Nov. 18, 1952 S. GOULD 2,618,487

SAFETY DEVICE FOR SKIS AND THE LIKE

Filed April 10, 1950 2 SHEETS—SHEET 1

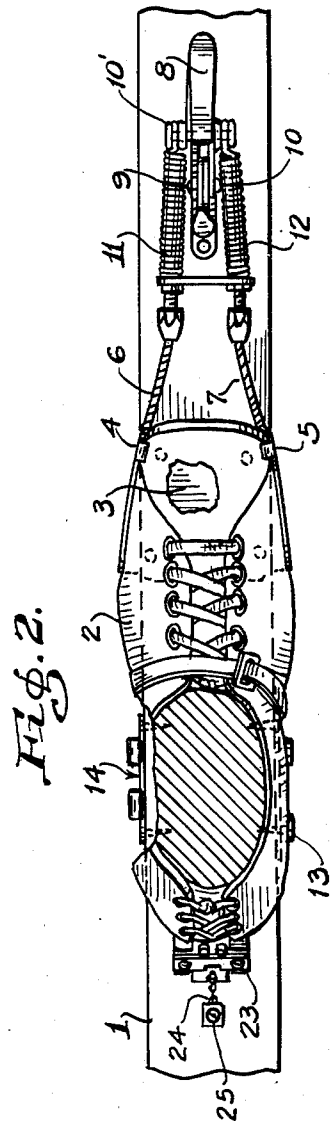


Fig. 2.

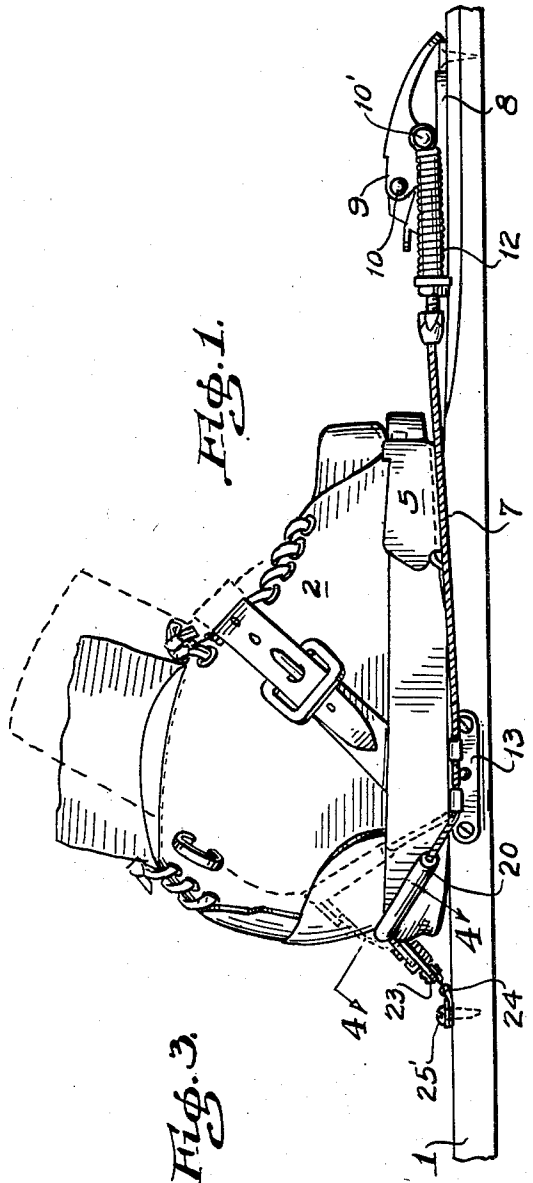


Fig. 1.

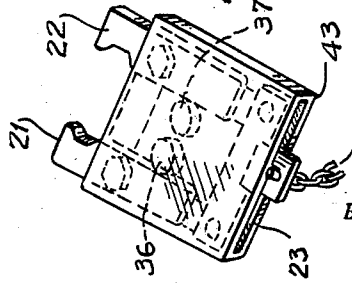


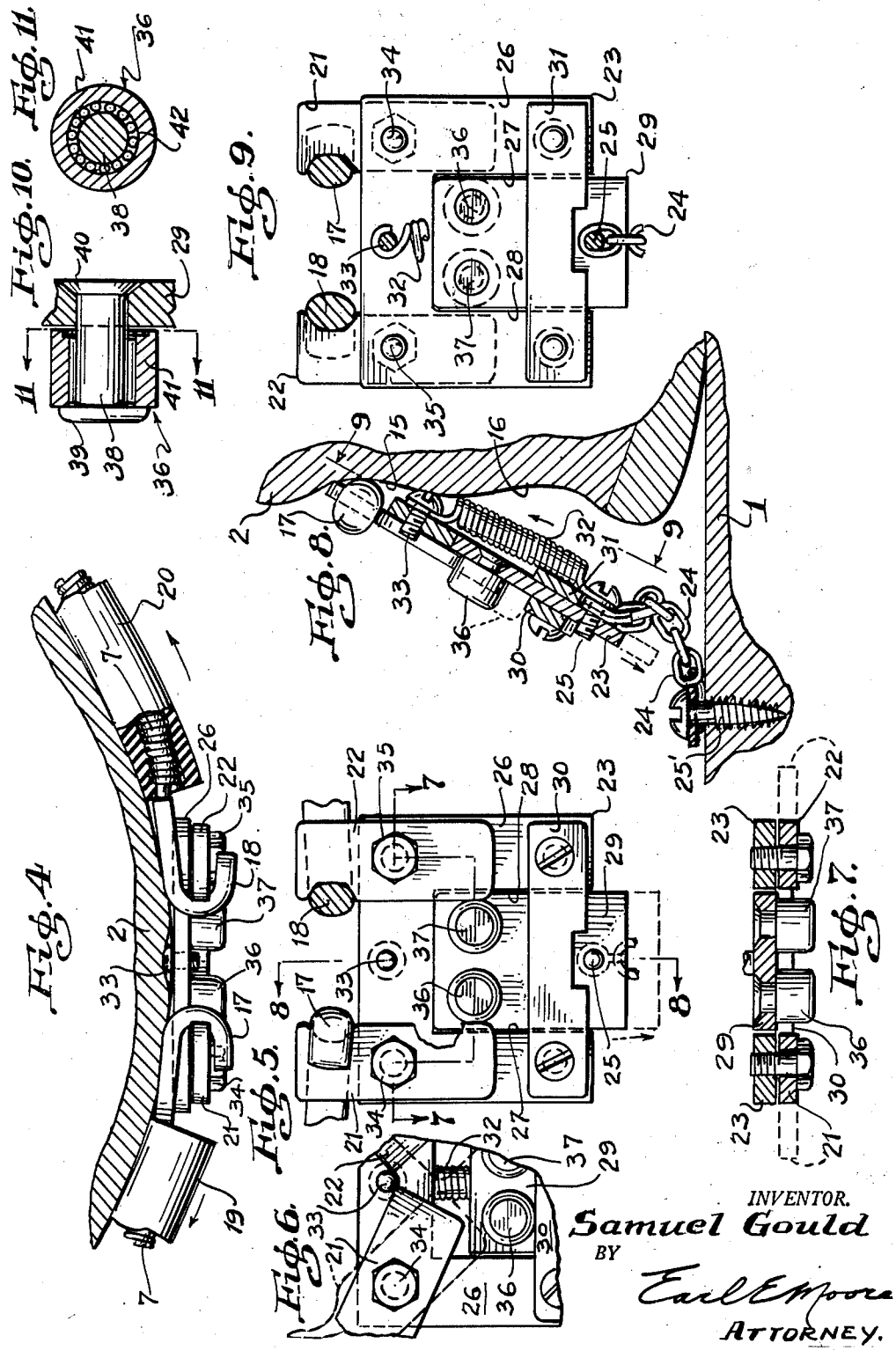
Fig. 3.

INVENTOR.
Samuel Gould
BY
Earl E. Moore
ATTORNEY.

Nov. 18, 1952 S. GOULD 2,618,487

SAFETY DEVICE FOR SKIS AND THE LIKE

Filed April 10, 1950 2 SHEETS—SHEET 2



INVENTOR.
Samuel Gould
BY
Earl E. Moore
ATTORNEY.

Patented Nov. 18, 1952 2,618,487

UNITED STATES PATENT OFFICE

2,618,487

SAFETY DEVICE FOR SKIS AND THE LIKE

Samuel Gould, Lennox, Calif.

Application April 10, 1950, Serial No. 154,991

6 Claims. (Cl. 280—11.35)

1

This invention belongs to that general class of devices known as sporting goods and relates particularly to safety devices for skis etc.

So far as known, there is no reliable and dependable and satisfactory means for releasing a skier's shoe or shoes from skis when there is danger of the skier breaking one or both legs because of running into soft snow or any hazardous situation where it would be most desirous of freeing one's legs. Many skiers have broken one or both legs when the leading end of their skis dig-in while going at a high rate of speed which may be around fifty miles per hour. Applicant's means avoids such danger in that structure is employed which releases the shoes when a dangerous high pressure is exerted upon the legs in a forward direction.

The invention has among its objects the production of a means of the kind just mentioned that is simple, durable and compact in structure, inexpensive to make and manufacture, dependable and efficient in use and service, and convenient and easy to install on all types of skis or any device somewhat similar to skis where the feet are secured upon a moving object.

Other objects, advantages and features of this particular invention will appear from a careful perusal of the accompanying drawings, the subjoined detailed description, the preamble of these specifications, and the claims appended hereto.

Below, applicant describes one of the preferable forms of his invention in order to teach the art thereof and show how to make and use the same, but it is to be understood that the drawings and illustrations and the description thereof are not to limit the invention in any sense whatsoever except as the same may be limited by the prior art. Language employed herein is not to be construed as giving any unauthorized person or organization the right to make, use and/or sell the invention herein disclosed.

In the drawings:

Figure 1 is a side elevational view of the invention with portions thereof broken away,

Figure 2 is a plan view of that shown in Figure 1,

Figure 3 is a perspective view of the principal part of the invention,

Figure 4 is an enlarged horizontal view of a portion of the device; parts being shown in plan and parts in section,

Figure 5 is a back view of the device, enlarged,

Figure 6 is an under plan portion similar to that shown in Figure 5, but showing parts in different positions,

Figure 7 is a cross sectional part taken substantially along the line 7—7 of Figure 5,

Figure 8 is a sectional view taken substantially along the line 8—8 of Figure 5, but showing a portion of the boot heel and the adjacent ski,

2

Figure 9 is an enlarged front view of the device,

Figure 10 is a greatly enlarged sectional view of one of the rollers, parts broken away,

Figure 11 is a sectional view of the roller taken substantially along line 11—11 of Figure 10.

In the particular device illustrated, a portion of a ski 1 is shown having means for attaching a skier's shoe 2 thereto. An adjustable toe plate 3 is screwed or otherwise firmly fixed to the ski, this plate having the usual side clamps 5 and 4 integral therewith and which forms nothing new in the art. Forwardly of the toe plate there is an adjustable means for holding the forward ends of the side cables 6 and 7, and this means comprises the fixed elongated plate 8 with various slots or catches to allow the cable coupling bracket 9 to be properly positioned and fixed with reference to the ski. This bracket has the pivot pin 10 and the cross headed pin 10', the opposite ends of the pin 10' having a firm connection to the ends of the strong springs 11 and 12. The cables 6 and 7 are secured to the other ends of these springs and the cables are kept in position along the sides of the ski by the fixed guides 13 and 14. All the foregoing named parts are old in the art and no claim is made thereto except as in combination with the device of this invention as illustrated.

The cable grooves 15 and 16 are generally provided in skier shoes for the obvious purpose of preventing slippage and loosening of the cable; there being but a single cable employed in the well known shoe anchors, but in applicant's invention, a pair of cables are employed and each cable provided with a hook, as 17 and 18, and also the terminal tubing pieces 19 and 20. The hooks are broad and strong and make connection with their respective release arms 21 and 22 of the safety unit 23. This unit has its lower end securely fixed to one end of a chain 24, the other end of the chain being securely anchored to the ski as by the screw means 25.

The safety unit 23 consists of an inverted U-shaped yoke 26, the legs of which form spaced guide walls 27 and 28 for the slidable plate 29. Opposite cross braces 30 and 31 add strength and also form guides for the plate 29. A spring 32 of predesigned strength and tension has one end anchored to the yoke at 33 and the other end anchored to the bolt means 25 so as to constantly urge the plate 29 into abutment with the top member of the yoke 23. Each arm 21 and 22 is pivoted to the yoke legs at 34 and 35, respectively, and their ends configurated, as shown, to neatly accommodate the chain or cable hooks 17 and 18.

Pivoted to the plate between the arms there are the frictionless rollers 36 and 37 which must be absolutely free rolling and no possibility of them sticking as the arms 21 and 22 must release

the cables when a predetermined tension is placed upon the spring 32. Each roller has the pivot stud 38 with the end heads 39 and 40, and a spaced revolvable sleeve 41 which provides a raceway for accommodating the needle rollers 42 which provide a substantial anti-friction bearing arrangement. To protect the unit from weathering etc. it is greased and covered by the elastic means 43. There is now an oil that has an extremely low freezing point which would be satisfactory for the safety unit, but the elastic covering would be useful in avoiding damage to the rollers as this part is a very important feature in preventing failure of operation.

Briefly, the operation of the device is as follows: When the lever 8 is pressed downwardly in place in order to hold the boot 2 in place, see Figures 1 and 2, the safety latching means 23 is anchored to the ski by the chain 24 and stud 25. The boot cannot leave the ski but to a limited extent, however, when the heel of the boot is forced upwardly because the point of the ski hit some object or dug its way into some soft snow, the momentum of the ski and rider when arrested will force the heel far upwardly and release it from the ski by action of the plate 29 which is pulled away from the release arms 21 and 22, thus freeing these arms to release the cable ends 17 and 18. By this means, injury of the rider's foot and leg is prevented from occurring as is quite common with present types of boot fasteners on skis.

It is, of course, understood that various changes and modifications may be made in the details of form, style, design, and construction of the whole or any part of the specifically described embodiment of this invention without departing from the spirit thereof in that such changes and modifications are considered as being within the scope of the following claims.

I claim:

1. In a safety device for releasing a boot from a ski and the like, a forward anchor means including a lever fixed to a ski and having a pair of cables extending therefrom around opposite sides of the boot and which cables are adapted to be shortened by manipulation of the lever means, a latching means positioned at the rear of the boot, the latching means comprising a yoke with arm elements pivoted along opposite margins thereof, the arm elements having end portions attached to the other ends of the cables, and a slidable plate in the latching means having projections which hold the arm elements in parallel relationship, said plate automatically releasing the arm elements and freeing their cable ends in order to free the boot upon a predetermined forward lift force upon the heel of the boot.

2. In a safety device for releasing a boot from a ski; a first anchoring means fixed to a ski for accommodating the toe portion of a boot, a second anchoring means including a lever and means for attachment of a pair of cables which are shortened by manipulation of the lever, a latching means at the rear portion of the boot and which latching means is secured to the ski, the latching means comprising a yoke with spaced arm elements pivoted thereto, and the ends of which are shaped to receive cable ends, and a sliding plate means in the latching means having projections which hold the arm elements in substantial parallel relationship, said plate means automatically releasing the cable receiving ends of the elements and hence cables attached thereto for the purpose of freeing the boot upon a predetermined upward force on the heel portion of the boot.

3. The safety device recited in claim 2 wherein the latching means include a yoke with guides for accommodating the sliding plate means, the sliding plate means having spaced rollers thereon which are in contact with the elements but which release the elements when the plate means is pulled downwardly.

4. In a safety device for releasing cables when a predetermined force is applied thereto, the device comprising a yoke with spaced guides and a slidable plate operable between the guides, a pair of cable holding arm elements spaced apart and each element pivoted near its center upon the yoke on either side of the slidable plate, means for accommodating the end of a cable at one end of each element, and roller means between the other ends of the elements and in contact therewith and mounted upon the slidable plate, and means limiting the movement of the slidable plate so that when it is forced from its position so as to shift the roller means from between the elements, the elements are automatically made free to turn and release their respective cables.

5. In a safety device for releasing cable means which hold skiers' boots to their skis; the device comprising an inverted U-shaped yoke with a slidable plate within legs thereof, means for retaining the plate within the legs, spring means attached to the yoke and plate for constantly urging the plate toward the yoke, a pair of cable holding arm elements spaced apart and each arm element having pivot connection near its longitudinal center with opposed legs of the yoke, means for accommodating the end of a cable at one end of each arm element, roller means between the other ends of the arm elements and contacting them and journalled upon the slidable plate, flexible cable means extending from the plate and the other end provided with means for attachment to a ski so that when the force acting through the flexible cable means is greater than the force of said spring means, the plate is shifted and the rollers removed from between the arm elements so as to free the arm elements and thus allow them to swing and release the cable ends attached to them.

6. The device recited in claim 5 wherein the rollers each consist of an anchored stud with a spaced sleeve thereon, and a plurality of needle bearing elements between the stud and its sleeve for providing substantially frictionless rolling action, and a weather-proof covering snugly housing the device which is readily removable.

SAMUEL GOULD.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,900,194	Niemi	Mar. 7, 1933
2,517,486	Hewett	Aug. 1, 1950

FOREIGN PATENTS

Number	Country	Date
843,364	France	July 3, 1939