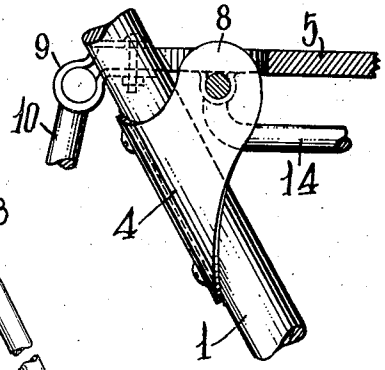
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FOLDING STOOL

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Fig. 7.



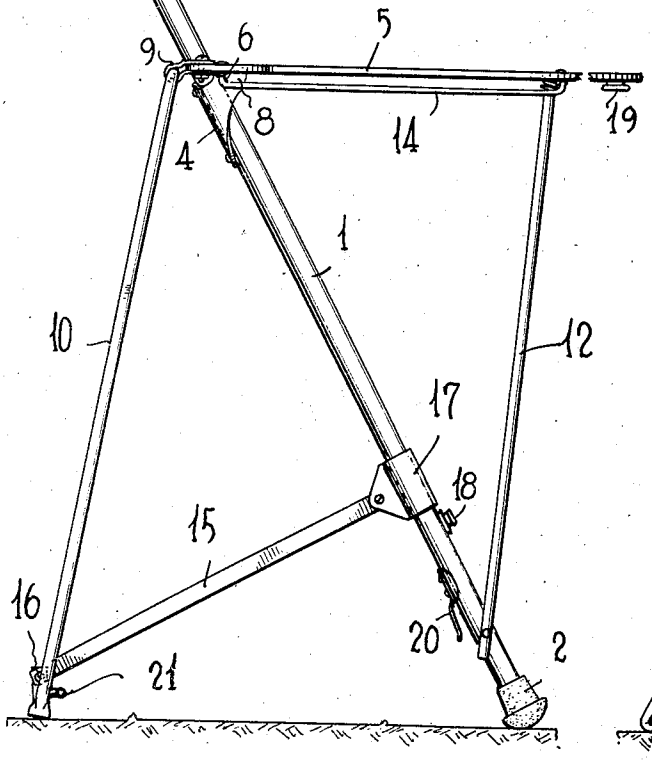
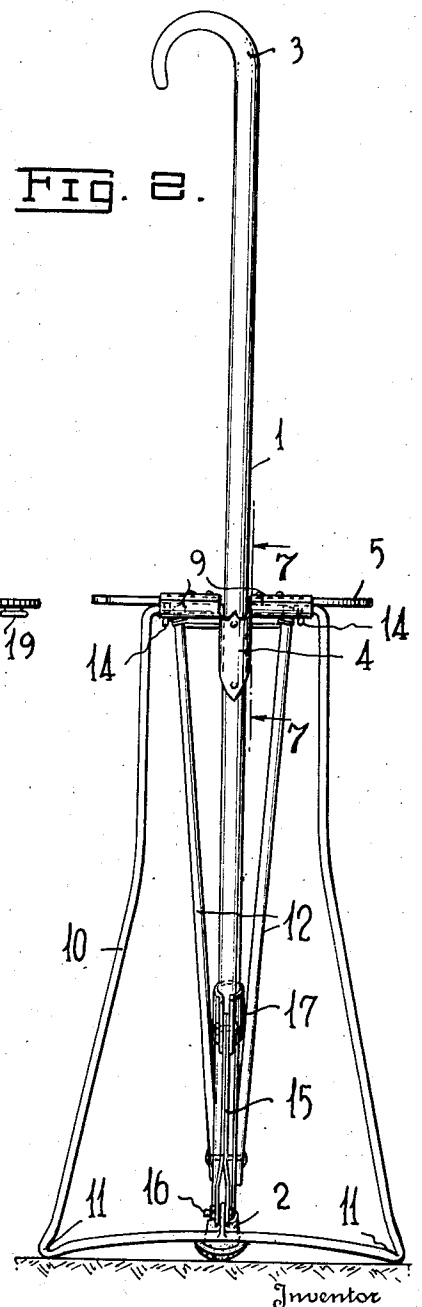


Fig. 1.

Fig. 2.



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Fig. 3.

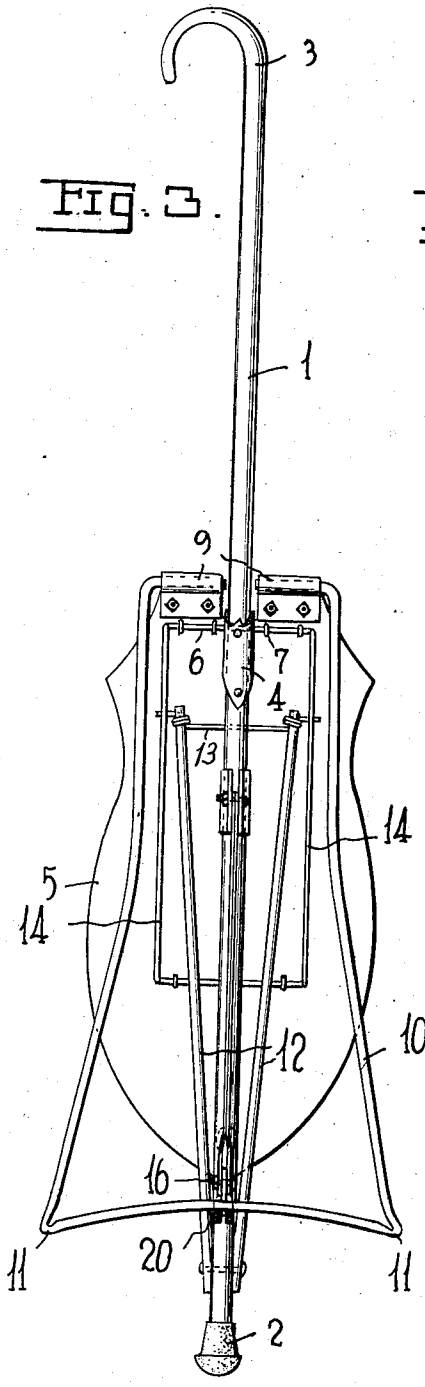


Fig. 4.

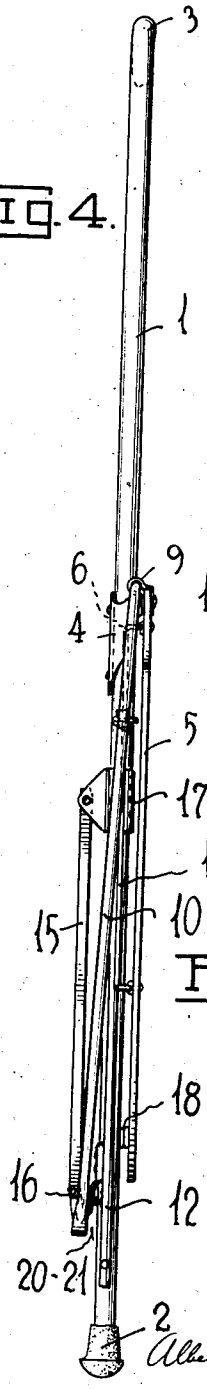


Fig. 5.

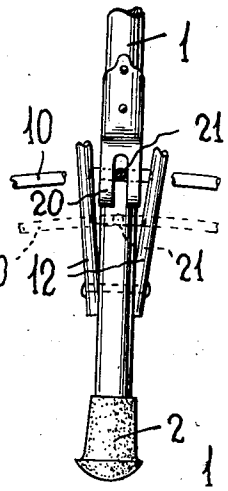
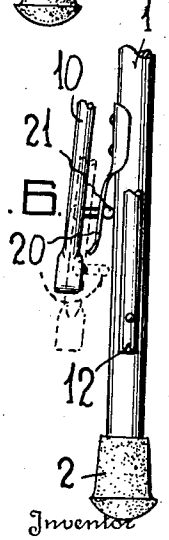


Fig. 6.



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Patented Oct. 11, 1938 2,133,047

UNITED STATES PATENT OFFICE

2,133,047

FOLDING STOOL

Albert Jay Sheldon, Willsboro, N. Y.

Application July 12, 1937, Serial No. 153,229

4 Claims. (Cl. 155—149)

My invention relates to portable, folding stools and more specifically contemplates an improvement in the subject matter of my United States Patent No. 1,972,668, issued September 4, 1934.

The patented construction embodies a combined walking stick and seat which, when in open position, includes a single leg adapted to rest on the ground or floor and support a person on the seat member. The occupant of the seat is required to balance himself, since the construction includes only a single leg in contact with the ground, and this balancing is accomplished by the occupant maintaining his feet on the ground in a manner fully explained in the patent.

It is evident that the patented construction is not self-sustaining in upright position ready for occupancy, and one object of the present invention is to improve the patented construction in this respect, i. e., to provide a new construction which will be self-sustaining in position for occupancy, and which, when occupied, will not require the user to steady or balance the stool or seat.

A related object of the present invention is to provide a construction which may be displayed, in stores, show cases and the like, in open position ready for occupancy. This is a feature not present in the patented construction, and its absence from the patented construction has impaired the appeal made by the device when displayed to prospective purchasers.

While it is proper to regard the present invention as an improvement in the patented construction referred to above, in its broader aspects the new invention is not to be considered to be exclusively applicable to structures of the precise type shown in the patent. On the contrary, the present invention involves certain structural relationships and useful features which are capable of embodiment in stools, seats and the like generally. That is to say, while I prefer at the present time to embody the new invention in a construction of the combined walking stick and seat type, and have so shown it in the accompanying drawings, the invention may be readily embodied in stools and chairs of other types. The appended claims are therefore to be construed broadly and to be considered limited only by their expressly stated limitations and the requirements of the prior art.

Other advantages and objects of the present invention are concerned with providing a folding stool structure which will occupy a minimum of space when in folded position and which will provide a stable and secure seat when the parts are disposed in opened position.

Further objects are to provide a readily foldable and portable stool construction which will be of minimum weight and maximum strength and which will be durable, efficient and foolproof.

In the accompanying drawings I have shown a preferred form of embodiment which has in actual practice given satisfactory service. In these drawings, which form part of this application for letters patent and in which the same reference numeral is used to designate the same part in the several views,

Figure 1 shows a stool made in accordance with the invention with the parts disposed in open position, ready for occupancy, the view being taken in side elevation and a portion of the structure being broken away for economy of space on the sheet;

Fig. 2 is a rear elevational view of the stool in opened position;

Fig. 3 is a rear elevational view of the stool in folded or collapsed position;

Fig. 4 is a side elevational view of the stool in folded position;

Figs. 5 and 6 are detail views on a relatively enlarged scale showing the means for latching front and rear legs together and indicating the sequence of steps in the latching and unlatching operations; and

Fig. 7 is a detail view, taken on the line 7—7 of Fig. 2, showing on an enlarged scale a preferred form of hinge connection for the seat member and legs.

Referring now to the drawings, the reference numeral 1 designates the forward leg which is conveniently and preferably provided in the form of a single stick having a single foot portion 2 adapted to rest on the ground or floor when the parts are in open position as shown in Fig. 1. If the invention is to be embodied in a combined walking stick and seat construction of the general type shown in my patent hereinabove referred to, the forward leg 1 is made relatively long, the upper portion, comprising substantially one-half of the member 1, serving as a carrying handle for the stool or performing the function of a walking stick. For this purpose the upper end of the element 1 is made curved or otherwise formed to provide a handle 3. To the upper end of the leg portion of the element 1, about midway the length of the element if it be extended to constitute a walking stick, there is attached one element 4 of a hinge connection mounting a seat member 5, conveniently made of plywood or other light rigid material. The cooperating part of

the hinge connection, serving as the hinge pin, may be provided in the form of a rod 6 secured to the under side of the seat member by staples or the like 7 and passing through aligned openings in the element 4, the latter element being shown in the form of a sheet metal channel secured to the forward leg 1 and having projecting ears 8 penetrating slots in the seat 5 and containing the holes receiving the rod 6. This hinge construction is provided at the rear edge of the seat member 5, which edge is recessed to provide clearance for the projecting portion of the forward leg 1 when the seat member is raised on the hinge 4—6 to open position, all as will be evident from a comparison of Figs. 1 and 3.

The extreme rear edge of the seat member carries hinge plates 9, 9 pivotally mounting the aligned ends of a rear leg 10, so that this rear leg is pivoted to the seat member to swing outwardly from the forward leg 1 when the stool is in the open position shown in Fig. 1, or toward the forward leg 1 when the stool is in folded position as shown in Fig. 3. The rear leg 10 may take any convenient and desirable form, but I prefer to make it of stout metal tubing or channel or bar stock, formed in substantially U-shape as shown in Figs. 2 and 3, so that the rear leg provides spaced apart foot portions 11, 11. In this way the feet 2, 11, 11 give the stool three-point contact with the floor or ground when the parts are in open position, and the stability of the construction and its self-sustaining properties referred to hereinabove are realized.

To support the forward portion of the seat member 5 I employ strut means conveniently in the form of a pair of rod members 12, 12 converging together at their lower ends and there pivoted at a common point to the lower portion of the forward leg 1, and diverging at their upper ends where they are connected by a tie rod 13. Limited movable connection with the seat member 5 is effected by providing on the under side of the seat member a guide or runway for the connected ends of the struts 12. This guide or runway is preferably provided by securing to the seat member a pair of parallel rods 14, 14 which are spaced slightly below the under side of the seat member and are closed at their forward and rear ends. In the space between the guide rods 14 and the seat member the ends of the tie 13 for the strut members are disposed so that the strut means 12, 12 may be slid from forward position at the forward end of the guides 14, shown in Fig. 1, to a rear position nearer to the rear end of the seat member 5, as shown in the folded condition of the parts illustrated in Fig. 3. It is convenient to make the guide rods 14 integral with and a continuation of the hinge rod 6 as shown in Fig. 3, the assembly 6, 14, 14 being a substantially rectangular loop of relatively heavy gauge wire.

When the strut means 12 is in its forward position it supports the forward part of the seat member 5 by transmitting loads in compression to the lower part of the forward leg 1. By locating the connection of parts 12 and 1 relatively near the foot 2, there is no appreciable tendency of the forward leg 1 to bend under load.

To tie the rear leg 10 to the forward leg 1 and prevent excess angular separation of the legs, I connect a link 15 between the legs. The link is hinged to one of the legs and slidable on the other so that the legs may be folded together when it is desired to collapse the stool. In the illustrated embodiment I have shown the link hinged at 16 to the rear leg, specifically to the mid-point thereof, and slidably connected to the forward leg 1 through the medium of a bushing member 17 pivotally connected to the forward end of the link and freely slidable on the forward leg 1.

It is of course desirable to limit the angular separation of the legs 1 and 10 when the seat is opened, and this I accomplish by limiting the path of movement of the bushing 17 on leg 1. It is also desirable releasably to connect the seat member 5 to the leg 1 when the stool is folded. I accomplish both of these objects by providing cooperating parts 18, 19 of a friction catch device on the leg 1 and seat member 5 respectively. The parts 18 and 19 become engaged when the seat member is folded down on the leg and the part 18 serves as a stop to limit downward movement of the bushing 17 and hence the angular separation of the legs 1 and 10.

To hold the forward and rear legs together and maintain the stool in the folded condition shown in Figs. 3 and 4, I provide a latch device which may take the form of a forked prong element 20 carried by the rear face of the forward leg and a cooperating lug 21 having a T-shaped head projecting from the forward face of the central part of the rear leg 10. Figs. 5 and 6 show the latch parts 20—21 engaged, the dotted lines of Fig. 6 indicating the positions of the parts just prior to engagement or just after disengagement. It will be evident from Fig. 1 that inasmuch as those parts of the plates 9, 9 which carry the end of leg 10 project beyond the turning axis of the seat member 5, which is the hinge pin formed by the rod 6, the rear leg 10 is lifted, or slid axially, when the seat member is folded down against the forward leg 1. If this movement of the rear leg is effected with the rear leg folded substantially against the forward leg, the lug 21 will move from the dotted to the full line position of Fig. 6 and the legs will be latched together.

With the stool folded as shown in Fig. 4, it may be opened by striking the foot 2 against the ground or floor while the seat member 5 is disposed on the under side of the assembly. Catch elements 18 and 19 separate and strut means 12 moves forwardly in guide 14. The seat member 5 is thus disposed in relation to the leg 1 and strut means 12 as shown in Fig. 1. During this movement of the seat member the leg 10 moves a slight distance downwardly, from the full to the dotted line position of Fig. 6, which is sufficient to release the lug 21 from the prong element 20. The stool is then turned over to bring the rear leg 10 to the under side of the assembly, whereupon the rear leg falls free of the forward leg, bushing 17 dropping down leg 1 until it abuts stop 18 and the parts assume the positions shown in Fig. 1. The stool is then ready to be occupied. It may be folded by sliding the bushing 17 upwardly along the leg 1, thereby bringing the legs 10 and 1 together, with the latch elements 20 and 21 spaced apart as shown in dotted lines in Fig. 6, and then collapsing the seat member 5 to engage the friction catch elements 18 and 19, by which latter movement the lug 21 moves up under the prong 20 with the shank of the lug in the slot of the forked prong and the crosspiece of the lug straddling the slot. In this relationship of the parts separation of the latch elements 20—21 except following separation of the spring catch elements 18—19 is prevented.

Various features of the disclosed embodiment

are desirable and useful and have been adopted and are shown in this application because they are preferred. Certain of these features are however not essential to an operative embodiment of the invention broadly considered, and the claims are not to be considered limited to such specific disclosures except insofar as may be required by their express limitations. For example, the specific types of hinge connection employed, the specific form of the rear leg 10, the specific form of the strut means 12, and the extension of forward leg 1 to provide a walking stick, are all thought to be desirable features of the invention and appropriate subject matter for some of the limited claims, but all such features may be modified, and certain of them may be entirely dispensed with, insofar as the broad principles of the invention are concerned.

I claim:

1. A portable, folding stool comprising a forward leg, a seat member hinged to the forward leg and having a portion extending from said hinge rearwardly of the forward leg, means for supporting the seat member on the forward leg, a rear leg member hinged to said rearwardly extended portion of the seat member and having foot portions spaced apart laterally with respect to the forward leg to cooperate therewith to make the stool self-supporting when opened, means connecting the rear leg member to the forward leg for limiting their separation when opened, and cooperating latch elements carried by the forward and rear legs respectively, adapted to be brought into proximity to each other when the rear leg is folded against the forward leg and adapted to be drawn into latched engagement with each other when the seat member is thereafter folded against the forward leg.

2. A portable, folding stool comprising a forward leg, a seat member hinged to the forward leg and having a portion extending from said hinge rearwardly of the forward leg, means for supporting the seat member on the forward leg, a rear leg member hinged to said rearwardly extended portion of the seat member and having foot portions spaced apart laterally with respect to the forward leg to cooperate therewith to make the stool self-supporting when opened, means connecting the rear leg member to the forward leg for limiting their separation when opened, a forked prong element carried by the forward leg, and a T-shaped lug carried by the rear leg adapted to be brought into proximity to the forked prong element when the rear leg is folded against the forward leg and adapted to be drawn into latched engagement therewith when the seat member is thereafter folded against the forward leg.

3. A portable, folding stool comprising a seat member, a forward leg, hinge means connecting said forward leg to the rear of the seat member whereby the seat member may be folded down against the forward leg or opened to extend acute angularly therefrom, cooperating friction catch means on the seat member and on the lower portion of the forward leg for releasably securing said leg and member in folded position, a seat member supporting strut pivoted to the lower portion of said leg and slidably connected to the seat member, a rear leg hinged to the rear of the seat member and having foot portions spaced laterally with respect to the forward leg to cooperate therewith to make the stool self-supporting when opened, and a link having one end pivoted to the lower portion of the rear leg and its other end slidably connected to the forward leg and movable between the hinge means and the friction catch means on the forward leg.

4. A portable, folding stool comprising a forward leg, a seat member hinged to the forward leg and having a portion extending from said hinge rearwardly of the forward leg, means for supporting the seat member on the forward leg, a rear leg member hinged to said rearwardly extended portion of the seat member, said legs together having at least three foot portions not all of which lie on the same straight line when the legs are opened to operative position, whereby the stool is self-supporting when opened, means connecting the rear leg member to the forward leg for limiting their separation when opened, and cooperating latch elements carried by the forward and rear legs respectively, adapted to be brought into proximity to each other when the rear leg is folded against the forward leg and adapted to be drawn into latched engagement with each other when the seat member is thereafter folded against the forward leg.

ALBERT JAY SHELDON.