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[54] TRACTION LEVER DEVICE FOR THE FASTENING
OF BOOTS, PARTICULARLY SKI BOOTS
2 Claims, 3 Drawing Figs.

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ABSTRACT: This invention provides a traction lever device for the quick fastening of boots, particularly ski boots, in which a manually operable notched lever arm is carried by a support which is itself pivotally mounted on the plate which secures the device to one of the boot upper flaps, permitting rocking movement of the support and the lever arm about an axis perpendicular to the plate and spaced from the pivot axis of the lever arm itself. This arrangement permits alignment of the lever arm with the direction of the tension applied thereto when the arm engages a tensioning element such as a ring attached to the other boot upper flap.

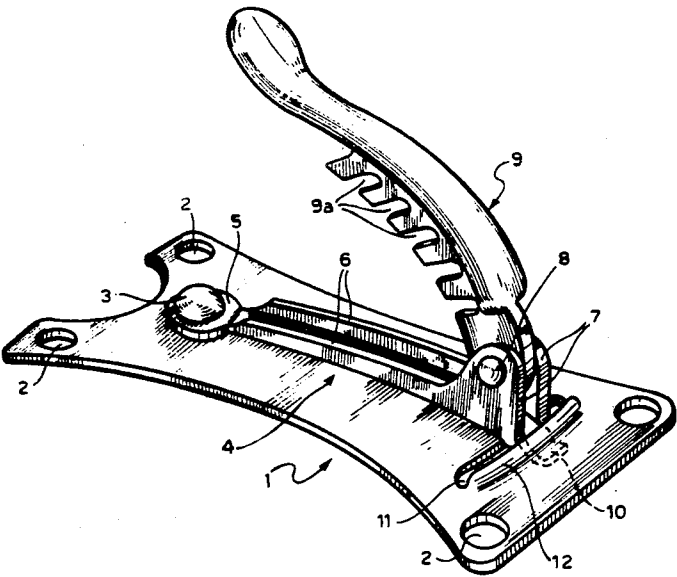


Fig. 1

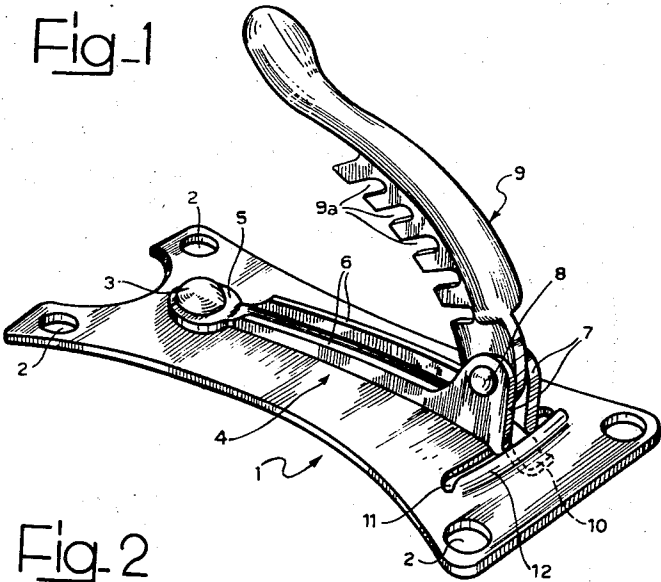


Fig. 2

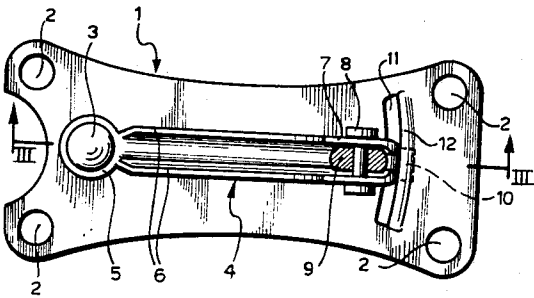
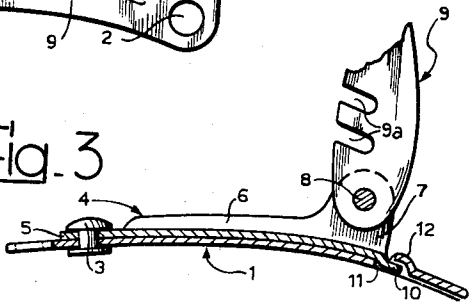


Fig. 3



TRACTION LEVER DEVICE FOR THE FASTENING OF BOOTS, PARTICULARLY SKI BOOTS

This invention relates to traction lever devices for the fastening of boots, especially ski boots.

Known traction lever devices for the fastening of boots include a plate adapted to be fastened to one flap of the upper part of the boot, a pivot support carried by the plate, and a lever arm pivotally mounted on the pivot support. The lever arm is generally provided with a plurality of notches for cooperation selectively with a tensioning element such as a ring carried by the other flap of the upper part of the boot.

In order to make traction lever devices of this type work satisfactorily the lever arm should ideally be in perfect alignment with the tensioning element, so that the point of engagement of the lever arm with said element and the points of attachment of said element and said plate to the two flaps of the boot upper part lie in a single line of action.

Such ideal conditions are not achieved in practice due both to faults in the making of the boot and to differences of the anatomical shapes of wearers' feet. Such faults create a misalignment between the lever arm and the tensioning element, so that the interengaged elements are subjected to lateral forces of flexion, tending to cause deformation of the upper part of the boot and imperfect fastening of the boot.

An object of this invention is to provide a traction lever device of the above-mentioned type, which effectively avoids faults and anomalies in fitting and fastening boots on feet of different shapes by keeping substantially in line with the tensioning element when in its engaged position so that the interengaging fastening elements work under optimum functioning conditions.

Another object of the invention is to provide a traction lever device of the above-mentioned type, which is of simple, strong and economical construction, easy and comfortable to use and safe in use.

The main characteristic of the traction lever device according to the invention lies in the fact that the pivot support is connected to the plate by means of a pivot, the axis of which is perpendicular to the plate and which is spaced from the pivot of the lever arm.

Further characteristic features and advantages of the invention will be apparent from the detailed description which follows, given by way of nonlimiting example, with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of the traction lever device for the fastening of ski boots according to one embodiment of the invention;

FIG. 2 is a sectional view from above, and

FIG. 3 is a longitudinal section, taken on line III-III of FIG. 2.

In the drawings there is shown a plate 1 which can be fixed to one of the flaps of the upper part of a boot, for example, by means of rivets inserted in holes 2 drilled in the plate 1.

A support 4 is pivotally connected to the plate 1 by means of a pivot 3 at one end of the support 4, the axis of the pivot 3 being perpendicular to the plate 1.

The support 4 is formed at one end with an eyelet 5, with which the pivot 3 engages. At an intermediate part the support 4 is reinforced by parallel raised edge flanges 6, and the other end of the support 4 remote from the pivot 3 is formed with two raised parallel side cheeks 7 which support a pivot 8 the

axis of which is parallel to the plate 1. A lever arm 9 is pivotally attached to the support 4 by means of the pivot 8.

The lever arm 9 is formed with a plurality of notches 9a with which a tensioning element such as a ring (not shown) carried by the other flap of the boot may be engaged selectively according to the size of the wearer's foot. The Axis of the pivot 3 by which the support 4 is articulated to the plate 1 is spaced from the axis of the pivot 8 of the lever arm 9 in such a way that the stress acting on the lever arm 9 when in a closed position, irrespective of which notch 9a is engaged by the tensioning element, results in the exact alignment of the lever arm 9 with the tensioning element.

In the illustrates example the pivot 3 which connects the support 4 to the plane 1 is located at one end of said support 3 in order to permit maximum freedom of pivotal movement to both the support 3 and to the lever arm 9.

In order to prevent the support 4 and the lever arm 9 lifting from the surface of the plate 1 under the action of the force exerted by the tensioning element on the lever arm 9 when the device is in a closed position, the support 4 is provided at its free end with a downwardly bent tooth 10 which projects forwardly and is engaged in an arcuate slot 11 formed in the plate 1. The end of the tooth 10 projects beneath one of the edges of said slot 11, in this example, the front edge of the slot 11. This edge is formed by a portion 12 which is raised, for example by funneling, with respect to the remainder of the plate 1, so that the tooth 10 of the support 4 can move along the raised portion 12, avoiding in this way any contact with the underlying flap of the upper part of the boot which contact could hinder the free pivotal movement of the support 4 about the pivot 3.

The lever device as described allows the lever arm 9 and the tensioning element to align naturally with each other when under tension, thereby avoiding any lateral forces or bending stresses on the fastening and permitting a better distribution of pressure on the interconnected flaps of the upper part of the boot.

It will be appreciated that better results can be obtained by coupling the lever device herein described with a tensioning element which is also pivotally attached to its respectively boot flap by a transverse pivot perpendicular to the said flap.

Naturally details of construction of embodiments of the invention can be widely modified from what has been specifically described and illustrated without departing from the scope of this invention as defined in the appended claims.

I claim:

1. Traction lever device for the fastening of boots, particularly ski boots, comprising a plate adapted to be fastened to one flap of the upper part of the boot, a pivot support carried by the plate, and a lever arm, first pivot means mounting the lever arm on the pivot support for rocking movement relative to the support, second pivot means pivotally connecting the pivot support to the plate the axis of the second pivot means being perpendicular to the plate and spaced from the axis of the first pivot means, means defining an arcuate slot in the plate and a tooth provided at the free end of the support and running in the arcuate slot, said tooth projecting beneath one of the defining edges of said slot to prevent lifting of the support from the surface of the plate.

2. Traction lever device according to claim 1, wherein the said edge of the arcuate slot beneath which the tooth projects is raised with respect to the remainder of the plate, thereby avoiding contact of the tooth with the upper part of the boot.