July 6, 1948. M. CARRIER 2,444,428

SHOE FOR SPORTS AND THE LIKE

Filed Aug. 20, 1945 2 Sheets-Sheet 1

Fig. 1

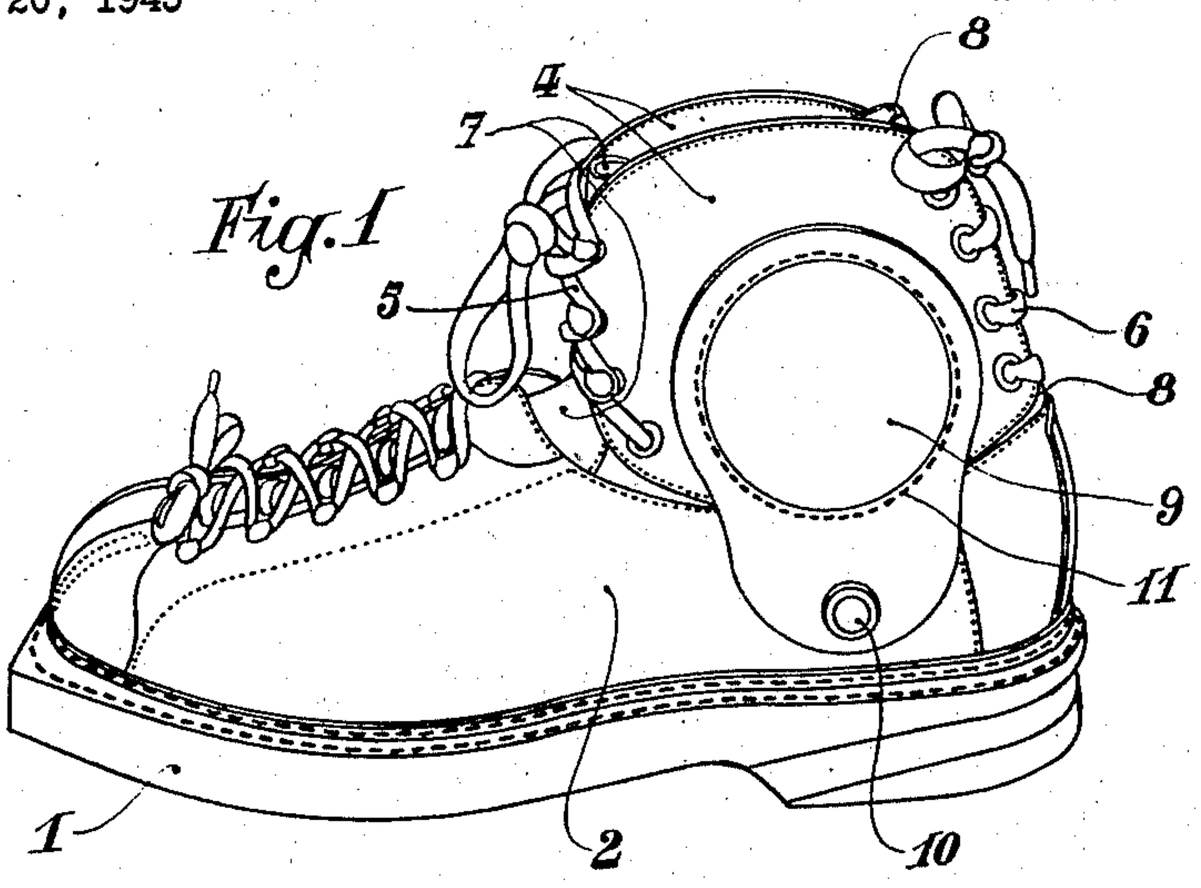

Fig. 2

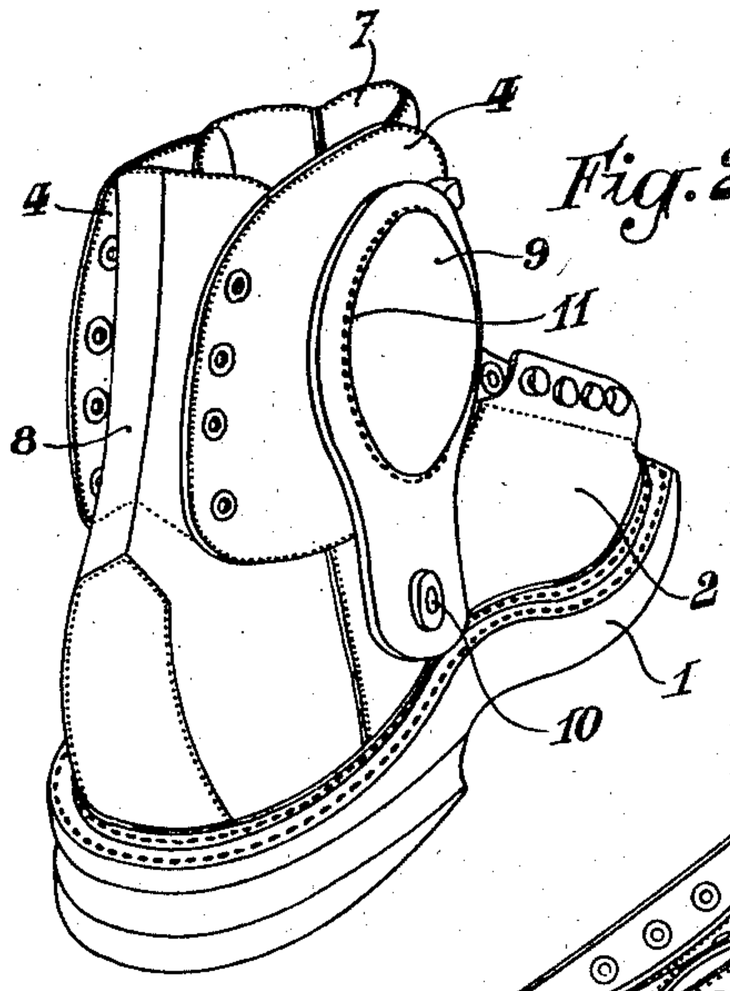

Fig. 3

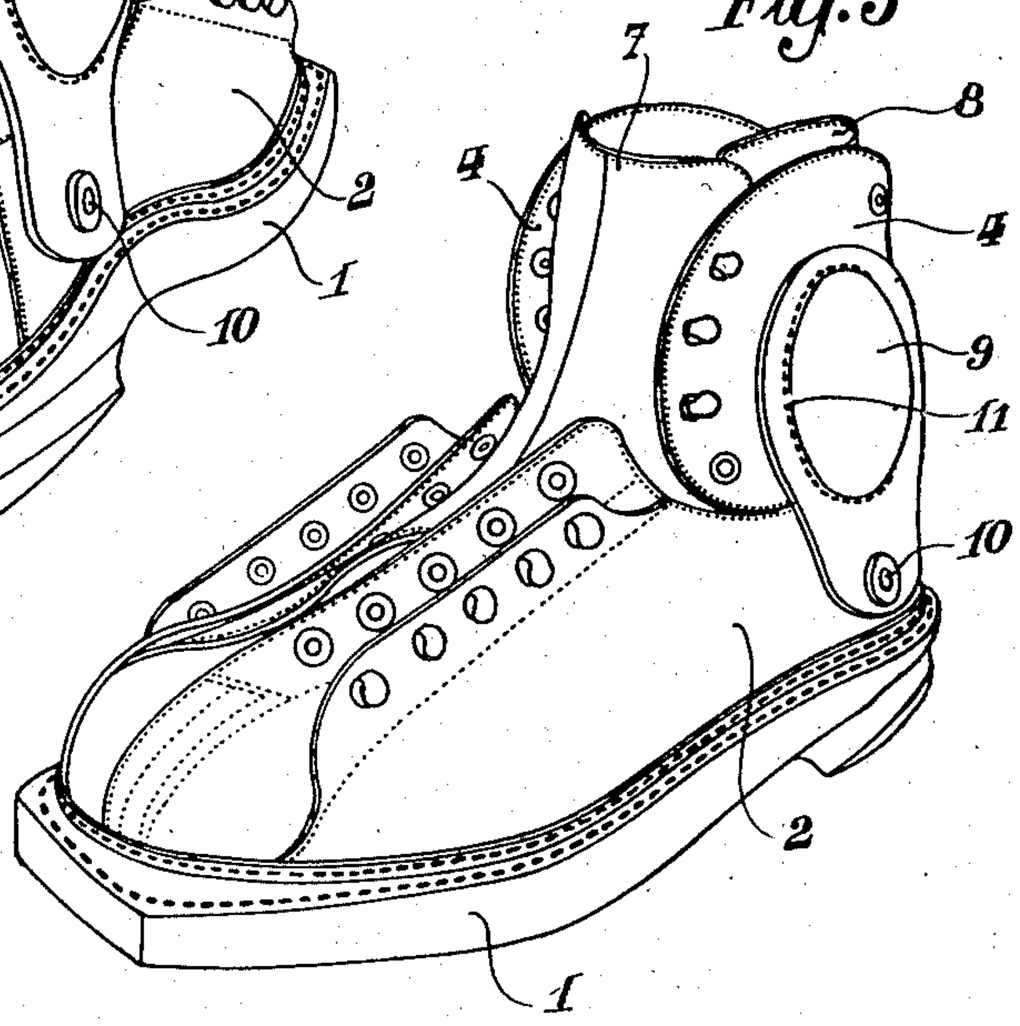

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Fig. 4

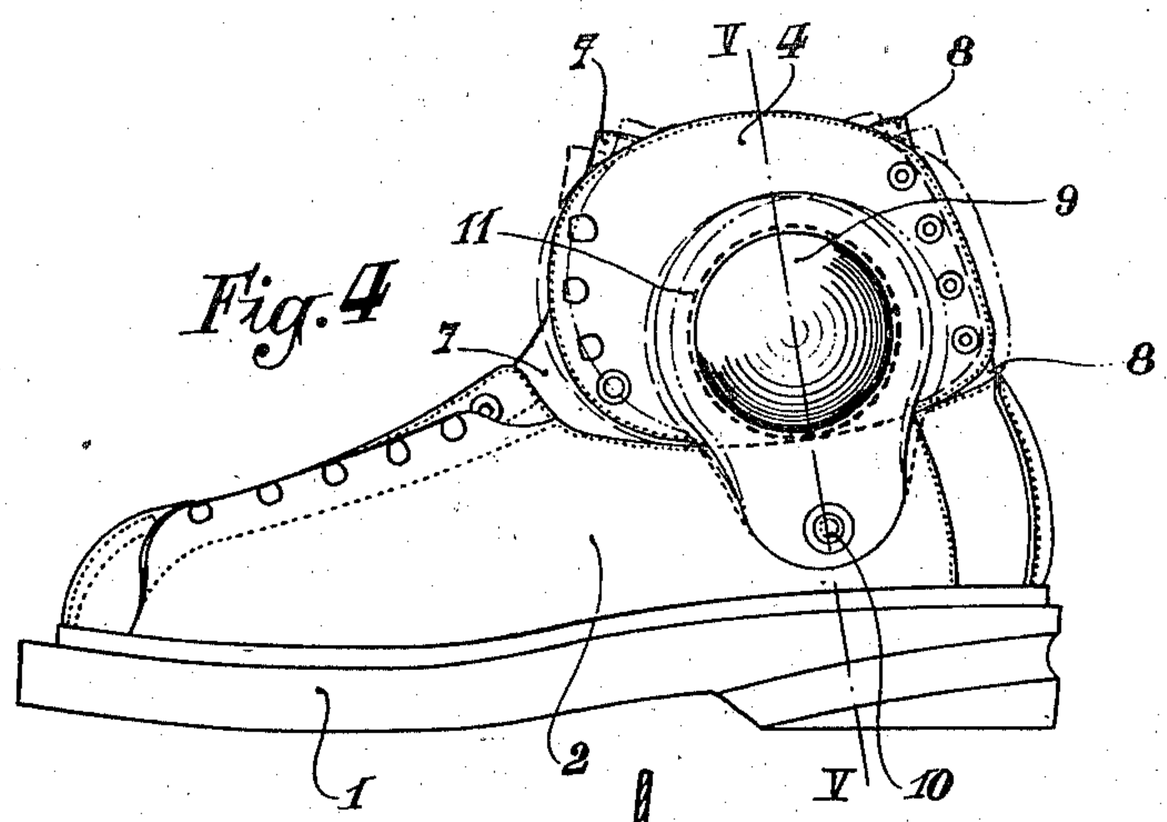
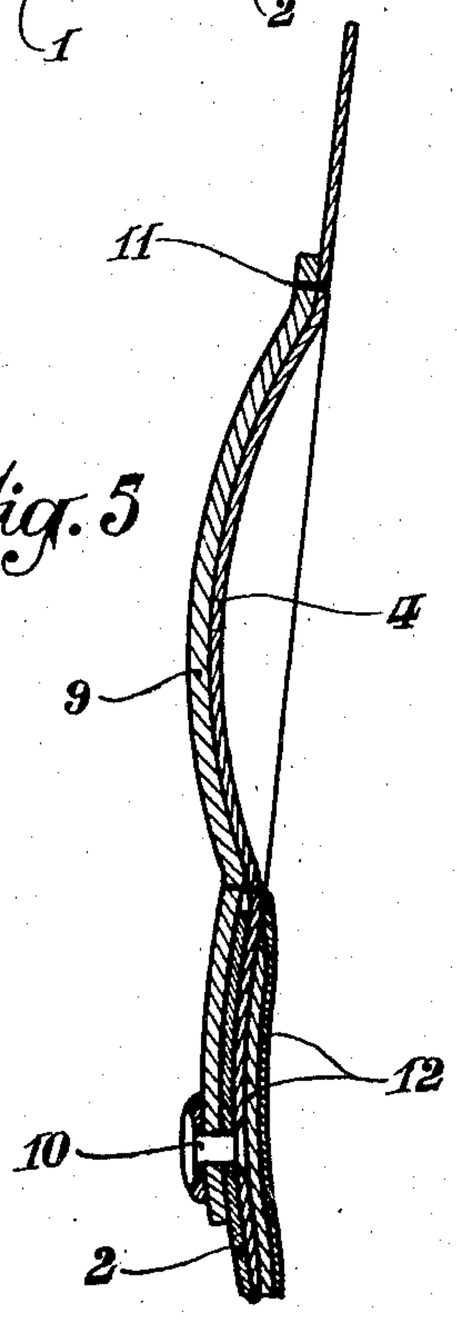


Fig. 5



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SHOE FOR SPORTS AND THE LIKE

Marcel Carrier, Sillans, France; vested in the Attorney General of the United States

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Section 1, Public Law 690, August 8, 1946
Patent expires June 3, 1962

3 Claims. (Cl. 36—2.5)

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My invention relates to shoes for sports in general and more particularly for ski-ing purposes and the like.

In such cases the wearer should be free to bend his leg forward, his foot remaining horizontal, without being hindered by any part of the shoe. It is besides essential that his ankle should be firmly maintained against wrenching. With the conventional shoe structure, the upper part of the outer is a material hindrance against forward motion of the leg. It is of course possible to reduce this drawback by reducing the height of the shoe, but the latter then becomes inefficient to protect the ankle.

It has been proposed to render the upper part of the shoe more or less independent from the lower part thereof, these two parts being made separate from each other and only connected by fabric, thin leather or like very flexible means. The wearer is thus free to bend his leg as desired without being hindered or hurt, while his ankle is nevertheless firmly held, and there is not formed behind the leg an aperture through which snow is liable to penetrate. Moreover the heel has no tendency to rise from the ski, which is a marked advantage in actual practice. But on the other hand such an arrangement is only effective when the upper part of the shoe has a high degree of freedom with respect to the lower part thereof and in such a case the foot is not sufficiently maintained against rotations about a longitudinal or vertical axis. The shoe is not a sufficient protection against wrenching.

One object of my invention is to provide a shoe for ski-ing purposes and the like which, while affording a high degree of freedom for forward motion of the leg, will effectively prevent too large deviations about a longitudinal or vertical axis and will thus be fully protective against foot wrenching.

A further object of my invention is a shoe of the character described, wherein the upper part, relatively independent from the lower part, is positively articulated with the latter about a transverse axis.

Still a further object of my invention is a shoe of the character described, wherein the upper part is laterally provided with a pair of downwardly extending lugs, made of relatively rigid material, which are pivoted to the lower part of the shoe, the said lugs being preferably concave and adapted to cover and protect the wearer's ankle.

In the annexed drawing:

Figs. 1 to 3 are different perspective views of a shoe established in accordance with my invention.

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Fig. 4 is a side view thereof.

Fig. 5 is a large scale partial section taken along line V—V of Fig. 4.

The shoe illustrated is divided into two parts, the lower one comprising a sole 1 and an outer 2 reinforced at the toe end as clearly indicated in Fig. 3. The upper part is formed of two halves 4 surrounding the wearer's ankle and connected with each other by means of lacings 5 and 6 (Fig. 1) respectively in front and at the rear.

Each half upper part 4 is engaged between the outer 2 of the lower part and its inner lining, and it is fixed thereto by some stitches, the latter being loose enough to leave the upper part quite free. The upper and lower parts are moreover connected by means of flexible layers 7 and 8, of fabric, thin leather or the like, which ensure watertightness without practically affecting the degree of freedom of the two parts.

To each half 4 there is fixed a sort of lateral shell 9, made of thick and rigid leather, the said shell comprising a main portion, of substantially circular shape and embossed with its concave face against half 4, and a downwardly projecting lug which is pivotally fixed to outer 2 by means of a rivet 10.

Fig. 5 clearly shows the details of this arrangement. The dished portion of shell 9 is secured to half 4 by stitches 11. Rivet 10 is passed through the lower lug of shell 9, through outer 2 and also through the lower portion of half 4 between outer 2 and its lining 12. The concave face of shell 9 is turned inwardly. The shoe is so proportioned that this concave face fits over the wearer's ankle.

It will be readily understood that the upper part of the shoe, comprising the two halves 4, is free to oscillate about the common transverse axis of rivets 10, as indicated in Fig. 4, for an angle sufficient to permit of bending the leg forward without raising the heel. This oscillation entails no stress on the leather and neither the foot, nor the ankle are liable to be hurt thereby. The shoe according to my invention is a marked improvement for an expert sportsman who remains with his legs bent during the whole course of a race, his heels resting on the skis. In spite of this flexibility, the shoe according to my invention effectively prevents any rotation about a longitudinal axis since such a rotation would tend to lengthen one shell 9 and to shorten the other one. The wearer's ankle is therefore not liable to be wrenched laterally. My improved shoe also protects against rotations about a ver-

tical axis as well as a very rigid shoe of standard structure.

Shells 9 may be made of any semi-rigid or rigid material such as leather, cellulosic derivatives, synthetic resins or even metal. They may be either circular, as shown, or elliptic, in order to fit on the foot of any wearer whatever may be the exact position of his ankle. Instead of being fixed to the outer, rivets 10 might be disposed at a lower level in order to be fixed to the sole proper.

I claim:

1. In a shoe of the character described a sole; an outer fixed to said sole and forming therewith the lower part of the shoe; an upper part adapted to form a sleeve around the wearer's ankle; concave substantially circular members made of relatively non-yielding material, laterally fixed to said upper part in proper relation therewith to fit the wearer's ankle; and means to positively pivot said upper part to said lower part about a horizontal transverse axis.

2. In a shoe as claimed in claim 1, said concave members forming downwardly projecting lugs and said pivoting means cooperating with said lugs.

3. A shoe for ski-ing purposes and the like comprising a lower part embodying the sole and the outer; an upper part made of two halves laced with each other and adapted to form a sleeve around the wearer's ankle; flexible means to watertightly connect said lower and upper parts together while preserving a material degree of freedom of said upper part with respect to said lower part; concave members made of relatively non-yielding material, laterally fixed to said upper part in proper relation therewith to fit the wearer's ankle; lugs projecting downwardly from said concave member in external relation to said lower part; and transverse rivets pivotally fixing said lugs to said outer.

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REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Country	Date
509,569	Great Britain	July 18, 1939