Nov. 12, 1940. E. R. NOWICK 2,221,264

STEPLADDER

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Fig. 1.

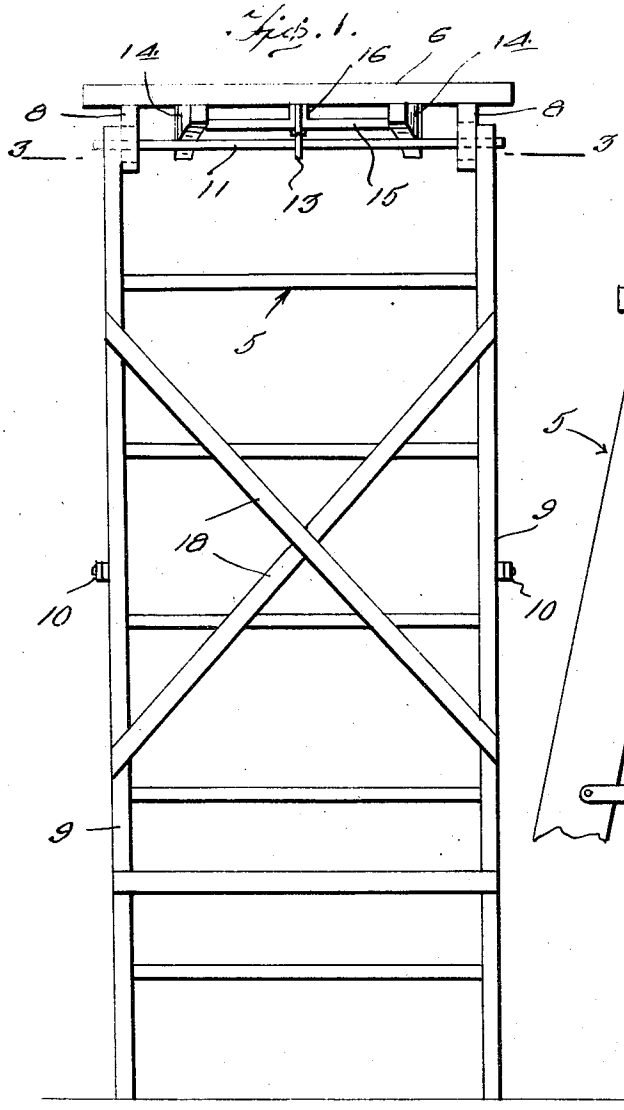
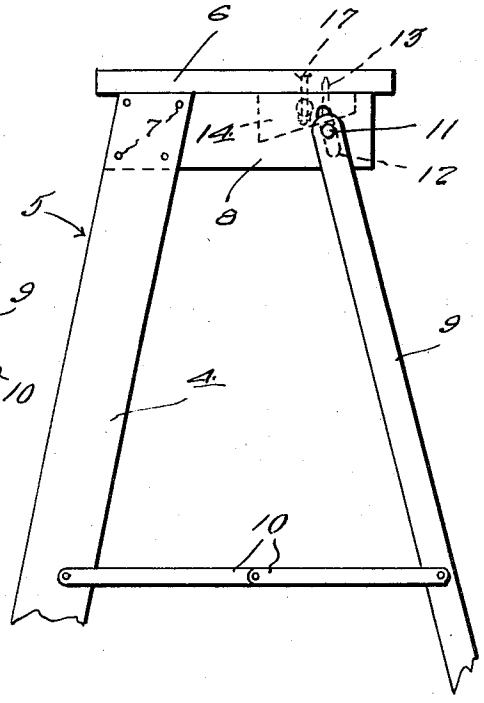


Fig. 2.



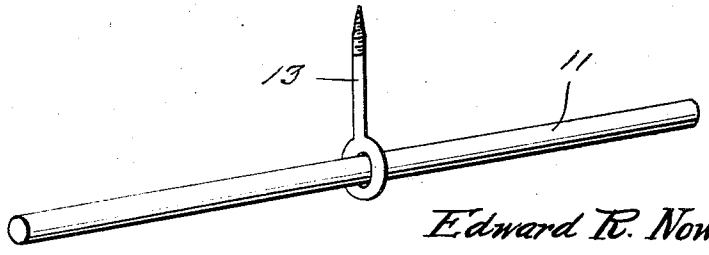


Fig. 6.

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STEPLADDER

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Fig. 3.

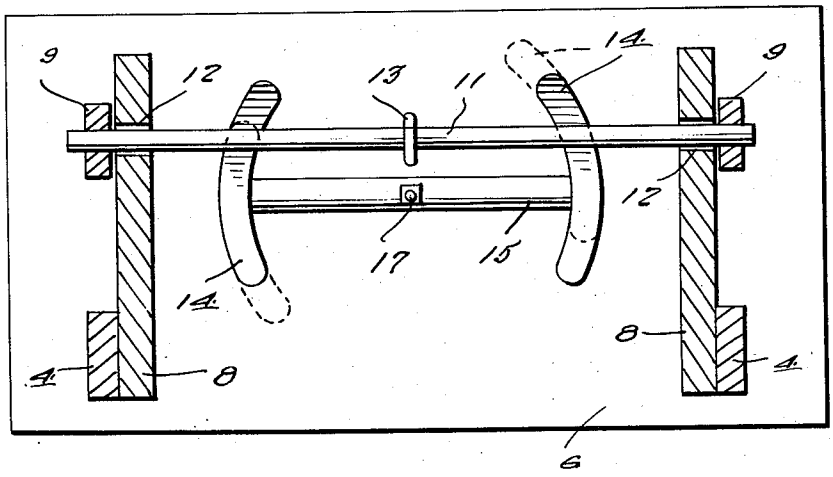
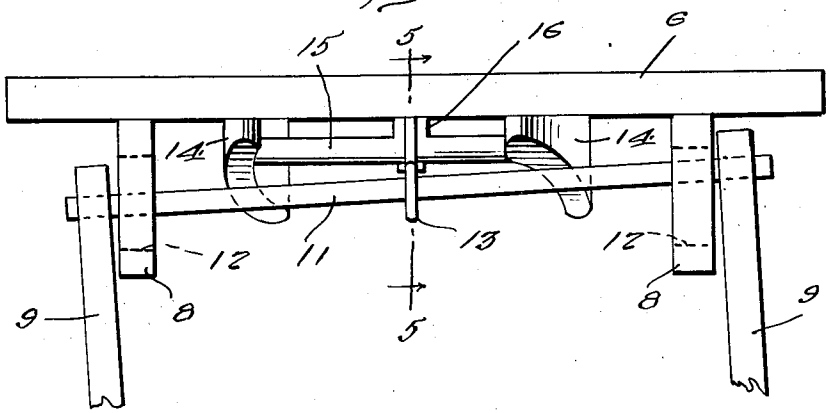


Fig. 4.



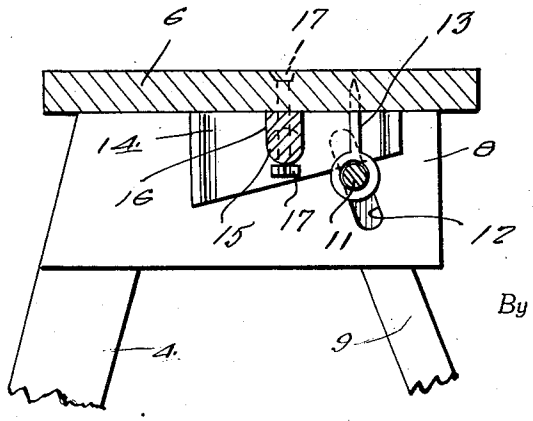


Fig. 5.

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UNITED STATES PATENT OFFICE

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STEPLADDER

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Application March 26, 1940, Serial No. 326,087

5 Claims. (Cl. 228—29)

This invention relates to stepladders and an object of the invention is to provide a stepladder in which the legs may be shifted to conform to uneven surfaces upon which the latter may be positioned, together with means for positively securing the supporting legs in the position to which shifted against being easily displaced; and the invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a rear elevational view of the stepladder embodying the features of the present invention.

Figure 2 is a fragmentary side elevational view of the latter.

Figure 3 is a sectional view taken substantially on the line 3—3 of Figure 1.

Figure 4 is a fragmentary elevational view showing the manner in which the supporting legs are secured in the position to which shifted as the unevenness of the ground upon which the latter is positioned may require.

Figure 5 is a detail sectional view taken substantially on the line 5—5 of Figure 4, and

Figure 6 is a perspective view of a hinge rod for the supporting legs and an eye screw for said rod, the referred to parts being shown assembled.

Referring more in detail to the drawings it will be seen that the ladder, as is conventional, comprises the conventional front step construction 5 to the upper end of which is attached the broad top step or ladder top 6, side rails 4 of the front step construction 5 being fastened by nails or other suitable fastening elements 7 of the side cleats 8 of said top step or ladder top 6.

Also for the ladder there are provided the rear supporting legs 9 which are connected to the side rails of the front step structure 5 through the medium of conventional folding braces 10.

However in accordance with the present invention the supporting legs 9 at the upper ends thereof are apertured to accommodate a hinge rod 11, the end portions of which are accommodated in slots 12 provided therefor in the cleats 8 and disposed at an angle to the perpendicular as clearly suggested in Figure 2. Thus it will be seen that the legs 9 have a free movement in several directions relative to the cleats 8 thus permitting the legs 9 to be positioned as required due to the unevenness of the ground or surface upon which the latter is placed for use.

For the hinge rod 11 there is provided an eye screw 13 that threads upwardly into the ladder top 6 from the underside of the top and which is positioned intermediate the cleats 8 as shown. The eye of the screw 13 is of sufficient diameter with respect to the diameter of the rod 11 to permit the rod 11 to have the requisite play for permitting shifting of the legs 9 to compensate for the unevenness of the ground or surface upon which the ladder is placed.

Also in accordance with the present invention there is provided a rotatable wedge assembly; the assembly comprising a pair of confronting, oppositely disposed curved wedges 14 provided on the relatively opposite end of a spreader bar 15. Intermediate its ends the spreader bar 15 is provided with a hub 16 that accommodates a pivot bolt 17 that extends downwardly from the ladder top 6 and thus serves to support the wedge assembly to permit the ladder to be easily rotated in either of two directions and about the bolt 17 as an axis.

Also, and as shown, the legs 9 intermediate their ends are braced relative to one another through the medium of crossed braces 18.

By this arrangement and construction it will be apparent that in use the front step structure of the ladder may be placed upon the ground or supporting surface in the desired location irrespective of the unevenness of such surface and the supporting legs 9 spread rearwardly with respect to the step structure so that as the ladder is tilted backwardly the supporting legs 9 will find engagement with the uneven ground resulting in the legs 9 shifting bodily as required due to the unevenness of the ground. After the ladder has been so positioned the operator need only rotate the wedge assembly embodying the wedges 14 and associated parts in the proper direction and as suggested in Figure 4 for proper contact with the hinge rod 11, thus causing the legs 9 to be locked in position to which shifted as a result of the unevenness of the ground. Thus it will be seen that regardless of the unevenness of the ground, the step structure 5 and the top step, platform, or ladder top 6 will remain in substantially horizontal or level position; the rear legs being thus permitted to firmly engage the ground regardless of its uneven surface.

It is thought that a clear understanding of the construction, operation, utility and advantages of a stepladder embodying the features of the present invention will be had without a more detailed description.

While I have shown my invention in the particular embodiment described, it will be understood that I do not limit myself to this exact construction as I may employ equivalents known to

the art at the time of the filing of this application without departing from the scope of the appended claims.

Having thus described the invention what is claimed as new is:

1. A stepladder comprising a top platform, a front step structure secured at its upper end to said platform, an eye bolt depending from said platform, a rear leg structure embodying a hinge rod engaging in the eye of said eye bolt, and a wedge assembly pivoted for horizontal swinging movement to the underside of said platform and embodying a pair of opposed arcuate wedges for wedging engagement between said platform and said hinge rod.

2. A stepladder embodying a top platform, a front step structure, a rear supporting leg structure embodying a hinge rod, an eye member depending from said top platform and through which said hinge rod extends, and a wedge assembly rotatably mounted on the platform at the underside thereof and rotatable on an axis substantially perpendicular to the platform, as and for the purpose specified.

3. A stepladder comprising a front step structure, a rear supporting leg structure, a top platform to which the front step structure is positively secured, interengaging means on the platform and on the rear supporting leg structure connecting the latter with the platform in a manner to permit compound movement of the leg structure relative to the platform, and a wedge assembly pivotally mounted at the underside of the platform for rotation on an axis perpendicular to the platform and cooperating with the connection between the platform and the rear supporting leg structure for supporting the platform substantially level irrespective of the unevenness of the surface upon which the ladder is placed.

4. In a stepladder, a top platform having side cleats adjacent opposite ends thereof, a front step structure having side rails positively secured to said cleats, an eye bolt depending from the platform intermediate said cleats, said cleats adjacent the rear ends thereof being provided with slots inclined at an angle to the perpendicular, rear supporting legs, a hinge rod connecting the upper ends of said legs and trained through the eye of said bolt and through said slots, and a wedge assembly pivotally mounted at the underside of the platform and rotatable relative thereto on an axis substantially perpendicular to the platform for engagement with said hinge rod and serving to act as an evener for the ladder.

5. In a stepladder, a top platform having side cleats adjacent opposite ends thereof, a front step structure having side rails positively secured to said cleats, an eye bolt depending from the platform intermediate said cleats, said cleats adjacent the rear ends thereof being provided with slots inclined at an angle to the perpendicular, rear supporting legs, a hinge rod connecting the upper ends of said legs and trained through the eye of said bolt and through said slots, and a wedge assembly at the underside of the platform and embodying a pair of opposed arcuate wedges, a spacer bar connecting said wedges together and provided intermediate its ends with a hub, and a pivot bolt for said wedge assembly depending from said platform, the hub of said wedge assembly being mounted on said pivot bolt for supporting the wedge assembly thereon to turn in a substantially horizontal plane about said bolt as an axis for engagement of the wedges between said platform and hinge rod.

EDWARD R. NOWICK.