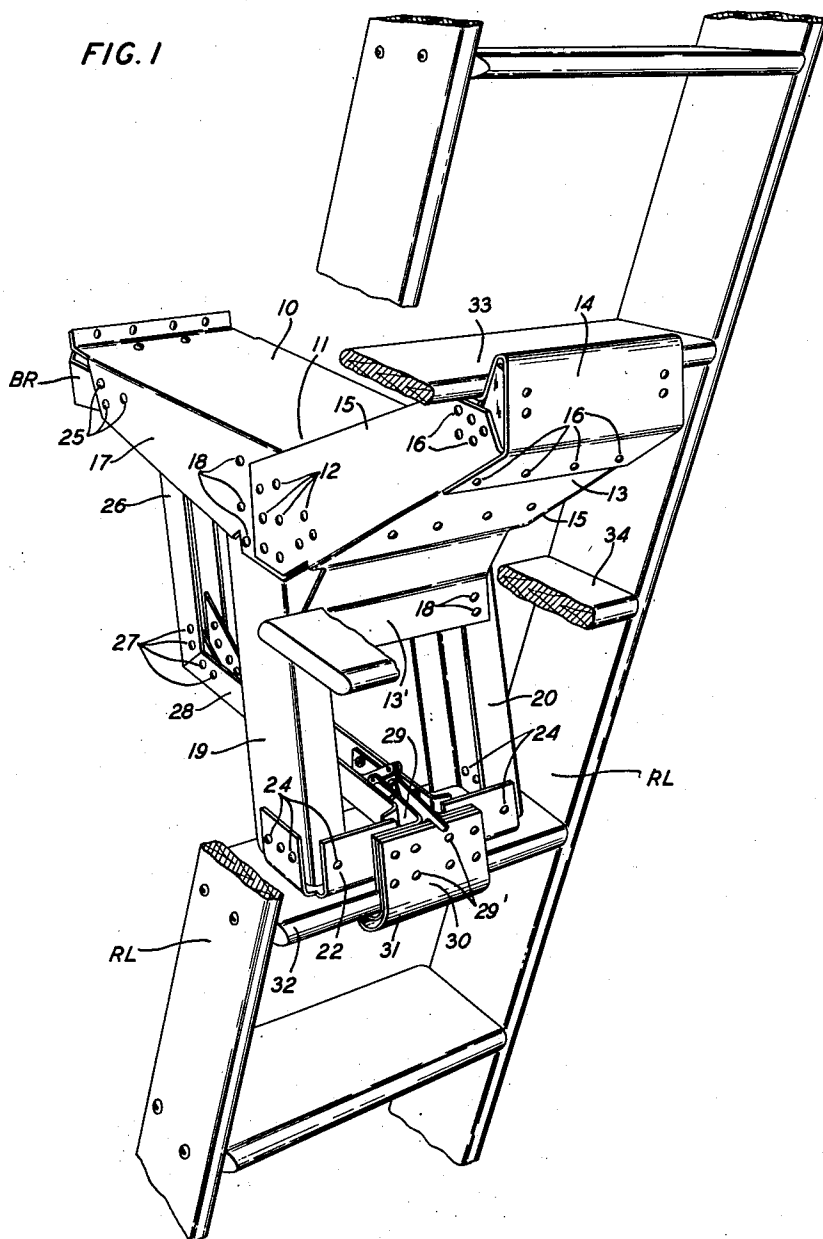


Filed Nov. 12, 1953

LADDER SEATS

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Dec. 31, 1957

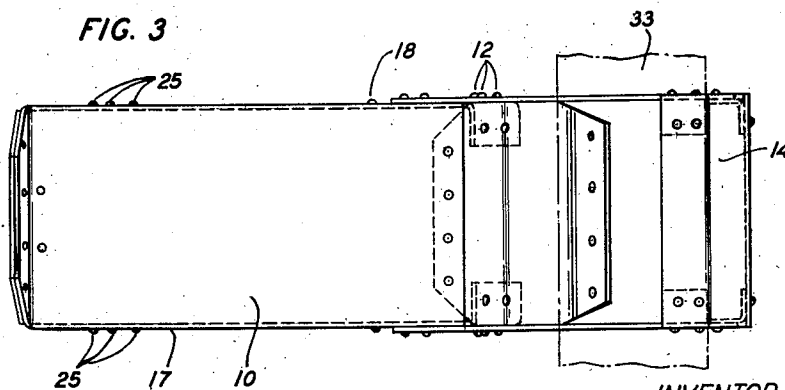
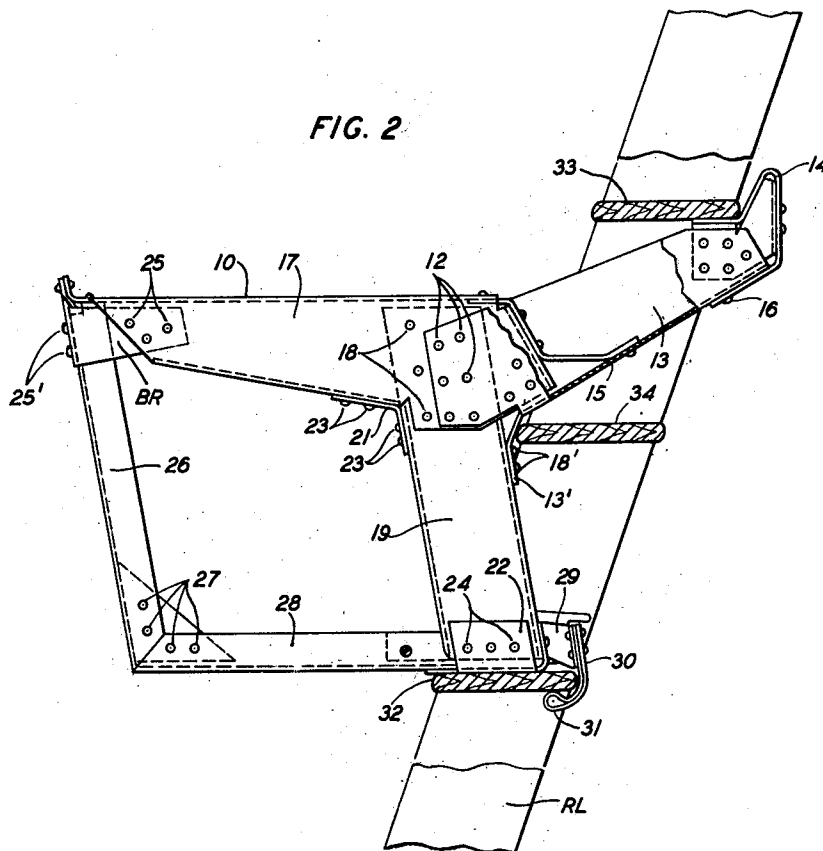
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LADDER SEATS

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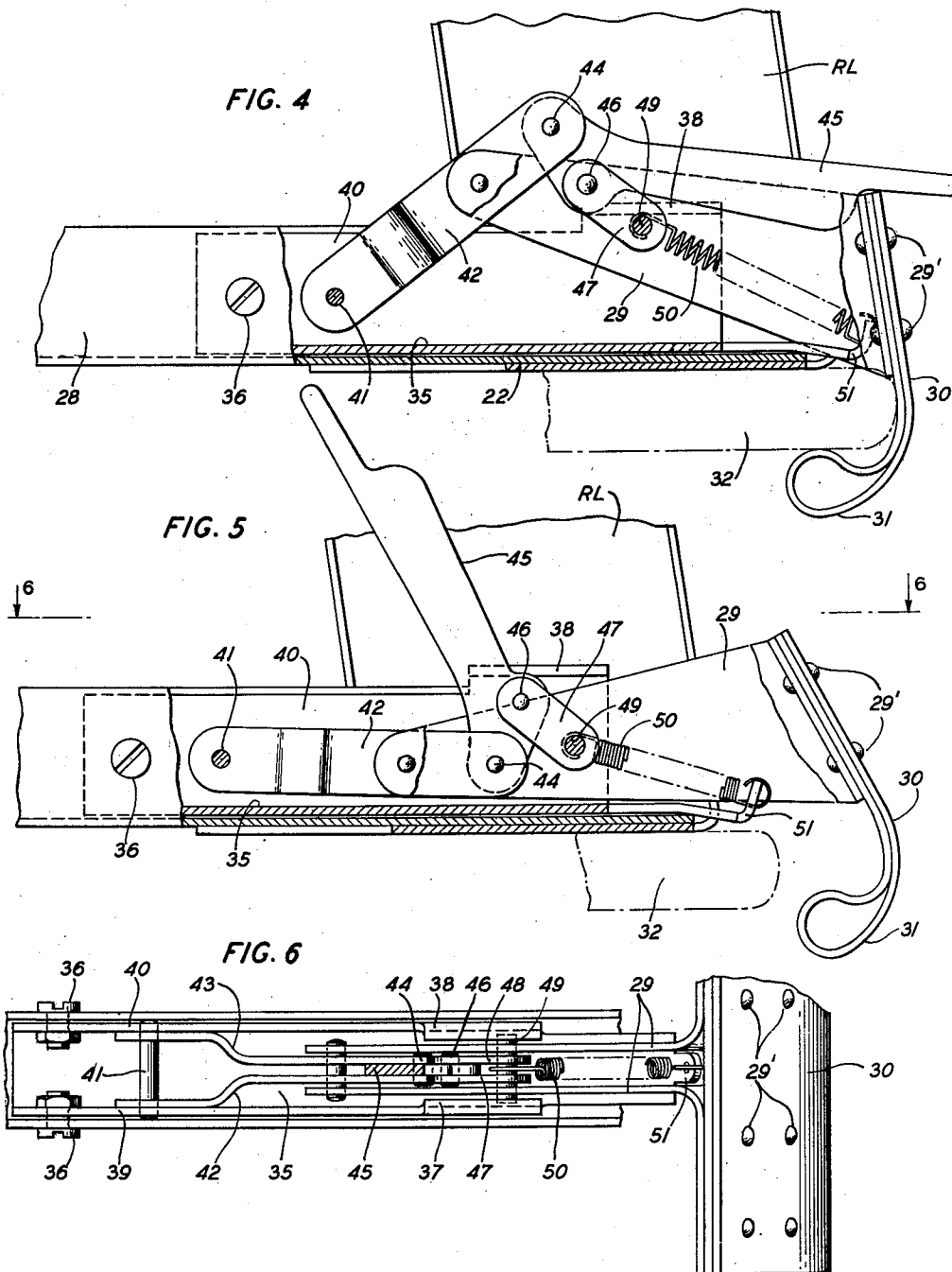
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LADDER SEATS

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LADDER SEATS

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4 Claims. (Cl. 304—31.5)

This invention relates to ladder seats and more particularly to seats for rolling ladders wherein the steps are substantially flat in configuration.

An object of the present invention is to provide a light, strong ladder seat which may be readily attached to and detached from ladders wherein the steps comprise substantially flat surfaces.

Another object of the invention is the provision of a ladder seat which, when in position on the ladder, is positively locked against displacement.

A further object of the invention is the provision of a ladder seat which comprises a single unitary structure fabricated from a strong, light metal and which affords a comfortable seat for the occupant.

A still further object of the invention is the provision of a ladder seat wherein the load distribution is such that the weight of the occupant is borne by the second lower step thereby reducing the strain on the ladder to a minimum.

In the preferred form of my invention, which is preferably fabricated from strong, light metal, for example magnesium, I provide a channel or box-like seat portion of a size suitable to accommodate the average workman. This seat portion is substantially flat, extends outwardly from the ladder, to which it is secured, and is level. The inner end of the seat portion has secured thereto an upwardly extending box-like member, the free end of which is adapted to engage the under side and rear edge of a ladder step to secure it against movement when the seat is locked in place.

Secured to the free end of the seat and to the body portion thereof are downwardly extending supporting members or legs which are suitably braced to provide strength and to provide a comfortable foot rest for the occupant of the seat. Positioned between the rear legs and mounted in the channel, which forms the foot rest, is a latch mechanism which extends rearwardly and has portions thereof adapted to engage the rear edge of a lower step when the cross brace on the rear legs is in engagement with the upper surface of the lower step. The latch in its operative position securely clamps the seat between two steps. Due to the novel structure involved, a compartment for tools is provided in the upwardly extending portion of the seat.

The features of my invention will be more clearly understood from the following detailed description when read with the drawings of which:

Fig. 1 is a fragmentary perspective view of the ladder seat of this invention in position on a ladder;

Fig. 2 is a side elevational view, partly in section of the structure shown in Fig. 1;

Fig. 3 is a top plan view;

Fig. 4 is an enlarged elevational view of the latch mechanism in its locked position;

Fig. 5 is a view similar to Fig. 4 but shows the latch in its unlocked position; and

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Fig. 6 is a top plan view of the latch shown in Figs. 4 and 5.

As shown in the drawings heretofore referred to, and with particular reference to Figs. 1, 2 and 3 inclusive, the ladder seat of this invention is fabricated from a strong, light metal, for example magnesium, and comprises a seat member 10, which is box-like in configuration and of sufficient width and length to comfortably accommodate an occupant. Secured to the end 11 of the seat 10, by means of rivets 12 and projecting upwardly at an angle with respect to the seat 10, is a channel or box-like member 13, which serves as a receptacle for tools and the like. The free end of the member 13 is provided with an upturned lip 14, formed from a strip of metal bent back upon itself and secured to the side portions 15 of the member 13 by the rivets 16, and to the bottom thereof by rivets 16'.

Secured to the side portions 17 of the seat 10, by means of the rivets 18, and to the apron-like portion 13' of the member 13 by the rivets 18', are the downwardly extending legs 19 and 20. The legs 19 and 20 are of channel-like cross section and are provided with suitable cross braces 21 and 22. These cross braces are secured to the legs 19 and 20 by rivets 23 and 24 and are located one at the free ends of the legs and one adjacent to the underside of the seat 10.

As shown more in detail in Fig. 2, there is secured to the free end of the seat 10, by means of the rivets 25, a bracket BR which has secured thereto by the rivets 25', a downwardly extending leg 26. The leg 26 has a channel-like cross section and has secured to the free end thereof, by suitable rivets 27, a rearwardly extending channel member 28, the free end of which is secured to the upper face of the lower brace 22.

Positioned in the channel member 28 is a latch or locking device which comprises a pair of spaced apart slidable members 29—29 which have secured to their free ends by the rivets 29', a substantially vertically extending plate member 30. The member 30 is provided at its lower edge with a rolled over portion 31 to provide a transversely extending lip which firmly engages the underside of the step 32 when the latch mechanism is in its locked position.

As will hereinafter be described in detail, the plate 30, which engages the rear edge of the lower step 32, cooperates when actuated, with the lip 14 on the member 13 to firmly clamp the seat 10 to the lower step 32, thereby locking the seat in a wedged position between the steps 32 and 33 and against the intermediate step 34, which are secured to the side rails RL—RL in the well-known manner.

The latch mechanism, as shown in Figs. 4, 5 and 6, heretofore referred to, is mounted in the channel 28 adjacent the step 32 and is in operable engagement therewith. This latch comprises a short section of channel which is secured in position in the channel member 28 by means of the bolts 36—36 and is provided on its opposite end with aligned intumed flanges 37 and 38. Pivotaly mounted between the parallel walls 39 and 40 and the channel 35, adjacent the bolts 36 by means of the pin 41, are the longitudinally extending arms 42 and 43, the free ends of which have pivotally mounted therebetween, by means of the pin 44, an operating lever or arm 45. Pivotaly secured to the end of the lever arm 45 adjacent the pivot pin 44, by means of the pin 46, are the link members 47 and 48. These link members are connected at their free ends with a transversely extending pin 49, the ends of which extend beyond the faces of the link members and are adapted to engage the underside of the flanges 37 and 38 on the channel 35, when the latch is in its locked position as shown in Fig. 4.

A biasing spring 50 is secured to the pin 49 and to an upturned ear 51 on the member 35 to provide a toggle action between the linkage.

Pivotaly mounted on the arms 42 and 43, a short distance from the lever arm pivot pin 44, are the longitudinally extending slidable members 29—29 which as heretofore described, have secured at their free ends, by means of the rivets 29', the vertically extending plate 30. The sliding action of the members 29—29 operable by the linkage heretofore described, causes the vertical plate 30 to engage and disengage the rear edge of the step 32 as shown in Figs. 4 and 5.

As shown in Fig. 4, the latch is in its locked position with the rolled over edge portion 31 of the plate 30 in firm engagement with the rear edge of the step 32. This positive locking action is accomplished by the toggle action of the linkage which through the operation of the lever arm to the position as shown in Fig. 4, causes the members 29—29 to slide forwardly and upwardly against the tension of the spring 50 to cause lever arm 45 and its associated parts to travel past dead center, thereby causing the plate 30 to firmly engage and be locked against the rear edge of the step 32.

When it is desired to unlock the latch, to remove the ladder seat, the lever arm 45 is raised upwardly as shown in Fig. 5 thus causing the members 29—29 to slide rearwardly and disengage the plate 30 from the step 32 as shown.

While I have shown and described the preferred embodiment of my invention, it is understood that various changes and modifications may be made therein without departing from the spirit and scope of the invention.

What is claimed is:

1. A seat for ladders having rigid side rails and spaced apart substantially flat treads of rectangular cross section comprising, a forwardly extending seat portion having means on the inner end thereof for engagement with the rear edge and underside of one of said ladder treads, downwardly depending support members on said seat, at the front and rear thereof, said rear supporting members adapted to rest on the next lower tread, a brace member secured to the free ends of said support members, and a lever operated clamping means comprising a rearwardly extending hook member pivotally and slidably mounted on said brace member between said rear support members, said hook member engaging the rear edge of a lower tread for locking said seat in position when said lever is in its forward position and unlocking said seat when said lever is in its rearward position.

2. A seat for ladders having rigid side rails and spaced apart substantially flat treads of rectangular cross section comprising, a forwardly extending seat portion having means on the inner end thereof for engagement with the rear edge and underside of one of said ladder treads, and having a portion thereof in engagement with the next adjacent tread, a pair of downwardly depending spaced apart support members on said seat, at the rear end thereof, adapted to rest on the next lower tread, a stretcher plate secured to the free ends thereof, a single

support member at the front end of said seat, a brace member secured to the free end of said support member and to said stretcher, and a lever operated clamping means comprising a rearwardly extending hook member pivotally and slidably mounted on said brace member between said rear support members, said hook member engaging the rear edge of a lower tread for locking said seat in position when said lever is in its forward position and unlocking said seat when said lever is in its rearward position.

3. A seat for ladders having rigid side rails and spaced apart substantially flat treads of rectangular cross section comprising, a forwardly extending seat portion having means on the inner end thereof for engagement with the rear edge and underside of one of said ladder treads, and having a portion thereof in engagement with the next adjacent tread, downwardly depending support members on said seat at the front and rear thereof, said rear supporting members adapted to rest on the next lower tread, a brace member secured to the free ends of said support members, and a lever operated clamping means comprising a rearwardly extending hook member pivotally and slidably mounted on said brace member between said rear support members, said hook member engaging the rear edge of a lower tread for locking said seat against movement, whereby the rearwardly extending portion of said seat is forced into intimate engagement with the front edge of an intermediate tread located between said upper and lower treads.

4. A seat for ladders having rigid side rails and spaced apart substantially flat treads of rectangular cross section comprising, a forwardly extending seat portion having means on the inner end thereof for engagement with the rear edge and underside of one of said ladder treads, and having a portion thereof in engagement with the next adjacent tread, a pair of downwardly depending spaced apart support members on said seat, at the rear end thereof and adapted to rest on the next lower tread, a stretcher plate secured to the free ends thereof, a single support member at the front end, a brace member secured to the free end of said support member and to said stretcher, and a lever operated clamping means comprising a rearwardly extending hook member pivotally and slidably mounted on said brace member between said rear support members, said hook member engaging the rear edge of a lower tread for locking said seat against movement, whereby the rearwardly extending portion of said seat is forced into intimate engagement with the front edge of an intermediate tread located between said upper and said lower treads.

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