AUTOMATIC FOLDING STEP STOOL

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This invention relates to step stools and in particular to a type in which, when the top is raised, the lower step will be moved to position to adapt the stool for use as a step ladder.

A particular object of my invention is to provide a labor saving construction in the nature of a combination stool and step ladder, the operation of which is automatic so that when the device is to be converted for use as a stool, it will automatically fold from its step ladder forming position and the lower step thereof will be folded completely out of the way so that the device may perform all of the functions of a stool.

A further object of my invention is to provide a combination stool and step ladder which is convenient in use and which eliminates the necessity of stooping over to fold the bottom step after the device has served its purpose as a step ladder, the same being arranged so that when the lower step is folded up by a movement of the foot, the top will also fold down to cover the top step upon which one may stand so that the top forms a protection to the clothing when the device has been converted for use as a stool.

Other important objects of my invention are the provision of a step ladder in which the maximum standing space is provided, the space being sufficient so that a woman wearing high heel shoes may stand on either the upper or lower step, with the entire foot, this construction varying from other types of combination stools and step ladders in which space is only provided for the accommodation of the sole of the shoe and not for the heel, which is dangerous and does not give the stability desired.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 is a view in elevation of a combination step ladder and stool constructed in accordance with my invention, the lower step thereof being shown folded and the device being illustrated as it would appear when ready for use as a stool.

Figure 2 is a view similar to Figure 1 showing the device with the top raised and the lower step projected, the top and the step being connected through the medium of a suitable mechanism for providing automatic operation of the parts, and

Figure 3 is a plan view of the combined stool and step ladder as is shown in Figure 2.

Referring to the drawings in detail, 5 indicates the legs of the stool combination which are joined by the rungs 6 and are provided with the protective feet 7 which prevent slipping of the stool and marring of the floor. The upper ends of the legs 5 are secured in any suitable manner to the top step 8 upon which is disposed, a rubber mat 9, preferably having a corrugated surface so that slipping of one using the article as a step ladder is guarded against.

The top step 8 which is rectangular in shape, as illustrated in Figure 3, there is secured as by the hinges 10 thereto, the top 11 which constitutes the top of the stool when the same is used for seating purpose.

The top step 8 is also provided with the rubber stops 12 upon which the top 11 rests when the same is closed. The top 11 is provided with a bracket arm 13 to which is pivoted the link 14. The link is offset at 15 to engage the end of a strip 16 secured in any suitable manner to the side pieces 17 of the lower step 18. This lower step 18 is also provided with a rubber mat 19 to prevent accidental slipping of one mounting the step stool. The side pieces 17 of the lower step 18 are joined together through the medium of the rung 20 and the top piece 21 and are pivoted on the rod 22, which is preferably made of metal and extends between the legs 5 of the stool. The strip 16, as has been before noted, is secured to one of the side pieces 17, preferably beneath the top piece 21 and its point of pivotal connection with the link 14 is such that, being beyond the pivotal
2. A rod 22 around which the step 18 is arranged to revolve, the closing or opening of the top 11 will throw the lower step in and out as illustrated, with a minimum of effort, so that a woman operating the device to either open or close it, can do so quickly and easily.

When the step 18 is folded, as illustrated in Figure 1, it is completely out of the way and the top 11 being folded down, provides a seat that covers the rubber mat 9 so that soiling of the clothing is prevented. The back 11, when in its raised position, also affords a support for the hand and arm to the one mounting the step stool. The automatic folding feature of the stool is an important consideration inasmuch as the lower step 18 may be kicked up to closed position by inserting the toe of the shoe beneath the rung 20 and the raising movement of the lower step 18 will, through the medium of the link 14, close the top 11, it being understood that the raising of the top 11 through the link 14 will extend the lower step 18 to the position illustrated in Figure 2.

It is evident that I have provided a stool of sturdy construction which may be used as a step ladder and in which a number of natural steps are employed properly spaced and of sufficient width to give room for the feet of the person using the same so that either of the steps may be occupied without danger of falling.

Also, the automatic operation of the step stool is performed with little effort and considerable convenience.

While I have illustrated and described my invention with some degree of particularity, I realize that in practice various alterations therein may be made without departing from the spirit of the invention or the scope of the appended claims.

What I claim is:

1. A combination ladder and stool comprising a supporting structure including legs, a top step mounted at the upper ends of the legs, a stool top pivoted to the supporting structure, a step pivoted to the supporting structure below said stool top, and means connecting said stool top and the step whereby the latter is automatically extended when the stool top is raised.

2. A combination ladder and stool comprising a supporting structure including legs, a top step mounted at the upper ends of the legs, a stool top pivoted to the supporting structure, a step pivoted to the supporting structure below said stool top, a bracket arm on the stool top and on the step, and a link connecting said bracket arms whereby the step is automatically extended when the stool top is raised.

3. In a device of the character described, an upper step, legs supporting the step, a lower step pivoted between said legs, and movable to a position beneath or from under said upper step, a pivoted top constituting a cover for said upper step, brackets providing projections on the top and on the lower step and a link connecting said projections whereby when the top is open, the lower step is moved from beneath said upper step.

4. A combination ladder and stool comprising a supporting structure including legs, a stool top pivoted to the supporting structure, a step pivoted to the supporting structure below said stool top, and means connecting said stool top and step whereby the step is operated when the top is moved.

5. A combination ladder and stool comprising a supporting structure including legs, a stool top pivoted to the supporting structure, a step pivoted to the supporting structure below said stool top, a link, and means connecting the ends of the link with the top and step respectively whereby the step is operated by a movement of said top.

In testimony whereof, I have signed my name to this specification this 31st day of March, 1930.

ROBERT C. HAYNE. [L. s.]