

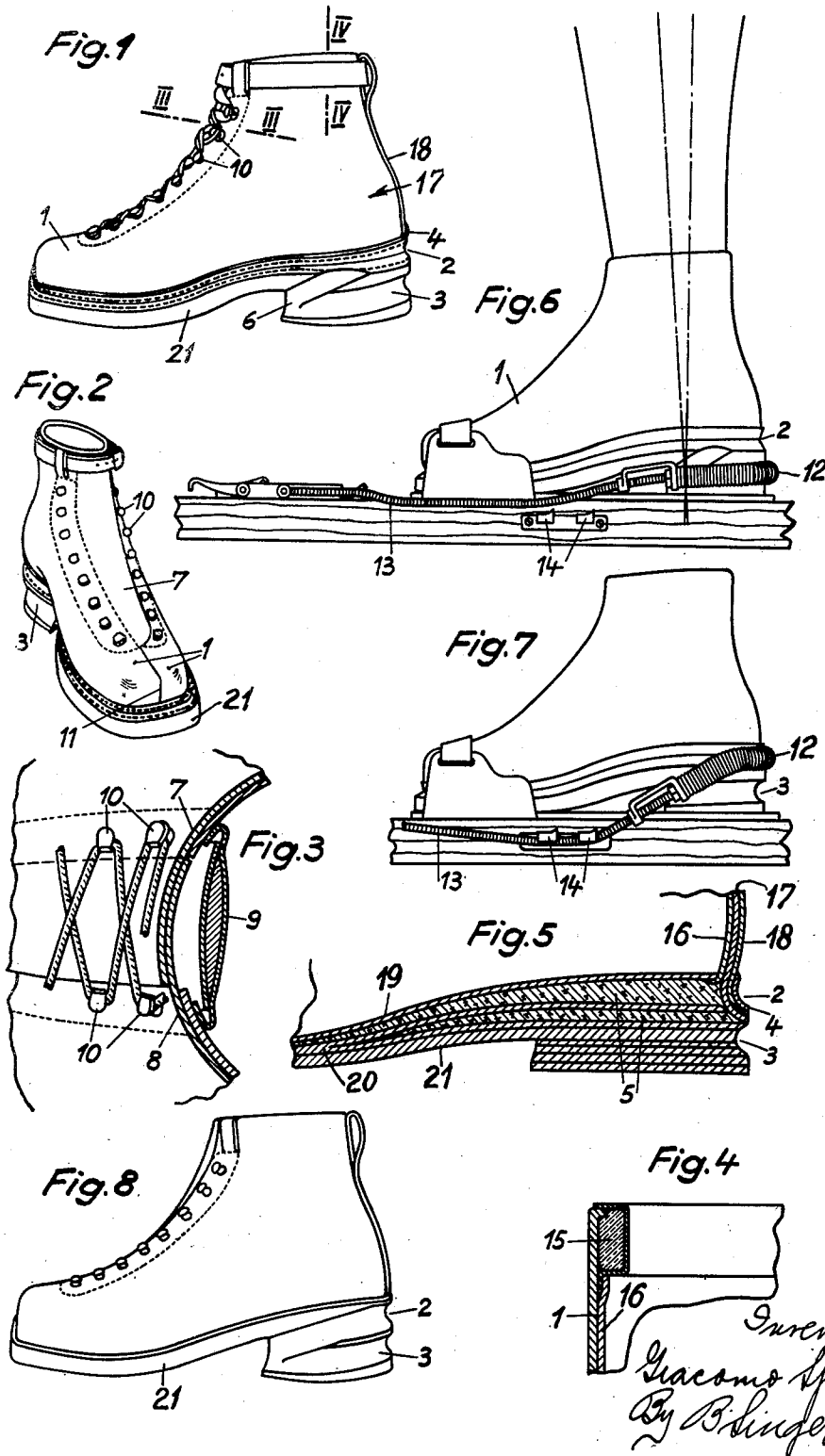
Jan. 24, 1939.

G. SPINI

2,145,102

SKI SHOE

Filed Nov. 22, 1937



UNITED STATES PATENT OFFICE

2,145,102

SKI SHOE

Giacomo Spini, St. Moritz, Switzerland

Application November 22, 1937, Serial No. 175,932

7 Claims. (Cl. 36—2.5)

This invention relates to improvements in ski shoes and has for its principal object a particular shaping of the sole and of the heel.

A further object of the invention is to provide means so as to raise the heel of the skier relatively to the ball part so that the heel of the skier using the ski shoe is located for instance one inch higher than is the case of the usual ski shoes. In this manner there is imparted to the lower limb the forward inclination which is necessary when skiing and particularly when running downhill.

Another object of the invention is to provide a guide groove for the heel pulling member, e. g., a heel strap cable spring or the like located above the heel.

Other objects and advantages of this invention will become apparent during the course of the following description.

In the drawing wherein like reference characters indicate like or corresponding parts:

Fig. 1 is a side elevation of a shoe according to this invention,

Fig. 2 is a front view of a similar shoe;

Fig. 3 is a section taken on line III—III of Fig. 1;

Fig. 4 is a section taken on line IV—IV of Fig. 1;

Fig. 5 is a longitudinal section through a part of a sole of a ski shoe according to this invention;

Fig. 6 illustrates how the lower limb of the skier is imparted a forward inclination;

Fig. 7 is a side elevation of a shoe, showing the spring of the ski binding located in the upper heel groove;

Fig. 8 is a side elevation of another embodiment of the invention.

The ski shoe shown in Figures 1 and 2 is provided with a body 1 consisting of two parts assembled along a seam 11. As shown in Figure 5 the sole 21 is raised in the heel part in comparison with the usual shoes. The thickness of the sole which increases from the front rearwardly can be obtained by means of one or more, for instance two wedge like parts 5, consisting of leather, cork, felt, wood, light metal or the like. At its rearward part the sole reaches as far as to the upper end of the upper groove 2. If such a shoe is fastened in a ski binding as illustrated the pull exerted by the spring 12 which is connected to a cable 13 is imparted to the sole of the shoe and not to the heel of the skier. The horizontal groove 3 is arranged on the outer walls of the shoe heel and is already known per se. It fulfills the same purpose as groove 2, but

obviously the downward component of the pull exerted by the cable 13 is smaller when spring 12 is located in groove 3 than when it is located in groove 2. Groove 2 is preferably provided with a lining 4 of leather. A diagonal groove 6 extending rearwardly from the front of the groove 3 merges with the groove 2 to receive spring 12 when the same is positioned as shown in Figure 7.

When skiing a strong forward position of the skier is necessary. In order to obtain this without fatigue, the sole for instance grain leather soles, in accordance with the invention, is raised in the heel part in comparison with the usual shoes, for example by about one inch. In this manner the lower limb of the skier receives from the start a predetermined inclination and the knee is moved forwardly to the desired extent without any separate strain of the skier being necessary for this purpose. The amount of the inclination obtained by means of a shoe according to this invention is shown in Figure 6 where the axis of the lower limb is shown in dot and dash lines.

Instead of arranging the wedge like portions 5 between the soles of the shoe, wedge-shaped insoles might be used.

The grooves 2 and 3 might also be arranged in a piece of metal fixed to the shoe heel. It is also possible to arrange groove 3 in the shoe heel whereas the upper groove 2 is arranged in a piece of sheet metal secured to the shoe heel.

As may be gathered from the Figures 6 and 7 it is easily possible to move the spring upwardly from the position shown in Figure 6 into the position in Figure 7 without any displacement of the tightening device of the ski binding being necessary for this purpose. Reversely when falling the spring 12 can slide comparatively easily from the upper groove 2 into the lower groove 3 so as to provide movability for the foot. A pressure on the heel of the skier is excluded even when the binding is in the position shown in Figure 7, as the thickened sole in the heel portion extends up to the upper edge of the upper groove 2.

When the cable of the ski binding is laid into the holders 14 and the spring 12 is located in the upper groove 2 (Fig. 7) it is in practice hardly possible to raise the shoe from the ski. This is especially desirable in downhill running and jumping.

The necessary inclination forward might also be secured by making the shoe heel high enough (Fig. 8).

The Figures 2 and 3 show some further im-

provements of the shoe according to this invention which prevent water from entering into the shoe. The body of the shoe consisting as mentioned above of two parts, is provided with two overlapping parts 7 and 8. Below these parts the tongue may be arranged as known per se. The hooks 10 necessary for the lacing of the shoe are arranged on the parts 7 and 8 but not along the edges of the said parts, as shown in Figure 3. Preferably the two rows of hooks reach to the cap of the shoe. It is of special advantage to make the overlapping parts 7 and 8 of smooth and thin leather adapting itself easily to the form of the foot of the skier. Tongue 9 is preferably provided with a lining of porous rubber. The overlapping parts 7 and 8 may form one piece with the pieces of leather forming the body 1 of the shoe. But they may also be made of separate pieces secured to the body of the shoe in any manner known per se.

The upper part of the shoe body according to Figure 4 is provided with a lining 15 of porous rubber or the like which ensures a complete tightening of the shoe (Fig. 4).

As will be seen from Figure 5, the shoe is provided with an inner lining 16 for the outer layer 17 of the body 1, a strip 18 extending along the back of the shoe to the heel. The groove 2 extends entirely around the raised part of the shoe beneath the level of the insole 19. One of the inserted wedges 5 may be located between the insole 19 and an intermediate sole 20, the latter, if desired, being split toward the rear to receive the lower inserted wedge 5. It will therefore be seen (Figures 1 and 5) that the groove 2, at the rear part of the shoe at least, lies within the profile of the inserts and the liner 4 serves to conceal the same (compare Figures 5 and 1).

While the preferred embodiment of the invention has been shown, it is to be understood that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention and the scope of the appended claims.

What I wish to claim and secure by United States Letters Patent is:

1. Ski shoe with means for raising the heel of the skier relatively to the ball part, the said means being formed by a wedge shaped sole of increasing thickness from the front rearwardly, a groove for the heel pulling member extending horizontally around the outer walls of the shoe heel, a further groove above the horizontal groove and located at the rear end of the shoe above the heel and extending from there forwardly, the thickened portion of the sole in the heel portion extending up to the upper edge of the upper groove.

2. Ski shoe according to claim 1 in which the upper groove is arranged in a piece of metal secured to the heel of the shoe.

3. Ski shoe according to claim 1 provided with a wedge shaped grain leather sole increasing in thickness from the front to the back.

4. A ski shoe having a sole and a heel with means for raising the heel of the skier relatively to the ball part, said means comprising wedge-shaped inserts, arranged between the inner sole and the outer sole, said inserts being of gradually increasing thickness from the front to the rear so that a forward inclination is imparted to the lower limb of the wearer, there being two heel grooves provided in juxtaposition for the heel pulling member, the upper groove being in the profile of the inserts of the shoe above the heel proper, the lower groove being located in the heel, a liner for the upper groove which liner extends entirely around the shoe and conceals the profile of the inserts.

5. A ski shoe having a sole and a heel with means for raising the heel of the skier relatively to the ball part, said means comprising wedge-shaped inserts, arranged between the inner sole and the outer sole, said inserts being of gradually increasing thickness from the front to the rear so that a forward inclination is imparted to the lower limb of the wearer, there being two heel grooves provided in juxtaposition for the heel pulling member, the upper groove being in the profile of the inserts of the shoe above the heel proper, the lower groove being located in the heel, a liner for the upper groove there being also a diagonal groove on each side of the heel extending from the front of the lower groove upwardly and rearwardly and merging into the upper groove.

6. A ski shoe having a sole and a heel with means for raising the heel of the skier relatively to the ball part, said means comprising wedge-shaped inserts, arranged between the inner sole and the outer sole, said inserts being of gradually increasing thickness from the front to the rear so that a forward inclination is imparted to the lower limb of the wearer, there being two heel grooves provided in juxtaposition for the heel pulling member, the upper groove being in the profile of the inserts of the shoe above the heel proper, the lower groove being located in the heel, a liner for the upper groove and an intermediate sole resting on the outer sole, one of the wedge shaped inserts lying between the inner and the intermediate soles.

7. A ski shoe having a sole and a heel with means for raising the heel of the skier relatively to the ball part, said means comprising wedge-shaped inserts, arranged between the inner sole and the outer sole, said inserts being of gradually increasing thickness from the front to the rear so that a forward inclination is imparted to the lower limb of the wearer, there being two heel grooves provided in juxtaposition for the heel pulling member, the upper groove being in the profile of the inserts of the shoe above the heel proper, the lower groove being located in the heel, a liner for the upper groove which liner extends entirely around the shoe and conceals the profile of the inserts, the other insert lying in a split portion of the intermediate sole.

GIACOMO SPINI.