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SAFETY FASTENING FOR SKIS

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Fig. 1.

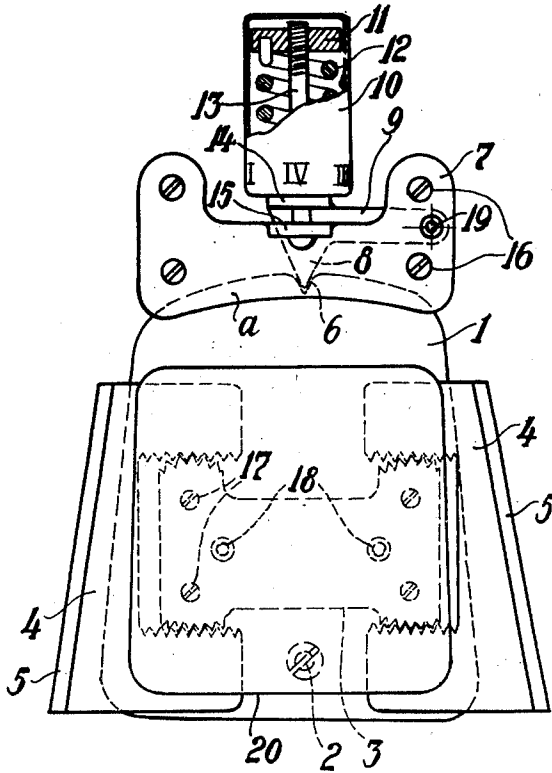


Fig. 2.



Fig. 4.

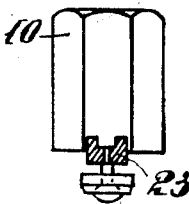


Fig. 5.

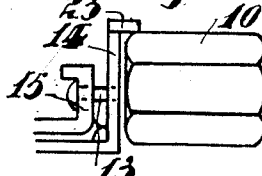


Fig. 6.

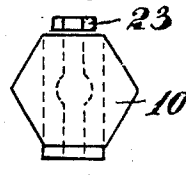
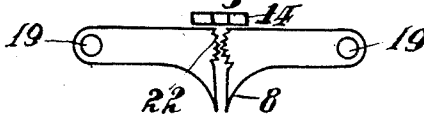


Fig. 3.



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SAFETY FASTENING FOR SKIS

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4 Claims. (Cl. 286—11.35)

The present invention has for object a safety fastening for skis, intended to prevent sprains, ruptures and luxations, which may result from the torsion of the foot by the fastening device in which the shoe is held.

The invention has for object to prevent said torsional movement from being transmitted to the foot when a predetermined limit is transgressed. For this purpose, the whole of the clamping means acting upon the shoe are adapted to rotate about a vertical stud, as soon as an excessive torsion is transmitted by the ski to the shoe.

The fastening device has been illustrated in the accompanying drawing.

Fig. 1 is a plan view.

Figs. 2 and 3 are plan views of modified latch elements as used in the device of Fig. 1.

Figs. 4, 5 and 6 are a plan view side and end elevations of a regulating socket as used in the device of Fig. 1.

The fastening device comprises a base plate 1 capable of rotating about an upright stud 2, which at the same time constitutes the fixing means of the plate upon the ski. Upon this base plate 1 is riveted a connection element 3, provided with four toothed sectors arranged for the adjustable holding of the clamps 4, which engage the sole of the shoe with their flanges 5. These clamps are of the well known shape and are adapted to be arranged closer to or farther apart from the middle axis, their rack portions engaging the aforesaid toothed sectors. The stud 2 enables the whole fastening device to rotate, and the base plate 1 is provided, at its front end, with a V-shaped notch 6, which is used for keeping the whole within the axis of the ski, under the action of a latch 8 engaged in said notch and pressed therein by a helical spring 12. The latch 8 is pivotally mounted by a side arm upon a stud 19 fixed at the underside of a control plate 7 which, being mounted at a convenient distance upon the ski, has for object to prevent the upward lifting of the base plate 1 by overlapping the outer edge thereof, however without pressing thereon. This overlapping portion extends over the notch 6 and is designated by α in the drawing. The covered portion α has its edge in the shape of a circular arch, the center of which is the general axis of rotation 2, and the outer edge of the base plate 1 is also a similar circular arch but having some clearance with respect to that of α , so as to constitute a slope for the progressive cocking of the cooperating elements 1 and 8. The arm 9 has an upright lug

14 at right angles thereto, against which is acting the socket 10 containing the spring 12 for controlling the torsional strain. A bolt 13 freely passes through an upright lug 15 integral with the plate 7, and the tension of the spring 12 enclosed in the pocket 10 and surrounding the bolt is adjusted by the screw nut 11 screwed on the threaded end of the bolt.

The socket 10 bears reference numerals I, IV, III, . . . indicating with relation to a fixed mark on the lug 14, the tensional strain imparted to the spring 12.

The plate 7 is fixed to the ski by means of four screws 16 and spaced therefrom by washers or distance pieces coaxial with these screws, so that the said control plate 7 retains the base plate 1 without pressing thereon.

The socket 10 for regulating the torsional strain is of a cylindrical shape; the rotation of the socket drives the nut 11 so as to move it along the threaded end of the bolt 13, thereby compressing or releasing the spring 12, one end of which is fixed to the nut.

Underneath the plates 1 and 7 are arranged plates of corresponding shape in contact with the ski and intended to facilitate the movement of the different elements. The clamps 4 are held upon the base plate 1 by means of an upper plate 20, which is screwed upon said plate after being adjusted thereto.

Screws 17 secure the element 3 upon the base plate 1, whereas the cover plate 20 is secured by means of screws 18.

This simple and strong construction enables a rapid fixing of the ski upon the shoe.

When too great a torsional strain is transmitted to the clamps, the plate 1 undergoes a side-ward deviation the V-shaped notch 6 causes the latch 8 to ascend along the edges of the V against the action of the spring 12, and as soon as the outer edges of the notch are transgressed by the latch, the base plate 1 escapes and freely rotates, thus avoiding a torsional strain upon the foot.

The fastening device will be easily brought to its normal operative position, indeed the base plate 1 passing underneath the control plate 7 presents a sloping edge, along which the latch is brought back within the notch 6 under a slight compression of the control spring.

In a modified form of embodiment, the latch element 8 is duplicated, as illustrated in Figs. 2 and 3; said two elements replacing the arm 9 in Fig. 1 are adapted to swing oppositely about their studs 19, in the locked position, said elements are interengaged by a tenon and mortise

connection 21, as illustrated in Fig. 2, or by toothed sectors 22 meshing with each other as illustrated in Fig. 3. This double latch is particularly useful for reason that the frictional resistance is reduced, while disengagement will take place under the same torsional effort on both sides.

With relation to the socket, the invention also provides an auxiliary locking device detailed in Figs. 4 to 6. The socket 10 which in this latter figure is of hexagonal shape instead of cylindrical as in Fig. 1, is locked in its position by means of a flange or lug 23 pressing upon the side or flat portion of the socket 10, said lug being integral with the upright flange 14. The angle between said flange and the arm 9 is less than 90°, for instance 87°, and the traction transmitted upon the socket causes the latter to ascend, so as to press against the flange 23, and this prevents an unexpected unscrewing.

For screwing or unscrewing by hand, a pressure is exerted downwards upon the socket 10, whereby the flange 23 is disengaged and rotation of the socket becomes possible.

I claim:

1. A safety fastening for skis comprising a base plate rotatably fixed to the ski, adjustable clamps mounted on the base plate and having upright flanges engaging the sole of the shoe, a control plate fixed upon the ski adapted to overlap with an arched edge the arched edge of the base plate opposite to its axis of pivotment, a latch pivotally mounted intermediate the base plate and the control plate adapted to engage a notch in the arched edge of the base plate, and adjustable spring means engaging the latch in the notch of the base plate.

2. A safety fastening for skis comprising a base plate rotatably fixed to the ski, adjustable clamps mounted on the base plate and having upright flanges engaging the sole of the shoe, a control plate fixed upon the ski adapted to overlap with an arched edge the arched edge of the base plate opposite to its axis of pivotment, a latch pivotally mounted intermediate the base

plate and the control plate adapted to engage a notch in the arched edge of the base plate, and adjustable spring means engaging the latch in the notch of the base plate, said means comprising a bolt traversing upright lugs integral with the control plate and latch respectively, a helical spring surrounding the bolt, a nut screwing against said spring and a rotatable socket surrounding the nuts substantially as set forth.

3. A safety fastening for skis comprising a base plate rotatably fixed to the ski, adjustable clamps mounted on the base plate and having upright flanges engaging the sole of the shoe, a control plate fixed upon the ski adapted to overlap with an arched edge the arched edge of the base plate opposite to its axis of pivotment, two juxtaposed latches pivotally mounted intermediate the base plate and the control plate having their adjacent ends interengaged with each other and adapted to engage a notch in the arched edge of the base plate, and adjustable spring means engaging the latches in the notch of the base plate.

4. A safety fastening for skis comprising a base plate rotatably fixed to the ski, adjustable clamps mounted on the base plate and having upright flanges engaging the sole of the shoe, a control plate fixed upon the ski adapted to overlap with an arched edge the arched edge of the base plate opposite to its axis of pivotment, two juxtaposed latches pivotally mounted intermediate the base plate and the control plate having their adjacent ends interengaged with each other and adapted to engage a notch in the arched edge of the base plate, and adjustable spring means engaging the latches in the notch of the base plate, said means comprising a bolt traversing upright lugs integral with the control plate and latches respectively, a helical spring surrounding the bolt, a nut screwing against said spring, a rotatable socket surrounding the nut and a locking element for the socket, substantially as set forth.

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