

[54] **SKI TRAM LOADING SYSTEM AND CARRIERS THEREFOR**

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[22] Filed: **Apr. 19, 1971**

[21] Appl. No.: **135,242**

[52] U.S. Cl. **104/173; 104/173; 104/180**

[51] Int. Cl. **B61b 11/00**

[58] Field of Search 104/173, 180, 173 ST

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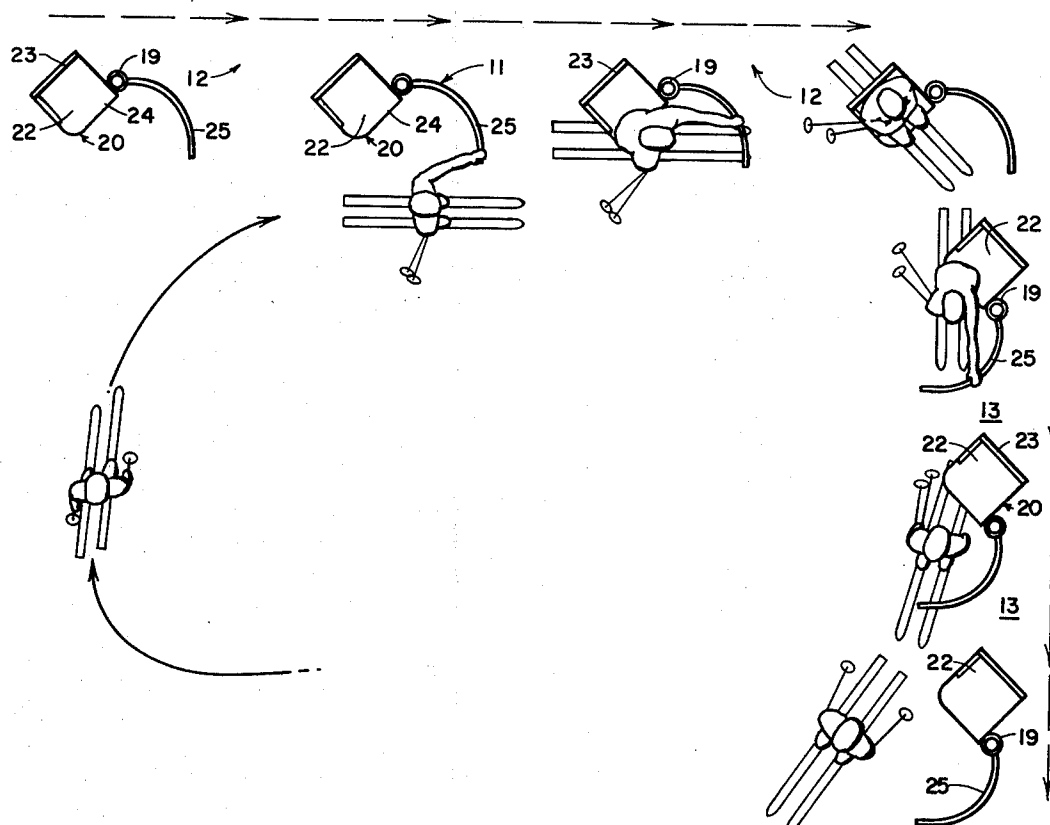
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Primary Examiner—Drayton E. Hoffman

[57] **ABSTRACT**

A system for loading moving skiers upon carriers of a moving overhead tram. A tram's provided with a loading course having adjacent skier supportative surface on at least one side sloping inwardly toward the tram so that a skier may ski downwardly to the tram loading area to be loaded on a tram carrier during motion. Particular carriers are provided to facilitate initial grasping and allow later positioning of the skier for transport. Plural species of carriers allowing this function are specified.

8 Claims, 10 Drawing Figures



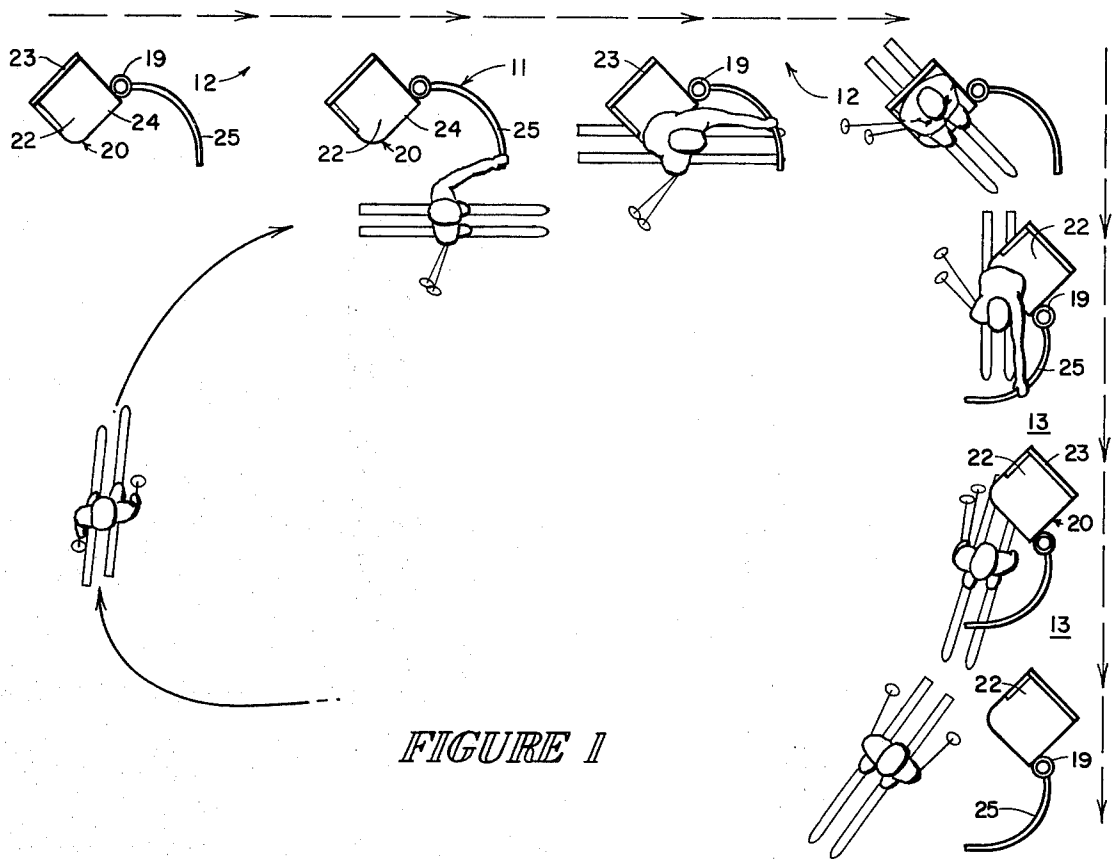


FIGURE 1

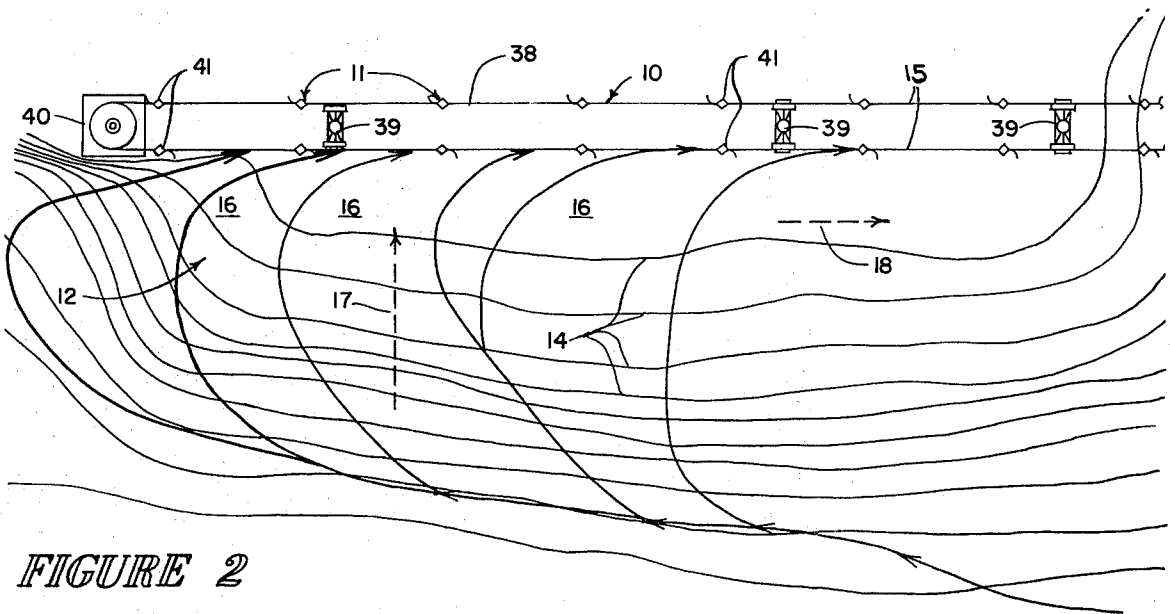


FIGURE 2

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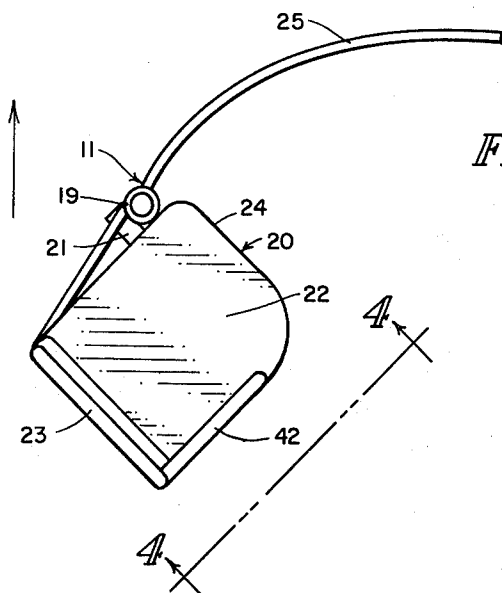


FIGURE 3

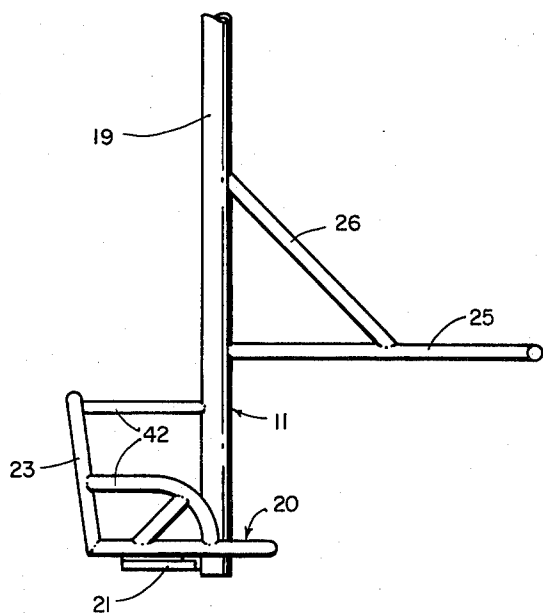


FIGURE 4

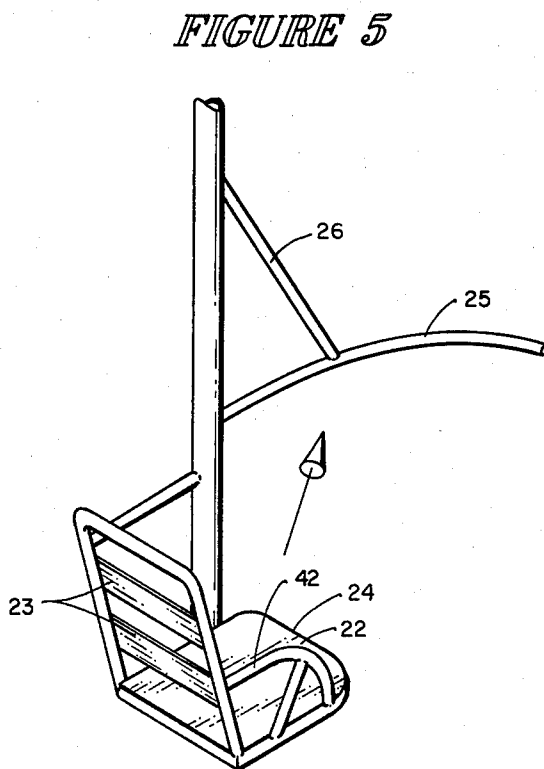


FIGURE 5

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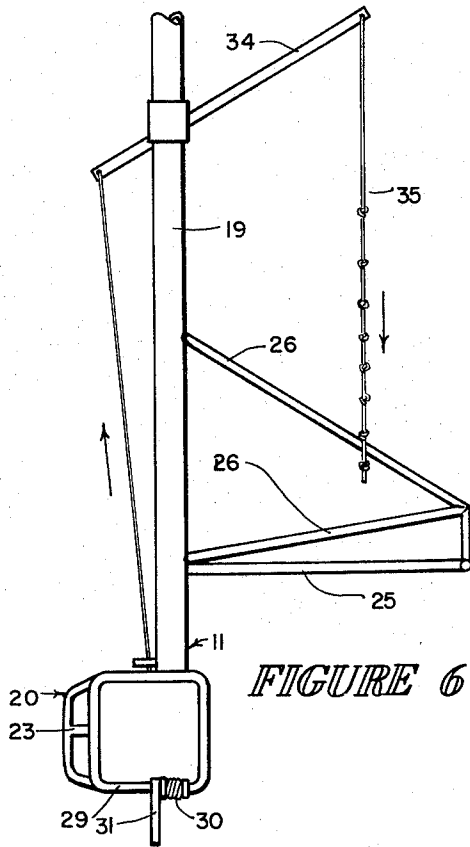


FIGURE 6

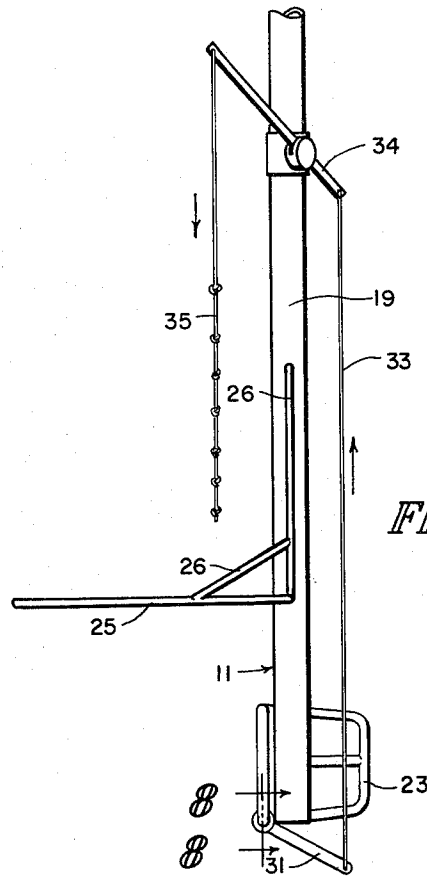


FIGURE 7

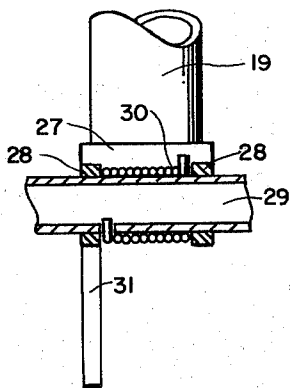


FIGURE 8

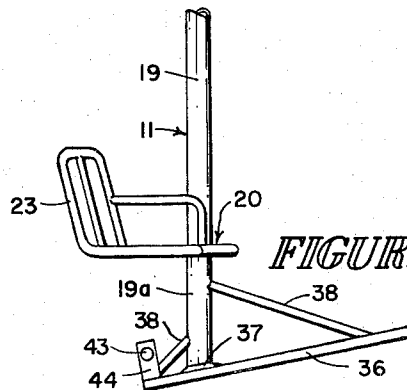
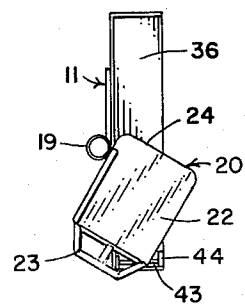


FIGURE 9

FIGURE 10



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SKI TRAM LOADING SYSTEM AND CARRIERS THEREFOR

BACKGROUND OF INVENTION

Related Applications

There are no application related hereto now filed in this or any foreign country.

Field of Invention

This invention relates generally to the loading of overhead, endless cable-type ski trams having fixed carriers and more particularly to such a system that has associated facilities to allow loading during motion of both skier and carrier.

Description of Prior Art

The overhead tram providing an endless cable transiting about a course defined by plural sheaves supported above the earth by plural spaced towers to move carriers of some sort for passenger transport has become increasingly popular in the transporting of skiers. Although some trams have provided carriers releasably attachable to the transiting cable to allow passenger loading while the carrier is at rest, these devices are quite complex and have not come into general use. The most popular type of such tram provides a chair-type carrier, with or without cover, suspended by rigid linkage from a fixed mechanical connection with the overhead cable. Since it is not feasible to stop the overhead cable motion to allow stationary loading of the carriers by reason of the inertia forces and time factors involved, the carriers are loaded during motion. Normally the carriers are spaced at sufficient distance on the cable to allow users to position themselves with appropriate stance in the line of carrier transit and seat themselves on the carrier when it arrives at the position of the stationary user.

This method of loading has not been without its problems, however. With the method a relatively slow cable speed is required to allow sufficient time for successive users to get into position to be seated, to avoid injury when the moving carrier contacts the stationary user, and to maintain appropriate spacing between successive loading operations. The effect of low cable speed, long carrier spacing and successive loading cumulatively necessitate a fairly low uphill capacity for such trams. Similarly during the loading operation there normally is created upon the carrier a force other than vertical so that a pendulum motion of one sort or another is initiated in the carrier which may be of sufficient magnitude to cause problems per se or may be enhanced by other external forces during operation to cause carriers to strike supporting towers or force the transit cable from its support. The existing loading system also is rather physically abusive to the users as the initial contact between carrier and user is of some impact and the boarding of the carrier requires some experience, skill and dexterity.

Heretofore various systems to improve this loading operation have become known. This prior art may be conveniently divided for discussion into a first class embodying carriers that may be detached from the transiting cable and a second class embodying those that are rigidly fixed to the cable.

Devices of the first class are readily distinguishable from the second in that they of necessity require some relatively complex, releasable-type of mechanical link-

age between carrier and transiting cable. This requirement offers many problems of cost, reliability, and even operability, especially in the adverse physical environs within which the trams must operate. Because of this, carriers of the first class have not become popular in ski trams.

Devices of the second class have in general provided some type of support for the potential passenger which may be mechanically moved to bring the passenger to the carrier at the loading point, preferably with a then existing motion of the passenger somewhat similar in magnitude and direction to that of the carrier. Two such devices that have accomplished this purpose have been belts supporting skiers moving substantially perpendicularly to the course of ski tram motion and turntable devices appropriately timed to present a skier supported thereon to a carrier at the loading point. The known devices of this class have in general used a chair or carrier that is adapted to be entered from the front to by reason of their structure necessarily require some difference between carrier and passenger motion to accomplish loading.

My invention differs from this art by providing appropriately formed topography or other artificial supportative surface adjacent the loading area to allow a skier to move upon his skies downwardly to and along the course of the carrier travel for loading during skier motion. I provide a particular carrier with means for manual manipulation to aid the user in making initial contact and a seat angled to tram motion and configured to allow simple and easy side entry. Species of carrier are disclosed which allow the user to be seated directly or allow him to support himself on his skies on a platform with or without seating. The system may be used with existing trams without extensive alterations. It provides a loading system with the economic advantages of simultaneous loading of carriers, closer allowable spacing of carriers, possible higher velocity of cable motion and potentially simple, safe operation.

SUMMARY OF INVENTION

My invention provides a method of loading ski tram carriers while both carrier and skier are in motion, with particular carrier structure and particularly configured adjacent areas to aid the operation.

My invention is adapted to operate with the ordinary overhead tram having an endless cable supported on plural sheaves carried by spaced towers along a continuous lineal course. At spaced points along the course of the tram, normally at its terminals, loading and unloading areas are provided, with tram carriers at these points maintained in a substantially straight course and vertically positioned to allow ingress and egress of potential passengers. The supportative surface surrounding the loading area is configured to a compound slope with at least a downward gradient toward the loading area and preferably but not necessarily a downward gradient forwardly along it — in the same direction as the course of tram travel. The slope is such as to allow a skier moving downwardly in a curvilinear course along the area adjacent the tram to attain a speed and travel direction substantially equal to that of the tram at the tram loading line. Similarly the unloading area is designed with a level or slightly downward slope away from the unloading course so that a skier leaving a tram carrier may move laterally at a small angle away from the carrier's course of travel with a speed approxi-

mately equal to that of the carrier. Trams embodying my invention may operate at greater speed and with carriers more closely spaced than they normally are at present.

My invention further provides a carrier adapted to initial manual grasping and subsequent establishment of a passenger thereon for carriage. The carrier is suspended in traditional fashion from a fixed position on the transit cable with a rigid depending arm supporting the passenger carrying structure. One particular carrier provides a seat fixedly mounted on the supporting arm at an angle of approximately 45° to the line of transit of the carrier so as to allow easy entry from the side. An arcuate grasping bar extends forward and laterally outward from the chair to allow initial grasping by the user and aid him in his entry into the chair. Another form of carrier provides a pivotably mounted chair normally biased to an upward position but movable by the user to a downward position for use after the user has properly positioned himself relative the carrier.

A lower platform of some areal extent may depend below the front of the seat, with either type chair, to aid entry by allowing the skier to place first one ski on the platform and then the other during the seating operation so that he is first partially supported by the platform and thereafter completely supported by it prior to the time he is seated in the chair.

In providing such a structure it is:

A principal object of my invention to provide a loading system for an endless cable overhead tram having fixedly positioned carriers with a particularly conformed surface adjacent the conformed loading and unloading course to allow a skier to ski to or from these areas and enter or leave tram carriers while both skier and carrier are in motion.

A further object of my invention to provide such a loading system that allows simultaneous loading of carriers, closer spacing of carriers and possible higher cable speed than the existing systems.

A further object of my invention to provide a carrier for such a tram system with mechanical means to aid the user in grasping the carrier during the loading operation and one that may be entered by a potential user from a lateral or partially lateral direction to further aid loading and unloading.

A still further object of my invention to provide such a device that is of new and novel design, of rugged and durable nature, of simple and economic manufacture, and otherwise well adapted to the uses and purposes for which it is intended.

Other and further objects of my invention will appear from the following specification and accompanying drawings which form a part of this application. In carrying out the objects of my invention, however, it is to be understood that its essential features are susceptible of change in design and structural arrangement with only one preferred and practical embodiment being illustrated in the accompanying drawings as required.

BRIEF DESCRIPTION OF DRAWINGS

In the accompanying drawings which form a part of this specification and wherein like numbers of reference refer to similar parts throughout:

FIG. 1 is a semi-diagrammatic plan view of a tram and its environs showing a skier's motion during approach, entry, carriage and egress from a tram carrier embodying my invention.

FIG. 2 is a similar, somewhat smaller scale diagram showing topographic contour lines of an approach area with possible skier's approach courses indicated in arrowed lines.

FIG. 3 is a plan view of a fixedly positioned, laterally angled species of chair-type carrier for my invention.

FIG. 4 is an orthographic side view of the device of FIG. 3, taken on the projection plane trace 4—4 of FIG. 3 in the direction indicated by the arrows thereon.

FIG. 5 is an isometric view of the chair-type carrier of FIG. 3 showing more particularly the grasping bar structure and its relationship to the chair.

FIG. 6 is an orthographic side view of a pivotable seat-type carrier for my invention.

FIG. 7 is a similar orthographic side view of the same device as FIG. 6, but taken from a different angle.

FIG. 8 is an enlarged orthographic view through pivotable chair mounting structure of the device of FIG. 7, taken on the line 8—8 in the direction indicated by the arrows thereon.

FIG. 9 is an orthographic side view of a chair-type carrier having a depending ski platform therebelow.

FIG. 10 is an orthographic top plan view of the device of FIG. 9 showing further details from this aspect.

DESCRIPTION OF PREFERRED EMBODIMENT

Referring now to the drawings in more detail it will be seen that my invention generally comprises overhead, endless cable tram 10 having plural spaced depending carriers 11 transiting a course between loading-unloading areas 12.

Overhead tram 10 is in its essence of the ordinary variety of commerce and well known in the ski-tram art. It provides endless overhead cable 38 transiting about a course defined by plural sheaves carried on plural spaced towers 39 with associated driving mechanism 40 to move the endless cable continuously about its course. Generally the cable extends in linear, adjacent, parallel courses between a lower loading area and an upper unloading area to transport skiers for their skiing activities. Attached to the endless cable are plural carriers 41 each providing a depending carrier arm supporting in its lower part some type of passenger carrying structure at a spaced distance above the earth, the distance being regulated to allow loading and unloading but yet avoid topography, associated structures and materials or herbage. Such trams in general are well known in the prior art and constitute no part of my invention per se, though the invention is a necessary adjunct to and unified with such tram structure. Because of the prior knowledge of tram structure, it is illustrated only diagrammatically and not in any extended detail.

A typical loading area 12 is illustrated in FIG. 2, where each of the lines 14 are contours of points of equal elevation. The diagram might illustrate either a loading or unloading area as the two are essentially similar with the downward gradient in the first instance toward the tram loading course and in the latter instance away from it. The area illustrated is for loading, with the contour lines decreasing in elevation as the tram is approached.

With existing tram construction, generally outgoing and return cable courses 15 are substantially parallel in spaced adjacency, at least in the loading and unloading areas. With this type of tram, the loading and unloading operations are most conveniently carried out from only one side of the tram. The laterally adjacent topography

about loading area 16 is configured to a continuous sloping curved surface as illustrated in FIG. 2. The slope is gradually downward toward the loading area 17 with contour lines substantially parallel to the course of tram travel, and preferably but not necessarily with some slight compound curvature providing a lesser slope component 18 substantially parallel to the course of tram travel and in the direction of the travel. The gradient 18 parallel to the course of tram travel may be increased in some instances if desired, as at the terminal end of the loading area of FIG. 2, to become more dominant or in fact nearly exclusive. The loading area may be formed by appropriately configuring the surface of the earth or by using auxiliary structures supported on the earth. Auxiliary structures (not shown) might be formed with earth or snow fill or with more sophisticated elements of wood, metal or the like, according to the known practice of the structural arts.

The amount or degree of slope gradient in either direction is not critical and may vary in individual instances with differing conditions. In general the slope should be such as to allow the average class of skiers under ordinary conditions to move downwardly over the contoured loading area slope and in so doing reach a velocity substantially equal in amount and direction to that of a carrier at the time the carrier is reached. The skier velocity obviously depends upon many variables such as ski-type snow conditions, skier weight and the like which may not be completely pre-determinable and may not be completely controlled by pre-determination of the sloping loading surface, but in general if the surface has an areal extent of a few hundred feet perpendicular to and along the tram loading area and a drop in elevation from its lateral limit to the tram of some 10 to 20 feet, the average skier, with little experience, can regulate his course of travel to meet a pre-determined moving carrier at substantially the carrier's direction and velocity of travel. It is to be noted that with this type of loading procedure and loading area more than one skier may engage in the loading process at the same time to allow closer spacing of carriers on the traction cable and a higher cable speed.

The unloading area is of substantially the same nature as the loading area but with contours of the same general pattern having a gradient of slope perpendicular to but away from the course of tram travel to allow a user to leave a tram carrier and ski downwardly away therefrom. The unloading area again should provide a sloped surface of some several hundred feet in dimension both perpendicular to and along the carrier course of travel with some suitable resting area adjacent thereto, to adequately provide for skier transit. This type of unloading facility is known and used with chair-type ski trams of present day commerce.

Particular carriers 11 for use with my invention are illustrated in FIGS. 3 et seq. Although the traditional front loading, seat-type carrier might be used with my loading system it is not particularly convenient or desirable and may be used only with substantial inconvenience to the user. With a lateral approach of the potential user to the tram it is much more convenient to provide some type of carrier that may be entered from the side or from a sidewise direction. It is also most convenient to provide some means to aid initial grasping of a carrier by a potential user as he approaches the carrier. Two species of such a laterally loading seat-type carrier are illustrated.

The carrier in either form provides elongate carrier arm 19, depending from a carrier fastener (not shown) mechanically carried by the endless transit cable, supporting in its lower portion some type of passenger carrier 20. The carrier arm quite commonly is offset to maintain its loading center of gravity substantially vertically below the supporting cable. Both carrier arms and cable fasteners of various sorts that will fulfill the purposes of my invention are well known in the tram arts.

In the form of passenger carrier illustrated in FIGS. 3, 4 and 5, horizontal seat element 20 of appropriate configuration to hold a skier, structurally communicates with back element 23 and by bracket 21 with the lowermost portion of carrier arm 19 to comfortably support a potential user in seated position. The seat element is positioned upon carrier arm 19 so that its forward edge 24 is at an angle of approximately 45° facing laterally outwardly to the course of travel of the carrier along the tram. This angling together with the shortened arm-rest 42 on the outwardly facing or approach side, allows easy entry from the side.

I provide at a comfortably spaced distance above seat 22, grab-bar 25 comprising an arcuate tubular element, the inner end part of which is physically attached to carrier arm 19. Its structure is strengthened by angled brace 26 extending between the medial part of the grab-bar and the carrier arm above the point of grab-bar attachment. The configuration and spacing of the grab-bar should be such as to allow easy entry and exit of a skier between grab-bar and seat and the seating of the user behind the grab-bar. Normally this requires that it be spaced about 20 inches above the level of the seat. It should extend in, preferably arcuate fashion, forwardly and toward the entry side of the seat, substantially as illustrated through its exact configuration is not critical. The form of seat illustrated in FIG. 6, et seq., is pivotable upon its support to maintain the upper surface of the seat free from debris, especially snow, when not in use. This seat is oriented so that the user sitting in it faces the direction of travel. Bracket 27 by which it is supported upon carrier arm 19 provides a biased, pivotable type linkage, in this instance hasp 28 mounting 29 with rotary spring 30 therebetween to bias the seat to an upward position. Pivot arm 31 irrotatably communicates with axle 29 and cord 33 extends from communication with the outer end of the pivot arm to one end of lever 34, pivotably carried by the upper, medial part of carrier arm 19. The opposite end of lever 34 carries depending knotted rope 35 to allow a user to grasp the rope and move it downwardly to cause the seat of this form of my invention to move downwardly against its normal bias into horizontal seating position. This species of my invention again may have the upwardly spaced, forwardly extending grab-bar previously described, as all elements are appropriately sized and configured so as not to interfere with each other or the user during operation. The grab-bar illustrated is not so arcuate, however, as that illustrated in the species of FIGS. 3, 4 and 5.

In the form of invention illustrated in FIGS. 9 and 10, the lowermost portion 19a of the carrier arm extends below its communication with seat element 20 to support, at a spaced distance below the seat, standing platform 36. The standing platform is a planar element of some areal extent structurally communicating with the lowermost portion of carrier arm 19 by interposed

bracket 37. Additional braces 38 may be employed, if necessary, to create appropriate strength and rigidity. A heel arrestor, providing rod 43 positioned immediately below the seat and at a spaced distance above the standing platform is supported by at least one bracket 44 carried by the standing platform to aid a skier in maintaining his skis in proper position on the platform by allowing their rearward part to project rearwardly in the space between rod 43 and the standing platform. The standing platform should be of such configuration and areal extent to allow a skier to stand thereupon, with one or both skis in proper position on his feet to support him and aid in gaining entry to a carrier seat. This type of carrier may be used with the species of seat disclosed or preferably with a simple folding seat (not shown). In fact, it might be used to transport skiers without any seat (in which case a safety belt would be desirable), the skier merely supporting himself upon the platform and holding onto the elongate carrier arm or grab-bar structure, if used.

With my loading process and structures, the course of tram transit must obviously be controlled in the vertical aspect to maintain carriers at appropriate spaced distance above the skier supporting surface for loading and unloading, but yet avoid earth supported obstacles during transit. This requirement is common to existing trams, however, and may be dealt with as it normally is in the existing arts.

Having thusly described the structure of my invention, its use may now be understood:

Firstly a ski tram of the ordinary variety specified, providing an overhead cable with depending passenger carriers of one of the species described, is provided. A linear loading course is provided along the tram such that when the snow surface is established upon the underlying support carriers will be at appropriate height above the snow surface for loading. The ultimate supportative snow surface in the loading area is contoured as described to provide a substantially continuous curved surface sloping principally downwardly toward and preferably somewhat along the tram loading course. A skier seeking entry to the tram carriers enters the loading slope and moves upon his skis downwardly toward the tram in an appropriate course, roughly calculated to bring him to a particular pre-determined carrier in the loading area with motion having approximately the same magnitude and direction as that of the carrier.

As the skier approaches the carrier, he grasps some part of it, preferably the grab-bar if used, and allows the carrier motion to move him along with the carrier as he boards it.

With a chair-type carrier specified, the skier, after grasping the carrier, moves his body in such fashion as to become seated in the chair. This manipulation is accomplished with relatively little training and skill, in a fashion similar to that used in the present day stationary loading, only with less impact and less difficulty.

Simultaneous or near-simultaneous loading at several locations along the loading area eliminates the loading-rate bottleneck to uphill capacity which is characteristic of current ski trams, which load sets of two skiers sequentially at rates typically 10 seconds per set.

If the particular chair is one providing a standing platform, the skier upon approaching the carrier places the first ski, that on the side facing the carrier, upon the platform and while so doing maintains his balance by

moving the other ski upon the supportative surface beneath and adjacent. After this is accomplished, support is shifted to the first ski and the second ski is then placed upon the platform. The skier now is completely supported and carried by the carrier, and during this standing carriage he may conveniently be seated in a seat-type support.

With my loading system it is to be particularly noted that more than one skier may be engaged in the loading process at the same time in different zones of the loading area. It is further to be noted that carriers may be spaced more closely than in the conventional stationary passenger loading type of tram and the traction cable speed may be increased, all to give a loading rate more compatible with the potential uphill capacity of a tram.

It is further to be noted that the features of my invention may be added to existing tram structures with a relatively small capital outlay as compared to the initial outlay for the entire tram structure.

It is further to be noted that a grab-bar may or may not be associated with the carrier, though it does aid in the convenience of entry. Similarly the standing platform may be used with or without the grab-bar structure and with or without a seat; if this structure be used alone, a skier may stand upon it and balance himself by manual support on the carrier arm with or without a grab-bar, though preferably with some type of safety belt to aid in maintaining position.

It is further to be noted that if outgoing and return tram courses be separated sufficiently, a tram might be loaded from both sides along the loading course. If this be done, the same type of slope would be established on each side, and if desired double chairs could be used in each carrier, each chair being angled outwardly (away from each other).

The foregoing description of my invention is necessarily of a detailed nature so that a specific embodiment of it might be set forth as required, but it is to be understood that various modifications of detail, rearrangement and multiplication of parts may be resorted to without departing from its spirit, essence or scope.

Having thusly described my invention, what I desire to protect by Letters Patent, and what I claim is:

1. A loading system for ski trams having an overhead traction cable transiting about a course defined by plural sheaves supported upon plural spaced towers, comprising: a linear loading course wherein carriers are supported at boarding elevation a spaced distance above a skier supportative surface therebeneath for a distance sufficient to allow simultaneous, plural loading of skiers; and a loading area having a continuous conformably sloping skier supportative surface on at least one side of the loading course with the surface having a downward slope to the carrier course to allow each of a plurality of skiers to transport himself by skiing on the supporting surface to one of plural, spaced moving passenger carriers and move with the one carrier while entering it simultaneously with other skiers entering other carriers, with depending passenger carriers, comprising, in combination:

a passenger carrier arm fixedly communicating for support with the overhead transit cable and depending therefrom; and

at least one carrier seat to support a passenger fixedly positioned on the lowermost part of the carrier arm and angularly disposed laterally outwardly to the course of passenger carrier travel.

2. The invention of claim 1 having a grab-bar comprising:

an elongate tubular grab-bar structurally communicating with the depending carrier arm at an elevation to allow manual grasping by a skier supported upon a surface beneath the loading course of the tram and extending in a curvilinear course forwardly and laterally to aid in initially grasping the carrier but allow entry of a passenger into the carrier rearwardly of the grab-bar.

3. The invention of claim 1 having:

a standing platform of some areal extent extending horizontally and laterally outwardly from the lowermost portion of the carrier arm at a spaced distance above the skier supportative surface to allow a skier to support his skis thereon when in place on his feet.

4. A loading system for ski trams having an overhead traction cable transiting about a course defined by plural sheaves supported upon plural spaced towers, comprising: a linear loading course wherein carriers are supported at boarding elevation a spaced distance above a skier supportative surface therebeneath for a distance sufficient to allow simultaneous, plural loading of skiers; and a loading area having a continuous conformably sloping skier supportative surface on at least one side of the loading course with the surface having a downward slope to the carrier course to allow each of a plurality of skiers to transport himself by skiing on the supporting surface to one of plural, spaced moving passenger carriers and move with the one carrier while entering it simultaneously with other skiers entering other carriers, with depending passenger carriers, comprising, in combination:

a passenger seat structurally communicating with an axle pivotably supported by the carrier arm and extending perpendicularly thereto;

biasing means maintaining the seat in a normally vertical position; and

manually manipulable rope means mechanically linked to the seat to move it to a horizontal position against its bias upon passenger activation.

5. The invention of claim 4 having a grab-bar comprising:

an elongate tubular grab-bar structurally communicating with the depending carrier arm at an elevation to allow manual grasping by a skier supported upon a surface beneath the loading course of the tram and extending in a curvilinear course forwardly and laterally to aid in initially grasping the carrier but allow entry of a passenger into the carrier rearwardly of the grab-bar.

6. The invention of claim 5 further characterized by: the carrier arm depending a space distance below the carrier seat and mounting in its lowermost portion a substantially horizontally positioned, laterally

outwardly extending standing platform of some areal extent to allow a skier with skis in position on his feet to stand thereon during entry into the carrier.

7. A loading system for ski trams having an overhead traction cable transiting about a course defined by plural sheaves supported upon plural spaced towers, comprising: a linear loading course wherein carriers are supported at boarding elevation a spaced distance above a skier supportative surface therebeneath for a distance sufficient to allow simultaneous, plural loading of skiers; and a loading area having a continuous conformably sloping skier supportative surface on at least one side of the loading course with the surface having a downward slope to the carrier course to allow each of a plurality of skiers to transport himself by skiing on the supporting surface to one of plural, spaced moving passenger carriers and move with the one carrier while entering it simultaneously with other skiers entering other carriers, with depending passenger carriers having a depending carrier arm fixedly communicating with the overhead traction cable, a grab-bar structure comprising, in combination:

an elongate tubular grab-bar structurally communicating with the depending carrier arm at an elevation to allow manual grasping by a skier supported upon a surface beneath the loading course of the tram and extending in a curvilinear course forwardly and laterally to aid in initially grasping the carrier but allow entry of a passenger into the carrier rearwardly of the grab-bar.

8. A loading system for ski trams having an overhead traction cable, transiting about a course defined by plural sheaves supported upon plural spaced towers, with depending passenger carriers comprising:

a linear loading course wherein carriers are supported at boarding elevation a spaced distance above the earth therebeneath with a continuous conformably sloping skier supportative surface, on at least one side of a loading course providing a downward slope to the carrier loading course, over which a skier may ski to intercept a moving passenger carrier;

plural spaced passenger carriers supported by the overhead traction cable including a carrier arm fixedly communicating with the traction cable and depending therefrom to support in the lower medial part a carrier seat angularly disposed laterally outwardly to allow passenger entry from a lateral position; and

an elongate grab-bar structurally communicating with the depending carrier arm a spaced distance above the carrier seat with a laterally curving configuration to allow lateral entry of a potential passenger into the seat.

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