

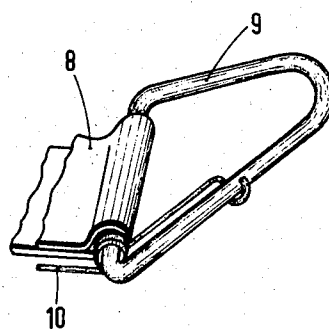
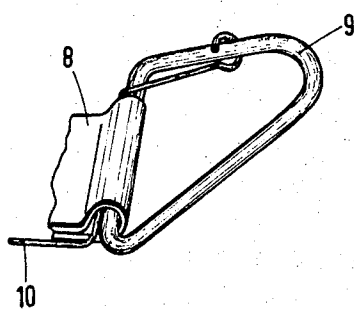
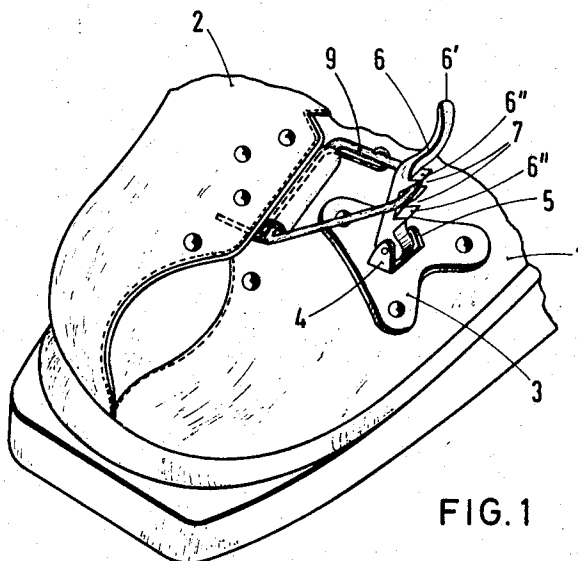
**Nov. 14, 1967**

P. LÖLLMANN

**3,351,985**

# ADJUSTABLE TIGHTENING LOCK FOR SHOES

Filed June 13, 1966



INVENTOR  
Paul Löllmann  
BY *Spencer & Kaye*  
Attorneys

1

3,351,985

**ADJUSTABLE TIGHTENING LOCK FOR SHOES**  
Paul Löllmann, Tuttlingen, Germany, assignor to Rieker  
& Co., Tuttlingen, Germany

Filed June 13, 1966, Ser. No. 557,004

Claims priority, application Germany, Dec. 24, 1965,

R 42,310

3 Claims. (Cl. 24—70)

## ABSTRACT OF THE DISCLOSURE

In an adjustable ski-boot lock containing a pivoted tightening lever having a row of teeth and an eye member adapted to be hooked into any one of the tooth gaps in the tightening lever, a spring is attached to the eye member urging the eye member in the upward direction so that, when the lever is opened, the eye member will slide under the action of the spring from the tooth gap in which it is hooked into the adjacent tooth gap which is more remote from the pivot point of the tightening lever.

The present invention relates to an adjustable tightening lock for shoes and especially ski boots which comprises a tightening lever which is provided with a row of teeth and pivotably secured to one part of the upper of the shoe or boot and an eye member which is secured to another part of the upper and is adapted to be hooked into one or another of the tooth gaps on the tightening lever.

For varying the distance between two different parts of a shoe or boot, for example, for varying the width of the upper, the tightening lever of such a lock is pivoted upwardly from its closed or locking position to such an extent that the eye member which was previously hooked into one tooth gap of the lever may then be shifted to another tooth gap. In tightening locks of the types which were known prior to this invention, this operation had to be carried out by hand. This may sometimes be difficult, especially when the wearer of the shoes has only one free hand which he then needs merely for operating the tightening lever.

It is an objective of the present invention to overcome this disadvantage by providing the tightening lock with a spring which, after the eye member has been hooked into one of the tooth gaps of the released tightening lever, presses this eye member against the lever. This spring may be mounted within the bearing of the eye member. The teeth of the tightening lever between which the connecting eye is hooked are provided on the side of the lever which faces the upper when the lever is closed, and the backs of these teeth are inclined from their base in the direction toward the free end or handle of the lever. If the eye member of the tightening lock is at first hooked, for example, into the lowest tooth gap of the tightening lever so that, when the latter is closed, the two parts of the boot which are held together by the lock will at first be drawn relatively loosely together, and if the wearer of the boots subsequently wishes to draw the two parts more tightly together, he only needs to lift the tightening lever by hand from its closed position. During this lifting movement, the eye member will slide under the action of the spring along the inclined back of the tooth which defines the upper side of this tooth gap until the lever is lifted far enough so that the eye member can slide over the tip of this tooth and snap under the spring action into the next higher tooth gap. When the tightening lever is then closed again, the two parts of the shoe will be more tightly drawn together than previously. If the wearer then finds that the two parts of the boot should be drawn still more

2

tightly together, he only needs to lift the lever again and slightly higher than previously so that the eye member will then slide automatically into the next higher tooth gap. Thus, if a ski boot is provided with a tightening lock according to the invention, the wearer only needs to use one hand for operating the tightening lever and he no longer needs his other hand for shifting the eye member from one tooth gap to another in order to adjust the lock so as to permit the two boot parts to be drawn more tightly together.

Another advantage of the tightening lock according to the invention is the fact that, if the wearer of the boots wishes to loosen the upper on the foot and therefore opens the lock and separates the eye member from the tightening lever, the eye member will be held by the spring in a fixed position. In similar tightening locks prior to this invention the eye member was freely movable after being separated from the tightening lever, which had the disadvantage that during the skiing the metallic eye member would constantly hit against the metallic lever and thereby cause a rattling noise.

The features and advantages of the present invention will become further apparent from the following detailed description thereof which is to be read with reference to the accompanying drawings, in which:

FIGURE 1 shows a perspective view of the front part of a ski boot which is provided with a tightening lock according to the invention;

FIGURE 2 shows an enlarged perspective view of the connecting eye member of the tightening lock according to FIGURE 1; while

FIGURE 3 shows an enlarged perspective view of a modification of the eye member according to FIGURE 1.

In FIGURE 1 of the drawings, the two front parts 1 and 2 of the upper of a ski boot are illustrated which are to be held together by means of the adjustable tightening lock according to the invention, the two main elements of which consist of a tightening lever 6 and an eye member 9. The tightening lever 6 is pivotably mounted at one end on a bearing bracket which consists of two parallel arms 4 and 5 which are spaced from each other and project upwardly from a base plate 3 which is secured by rivets to the part 1 of the upper. One side of this lever 6 facing the boot part 1 when the lever is in its closed or locking position is provided with a row of teeth 7 which are designed so that the tooth gaps into which the member 9 may be hooked are inclined from their base in the direction toward the free end or handle 6' of the lever.

The eye member 9 is pivotably mounted on a fitting 8 which is riveted to the other boot part 2. A spring 10 acts upon the eye member 9 so as always to press the latter when hooked into one of the tooth gaps of lever 6 against the inclined back of the next tooth 7 toward the handle 6' of the lever. Consequently, when lever 6 is opened to the position as shown in FIGURE 1, the eye member 9 will automatically slide upwardly from a lower tooth gap into the next higher tooth gap, that is, into one which is located closer to the handle 6'. This sliding movement occurs very easily due to the fact that the backs of the teeth 7 are inclined toward the handle 6'.

While the spring 10 according to FIGURES 1 and 2 simply consists of an angularly bent wire, FIGURE 3 shows a modification in which this spring is provided in the form of a spiral spring.

Although my invention has been illustrated and described with reference to the preferred embodiments thereof, I wish to have it understood that it is in no way limited to the details of such embodiments but is capable of numerous modifications within the scope of the appended claims.

3

Having thus fully disclosed my invention, what I claim is:

1. An adjustable tightening lock for shoes comprising a tightening lever and pivot means for pivotably connecting said lever at one end to one part of the shoe, said lever having a row of teeth on one side thereof facing said shoe part when the lever is closed, an eye member, pivot means for pivotably connecting said eye member to another part of the shoe, said eye member being adapted to be hooked into one or another of the tooth gaps of said lever, and a spring adapted to pivot said eye member in the upward direction against said one side of the tightening lever so that, when said lever is opened, said eye member will slide under the action of said spring from the tooth gap in which it is hooked into another tooth gap which is more remote from said pivot means of said tightening lever.

2. An adjustable tightening lock as defined in claim 1, in which said spring is mounted on said pivot means of said eye member.

4

3. An adjustable tightening lock as defined in claim 1, in which the backs of said teeth are inclined in the direction toward the free end of said lever.

#### References Cited

##### UNITED STATES PATENTS

461,254	10/1891	Barrows	292—250
570,670	11/1896	Livermore	292—250
3,287,774	11/1966	Binding et al.	24—70

##### FOREIGN PATENTS

17,643	8/1913	Denmark.
--------	--------	----------

WILLIAM FELDMAN, *Primary Examiner*.

MILTON S. MEHR, *Examiner*.