Aug. 6, 1929. M. W. McARDLE 1,723,363

PORTABLE STOOL

Filed June 11, 1926

Fig. 1.

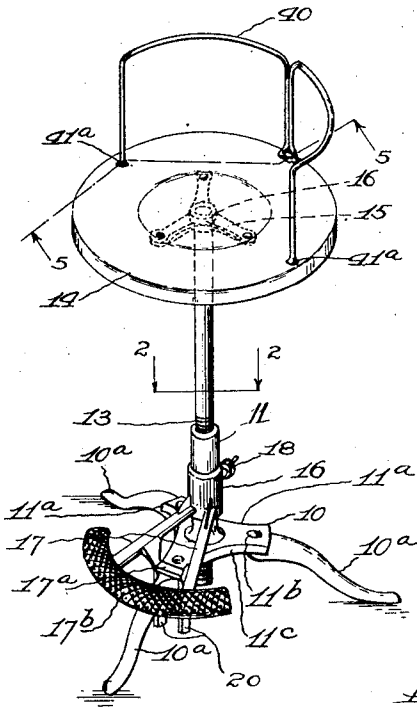


Fig. 2.

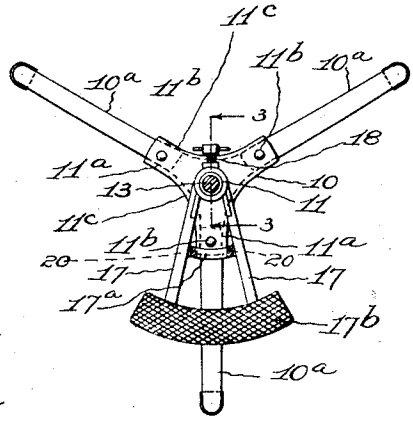


Fig. 5.

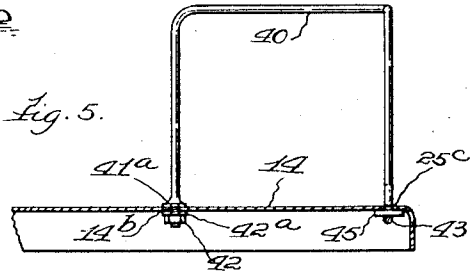


Fig. 3

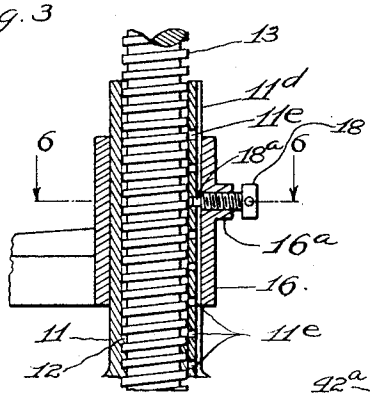


Fig. 4.

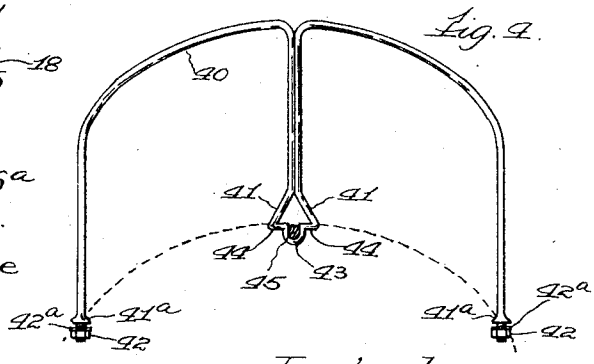
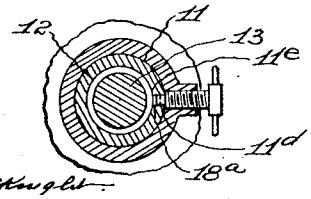


Fig. 6.



Witness.
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UNITED STATES PATENT OFFICE.

MICHAEL W. McARDLE, OF CHICAGO, ILLINOIS.

PORTABLE STOOL.

Application filed June 11, 1926. Serial No. 115,193.

The purpose of this invention is to provide a novel form of portable stool adapted for a wide range of utility by reason of independent vertical adjustability of seat and foot rest, and removability of the foot rest, and the provision of an easily mounted and easily removable back, and by other detail features, constituting with the foregoing, parts of the invention, as indicated in the claims.

In the drawings:—

Figure 1 is a perspective view of a stool embodying this invention which is shown equipped with a removable back and foot rest.

Figure 2 is a horizontal section at a plane between the seat and the foot rest.

Figure 3 is a section at the line 3—3 on Figure 2.

Figure 4 is a perspective view of the removable back member separated from the stool.

Figure 5 is a detail section at the line, 5—5, on Fig. 1, axial with respect to two of the back supports at its engagement with the seat when the back is mounted.

Figure 6 is a detail section at the line 6—6 on Figure 3.

In the drawings, 10 is a tripod base for the stool, having a sleeve stem or hub, 11, interiorly threaded as seen at 12 for receiving the threaded stem, 13, of the seat, 14, which is a sheet metal stamping having a cast iron central reinforce, 15, whose central boss or hub, 16, is bored and threaded for screwing onto the upper end of the seat stem, 13. Incidentally, it may be noted that each of the three feet, 10^a, of the tripod base is a metal stamping and that the sleeve stem or hub, 11, has at its lower end three horizontally radiating arms, 11^a, to which the metal stamping feet are secured by bolts, 11^b, the radial arms, 11^a, being laterally flanged as seen at 11^c, forming channels on the under side dimensioned for snug fit therein of the upper inner ends of the metal stamping feet, 10^a.

The sleeve stem, 11, is exteriorly diametered for easy fit thereon of the hollow cylindrical hub hereinafter referred to as the sleeve hub, 16, of a foot rest comprising the arcuate tread member, 17^b, radial arms, 17, 17, connecting the tread and sleeve hub 16, and a depressed yoke member, 17^a, which spans the angle between the radial arms, 17, back of the tread and by its depressed middle part, affords lodgment upon and engagement with one of the tripod feet, 10^a, above which the tread, 17^b, is medially positioned for a reason hereinafter pointed out.

In order to render the foot rest adjustable vertically relatively to the seat, and therefore independently of the seat, and at the same time to ensure the position of the foot rest directly over one of the tripod feet, the sleeve stem or hub, 11, of the tripod base has a superficial longitudinally extending groove, 11^d, in whose bottom there are formed at short intervals in the length of the groove set screw seats, 11^e, which may consist of holes bored entirely through the thickness of the sleeve into the axial cavity thereof; and the sleeve hub, 16, of the foot rest, preferably at an exteriorly protruding boss, 16^a, is bored and tapped for a set screw, 18, which is reduced in diameter at its end portion for a short distance as seen at 18^a to adapt said reduced end to enter any one of the seats, 11^e. It will be understood that the groove, 11^d, serves for engagement of the reduced end, 18^a, of the set screw, 18, when the set screw is only partially screwed in, for guiding the foot rest in vertical adjustment and keeping it throughout such adjustment in desired position directly over one of the tripod feet; and that the seats, 11^e, serve for positioning the foot rest at the desired vertical adjustment, the set screw being screwed home when the reduced terminal is registered with the seat corresponding most nearly to the desired height of the foot rest, the set screw being initially screwed in to cause the reduced end to touch the bottom of the groove, the slackness of fit of the foot rest sleeve on its tripod stem enabling the operator to recognize the registration of the set screw terminal with the set screw seat; the tightening of the set screw thus operating to add the frictional engagement of the sleeves 11 and 16 to the shearing strength of the reduced terminal for holding the foot rest against depression along the tripod sleeve when it receives the load of the stool occupant's feet. It may be understood also that the purpose of locating the foot rest directly above one of the tripod feet and constructing the means of vertical adjustment so as to maintain that relation of the parts is that in the case of a three-legged support the value of the spread of the feet for ensuring against tipping over is available to the full limit only

at the vertical radial planes in which the feet rest upon the floor, and that, therefore, if the foot rest could swing around so as to overhang, for example, the middle part of the arc between the feet of the tripod, one-half of the value of the spread of the tripod feet for stability as against the tendency of weight on the foot rest to tip the stool over, would be lost, because the mid point in the chord of the arc between two feet of the tripod is only one-half as far from the center as the tripod feet.

An additional means of keeping the foot rest directly above one of the tripod feet in the initial adjustment, and relieving the reduced end of the set screw of the stress which might shear it off if a user ignorant of the construction in this respect should apply force to the foot rest to swing it around on the tripod stem, is seen at 20, 20, consisting of two lugs extending down from the yoke, 17ª, constituting a fork which spans the tripod leg over which the foot rest is lodged. The lugs, 20, 20, are designed to be as long as the maximum desired vertical adjustment of the foot rest with respect to the tripod base; and they do not interfere with the entire removal of the foot rest when the use to which the stool is put renders its presence objectionable, for it will be understood that upon unscrewing the seat from the stem, or screwing the stem out from the base, the foot rest in its entirety can be withdrawn upwardly.

In Figure 4 there is shown a simple form of removable back for the stool consisting of a unitary rod, 40, bent in two V-shaped loops, 41, 41, and flexed horizontally at the necks of the loops in an arc of substantially 180°—90° in each loop, the rod being provided with shoulders formed by swaging as seen at 41ª, near the ends, and threaded from the ends to said shoulders for engaging apertures, 14ᵇ, in the seat on whose upper side the shoulders, 41ª, are stopped, nuts, 42, being applied below the seat on the threaded ends of the rod with washers, 42ª, if desired, above and below the web of the seat. At the middle part, below the loops, the rod may be bent as seen at 43 to form a narrow loop for protruding through a slot, 25ᶜ, in the seat web, and back of that loop at each side, horizontally protruding loops, 44, 44, forming shoulders for stopping on the upper side of the seat web, a key, 45, being inserted through the loop, 43, below the seat web; and for convenience of inserting and withdrawing that key, the flange of the seat may have an aperture registering on the position of the loop, 43, when the back is applied to the seat.

I do not limit myself to this particular form of the removable back which may be widely varied without departing from the invention, which, as to this part, consists in providing the stool seat with a back removable and replaceable at will.

I claim:—

1. A portable three-legged stool having a foot-rest of such substantial angular extent that being positioned with the middle portion of said extent at the radial plane of one of the legs its extremities are both contained between the radial planes bisecting the angles between said leg and the other two legs respectively.

2. A portable stool having a base with a central vertical stem and having a seat and a foot-rest both secured to and supported on said stem of the base, said seat and foot-rest being adjustable on the stem of the base axially of said stem independently of each other, the means of securing the foot-rest adjustably on the stem of the base consisting of a longitudinally superficial groove in the stem having vertically spaced-apart holes in the bottom of the groove, the foot-rest having a sleeve hub by which it is engaged with the base, and a set screw mounted in said foot-rest sleeve hub having its end dimensioned for engaging the holes.

3. In the construction defined in claim 1, means for assuring the position of the foot-rest with respect to the legs, as defined in said claim, consisting in the provision of a hub of the foot-rest which constitutes a sleeve for mounting it on the stem of the base, said base stem having a longitudinal groove for engagement by a set screw mounted in said sleeve-hub, the groove having vertically spaced-apart holes corresponding to positions of vertical adjustment of the foot-rest, the set screw having its end dimensioned for engaging said holes when screwed in for engaging the groove.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 7th day of June, 1926.

MICHAEL W. McARDLE.