July 13, 1948. D. H. WEISLANDER 2,445,286

PORTABLE STAGING OR THE LIKE

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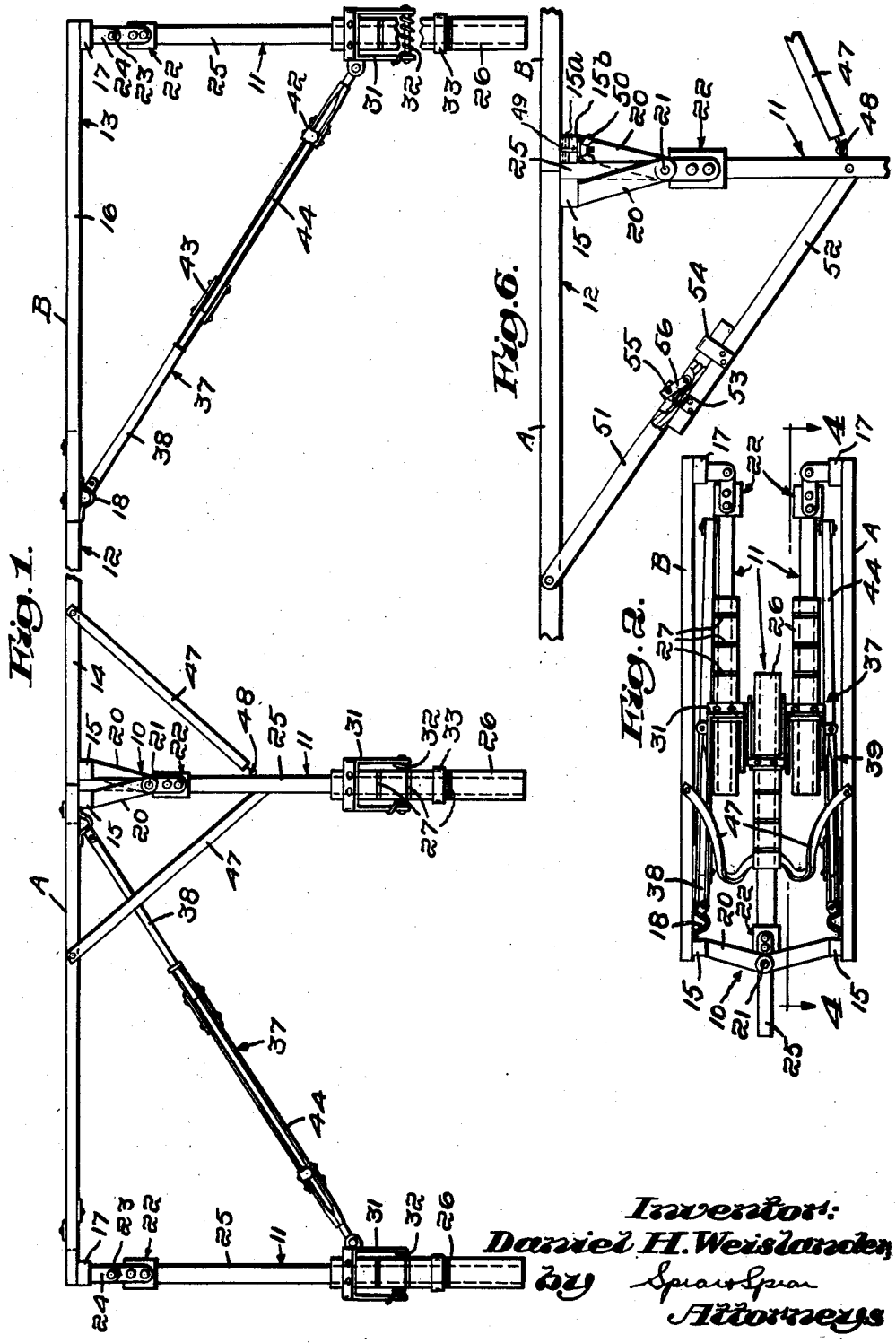


Fig. 1.

Fig. 6.

Fig. 2.

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Fig. 3.

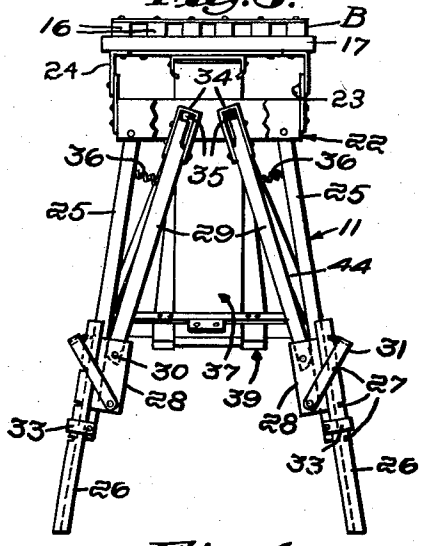


Fig. 4.

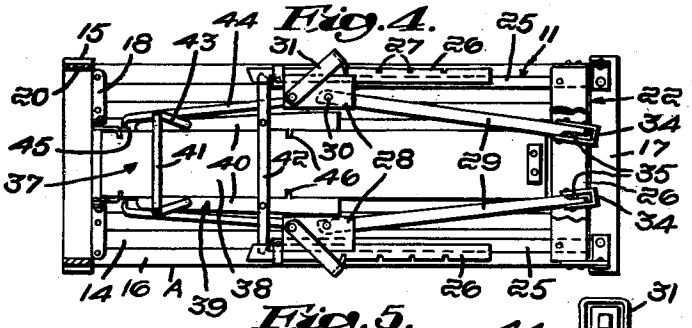
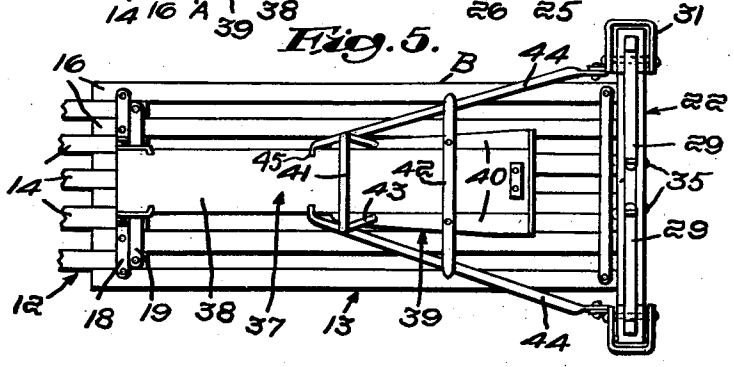


Fig. 5.



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UNITED STATES PATENT OFFICE

2,445,286

PORTABLE STAGING OR THE LIKE

Daniel H. Weislander, Portland, Maine

Application April 6, 1946, Serial No. 660,175

15 Claims. (Cl. 304—6)

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My present invention relates to portable stagings or like supports and particularly to folding leg structures therefor.

While my invention is well adapted for use in portable supports other than stagings, stagings such as those used by paperers and painters well illustrate the necessity of a support being adaptable to a wide range of conditions while having a folding leg structure that ensures strength and sturdiness when in use and that enables the staging to be rendered relatively compact for ease and convenience in transportation or storage.

In accordance with my invention, I provide a staging having a support that may itself be foldable and extensible. The support has spaced members transversely hinged to fold into or out of a supporting position and to each support I pivotally attach a pair of legs to swing outwardly into a supporting position.

I provide brace means for each pair of the legs which comprises a first element transversely hinged to the support adjacent each of the members and a pair of second elements, each of which is connected at one end to one of the legs. In accordance with my invention, I mount a slide on each of the first elements to which each of the second elements is pivoted adjacent its other end. The first and second elements have complemental locking surfaces which are engageable when a member and its pair of legs are in their supporting position.

I also preferably provide each of the legs with additional means to brace it at a different angle than that effected by the means which brace each pair of legs. The additional brace means are preferably spring-pressed into their locked position when the legs are in their supporting position.

Where the staging is foldable and of substantial length, I provide a pair of legs adjacent the hinge interconnecting the sections and may employ novel brace means to ensure that the staging is rigidly supported between its ends and to enable one of the sections to be removed quickly and easily.

Stagings in accordance with my invention also have adjustable legs by which the length of each leg may be quickly and safely adjusted as required by the nature of the surface on which the staging is used.

In the accompanying drawings, I have shown, as an illustrative embodiment of my invention, a portable staging from a consideration of which its novel features and advantages will be readily apparent.

In the drawings:

Fig. 1 is a fragmentary side view of a staging in accordance with my invention set up for use.

Fig. 2 shows the staging of Fig. 1 collapsed for storage or for convenience in carrying it.

Fig. 3 is an end view of my staging.

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Fig. 4 is a section along the lines 4—4 of Fig. 2.

Fig. 5 is a fragmentary bottom plan view of the staging when set up for use, and

Fig. 6 is a fragmentary view showing a modified form of a staging in accordance with my invention.

In the drawings, I have shown a staging as representing supporting structures in accordance with my invention. The staging may consist of two sections A and B hinged together as by hinge means generally indicated at 10 and has legs indicated generally at 11.

In order that the staging may be substantially extended, each of the sections A and B is shown as consisting of first and second slidably interconnected portions generally indicated at 12 and 13 respectively. While these portions may be otherwise constructed and interconnected, I have shown, as may be most clearly seen in Figs. 3–5, the portion 12 of each section as consisting of strips 14 connected at one end to a cross member 15 in such a spaced relationship as to receive between them strips 16 of the portion 13 which are interconnected at their opposite ends by the cross member 17. The strips 16 are interconnected adjacent their other end by the mount 18 for the leg brace means while the strips 14 are shown as interconnected by the cross piece 19. The cross piece 19 and the mount 18 serve to maintain the portions 12 and 13 of each section slidably interconnected, strengthen each section, and may also serve to limit the extent to which each section may be extended. (See Fig. 5).

The cross member 15 of the portion 12 of each section has a bracket 20 and the bracket 20 is pivotally connected as at 21 to a leg support 22 and a like leg support 22 is pivotally connected as at 23 to brackets 24 on each of the members 17 of the portions 13. The leg supports 22 are of similar construction and each is shown as consisting of a rectangular frame.

Each of the leg supports 22 has a pair of legs 11, the main or upper parts 25 of which are pivotally mounted therein. The legs 11 each have a lower part or foot 26 which is channelled along its inner edge to slidably receive the main leg part 25. The feet have a series of notches 27 on their outer edges. I attach to each upper leg part 25 a block or mount 28 channelled to straddle it and to receive the end of a leg brace 29 pivoted as at 30 thereto. A latch 31 pivotally attached to the mount 28 engages a selected notch 27 in the foot 26 to lock it in desired relation to the main part 25 thereby to provide suitable means for extending or shortening the legs 11 as required for the proper support of the staging. While the latch 31 may be held in engagement by other means, I have shown a spring 32 (see Fig. 1) as resiliently urging it into its engaged position. To ensure that the legs are sufficiently

rigid, I provide each of their main parts 25 with a collar 33 which slidably receives a foot 26.

Each leg brace 29 is of sufficient length to extend into a leg support 22 and has at its end a hook 34 adapted to engage with a pin 35 in the support 22 so that each of the legs 11 is braced when swung outwardly into its supporting position. The braces 29 are resiliently urged against the locking pins 35. For convenience, I have shown this as effected by springs 36 seated against the upper leg parts 25 and working against the braces 29.

The pair of legs 11 carried by each of the leg supports 22 on the cross members 17 are braced by means generally indicated at 37. In the drawings, I have shown a preferred embodiment of brace means and each of these consist of a first element 38 pivotally connected to the mount 18 which may be of longitudinally folded metal stock to ensure rigidity as suggested in Figs. 1 and 2. Each of the first elements 38 has a slide indicated generally at 39 in Figs. 4 and 5 and consisting of sides 40 located on opposite edges of the first element 38 on which the slides are maintained by first and second guides 41 and 42. The guide 41 may be braced as at 43 and adjacent its opposite ends I pivot second elements 44 so that their hook ends 45 may be moved into and out of locking engagement with the locking recesses 46 in the sides of the first element 38. (Compare Figs. 4 and 5.) When in their locking position, the second elements 44 are held against further outward movement by the second guides 42. The second elements 44 are pivotally secured to the legs 11.

By this construction, when the leg supports 22 are positioned to bring the legs 11 into supporting position and each leg is swung outwardly, the first and second brace elements 38 and 44 are rigidly interconnected. By pressing the leg braces 29 inwardly against the locking action of the springs 36 to release them from locking engagement with the pins 35, the second elements 44 are pivoted to unlock from the first element 38. The legs 11 and the leg support 22 may then be folded as shown in Figs. 2 and 4 to render the staging compact.

The pair of legs 11 pivotally mounted in the leg support 22 carried by the cross members 15 are shown in Fig. 1 as braced by straps 47 of any suitable flexible stock and I space the cross members 17 to receive between them and thus clamp the ends of the legs 11 when the staging is unfolded and the legs are in their supporting position. The straps 47 are connected to the portions 12 of each section and I have shown one set of the straps 47 as being detachably connected to the legs 11 by clamps 48 as shown in Fig. 1.

In Fig. 6, I have shown a modified form of staging having means to permit the section B to be detached so that the section A may be used by itself. In order that this may be easily effected, the member 15 carried by the section B is formed in two parts 15^a and 15^b. The part 15^b is secured to the brackets 20 and at each end is grooved so that the bolt 49 pivotally attached to the part 15^a may be positioned therein and the parts 15^a and 15^b clamped together by tightening the wing nuts 50.

By releasing the clamp 48 to release the strap 47 carried thereby and by releasing the wing nuts 50 to permit the bolts 49 to be pivoted out of the grooves in the part 15^b, the section B may be detached so that the section A may be used by itself.

Where the section A is to be used by itself, other means than the straps 47 must be employed to support the pair of legs 11 carried by the members 15. Such means may each comprise a first brace element 51 pivotally secured to a side of the portion 12 of the section A and a second brace element 52 pivotally secured to the upper part 25 of one of the legs 11. The second brace element has a pair of guides 53 and 54 which slidably confine the first brace element 51. I provide the guide 53 with a pin 55 and form the first brace element 51 with a pocket having pivoted therein a latch 56 spring-pressed to releasably interlock with the pin 55 when the legs 11 are in their supporting position.

From the foregoing, it will be apparent that stagings or other supports in accordance with my invention combine adequate strength and adaptability in use with compactness for convenience in transportation and in storage.

What I therefore claim and desire to secure by Letters Patent is:

1. A staging or the like comprising a support consisting of first and second slidably interconnected sections, a pair of legs hinged to opposite ends of each of said sections, and brace means for each of said pair of legs, the brace means for at least one of said pairs of legs comprising a first element transversely hinged to that section supported by that pair of legs, a slide on said first element, a second element pivotally connected to each of the legs of that pair and to said slide, said first and second elements having portions interlocking when said legs are in their supporting position.

2. In a staging or the like, a support, a member transversely hinged to said support to fold into and out of supporting position, a pair of legs transversely pivoted to said member to swing outwardly into supporting position, and leg brace means for said pair of legs, said leg brace means comprising a first element transversely hinged to said support, a slide on said first element, and a second element pivotally secured to each leg and to said slide, said first and second elements having interlocking portions adapted to interlock when said support and said legs are in their supporting position, and means to lock said legs in their supporting position.

3. The staging of claim 2 in which the locking means comprise braces pivotally connected to each of the legs, complemental locking means carried by the braces and by the member, and resilient means yieldably urging the complemental locking means into engagement.

4. A staging or the like comprising a support consisting of first and second sections, each of said sections including first and second slidably interconnected portions, hinge means interconnecting the first portion of each section, a pair of legs transversely hinged to opposite ends of each of said second portions, a pair of legs supported by said hinge means, and leg brace means for each of said pair of legs.

5. In a staging or the like, a support comprising first and second sections, a hinge, means connecting said hinge to said first section, means detachably connecting said hinge to said second section, a pair of legs supported by said hinge means, and brace means for said legs, said brace means being detachably connected to said second section.

6. In a staging or the like, a support comprising first and second sections, a hinge, a pair of legs carried by said hinge, means connecting

said hinge to said first section, means detachably connecting said hinge to said second section, and brace means pivotally connected to said first section and to said legs, said brace means comprising first and second slidably interconnected members, and a spring-pressed latch to interlock said members when said legs are in their supporting position.

7. A leg structure for a staging or the like, said structure comprising an upper leg, a foot, said leg and said foot having complemental tongue and groove portions, a reinforcing block fast on said leg, means on said block slidably interconnecting said leg and foot with said tongue and groove portions mated, and spring actuated latch means carried by said block engaging with said foot to lock said foot in any one of the plurality of selected positions relative to said leg.

8. In a foldable staging or the like, a support comprising first and second sections, a cross piece secured to the adjacent end of each of said sections, a member, hinge means connected to both of said sections and to said member, and a pair of legs carried by said member, said cross pieces gripping the ends of said legs when said sections are unfolded.

9. The staging of claim 8 in which one of the cross pieces consists of first and second portions, one of which is fast to one of the sections and the other of which is fast to the hinge means, and detachable clamp means interconnecting the portions to interconnect the sections of the support.

10. A staging or the like comprising a support, a pair of spaced members transversely hinged to said support to fold into and out of a supporting position, a pair of legs transversely pivoted to each of said members to swing outwardly into a supporting position, and leg brace means for each pair of legs, each of said leg brace means comprising a first element transversely hinged to said support in spaced relation to one of said members, and a pair of second elements, each of which is connected to one of the legs carried by said member, a slide on each of the first elements to which each of the second elements is pivoted, and said first and second elements having complemental locking surfaces engageable when said member is disposed at right angles to said support and said legs are swung outwardly into their supporting position.

11. A staging or the like comprising a support, a pair of spaced members transversely hinged to said support to fold into and out of a supporting position, a pair of legs transversely pivoted to each of said members to swing outwardly into a supporting position, and leg brace means for each pair of legs, each of said leg brace means comprising a first element transversely hinged to said support in spaced relation to one of said members, and a pair of second elements, each of which is connected to one of the legs carried by said member, a slide on each of the first elements to which each of the second elements is pivoted, and said first and second elements having complemental locking surfaces engageable when said member is disposed at right angles to said support and said legs are swung outwardly into their supporting position, and spring-pressed means connected to each of said members to lock said legs in their supporting position.

12. The staging of claim 11 in which the spring-pressed means consist of a brace pivotally connected at one end to each leg and including at its other end a hook, a pair of spaced pins carried by the member to be engaged by the hooks when the legs are swung outwardly into their supporting position, and a spring between each leg and each brace resiliently urging each hook into such engagement with the pins.

13. A staging or the like comprising a support, a pair of spaced members transversely hinged to said support to fold into and out of a supporting position, a pair of legs transversely pivoted to each of said members to swing outwardly into a supporting position, and leg brace means for each pair of legs, each of said leg brace means comprising a first element transversely hinged to said support in spaced relation to one of said members, and a pair of second elements, each of which is connected to one of the legs carried by said member, a slide on each of the first elements to which each of the second elements is pivoted, and said first and second elements having complemental locking surfaces engageable when said member is disposed at right angles to said support and said legs are swung outwardly into their supporting position, said slide limiting the outward pivoting of said legs relative to said member.

14. In a staging or the like, a support consisting of first and second sections slidably interconnected to permit said support to be extended, a member transversely hinged to said first section to fold into and out of a supporting position relative thereto, a pair of legs transversely pivoted to said member to swing outwardly into a supporting position and leg brace means comprising a first element, a transverse hinge on said first section supporting one end of said first element in spaced relation to said member and a pair of second elements, each of which is connected to one of said legs, a slide on said first element pivotally supporting said second elements, said first and second elements having complemental locking means engageable when said member and said legs are in their supporting position, and a member on said second section engageable with said transverse hinge to limit the extension of said support.

15. In a staging or the like, a support, a member transversely hinged to said support to fold into or out of a supporting position, a pair of legs transversely pivoted to said member to swing outwardly into a supporting position, each leg including a reinforcing mount, leg brace means connected to each of said mounts and to said support to interlock with said support thereby to brace said legs when said member and said legs are in their supporting position, extensible feet carried by each of said legs and having a plurality of notches, and a spring actuated latch carried by each mount to engage in a selected notch to lock the foot to the leg.

DANIEL H. WEISLANDER.

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