

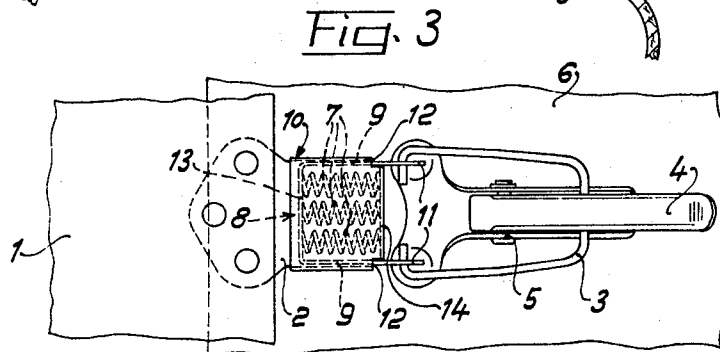
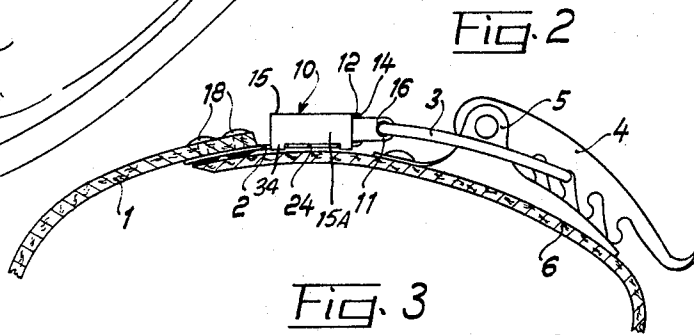
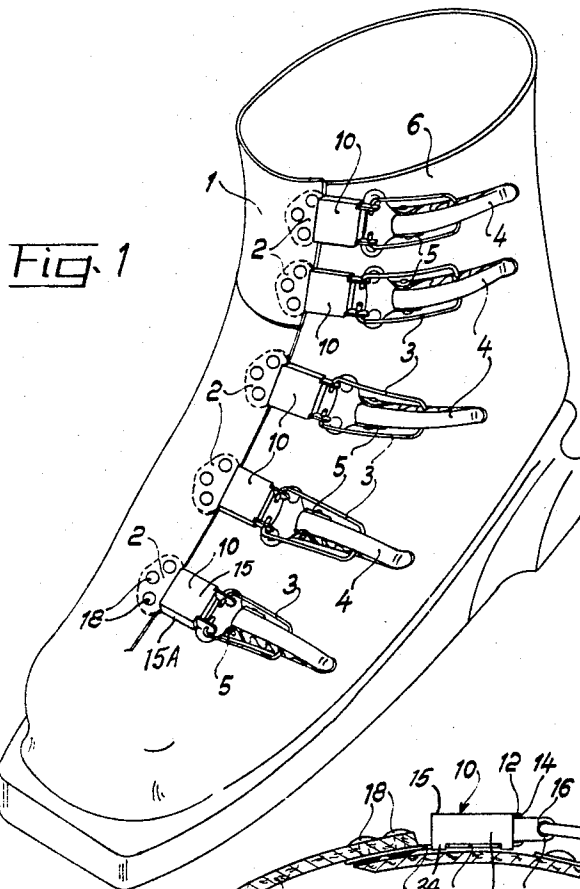
July 23, 1968

L. BASO
FASTENING DEVICE FOR SHOES, PARTICULARLY
FOR SKI AND MOUNTAINEERING SHOES

3,393,430

Filed Dec. 16, 1966

2 Sheets-Sheet 1



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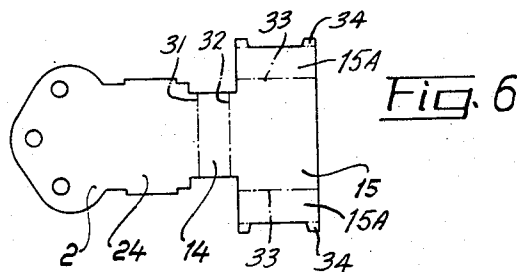
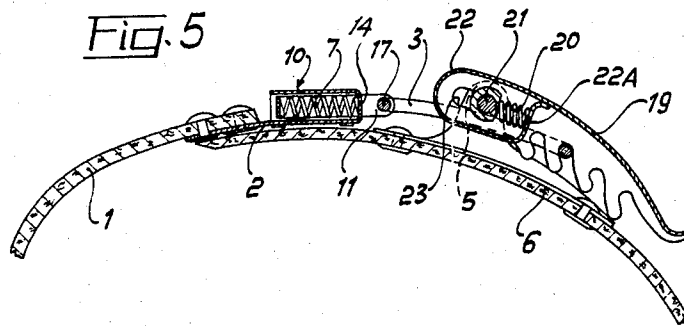
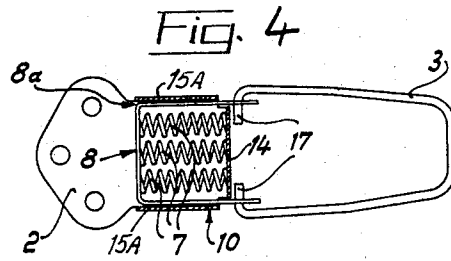
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3,393,430
**FASTENING DEVICE FOR SHOES, PARTICULARLY
FOR SKI AND MOUNTAINEERING SHOES**
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29,283/65
5 Claims. (Cl. 24—70)

ABSTRACT OF THE DISCLOSURE

A fastening device for ski shoes having an anchor plate mounted at one side of the instep portion of the shoe and a bearing block mounted at the other side of the instep portion of the shoe. A clamping loop is swingably arranged relative to the anchor plate and a tension lever is swingably affixed to the bearing block. The tension lever is provided with a plurality of recesses therein with the clamping loop being engageable with one of said recesses for closing the fastening device. Spring means are mounted between the clamping loop and the anchor plate to permit yielding therebetween during closing of the fastening device.

This invention relates to a fastening device for shoes, particularly for ski and mountaineering shoes. Said fastening device comprises an anchor plate mounted at one side of the instep part of the shoe together with a clamping loop swingably affixed thereon, which clamping loop is engageable in recesses of a tensioning lever which is mounted by means of a bearing block at the other side of the instep part.

It is an object of the invention to manufacture a fastening device of such construction which can easily be closed without causing a strong, unpleasant pressure on the instep of the foot and which is sufficiently flexible in closed condition to allow a certain movement of the foot in the shoe.

To attain said purpose, the invention provides that a spring means is provided between the anchor plate and the clamping loop. Said construction has several advantages. During the closing of the fastening device the spring means between the clamping loop and the anchor plate yields and, consequently, said spring means effects a limitation, on the one hand, of the closing force acting from the fastening device onto the instep and, on the other hand, of the closing force acting by hand onto the tensioning lever. By this, excess pressure onto the instep and also an overstraining of the instep parts of the instep leather or the closing device are prevented. When the fastening device is closed, the spring means allows a certain movement of the foot in the shoe.

Furthermore, the clamping loop of the invention can be used in association with various tensioning levers of the mentioned construction whereby the named advantages are obtained in each case.

Further advantages and details of the invention are discussed hereinbelow in detail with reference to the illustrative embodiments set forth in the drawings wherein

FIGURE 1 is a diagrammatic view of a skiing shoe utilizing the clamping loops of the invention and comprising together with appropriate tensioning levers;

FIGURE 2 is a side elevational view of a clamping loop together with an associated tensioning lever.

FIGURE 3 is a top view of a clamping loop together with the tensioning lever according to FIGURE 2;

FIGURE 4 is a top view partially cut on the clamp according to FIGURE 3;

FIGURE 5 is a side elevational sectional view of a

fastening device comprising the clamping loop of the invention and a resiliently arranged tensioning lever;

FIGURE 6 is a top view of a blank of an anchor plate punched out of metal.

The skiing shoe illustrated in FIGURE 1 comprises several anchor plates 2 being arranged on the side 1 of the instep part of the shoe. Clamping loops 3 are mounted swingably to each one of said anchor plates. Said clamping loops 3 are engageable, in a known manner, in recesses of tensioning levers 4 which are supported by means of bearing blocks 5 on the other side 6 of the instep part of the shoe, respectively. Each clamping loop 3 and tensioning lever 4 together form a fastening device.

According to the invention, spring means 7 are provided between each one of the clamping loops 3 and anchor plates 2. As illustrated in FIGURES 3 and 4, the clamping loop 3 in the illustrated embodiment is connected flexibly to a tension member 8 which is mounted, and guided movably, on the anchor plate 2, and the spring means 7 is provided between the tension member 8 and part 14 of the anchor plate 2. This arrangement of the tension member allows not only as easy transmission of forces from the clamping loop acting onto the spring means but also allows an advantageous, commonly known, swingable mounting of the clamping loop. In the illustrated embodiment, the tension member 8 is U-shaped, the legs thereof being arranged movably within a flat pocket 10 and along the narrow edges thereof. Said flat pocket 10 has a rectangular cross section, is open toward the side opposite the clamping loop 3 and is defined by suitable means connected to the anchor plate 2. Furthermore, said legs are pivoted with their free ends 11 of the clamping loop 3, said ends being guided in respective openings 12 along the edges of the pocket 10. As can be seen, the tension member 8 is movable with respect to the pocket 10. The spring means 7 is supported on the one side on the web 13 of the tension member 8, on the other side, said spring means is supported on the bottom part 14 of the pocket 10. It is illustrated especially in FIGURE 4 that the illustrated embodiment of the clamping loop of the invention is not only reliable in its function because of the guiding of the clamping loop 3 by means of the tension member 8 at the anchor plate 2, but is also attractive in appearance because of the smooth outer surface of the pocket 10 (see FIGURES 1 and 2).

The spring means 7 comprises preferably at least one compression spring. In the illustrated embodiment, three coil springs are arranged side-by-side in the pocket 10 between the legs 9 of the U-shaped tension member 8. The use of several compression springs arranged side-by-side results in equal distribution of the spring force over the width of the tension member 8 and further assists their reception into a relatively flat pocket 10.

In the illustrated embodiment, the anchor plate 2 is made of thin metal plate which, as illustrated in FIGURE 6, is constructed so that the pocket 10 can be integrally formed therefrom by suitable bending thereof substantially along the respective bending lines as indicated by the dash-dot lines in FIGURE 6 so as to form a substantially closed housing. In particular, the anchor plate 2 is formed with a first portion 24 integrally connected and extending therefrom, upon the end of which there is also integrally connected a second portion 14 which in turn is integrally connected to a third portion 15. The portion 15 also has lateral flaps 15A on opposite sides thereof. In forming the pocket or housing 10, the plate-like member illustrated in FIGURE 6 is bent along the line 31 whereupon the portion 14 is positioned substantially transverse with respect to the portion 24 as illustrated in FIGURE 5. The plate-like member is also bent

3

along the line 32 whereupon the portion 15 is positioned substantially transverse with respect to the portion 14. Thus, the portion 14 functions as a base portion for the housing 10 with the portions 15 and 24 functioning as the upper and lower walls, respectively. The flap portions 15A are also bent downwardly about the bending lines 33 so as to form sidewalls for the housing in the manner illustrated in FIGURE 2. The projections or tabs 34 formed on the flaps 15A extend down below the bottom wall 24 for holding the closed housing 10 together.

During the manufacture of the clamping loop of the invention, the pressure springs 7 are guided into the pocket after which the U-shaped tension member 8 holding the springs is moved into the pocket in such a way that its open ends 11 slide through the holes 12 provided at the edges of the pockets. The free ends 11 of the legs 9 of the tension member 8 are provided with holes 16 (FIGURE 2) into which the ends 17 of the clamping loop 3 engage. Mounting of the anchor plate 2 to the side 1 of the instep part can occur in a known manner by means of rivets 18 (FIGURES 1 and 2).

As illustrated in FIGURES 2 and 6, the lower part 24 of the pocket 10, which also forms an extension of the anchor plate 2, is mounted to the underside of the side 1 of the instep part. According to the illustration in FIGURE 2, this has the advantage that the pocket 10 projects only a little over the side 1 of the instep part and the arrangement is consequently of attractive appearance.

FIGURE 5 illustrates an embodiment of a fastening device in which the clamping loop 3 cooperates with a tensioning lever 19 which cooperates with a pressure spring 20. Said spring 20 is supported on its one end on the axis 21 of the bearing block 5, provided to hold the pivoted end 22 of the tensioning lever, and is supported at its other end on a part 22 of the tensioning lever whereby the tensioning lever is guided movably with respect to the axis by means of lateral longitudinal slots 23. By such a connection in series of springs 7 and 20 a still greater flexibility of the illustrated fastening device is achieved.

Finally it must be pointed out that instead of the coil springs 7 or 20, springs of other resilient materials, for example rubber or the like, could be used.

Although a particular preferred embodiment of the invention has been disclosed above in detail for illustrative purposes, it will be recognized that variations or modifications of such disclosure, which come within the scope of the appended claims, are fully contemplated.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A fastening device for ski shoes comprising an anchor plane mounted to one side of the instep part of the shoe, a clamping loop pivotably arranged to said anchor plate, a bearing block mounted to the other side of the instep part of the shoe, and a tensioning lever mounted to the bearing block and provided with at least one recess therein, the clamping loop being engageable in said recess for permitting the fastening device to be

4

closed, the improvement wherein the anchor plate is provided with an extension thereon forming a housing having a flat pocket-like opening therein with said housing having an upper wall portion closing said opening on the upper side thereof, said housing having a substantially rectangular configuration and being made of one piece with the anchor plate and further having a base portion integrally connected thereto, said clamping loop having an extension member connected thereto, and spring means positioned within the pocket-like opening with one end thereof being resiliently engageable with the base portion of said housing and the other end thereof being resiliently engageable with the extension member of said clamping loop so as to permit relative movement between said anchor plate and said bearing block when said fastening device is in the closed position.

2. A fastening device as defined in claim 1, wherein the anchor plate and the housing are initially manufactured from a single piece of flat sheet metal and wherein said housing has a top wall, a bottom wall and a plurality of sidewalls, said bottom wall being integrally connected to said anchor plate, one of said sidewalls comprising the base portion and being integrally connected to the said bottom wall and having been bent relative to said bottom wall so as to be substantially transverse relative thereto, said top wall being integrally connected to said base portion and having been bent relative to said base portion so as to be substantially transverse relative thereto, and a pair of lateral flaps provided on opposite sides of said top wall and having been bent substantially transverse relative thereto so as to form a pair of opposite longitudinal sidewalls.

3. A fastening device as defined in claim 1, wherein said spring means comprises a plurality of helical coil springs positioned within said opening in side-by-side relationship.

4. A fastening device as defined in claim 1, wherein the extension member connected to the clamping loop comprises a U-shaped tensioning member having a pair of parallel legs and a bridge interconnected therebetween, said bridge being positioned in and longitudinally movable within said pocket-like opening, said spring means being resiliently engageable with and supported on said bridge.

5. A fastening device as defined in claim 4, wherein the legs of the U-shaped member are movably supported adjacent the side portions of said opening, the free ends of said legs projecting out of said housing adjacent the corners of said base portion and being hingedly connected to said clamping loop.

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