Dec. 15, 1953 A. McILVAINE 2,662,587

CHAIR FOR AERIAL SKI LIFTS

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Fig. 1

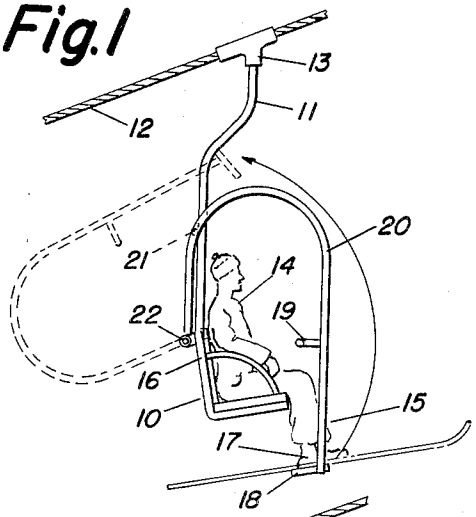


Fig. 2

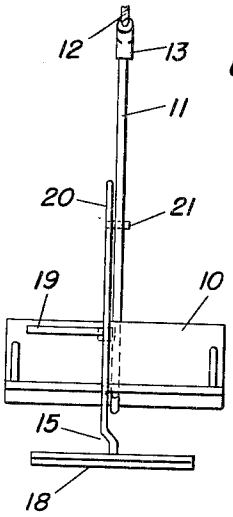


Fig. 3

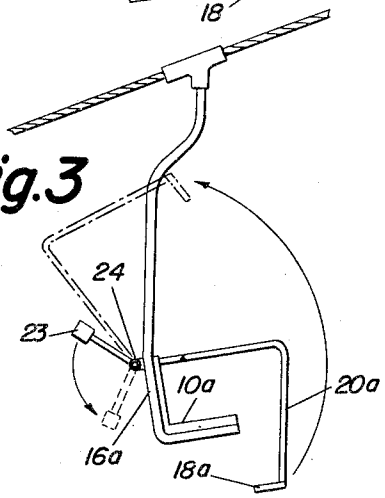


Fig. 4

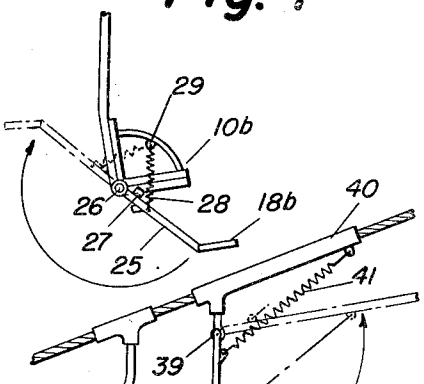


Fig. 5

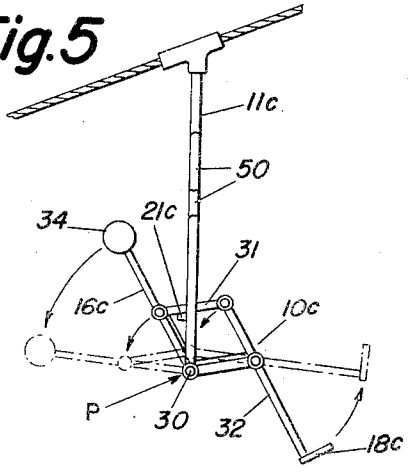
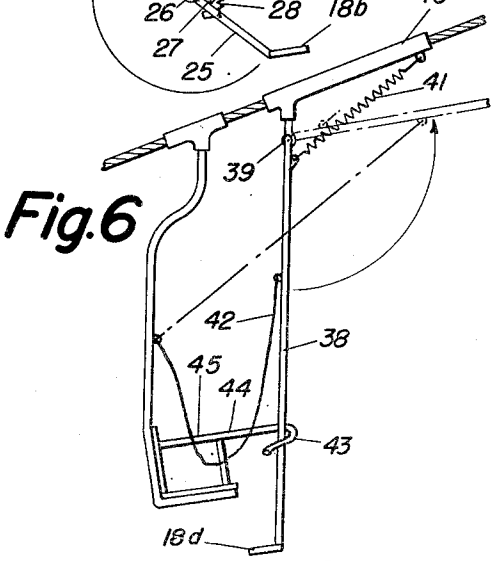


Fig. 6



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CHAIR FOR AERIAL SKI LIFTS

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3 Claims. (Cl. 155—171)

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This invention relates in general to aerial ski chair lifts, and in particular to improvements in the chairs for such lifts.

It is known to employ on aerial ski lifts chairs which are provided with foot-rests. However, heretofore, the foot-rests on such chairs are either fixed in position or they require an attendant to open the foot-rest and bring it into operating position before a passenger can be loaded. When the foot-rest is fixed in position on the chair, it frequently strikes the passenger before or after loading and requires that the lift cable be elevated unduly in order to have the foot-rest clear irregularities in the right-of-way. On the other hand, when the latter type of chair is employed, the passage of the chair around the bull wheel at the top of the lift causes the foot-rest to close by contact with such wheel. In this event, an attendant is required to open the foot-rest after it has passed the bull wheel at the top or bottom of the lift.

It is a general object of the present invention to provide a chair for a ski lift which has a retractable foot-rest.

It is a specific object of the invention to provide a ski lift chair in which the foot-rest is automatically and normally held out of the way for loading of passengers but which can be brought by the passenger into operating position during loading.

Another object is to provide a ski lift chair in which the foot-rest will not extend normally in unloaded state below the level of the chair seat so that it will not injure passengers after or before unloading.

According to the present invention, there is provided in an aerial ski lift, a lift chair having a dependent and movable foot-rest and means to move the foot-rest, preferably automatically, when the chair is unoccupied to a position where it does not extend substantially below the base of the chair seat. In one embodiment the foot-rest is retracted by means of a spring or an elastic member and in a second embodiment it is maintained or retracted in the elevated position by an over-balancing weight. The foot-rest may be attached to the seat or to the lift cable.

For a more complete understanding of the nature and objects of the invention, reference should be had to the accompanying drawings, in which

Fig. 1 is a side elevation of one embodiment of the chair;

Fig. 2 is a front elevation of the chair of Fig. 1;

Fig. 3 is a side elevation of a second embodiment of the chair showing a form which retracts the foot-rest by counter-weight;

Fig. 4 is a side elevation of a third embodiment of the chair showing the foot-rest swinging upward behind the chair by spring action;

Fig. 5 is a side elevation of a fourth embodiment which retracts by flattening;

Fig. 6 is a side elevation of a fifth embodiment in which the foot-rest is affixed to the ski lift cable.

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It should be noted that all of the embodiments shown in Figs. 1, 2 and 5 show the foot-rest mounted on a dependent lever which is drawn upward by an overbalancing weight and in Figs. 1, 4 and 6 the foot-rest is spring-loaded. The essential features of the invention can be illustrated by reference to the embodiment of Figs. 1 and 2, in which the chair 10 as of metal is fixed to a hanger rod 11 by welding, which rod is fastened to the lift cable 12 by means of a fastening 13 of conventional design. The hanger is preferably curved as shown so that the center of gravity of the chair when loaded with a passenger 14 is below the clamp 13. The foot-rest 15 is attached to the end of a dependent lever 20 which, in this embodiment, is curved in inverted U form to arch over the passenger and is pivotally attached to a member fixed with respect on the hanger rod directly to the chair, preferably behind the back 16 at the pivot point 22. The curved lever is also preferably provided with a handle or control bar 19 disposed in a horizontal plane so that it is positioned within reach of the seated passenger. The foot-rest is preferably a platform 18 sloping upwardly toward the front so that when the feet 17 of the passenger rest upon the foot-rest, the skis slope upward at the front ends thereof so that they do not tend to catch in underbrush or become lodged in the snow beneath the chair. In the front elevation, it is clear that the lever 20 is positioned in the center of the chair and that the platform 18 projects from it on each side to provide foot-rests for two passengers. It is to be understood that two identical levers can be used, instead of one, each mounted at or adjacent the sides of the chair. The lever 20 is provided, preferably with a projection 21 which serves as a stop when it contacts the hanger 11. If desired, this stop can be slidably mounted on the lever and fixed in a desired position by a set-screw.

The normal operating position of the foot-rest of the chair of Fig. 1 is shown in solid lines, and when the passenger desires to alight, the control bar 19 is pushed upward and backward until the

foot-rest 18 comes to rest on the hanger 11. When the curved lever 20 is in the position shown in broken lines, the foot-rest is completely out of the way of the passenger and remains in this position due to the fact that the center of gravity lies on the left side of the pivot 22. When the chair passes around the bull wheel of the cable, it does not cause the foot-rest to alter its position. When the chair reaches a loading station on the up-grade side, the passenger gets into the chair and then reaches over-head and pulls the foot-rest 18 downward by first grasping it and then grasping the control bar 19.

Fig. 3 illustrates another embodiment in which a counter-weight 23 is used to retract the foot-rest 18*a* mounted on the other end of a lever 20*a* which also serves as an arm rest. The lever 20*a* is pivoted at 24 on the side edge of the back 16*a*. In this embodiment the feet 17 of the passenger maintain the foot-rest 18*a* in the normal position shown in solid lines, but when the feet are removed as when the passenger alights, the weight 23 swings downward causing the foot-rest to be elevated to the position shown in broken lines, its backward movement being arrested by stop 21*b*.

While in Figs. 1 and 2 the foot-rest is retracted by passing upward in front of the passenger, the embodiment of Fig. 4 provides means for swinging the foot-rest upward behind the passenger. The foot-rest 18*b* is mounted on a lever 25 pivoted at the point 26 on the side of the chair 10*b* and having a stop 27 projecting toward the center of the chair. A spring 28 has one end attached to the lever 25 at a point between the pivot 26 and the foot-rest 18*b* and the other end attached at a point 29 on the chair, the point 29 being above the point 26. To retract the foot-rest the passenger pushes the lever backward and under the chair, thus stretching the spring 25 and causing the lever to come to rest in the position behind the chair as shown in the broken line, in which position it is maintained by the spring 28. When the lever is to be brought into operating position, the passenger gets into the chair and with one hand swings the lever under the chair to the normal position shown in solid lines. Instead of the spring 25, any elastic band may be used in the same position as the spring 28.

In Fig. 5 there is shown another embodiment utilizing a counterbalance to retract the foot-rest. In this type, the entire chair 10*c* is pivotally mounted inside the arms 50 of a forked hanger 11*c* having a cross-bar 30 on which the seat is fastened as by welding. The pivotal point P is so positioned that the chair has a normal tendency to tilt backward to the position shown in broken lines. In this type the chair back 16*c*, arm rest 31, leg 32 and foot-rest 18*c* are hinged together. The weight 34 causes the chair to flatten when it is not occupied. When the passenger desires to occupy the chair, it is pulled downward by means of the foot-rest until the stop 21*c* strikes the hanger 11*c*, and when occupied it remains in upright position, as shown.

In that embodiment shown in Fig. 6, the foot-rest 18*d* is attached to the free end of a lever 38,

the upper end of which is pivoted at 39 to a cable clamp 40 and normally held in retracted position by the spring 41 extending from the lever 38 to the clamp 40. A cord 42 has one end attached to the lever 38 and the other end fixed to the chair or hanger at a convenient point so that the occupant can pull the lever downward and fix the lever 38 in the hook 43 which is mounted on an extension 44 of a chair arm 45. In this case the arm 45 is positioned in the center of the chair seat and the foot-rest platform 18*d* extends on both sides of the lever 38 to provide foot-rests for two passengers.

It is characteristic of all embodiments of the chair of the invention that when the ski chair is not occupied the foot-rest retracts to a position not lower than the chair seat and, in the preferred embodiment, to an over-head position. Thus, the foot-rest does not get in the way of passengers alighting nor does it create a hazard for persons over whom the ski chairs may pass.

I claim:

1. An aerial ski lift including a chair having a seat and a back rest, an arm pivotally connected to a member fixed relative to the chair and said arm extending downward below the seat but movable forward and upward above the seat, a foot rest carried by said arm, and means connected to said arm for moving it about its pivot to raise the foot rest forward and upward above the seat whereby clearance below the seat is increased and users may have free access to the seat while wearing skis.

2. An aerial ski lift including a chair having a seat and a back rest, an arm pivotally connected to the chair adjacent the back rest and extending forward and downward below the seat but movable forward and upward above the seat, a foot rest carried by said arm, and means connected to said arm for moving it about its pivot to raise the foot rest forward and upward above the seat whereby clearance below the seat is increased and users may have free access to the seat while wearing skis.

3. An aerial ski lift including a chair having a seat and a back rest, an arm pivotally connected to a member fixed relative to the chair and extending forward and downward below the seat when in an active position but movable to a raised inactive position, a foot rest carried by said arm, and spring means connected to said arm and to said member fixed with respect to said chair for holding said arm and foot rest in said raised inactive position.

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