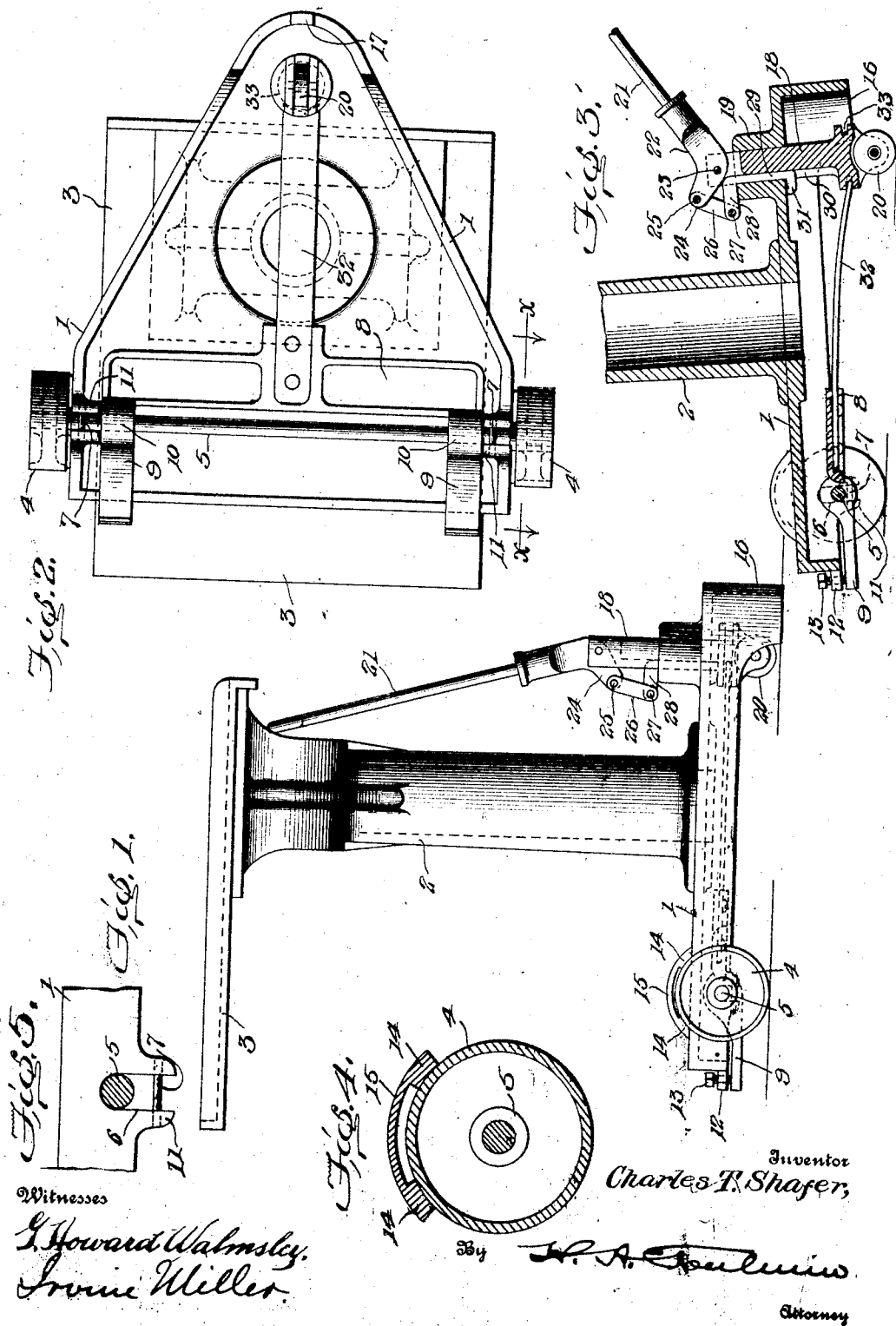


No. 833,253.

PATENTED OCT. 16, 1906.

C. T. SHAFER.
WHEELED BASE FOR PORTABLE STANDS.
APPLICATION FILED OCT. 13, 1905.



UNITED STATES PATENT OFFICE.

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WHEELED BASE FOR PORTABLE STANDS.

No. 833,253.

Specification of Letters Patent.

Patented Oct. 16, 1906.

Application filed October 13, 1905. Serial No. 282,566.

To all whom it may concern:

Be it known that I, CHARLES T. SHAFER, a citizen of the United States, residing at Santa Ana, in the county of Orange and State of California, have invented certain new and useful Improvements in Wheeled Bases for Portable Stands, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to wheeled bases for portable stands, and has for its object to provide a structure which will serve as a means for supporting and transporting articles of different kinds, such as vises or other tools, tool-boxes, or other receptacles.

15 More specifically the object of my invention is to provide a stand of this character which shall be capable of being readily drawn from place to place on suitable supporting-wheels or rollers and which at the same time will be firmly anchored or held stationary in any position to which it may be moved, the change from one condition to the other being automatically effected by the usual and natural operation of drawing on or releasing the handle provided for the purpose of pulling the stand from place to place.

20 To these ends my invention consists in certain novel features which I will now proceed to describe and will then particularly point out in the claims.

25 In the accompanying drawings, Figure 1 is a side elevation of a structure embodying my invention in one form, the same being shown in its stationary or anchored position. Fig. 2 is a bottom plan view of the same. Fig. 3 is a central longitudinal section showing the parts in position for transportation. Fig. 4 is a detail sectional view taken on a line corresponding to the line *xx* of Fig. 2 and looking in the direction of the arrows, but with the parts not in inverted position; and Fig. 5 is a detail side elevation of one of the rear corners of the structure with the supporting-wheel removed.

30 In the said drawings, 1 represents a suitable base or platform, which in the present instance I have shown as provided with a supporting-pillar 2 and table 3, as set forth in Letters Patent No. 758,779, granted May 3, 1904, to my assignee, The Western Tool and Manufacturing Company, then known as "The Western Manufacturing Company," as

the assignee of Elton E. Remsburg. The base or support 1 is preferably triangular in form, its apex being at the front of the machine and the machine being supported at the rear on wheels 4, which are mounted on an axle 5, extending across the back of the machine. The base or support 1 is free to move vertically relatively to the axle 5, and to this end said base is provided with vertical slots 6 in its lateral portions, in which the axle 5 fits loosely to permit the vertical movement of the frame and yet maintain the engagement thereof with the axle. Pins 7, extending across the lower portion of the slots 6, limit the upward movement of the base or support and prevent the axle from dropping out when the base or support is lifted.

35 The axle 5 is mounted in a frame comprising a transverse member or cross-piece 8 and two rearwardly-extending members or arms 9, having journal-bearings 10, in which the axle 5 is mounted to rotate. When the parts are assembled, the arms 9, with their bearings 10, lie immediately inside of lugs 11, in which the vertical slots 6 are partly located, which lugs serve to receive the pins 7. By reason of the bearings 10 being thus located the frame in which the axle 5 is mounted is held against lateral displacement relatively to the base or support 1.

40 The arms 9 extend rearward, as stated, and support the rear end of the base or support 1, this support being effected in any suitable way which will permit the forward end of said base to move vertically with respect to said frame and the supporting-surface. The construction which I prefer for this purpose is that shown, in which the arms 9 extend somewhat beyond the base 1 at the rear thereof, and said base is provided with lugs 12, through which set-screws 13 are threaded, said screws extending downward and resting upon the rearwardly-projecting ends of the arms 9. In raising and lowering the front end of the structure the lower ends of these set-screws practically form pivots upon which the base turns.

45 As hereinbefore stated, the base 1 is vertically movable relatively to the axle 5, and consequently relatively to the wheels 4 at the rear of the machine. Said base is provided with contact-surfaces 14, which when the

structure is lowered to its stationary or anchored position bear upon the wheels 4 and transfer directly to the periphery of said wheels a sufficient portion of the weight of the base and the parts supported thereby to act as brakes and prevent said wheels from turning. In the construction shown, in which the wheels 4 are set outside of the body of the base, the contact-surfaces 14 are carried by hoods or guards 15, extending laterally outward from the base, on each side thereof, over the wheels 4. When the front end of the base is raised, in the manner hereinafter described, to place the apparatus in condition for transportation, the contact-surfaces 14 are raised clear of the wheels 4, and these latter are left free to rotate. The set-screws 13 provide a means for so adjusting the base relatively to the wheels that the contact-surfaces 14 will come into proper contact with said wheels when the base is lowered, this provision being particularly advantageous where the structure is built up of castings, which is the preferred construction, since these castings are not always exact in form, and any variations may be readily compensated for by the use of the set-screws.

The mechanism for raising and lowering the base is located at the front end thereof, where said base is provided with a foot 16, adapted to rest upon the floor when the structure is in stationary or anchored position and by its engagement with said floor prevent displacement of the structure. Where the apparatus is to be used upon a hard floor—such as brick, stone, or cement—the foot 16 may have the flat under surface shown in Fig. 1, while a sharp tooth or projection 17, such as is shown in Fig. 2, may be employed when the apparatus is to be used upon a wooden floor or other relatively soft supporting-surface in order to give the base a better grip upon the same. The raising and lowering mechanism comprises a vertical shaft 18, mounted to slide longitudinally and also to rotate in a bearing 19 on the base 1. This shaft is provided at its lower end with a wheel or roller 20, which forms an alternating supporting contact with the floor at the front end of the structure, the structure being supported by the contact of said roller with the ground when it is not supported by the contact of the foot 16 with the ground. The operating-handle 21, by means of which the apparatus is drawn from place to place, is pivotally connected to the upper end of the shaft 18 in such a way that said handle may be swung downward and forward, as indicated in Fig. 3, into a convenient position to draw the apparatus along or may be swung back into substantially upright position, as indicated in Fig. 1, where it is out of the way when not in use. The connection between said handle and the shaft 18 is such, however, that said shaft turns in its bearing when the

handle is swung to the right or left, thereby so turning the wheel or roller 20 as to guide the apparatus during transportation. The construction which I prefer for this purpose is that shown, in which the upper end of the shaft is slotted vertically to receive a tongue-piece 22 on the end of the handle 21, the connecting-pivot 23 passing through the two parts of the shaft into which it is divided by the slot and through the intermediate tongue-piece. This latter has an arm or extension 24 extending rearward beyond the shaft, and having pivoted to its free end at 25 the upper end of a link 26. The lower end of this link is pivoted, as indicated at 27, to an arm 28, extending radially outward from the upper end of a key or lifting-bar 29, which is fitted to slide in a vertical groove or keyway 30 in the shaft 18. This key or lifting-piece is provided with a projection or arm 31, which also extends radially outward therefrom, being located at the lower end of said key or lifting-piece and extending under and engaging with the under side of the base or platform 1. It will be observed that the lifting-piece 29 is so arranged relatively to the base 1 and its bearing 19 that its terminal arms 28 and 31 contact, respectively, with the upper surface of the bearing and lower surface of the base, and said lifting-piece being held in such engagement by the shaft 18 the base must move in unison with the lifting-piece. The vertical movement of the lifting-piece is imparted to it by its connection through the link 26 with the arm 24 of the handle 21, the construction being such that when the handle 21 is swung up into the inoperative position (shown in Fig. 1) the base is so lowered that the foot 16 rests upon the supporting-surface, and when the handle 21 is drawn forward into operative position, as shown in Fig. 3, the forward end of the base is so raised as to lift the foot 16 clear of the supporting-surface, and the weight of the structure at this end then rests upon the wheel or roller 20. It will also be observed that the lifting-piece is so connected to the shaft 18 as to turn with the same and with the handle when these parts are rotated to the right or left in guiding the apparatus over the supporting-surface during transportation, while said lifting-piece at the same time maintains its engagement with the base and its connection with the lifting mechanism in all positions of the parts.

The shaft 18 is connected with the frame in which the axle 5 is mounted, and to this end said frame comprises a forwardly-extending member 32, preferably in the form of a flat resilient bar or spring, so connected to the shaft 18 that this latter is free to swivel or turn relatively thereto. To this end said shaft is provided near its lower end above the wheel or roller 20 with a grooved collar 33, and the forward end of the member 32 engages said grooved collar, so as to maintain

its vertical relations with the shaft 18, while permitting the latter to rotate freely. Since the relative positions of the shaft 18 and member 32 are fixed longitudinally of the machine, so that they cannot separate, it is not necessary that the forward end of the member 32 should extend entirely around the grooved collar 33, and in practice I prefer to simply engage the forward end of the member 32 in the groove of the collar, as shown.

From a consideration of the preceding description it will be seen that when the parts are in the position shown in Fig. 1 the structure is supported upon the foot 16 at the front of the machine and the wheels 4 at the rear of the machine and that a portion of the weight of the structure presses the contact-surfaces 14 against the wheels 4, so as to act as brakes and prevent rotation of these latter. The structure is therefore supported upon three fixed or non-rotating supports or points and is anchored or firmly held stationary, so as to prevent accidental displacement and permit the use of any tool which may be mounted upon the table 3. When it is desired to transport the structure from place to place in the shop, the mere act of grasping and pulling forward the handle 21, by which it is drawn, serves to lift the front end of the structure, raising the foot 16 from the ground and throwing the weight at this end upon the wheel or roller 20. At the same time the contact-surfaces 14 are raised clear of the wheels 4 as the structure pivots upon the ends of the set-screws 13, so that these wheels are free to revolve and the entire structure is supported upon the three wheels—to wit, the wheel 20 at the front and the wheels 4 at the back. The structure may then be readily drawn from place to place, being guided by the handle and the front wheel or roller 20, and when the desired position is reached the mere releasing of the handle 21 will permit the front end of the structure to drop again, lifting the handle 21 out of the way, bringing the foot 16 into contact with the floor, taking the load off of the front wheel or roller 20, and applying the brakes to the rear wheels 4, so that the machine is again anchored or held stationary.

I prefer to construct the member 32 of resilient material for the reason that when so constructed it acts as a supporting-spring when the structure is lifted into position for transportation, the weight resting on the rear ends of the arms 9, tending to depress these latter and raise the transverse member 8, thereby pressing upward on the rear end of the spring member 32, which resists this upward pressure with a yielding or resilient action.

The contact-surfaces 14, which act as brakes on the rear wheels, may be dispensed with, as the engagement of the foot 16 with the supporting-surface is sufficiently effective

under some circumstances to hold the structure against movement with the desired firmness. I prefer to employ these braking contacts, however, as they serve to further insure the immobility of the structure when in use.

I do not wish to be understood as limiting myself to the precise details of construction hereinbefore described, and shown in the accompanying drawings, as it is obvious that these details may be varied without departing from the principle of my invention.

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

1. A portable stand comprising a base or support provided with a foot at its front end supporting-wheels at its rear end and means for locking said wheels, in combination with a supporting wheel or roller at the front end, and means for lifting said front end to raise the foot from the supporting-surface and place the load at that end upon the front wheel or roller and to release said locking means, substantially as described.

2. A portable stand comprising a base or support having a three-point contact with the supporting-surface, the same comprising a foot at its front end, adapted to frictionally engage the supporting-surface, supporting-wheels at its rear end and means for locking said wheels, in combination with a supporting wheel or roller at the front end, and means for lifting said front end to raise the foot from the supporting-surface and transfer the load at that end to the front wheel or roller and to release said locking means, substantially as described.

3. A portable stand comprising a base or support provided with a foot at its front end supporting-wheels at its rear end and means for locking said wheels, in combination with a supporting wheel or roller at the front end, a pivoted handle whereby the stand may be drawn along, and means actuated by the swinging of said handle from its upright or inoperative position to its forwardly-extending or operative position to lift the front end of the base or support and raise the foot from the supporting-surface and transfer the load at that end upon the front wheel or roller and to release said locking means, substantially as described.

4. A portable stand comprising a base or support provided with a foot at its front end and having supporting-wheels at its rear end, in combination with a guiding wheel or roller swiveled in the front end of said base or support, a guiding and traction handle connected to said wheel or roller to turn the same in different directions, said handle being pivoted to swing from an upright or inoperative position to a forwardly-extending or operative position, and mechanism connecting said handle and base whereby the front end

of the base is lifted when the handle is swung forward, thereby lifting the foot from the supporting-surface and transferring the load to the guiding wheel or roller, substantially

5 as described.

5. A portable stand comprising a base or support provided with a foot at its front end and having supporting-wheels at its rear end, a shaft mounted to rotate and slide vertically in said base or support, said shaft being provided with a longitudinal groove, a lifting-piece engaging the base and sliding in said groove, a handle connected to said shaft to rotate the same and pivoted to swing downward and forward, said handle being provided with a rearwardly-extending arm, a link connecting said arm and lifting-piece, and a guiding-wheel mounted in the lower end of said shaft, substantially as described.

6. A portable stand comprising a base or support provided with a foot at its front end and having supporting-wheels at its rear end, said base having a vertically-arranged bearing at its front end, a shaft provided with a guiding-wheel at its lower end and fitted to rotate and slide vertically in said bearing, said shaft having a longitudinal groove, a lifting-piece fitted to slide in said groove, extending through the bearing, and having projections at its upper and lower ends engaging the upper and lower ends of the bearing, said lifting-piece rotating with the shaft within the bearing, a guiding and traction handle pivotally connected to the upper end of the shaft so as to rotate said shaft and swing between an upright or inoperative position and a forwardly-extending or operative position, said handle having a rearwardly-extending arm, and a link having its ends pivotally connected to said rearwardly-extending arm and to the projection at the upper end of the lifting-piece, substantially as described.

7. A portable stand comprising a base or support provided with a foot at its front end, supporting-wheels located at the rear of said base or support, said base or support being provided with contact-surfaces arranged to bear on said rear supporting-wheels when the frame is lowered to prevent the rotation thereof, a supporting wheel or roller at the front end of said base or support, and means for lifting said base or support to simultaneously raise the foot from the supporting-surface and the contact-surfaces from the rear wheels, and to transfer the load at the front end to the front wheel or roller, substantially as described.

8. A portable stand comprising a base or support provided with a foot at its front end, a frame provided with an axle and supporting-wheels at the rear end of said base or support, the latter engaging but being vertically movable relatively to said axle and wheels and being provided with contact-surfaces which bear upon the wheels to prevent rotation thereof when said base or support is lowered, a supporting wheel or roller at the front end of said base or support, and means for lifting said base or support to raise the foot from the supporting-surfaces and the contact-surfaces from the rear wheels, substantially as described.

9. A portable stand comprising a base or support provided with a foot at its front end, a frame provided with an axle and supporting-wheels, the base or support engaging but being vertically movable relatively to said axle and being supported on said frame at its rear end so that its front end is free to move up and down, said base or support being provided with contact-surfaces which bear upon said wheels to prevent rotation thereof when said base or support is lowered, a supporting wheel or roller at the front end of said base or support, and means for lifting said base or support to raise the foot from the supporting-surfaces and the contact-surfaces from the rear wheels, substantially as described.

10. A portable stand comprising a base or support provided with a foot at its front end, a frame provided with an axle and supporting-wheels at the rear end of said base or support, said base or support being provided with set-screws to bear upon said frame back of the axle, being vertically slotted to receive the axle, and having contact-surfaces which bear upon said wheels to prevent rotation thereof when said base or support is lowered, a supporting wheel or roller at the front end of said base or support, and means for lifting said base or support to raise the foot from the supporting-surface and the contact-surfaces from the rear wheels, substantially as described.

11. A portable stand comprising a base or support provided with a foot at its front end, in combination with a frame having an axle and supporting-wheels at the rear end of said base or support, a supporting and guiding wheel or roller at the front of said base or support, having a vertical steering-shaft swiveled in the base or support and connected to the frame so as to prevent vertical movement of the front end thereof, said base or support sliding vertically on said steering-shaft at its front end, and engaging the rear axle but free to move vertically relatively thereto, and supported on said frame at the rear of said axle, said base or support being provided with contact-surfaces which bear upon the wheels to prevent rotation thereof when said base or support is lowered, and a handle connected to said steering-shaft to operate the same and pivoted to swing in a vertical plane, said handle being connected to the front end of said base or support so as to raise and lower the same by said swinging movement, substantially as described.

12. A portable stand comprising a base or support provided with a foot at its front end, a frame provided with an axle and supporting-wheels at the rear end of said base or support, a supporting and guiding wheel or roller at the front of said base or support, having a vertical steering-shaft swiveled in the base or support and connected to the frame so as to prevent vertical movement of the front end thereof, said base or support sliding vertically on said steering-shaft at its front end, and engaging the rear axle but free to move vertically relatively thereto, and supported on said frame at the rear of said axle, said base or support being provided with contact-surfaces which bear upon the wheels to prevent rotation thereof when said base or support is lowered, and a handle connected to said steering-shaft to operate the same and pivoted to swing in a vertical plane, said handle being connected to the front end of said base or support so as to raise and lower the same by said swinging movement, substantially as described.

in combination with a frame having an axle and supporting-wheels at the rear end of said base or support, a supporting and guiding wheel or roller at the front of said base or support, having a vertical steering-shaft swiveled in the base or support and connected to the frame so as to prevent vertical movement of the front end thereof, said base or support sliding vertically on said steering-shaft at its front end, and engaging the rear axle but free to move vertically relatively thereto, and supported on said frame at the rear of said axle, said base or support being provided with contact-surfaces which bear upon the wheels to prevent rotation thereof when said base or support is lowered, and a handle connected to said steering-shaft to operate the same and pivoted to swing in a vertical plane, said handle being connected to the front end of said base or support so as to raise and lower the same by said swinging movement, the connection between said steering-shaft and frame comprising a grooved collar on said steering-shaft, and a spring-bar engaging said grooved collar at its front end, said spring-bar constituting a forward extension of the frame which resists the tendency of the frame to tilt upon the axle under the load of the base or support, substantially as described.

13. A portable stand comprising a base or support provided with a foot at its front end and having downwardly-extending slotted lugs near the rear ends of its sides, in combination with a frame comprising a cross-piece, and rearwardly-extending arms fitting between said lugs, an axle mounted in said arms,

extending through said slotted lugs, and provided with supporting-wheels at its ends, said base or support having set-screws adapted to bear on the rearwardly-extending arms and having contact-surfaces which bear upon said wheels when the base or support is lowered, a steering-shaft mounted to slide vertically and swivel in the front end of said base or support, having a guiding and supporting wheel or roller at its lower end, a grooved collar, and a pivoted guiding and traction handle, a spring-bar extending forward from the cross-piece of the frame and engaging said grooved collar, and means connecting the pivoted handle and the front end of the base or support, whereby the swinging of said handle on its pivot raises or lowers the front end of the base or support, substantially as described.

14. In a portable stand of the character described, the combination, with a base or support, of an axle having supporting-wheels at its ends lying outside of the base or support, said base or support being vertically movable relatively to said axle and wheels and being provided with hoods or guards which extend over said wheels and have contact-surfaces adapted to bear upon said wheels when said base or support is lowered and thereby prevent rotation of the same, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES T. SHAFFER

Witnesses:

CHAS. P. RUNSBERG,
HORATIO E. FORGY