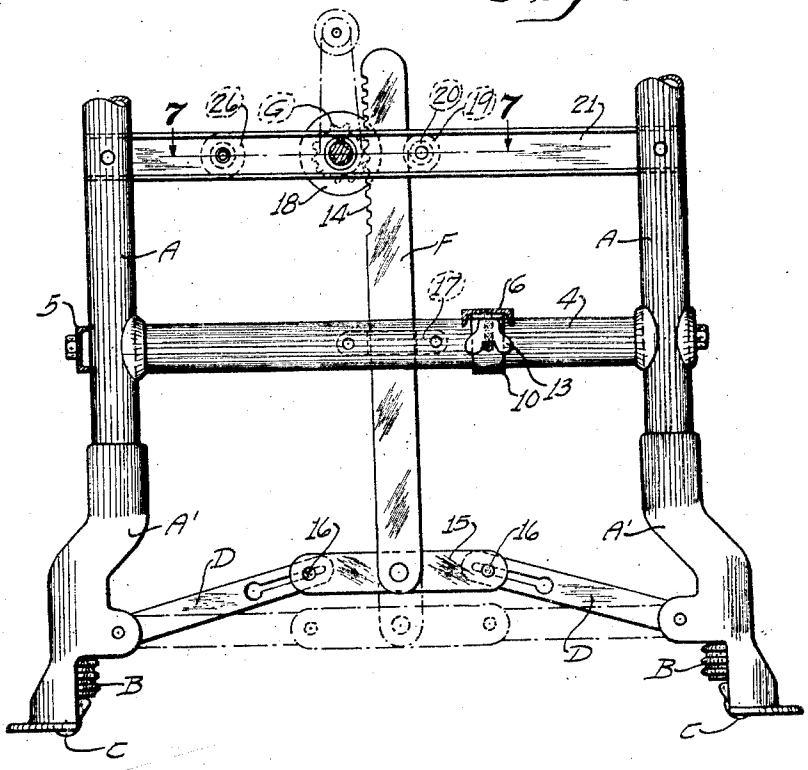
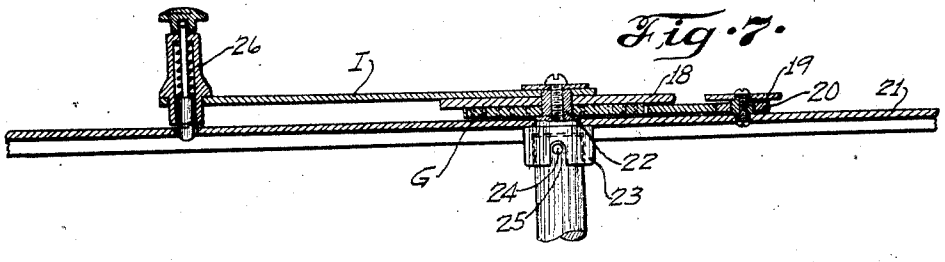


Fig. 7.



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Patented Nov. 17, 1925. 1,561,576

UNITED STATES PATENT OFFICE.

HIERO G. TIFFANY, OF ST. LOUIS, MISSOURI, ASSIGNOR TO TIFFANY ADJUSTABLE STAND COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

STAND.

Application filed October 2, 1922. Serial No. 591,937.

To all whom it may concern:

Be it known that I, HIERO G. TIFFANY, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Stands, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to stands of the kind in which the legs of the stand are equipped with rollers or casters that are adapted to be moved relatively to the legs into and out of engagement with the floor, so as to facilitate the movement of the stand from one place to another.

One object of my present invention is to provide a stand of the general type referred to which is equipped with a raising and lowering mechanism of novel construction that insures an even and uniform movement of the four actuating devices that effect the raising and lowering of the stand.

Another object is to provide a stand of the general type mentioned that is composed of a few units which can be assembled or combined easily by a person possessed of no mechanical skill, thereby permitting the stand to be transported at a low cost, due to the fact that it can be shipped in knock-down form.

Other objects and desirable features of my invention will be hereinafter pointed out.

Figure 1 of the drawings is a perspective view of a stand constructed in accordance with my invention.

Figure 2 is a top plan view of one of the adjustable tie members that is used to join the two side frames or side sections of the stand together.

Figure 3 is an edge view of said tie member, illustrating the strap on one end of same that is used to connect it to one of the side frames of the stand.

Figure 4 is an enlarged vertical sectional view, illustrating a portion of one of the legs of the stand.

Figure 5 is a vertical sectional view, taken through the shelf, illustrating the adjustable sustaining means for the shelf.

Figure 6 is a vertical longitudinal sectional view, taken through the lower portion of the stand, illustrating one of the vertically-movable operating bars and the connection between said bar and two of the rockable actuating devices that each side frame or side section of the stand is equipped with; and

Figure 7 is an enlarged horizontal sectional view, taken on the line 7—7 of Figure 6, looking in the direction indicated by the arrows.

The stand herein illustrated is similar in general design to the stand forming the subject-matter of my pending application Serial No. 564,467, filed May 29, 1922, in that it comprises four vertical legs A provided at their lower ends with hollow castings A′ that house and guide vertically-movable members B that are equipped with rollers or casters C, said vertically-movable members B having racks or teeth 1 that co-operate with segmental racks 2 on rockable actuating devices D carried by the hollow cast members A′ at the lower ends of the legs.

My present stand, however, is constructed in such a way that it can be shipped in knock-down form from the manufacturer to the user and thereafter combined or assembled easily by a person having no mechanical skill. In order to accomplish this desirable result I construct the stand of two side frames or side sections that are detachably connected together by transverse tie members which can be connected to said side frames simply by inserting or manipulating a few conventional fastening devices. Preferably each side frame or side section of the stand is composed of two of the legs A and top and bottom cross pieces 3 and 4 joined together in such a way as to form a single unit. Said units or side frames are joined together by two transversely-disposed tie members 5 and 6 arranged at the lower end of the stand and three transversely-disposed tie members 7, 8 and 8ª arranged at the upper end of the stand. I will hereinafter refer to the transverse tie members 5 and 7 as permanent tie members, as said tie members are permanently connected to the side frames of the stand after it reaches its point of destination by means of bolts or other suitable fastening devices 9. The remaining tie members 6, 8 and 8ª are combined with the side frames of the stand in such a way, however, that they can be adjusted longitudinally of the cross pieces 3 and 4, respectively, of the side frames, and therefore, I will hereinafter

refer to the tie members 6, 8 and 8ª as adjustable tie members. While it is immaterial, so far as my broad idea is concerned, how the adjustable tie members are connected with the side frames of the stand, I prefer to provide each of said tie members with straps 10 arranged at the opposite ends of same in such a way that they extend around the cross pieces of the side frames to which said tie member is joined. Thus, as shown in Figure 3, the bottom adjustable tie member 6 is provided at each end with a strap 10 provided at one end with a hook-shaped portion 11 that projects through a hole 12 in the tie member and which has its opposite end secured to the tie member by a wing nut 13 on a bolt 13ª that projects through aligned holes in the tie member 6 and in the strap 10. To combine the tie member 6 with the cross pieces 4 of the side frames it is only necessary to arrange said tie member transversely of said cross pieces, then insert the hook-shaped portions 11 of the straps 10 in the holes 12 provided for same in said tie members, and thereafter draw said straps upwardly into engagement with the cross pieces 4 by tightening the wing nuts 13 on the bolts 13ª. This method of connecting the adjustable tie members to the side frames of the stand not only enables the parts of the stand to be assembled quickly, but it also enables the adjustable tie members to be moved back and forth longitudinally of the cross pieces of the side frames into various positions, it being desirable to construct the bottom transverse tie member 6 in such a way that it can be moved towards and away from the front of the stand so as to provide ample leg room for the person seated in front of the stand, and it also being desirable to mount the upper transverse tie members 8 and 8ª in such a way that they can be adjusted towards and away from each other, as said top tie members are used to carry the adjustable machine rests E which support the computing machine or typewriter mounted on the stand.

The mechanism that is used in the stand herein illustrated for moving the rockable actuating devices D is of novel construction and is composed of two vertically-movable operating bars F, two spur gears G that mesh with racks 14 on said operating bars, a horizontally-disposed shaft H for causing said spur gears to operate in unison, and a horizontally-disposed link 15 pivotally connected to the lower end of each of the operating bars F and having its opposite ends joined by means of pivots 16 to the pair of rockable actuating devices D with which that particular operating bar co-operates. Each side frame or side section of the stand is equipped with one of the operating bars F that is permanently combined with said side frame in such a way that it is not necessary for the person who sets up the stand to make any connections between the operating bars F and the rockable members D which said operating bars F actuate. Preferably each of the operating bars is permanently mounted in guides on the side frame of the stand with which it co-operates in such a way that the rack 14 on said bar is held in mesh with the spur gear G that is used to move said bar vertically. The transversely-disposed, horizontal shaft H that is used to rotate the spur gears in unison is so constructed that the ends of same can be simply inserted in sockets combined with said spur gears when the side frames of the stand are arranged in parallel relation during the operation of assembling the stand, and thereafter locked to or maintained in operative relationship with said socket members by drawing the two side frames together by the transversely-disposed tie members that connect the side frames together. As shown in Figures 6 and 7 the intermediate portion of each of the operating bars F is embraced by a guide 17 on the bottom cross piece of the side frame with which the operating bar is combined, and the upper portion of the operating bar is overlapped by a disk 18 on the spur gear and a washer 19, as shown in Figure 7, the rack or toothed portion 14 of the bar being held in mesh with the teeth of the spur gear by means of a roller 20 that bears against the back edge or the unnotched edge of the operating bar. The spur gear and the guide roller 20 on each side frame of the stand are carried by a horizontal brace 21 arranged above the bottom cross piece 4 of the side frame and permanently connected to the two legs A of said side frame. The spur gear is provided with a hub 22, as shown in Figure 7, having a cylindrical portion that is journaled in the brace 21, and said hub is also provided with a socket 23 that is adapted to receive one end of the spur gear connecting shaft H, said shaft having a pin 24 in same that fits in notches 25 in the socket 23, so as to transmit rotary movement from the spur gear to the shaft H and vice versa. The spur gear on one of the side frames of the stand is provided with a handle I for rotating said gear, and said handle is equipped with a spring actuated locking device 26 that is adapted to enter a notch or hole in the brace 21, so as to lock the raising and lowering mechanism of the stand. This method of connecting the two spur gears of the respective side frames together is inexpensive to manufacture and it enables the side frames to be assembled quickly, as it is only necessary to slip the pins 24 in the opposite ends of the shaft H

into the notches 25 provided for same in the socket elements 23 of the spur gears and then connect the two side frames together by means of the tie members 5, 6, 7, 8 and 8ª, it being impossible for the shaft H to become disengaged from the spur gears without separating or disassembling the side frames of the stand.

Assuming that the parts of the stand are in the position shown in Figure 1, the rollers C of the stand can be moved downwardly into engagement with the floor, thereby raising the legs of the stand from the floor, by simply turning the handle I in a direction to raise the operating bars F, the upward movement of said operating bars causing the actuating devices D to depress the vertically movable caster carrying members B in the legs, as shown in Figure 6. When the operating bars F reach the upper limit of their movement the retaining device 26 on the handle I snaps into engagement with the hole provided for same in the brace 21, thereby causing the stand to be locked in its elevated position. To lower the stand or restore it to its former position it is only necessary to rotate the handle I in the opposite direction, thereby causing the gears G to move the operating bars F downwardly into the position shown in dotted lines in Figure 6.

The stand is provided with a shelf J which is mounted in such a way that it can be adjusted inwardly and outwardly with relation to the typewriter or computing machine mounted on the machine rests E of the stand, as shown in Figure 1. The shelf J is provided at its inner end with two depending brackets 27, each of which has three holes 28 that is adapted to receive a removable fastening device 29 carried by one of the legs of the stand, thereby causing the inner end of the shelf J to be supported by the two legs of one of the side frames of the stand. The outer end of the shelf J is sustained by two inclined braces 30 pivotally connected at their outer ends to brackets 31 on said shelf and having their inner ends connected to vertically-adjustable collars 32 on the legs of the side frame of the stand which carries the shelf. By removing the fastening devices 29 that pass through the brackets 27 the shelf can be adjusted inwardly or outwardly, so as to cause the inner edge of the shelf to be positioned in close proximity to the computing machine or typewriter sustained by the stand, it being necessary, of course, to raise or lower the collars 32 to which the lower ends of the braces 30 are connected, so as to arrange the shelf in a horizontal position. In addition to providing for lateral adjustment of the shelf J, this method of sustaining the outer end of the shelf permits the outer end of the shelf to be raised or lowered so as to maintain the shelf in an absolutely horizontal position.

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

1. A stand, comprising legs provided with vertically-movable members that effect the raising and lowering of the stand, rockable actuating devices, for moving said members, a pair of vertically-reciprocating operating bars arranged at opposite sides of the stand and each combined with a pair of said actuating devices, a horizontally-disposed operating shaft, arranged transversely of the stand and gears combined with said shaft and arranged in mesh with racks on the edges of said operating bars.

2. A stand provided with two separable side frames, a raising and lowering mechanism combined with each of said side frames and comprising a gear arranged in mesh with a reciprocating operating bar, and a horizontally-disposed shaft detachably connected to the gears of the respective side frames for causing said gears to operate in unison.

3. A stand provided with two side frames, a raising and lowering mechanism comprising a gear on each of said side frames arranged in mesh with a reciprocating operating bar, a socket element connected to each of said gears, and a shaft interposed between said socket elements and interlocked with same in such a way that said gears will be caused to operate in unison.

4. In a stand of the character described, a pair of legs, vertically-movable members in said legs provided with casters or rollers, rockable actuating devices for raising and lowering said members, a vertically-movable operating bar pivotally connected with said actuating devices, a horizontally-disposed brace connected to said legs, a rotatable pinion on said brace that meshes with a rack on said bar, and a roller on said brace that holds said bar in engagement with said pinion.

5. In a stand of the character described, a pair of legs, vertically-movable members in said legs provided with casters or rollers, rockable actuating devices for raising and lowering said members, a vertically-movable operating bar pivotally connected with said actuating devices, a horizontally-disposed brace connected to said legs, a rotatable pinion on said brace that meshes with a rack on said bar, means for preventing said bar from moving laterally away from said brace, and a socket piece connected to said pinion for the purpose described.

HIERO G. TIFFANY.