

April 13, 1943.

G. L. KARLSSON

2,316,252

ATTACHMENT FOR SKIS

Filed April 23, 1941

2 Sheets-Sheet 1

Fig. 1.

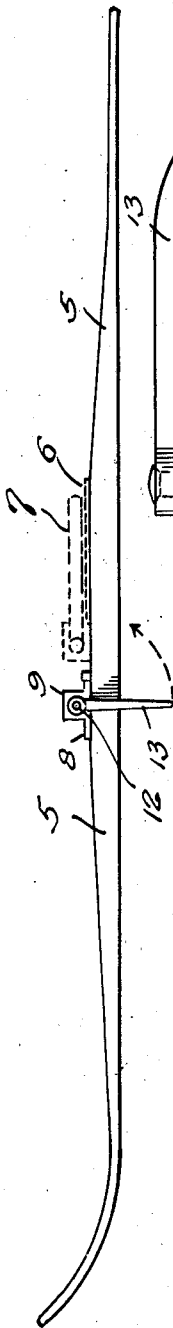


Fig. 2.

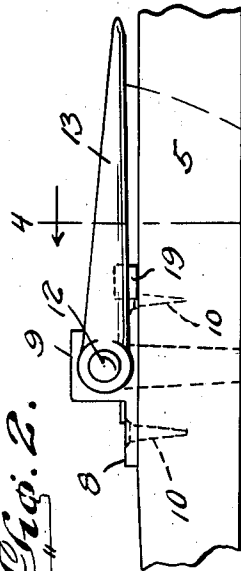
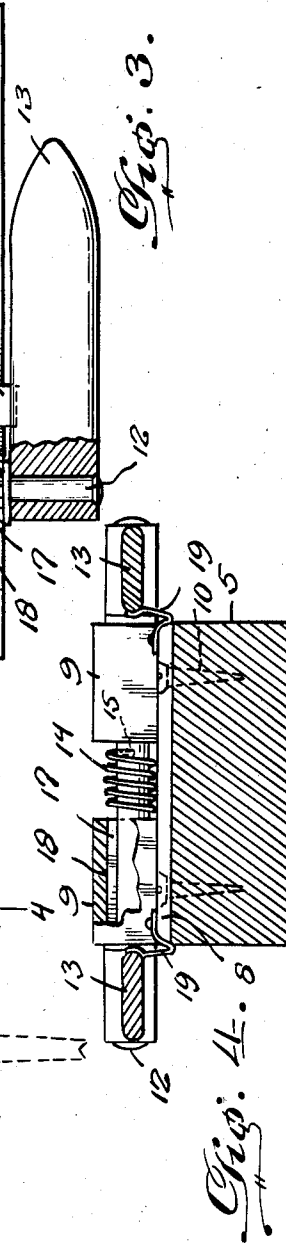


Fig. 3.



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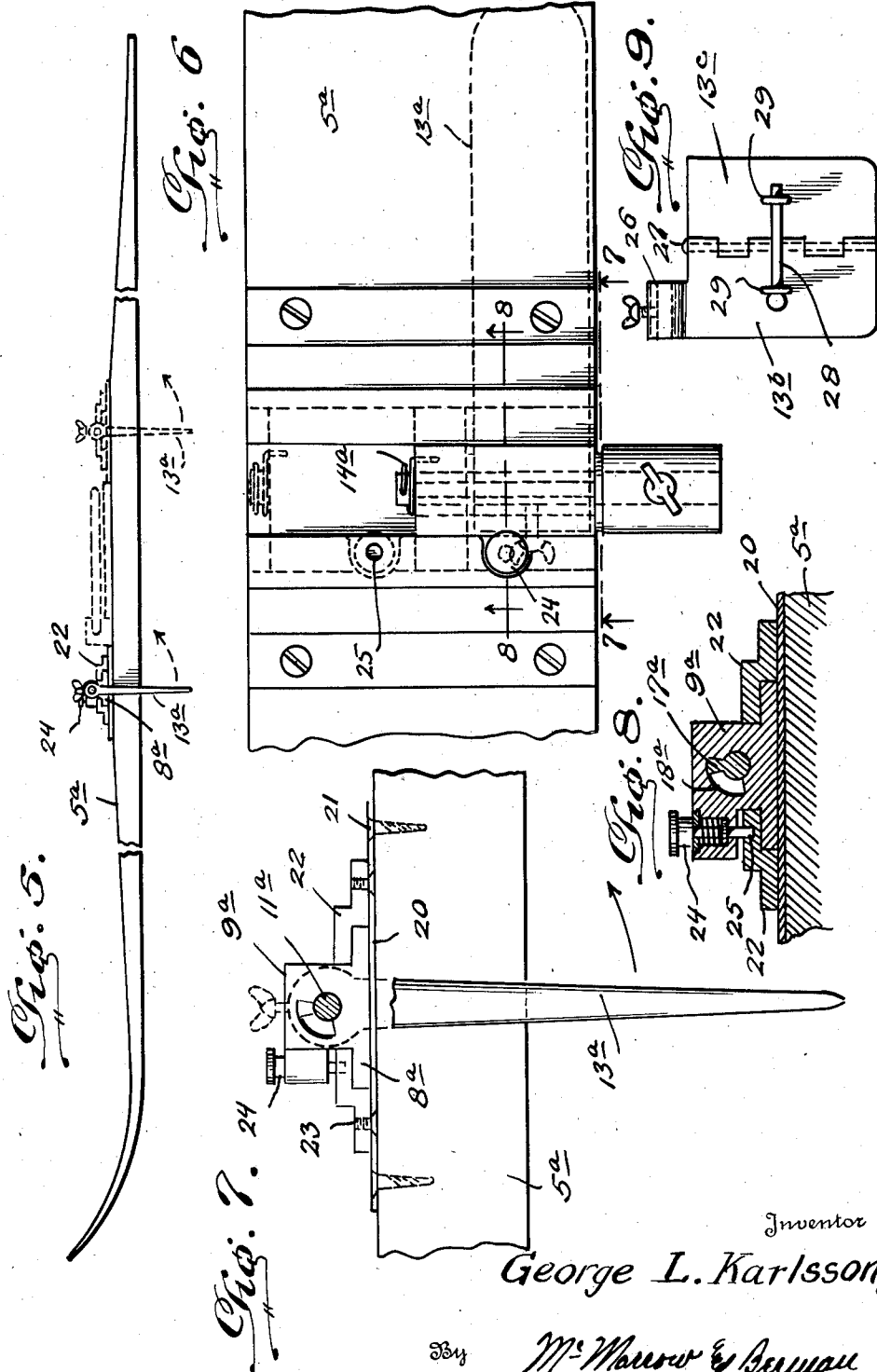
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ATTACHMENT FOR SKIS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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ATTACHMENT FOR SKIS

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2 Claims. (Cl. 280—11.13)

This invention relates to an attachment for skis, by means of which the skier is assisted in climbing a slope by preventing backward movement of the skis.

Generally described my attachment includes a blade, means to mount the blade upon a ski for vertical swinging movement about a horizontal axis disposed transversely of ski, whereby the blade may swing forwardly and downwardly to a vertical position extending downwardly below the undersurface of the ski and projecting into the snow, means to limit the forward and downward swinging movement of the blade to such vertical position whereby the blade is made rigid against backward movement of the ski, yieldable means for swinging the blade forwardly and downwardly to such vertical position so that the blade will not materially interfere with the forward movement of the ski, and means to releasably retain the blade in a rearwardly and upwardly swung substantially horizontal inoperative position.

The primary object of the present invention is to provide a ski attachment of the above character which is extremely simple and durable in construction, highly efficient in operation, and otherwise well adapted to meet with the requirements for a successful commercial use.

Other objects and features of the present invention will become apparent from the following description when considered in connection with the accompanying drawings, and the invention consists in the novel form, combination and arrangement of parts illustrated and described.

In the drawings:

Figure 1 is a side elevational view of a ski provided with an attachment constructed in accordance with the present invention, the blades of the attachment being in its forwardly and downwardly swung vertical operative position.

Figure 2 is an enlarged fragmentary elevation showing the blades of the attachment in raised inoperative position.

Figure 3 is a view of the construction shown in Figure 2, partly in top plan and partly broken away in section.

Figure 4 is a transverse section on line 4—4 of Figure 2.

Figure 5 is a view similar to Figure 1 illustrating a modified form of the invention applied to a ski.

Figure 6 is a fragmentary top plan view of the construction shown in Figure 5, drawn on an enlarged scale.

Figure 7 is a section on line 7—7 of Figure 6.

Figure 8 is a section on line 8—8 of Figure 6; and

Figure 9 is an elevational view of a modified form of blade which may be employed in lieu of the blade shown in Figures 5 to 8 inclusive.

Referring in detail to the drawings, the attachment of Figures 1 to 4 inclusive is applied to a ski 5 having the usual foot rest 6 and foot-securing means 7 indicated by dotted lines. The attachment of this form consists of a base plate 8 having spaced transversely aligned bearings 9 rigidly provided thereon and adapted to be securely fastened upon the upper surface of the ski 5 by means of screws 10 or the like. The base plate 8 extends the full width of the ski and the bearings 9 are positioned at opposite side edges of the ski as shown clearly by Figures 3 and 4. Each bearing 9 has a bore receiving a transverse horizontal shaft 11 so that the latter is rotatably mounted in the bearings 9 with its reduced ends 12 projecting at opposite sides of the ski 5. Suitably secured at corresponding ends on the reduced projecting ends 12 of shaft 11 are blades 13, and encircling the intermediate portion of shaft 11 between the bearings 9 is a helical spring 14, one end of which is attached to shaft 11 as at 15 and the other end of which bears against the base plate 8 as at 16. This spring 14 is comparatively weak as it is only intended to rotate shaft 11 for a short distance so as to position the blades 13 in their forwardly and downwardly swung vertical position as shown in Figure 1, while offering little resistance to rearward and upward swinging movement of said blades to the horizontal inoperative position of Figures 2 and 3. Means is provided for limiting the forward and downward swinging movement of blades 13 to the vertical position of Figure 1, which means consists of a lateral lug or rib 17 on shaft 11 working in an arcuate groove 18 provided in a bearing 9 outwardly of its bore which receives the shaft 11. When the shaft 11 is turned to a position wherein the blades 13 extend downwardly in a vertical position as in Figure 1, the lug or rib 17 engages one side of the groove 18 so as to make the blades rigid against backward movement of the ski. In order to releasably retain the blades 13 in an elevated substantially horizontal inoperative position as in Figures 2 and 3, suitable spring catches 19 are attached to the base plate 8 at opposite sides of the latter in position to engage the adjacent inner edge portions of blades 13. By snapping the blades 13 into engagement with these catches 19, they will be retained in the elevated inoperative position shown in Figures 2 and 3. At the same time, manual force may be applied so as to swing the blades 13 downwardly out of engagement with the catches 19, whereupon springs 14 will swing the blades 13 further forwardly and downwardly to the operative position of Figure 1.

In the embodiment of Figures 5 to 8 inclusive, the transverse horizontal shaft 11a is journaled in a bearing 9a carried by a base plate

8a, the shaft 11a having a radial lug or rib 17a working in an arcuate groove 18a to limit rotation of the shaft 11a and swinging movement of the blade 13a fixed thereon. In this embodiment, the shaft 11a merely extends beyond one side of the ski 5a, and only one blade 13a is used upon the single projecting end of this shaft 11a. A spring 14a is associated with the inner end of the shaft 11a for rotating the latter so as to swing the blade 13a downwardly and forwardly to a vertical operative position as shown in Figure 7. When in this position, the lug or rib 17a engages one side of the groove 18a as in Figure 8 so that the blade 13a is made rigid against backward movement of the ski. The construction in this embodiment provides for mounting the base plate 8a upon the ski 5a for sliding movement transversely of the latter. Accordingly, the base plate 8a is slidably disposed upon a thin metal plate 20 fastened by screws 21 or the like upon the ski 5a and having angular guideways 22 fastened thereon by screws 23 or the like. The guideways 22a receive the opposite edges of base plate 8a so as to slidably guide the latter transversely of the ski. The plate 20 provides a suitable metal bearing surface for the base plate 8a so that its transverse sliding movement is promoted. The purpose of slidably mounting the base plate 8a on the ski is to permit the latter to be moved to a position shown by dotted lines in Figure 6 wherein the blade 13a is disposed above one side of the ski 5a when in rearwardly and upwardly swung horizontally inoperative position. Thus, the blade 13a will engage the upper surface of the ski and will thereby be held in this inoperative position. To release the blade, it is simply necessary to slide the base plate 8a transversely of the ski to a position adjacent one side of the latter so that the blade 13a is positioned beyond the adjacent side edge of the ski. Spring 14a will then swing the blade 13a forwardly and downwardly to its vertical operative position. Means is provided to releasably retain the base plate 8a in either of its two transversely adjusted positions, which means includes a spring-projected bolt 24 carried by the bearing 9a of base plate 8a and adapted to be selectively engaged in either one of two sockets 25 provided in one of the guideways 22. In other words, when the base plate 8a is slid to one side of the ski so as to release the blade 13a and permit it to swing downwardly to vertical operative position, the latch bolt 24 will engage in one socket 25, while when the base plate 8a is slid transversely of the ski to a position near the opposite side of the latter, said latch bolt 24 will engage in the other socket 25 to retain the base plate 8a in the position wherein the blade 13a is maintained in a position over the ski.

It will be understood that the invention is susceptible to many minor changes and modifications. For instance, it is obvious that only one blade need be provided in the form of Figure 1, in which case the shaft 11 will have only one projecting end. In that event, as with the form of attachment shown in Figure 5, it may be found desirable to utilize a blade of variable width. Such a blade is illustrated in Figure 9 including a main section 13b having a top attaching hub 26 to receive the shaft on which the blade is mounted, and a foldable blade section 13c hinged as at 27 to the outer side edge of section 13b. By this construction, the blade may be collapsed by simply folding the section 13c onto the sec-

tion 13b and suitably retaining it in this folded position. On the other hand, the blade may be extended to double width by simply unfolding the blade 13c relative to the section 13b, and then securing the blade section 13c in unfolded position by any suitable means. As shown in Figure 9, this means may include a pin 28 extended through transversely aligned eyes 29 on the blade sections 13b and 13c, said pin 28 being suitably retained in the eyes. It will further be understood that the present attachment may be employed in front of the foot rest and foot-securing means of the ski or both at the front and back thereof, the latter possible position being indicated by dotted lines in Figure 5. This is mere duplication and may be obviously practiced when desired.

In ascending a steep slope, the skier releases the blade or blades so that it or they are swung forwardly and downwardly to a vertical position projecting below the undersurface of the ski. In this position, the blade or blades provide fixed brakes to prevent backward movement of the ski, although readily yieldable rearwardly and upwardly so as to not interfere materially with forward movement of the ski. When the slope has been ascended, and use of the attachment is no longer required, the blade or blades may be swung rearwardly and upwardly to horizontal inoperative position and retained in that position either by engagement with latches 19 or by positioning the blade over the ski as shown by dotted lines in Figure 6.

What I claim as new is:

1. A ski attachment comprising a base plate having a transverse bearing, a shaft journaled in said bearing and having a projecting end, a blade secured on said projecting end of the shaft, a spring for rotating the shaft so as to swing the blade downwardly and forwardly to an operative vertical position, means to limit rotation of said shaft to a position wherein the blade is in its forwardly and downwardly swung operative position, and transverse guideways adapted to be mounted upon a ski, said base plate being slidable in said guideways so as to position the blade over the ski when said blade is swung upwardly and rearwardly to a substantially horizontal inoperative position, whereby said blade may be retained in said inoperative position upon the ski.
2. A ski attachment comprising a base plate having a transverse bearing, a shaft journaled in said bearing and having a projecting end, a blade secured on said projecting end of the shaft, a spring for rotating the shaft so as to swing the blade downwardly and forwardly to an operative vertical position, means to limit rotation of said shaft to a position wherein the blade is in its forwardly and downwardly swung operative position, and transverse guideways mounted upon a ski and provided with spaced keeper sockets, said base plate being slidable in said guideways so as to position the blade over the ski when said blade is swung upwardly and rearwardly to a substantially horizontal inoperative position, whereby said blade may be retained in said inoperative position upon the ski, and releasable spring influenced means carried by said base plate and engageable in either of the keeper sockets for latching the base plate in either of two transversely adjusted positions relative to the guideways so as to position the blade beyond one side of the ski or over the latter.

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