

[54] **SKILIFT POLE DISTRIBUTOR**

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 43/61, 76, 99; 49/25, 28, 31, 68; 119/159

[56] **References Cited**

UNITED STATES PATENTS

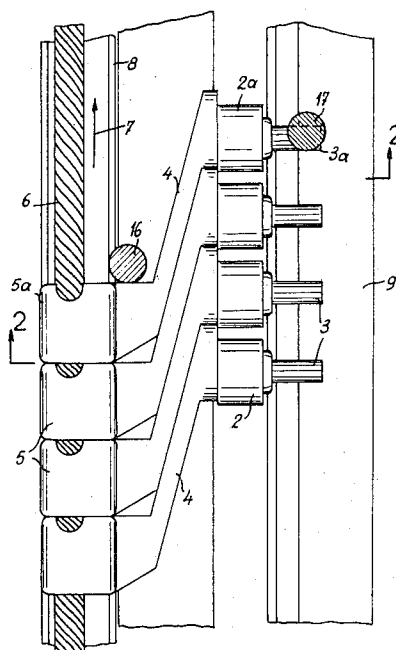
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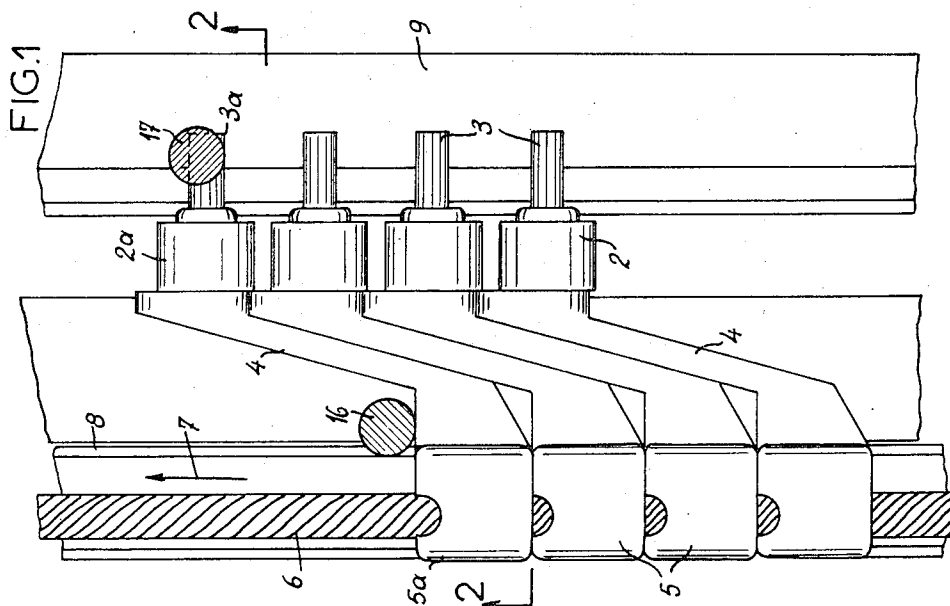
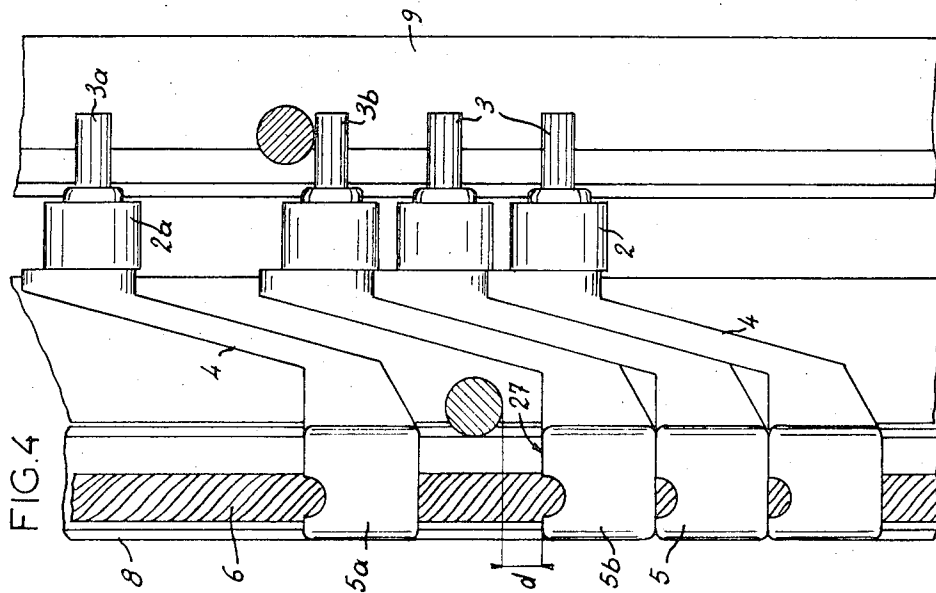
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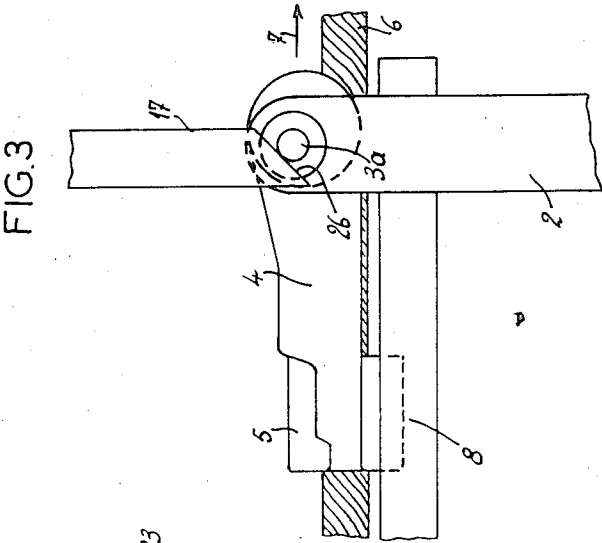
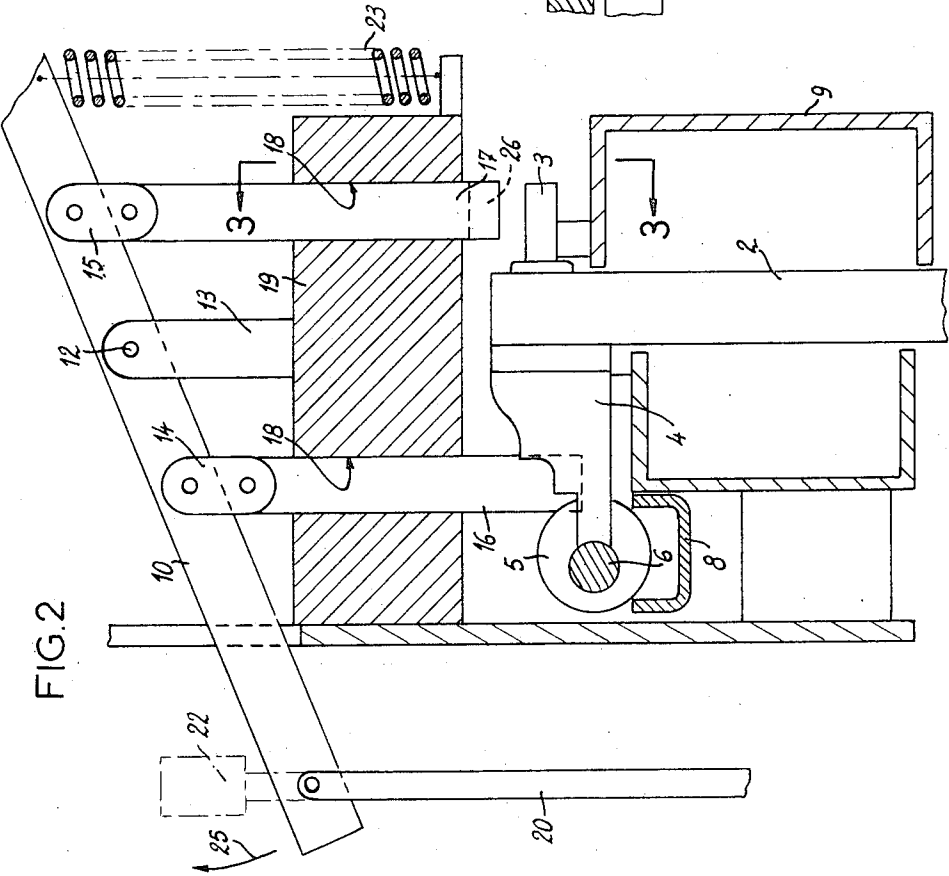
[57] **ABSTRACT**

In this improved skilift pole distributor a lever is pivoted about a horizontal fixed fulcrum in a support overlying the path followed by the sockets and studs provided at the upper end of each pole for wedging the traction rope in the socket, the stud projecting radially from said socket, the lever is connected through links to a pair of vertical stop members disposed on either side of the fulcrum and adapted one to engage said socket and the other said stud, the other stop member comprises at its lower end a bevelled face adapted to engage the stud of the first waiting pole at the starting station of the skilift where the waiting poles are accumulated. The arrangement is such that any undue wedging of sockets by the first stop member is safely prevented to provide a reliable, trouble-free operation of the pole distributor.

3 Claims, 4 Drawing Figures







SKILIFT POLE DISTRIBUTOR

FIELD OF THE INVENTION

The present invention relates to skilifts of the type wherein each pole has its upper end pivoted to a stud projecting radially from an anchoring body or side arm rigid with a socket secured by wedging to the traction rope or cable.

DESCRIPTION OF THE PRIOR ART

At the starting station of each skilift system the poles from the upper station are detached from the rope and after a 180-degree rotation about the return pulley of this rope they accumulate successively on a slideway and behind a retractable stop member, until they are picked up separately.

Conventionally, each pole is anchored to the rope by causing a socket rigid with each pole to pivot in a vertical plane and thus cause the rope to be wedged by the rear lower edge and front upper edge, respectively, of the bore formed in said socket.

In most skilift systems, when the poles are in their waiting position some selecting means must be provided to permit the release of each pole separately so that they can be brought to the starting point where the corresponding socket is wedged to the rope.

As a rule this selector comprises two-way stop members or double-bevel bolts and extends across the path of the pole-supporting studs, which are positively spaced from one another. This arrangement, while simplifying the construction of the starting station, is attended by a major inconvenience. In fact, when a stud is caused to abut against the selector device it is strongly deflected in a lateral and forward direction in relation to the socket rigid therewith, thus imparting to this socket a torque tending to improve the wedging thereof with respect to the rope. Even if this torque is not sufficient for actually wedging the rope and thus interlocking the two elements, it nevertheless accentuates the attrition between the ends of the corresponding edges of the socket bore and the rope, thus increasing the thrust force of the first sockets, as well as the wear and tear of their rope contacting portions.

To avoid this inconvenience a prior French Pat. application No. 69 06 949 filed on Mar. 18th 1969 by the same Applicant and concerning a "Process and device for stopping and releasing one by one skilift poles at the starting station" discloses a method consisting in forming a radial notch in the front end of the socket supporting the anchoring body of each pole and using this notch for engaging a catch or pin adapted to retain the socket of the next pole of the stacking while another catch or pin releases the first pole.

In actual operation, however, the results obtained with this method are not as fully satisfactory as one might reasonably expect, due to variations in the socket dimensions. In fact, on account of variations in the socket length, the sockets are either not properly retained by the first pin or, in contrast thereto, retained unduly since in certain cases the first pin is wedged in the socket formed in the socket, thus disturbing the operation of the skilift system.

SUMMARY OF THE INVENTION

It is therefore the essential object of the present invention to provide in a skilift system of the type dis-

closed hereinabove, a pole distributor eliminating completely these various inconveniences.

The improved skilift pole distributor according to this invention is characterized in that it comprises a lever pivoted about a horizontal fulcrum, to a support overlying the path followed by the sockets and studs, first and second stop members disposed vertically and attached to said lever on either side of its fulcrum, return means such as a spring normally urging said lever to a so-called inoperative position in which the lower end of the first stop member lies in the path of the sockets and prevents the release of the first waiting pole while the second stop member overlies the stud of the first pole, and control means adapted to cause said lever to pivot to a distributing position so that on the one hand said second stop member moves into the path of said studs for preventing any movement thereof while ejecting laterally the stud of said first pole and, on the other hand, said first stop member rises to a position well above the path of said sockets while being spaced laterally from the striker face of the socket associated with the next pole.

Thus, when said control means are not operated, the second stop member is retracted while the first stop member moves into the path of said socket. Due to the distance between the first stop member and the socket of the first waiting pole, an amply sufficient time is allowed for this first stop member to return to its inoperative position before the socket engages said first stop member. As a result, the operation of the system cannot be disturbed by possible dimensional variations in the sockets.

Moreover, although the second stop member bears against the studs, this bearing engagement is only temporary and does not exceed the time necessary for selecting the first pole. Thus, the torque applied to the socket lasts only a very short time not sufficient for increasing the natural wear and tear of the socket bore portions kept in frictional contact with the rope.

In a preferred embodiment of this invention said second stop member comprises at its lower end a bevelled face inclined downwards and backwards in relation to the direction of travel of the studs, and adapted to engage the stud of the first pole.

When this inclined face engages the stud of the first waiting pole during the downward movement of the second stop member it tends, of course, to eject the stud in the direction of travel of the sockets.

BRIEF DESCRIPTION OF THE DRAWING

This invention will be better understood from the following description given with reference to the accompanying drawing illustrating diagrammatically by way of example a typical embodiment of this invention. In the drawing :

FIG. 1 is a plan view from above partly in section showing more particularly the positions of the stop members in relation to the socket and stud of the first pole, when the device is in its inoperative position ;

FIG. 2 is a section taken along line 2—2 in FIG. 1 ;

FIG. 3 is a fragmentary section taken along the line 3—3 in FIG. 2, showing more particularly the second stop member during its downward movement to its selection position; and

FIG. 4 is a plan view from above partly in section showing the positions of the stop members when the

device is in its selection position and has just released a pole.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Conventionally, each skilift pole comprises a rod carrying at its lower end a saddle and having its upper end connected through a traction spring to a coupling lever 2. This coupling lever is pivoted to a stud 3 projecting laterally from a coupling body 4 secured laterally to a socket 5. This socket is a two-section cylindrical structure formed with a bore through which a traction rope or cable 6 is caused to pass, this rope 6 being pulled in the direction of the arrow 7 of FIGS. 1 and 3.

At the starting station, the sockets 5 released from rope 6 travel along a slideway 8 and are thus fed to the distributor, the successive sockets 5 accumulating on said slideway. The latter is slightly inclined in the forward direction and secured to one section member 9 of the frame structure of the starting station.

The distributor according to this invention comprises a lever 10 pivotably connected to a substantially horizontal pin 12 carried by a support 13 rigid with said section member 9. Said lever 10 is coupled through links 14, 15 to a first stop member 16 and to a second stop member 17. These stop members 16, 17 are disposed on either side of said pivot pin 12 in a substantially vertical position and guided during their vertical movements by bores 18 formed in a member 19 to which said support 13 is secured, as shown.

The end of lever 10 which corresponds to the lever arm associated with the first stop member 16, is connected to suitable control means consisting either of a handlever 20 or of an electromagnet 22 energized automatically by the passage of a skier. The opposite end of lever 10 is connected to a return means consisting of a coil compression spring 23 constantly urging said end to the position illustrated in FIG. 2, i.e. the inoperative position of lever 10.

As illustrated in FIGS. 1 and 2, when this lever 10 is in its inoperative position, the first stop member 16 lies in the path of the sockets 5 of the waiting poles and prevents the movement of the socket associated with the first pole from travelling on the slideway 8. In this case the other or second stop member 17 is positioned above the path followed by the studs 3 of said waiting poles, i.e. above the stud 3a of the first waiting pole.

When lever 10 is actuated either by handlever 20 or electromagnet 22 it pivots in the direction of the arrow 25 about its fulcrum 12. During this pivotal movement, the stop member 17 is lowered so that its lower end intersects the path of studs 3. At the same time, the first stop member 16 is raised, thus moving its lower end away from the path of sockets 5.

As shown in FIG. 3, during the downward movement of the second stop member 17 the lower end thereof, formed with a bevelled face 26 inclined as shown in FIG. 3, engages the stud 3a of the first waiting pole. Thus, the downward movement of this second stop member has the dual consequence of moving the stud 3a in the direction of the arrow 7 and therefore the socket 5a of the first pole 2a, which is rigid with said stud.

At the end of this selection phase, as shown in FIG. 4, the lower end of the second stop member 17 lies in the path of studs 3 and retains the stud 3b of the next waiting pole. On the other hand, the first stop member

16 lies above the path of sockets 5 and is off-set laterally by a distance d (FIG. 4) in relation to the bearing face 27 of socket 5b of this next waiting pole.

When the lever 10 is restored to its inoperative position, the second stop member 17 is retracted from the path of studs 3 and releases the aforesaid stud 3b while the first stop member 16 intersects the path of the sockets 5, and the distributor is ready for another operation.

By virtue of the above-mentioned distance d an ample time is available for enabling the stop member 16 to move to its locked position before the bearing or striker face 27 of socket 5b engages this stop member. This arrangement will thus safely prevent any undue wedging of sockets 5 by the first stop member 16, and provide a reliable, trouble-free operation of the pole distributor.

Of course, various modifications may be made to the single embodiment of the invention which is shown and described herein, without however departing from the scope thereof as set forth in the appended claims.

What I claim as new is :

1. A skilift of the type comprising a plurality of successive poles each including at the upper end thereof, an anchoring body having a rigid stud laterally projecting on one side of the pole and a rigid socket laterally projecting on the other side of the pole and adapted to be anchored by wedging to a traction rope such that the anchoring body can advance along a path of travel, the stud on each body being spaced forwardly of the socket on the same body, and a pole distributor comprising a lever, a fixed horizontal fulcrum disposed above the path of travel of the sockets and studs, said lever being pivotably connected to said horizontal fulcrum, first and second stop members disposed vertically and attached to said lever on either side of said fulcrum in laterally spaced relation corresponding to the lateral spacing between the sockets and studs, the second stop member being spaced forwardly of the first stop member, return means acting on said lever to urge said lever to an inoperative position in which the lower end of the first stop member lies in the path of the sockets and prevents release of the first waiting pole while the second stop member is above the stud of said first pole, and control means for pivoting said lever to a distributing position in which, on the one hand, said second stop member moves into the path of said studs for preventing any advance thereof while displacing the stud of said first pole forwardly and, on the other hand, said first stop member rises to a position above the path of said sockets, said first stop member being so spaced in the direction of travel of the ski poles with respect to the second stop member such that when the second stop member engages the stud of the next pole, the first stop member is spaced ahead of the socket associated with said next pole, each anchoring body thereby being successively contacted at laterally spaced locations on its stud and socket by said second and first stop members respectively.

2. The device according to claim 1, wherein said second stop member has a lower end with a bevelled face inclined downwards and backwards in relation to the direction of movement of said studs to engage the stud of the first waiting pole and cause advance thereof.

3. The device according to claim 1 comprising links coupling said stop members to said lever.

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