April 23, 1940. H. ALTORFER 2,198,361

SKI

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Fig. 1.

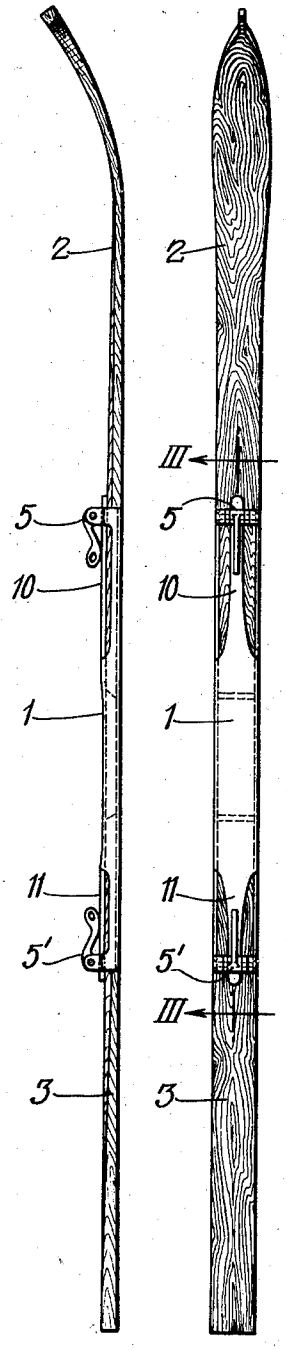

Fig. 2.

Fig. 3.

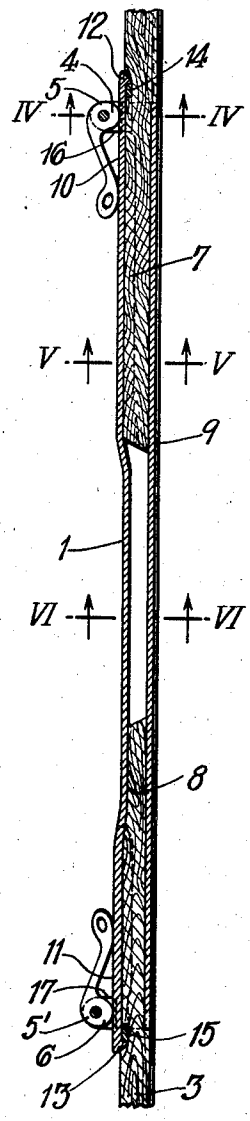

Fig. 4.

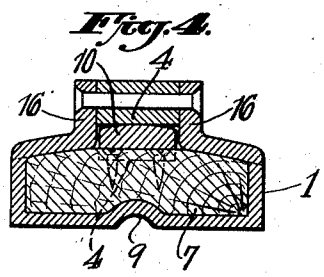

Fig. 5.

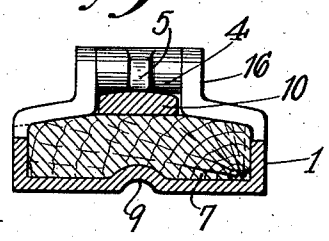

Fig. 6.

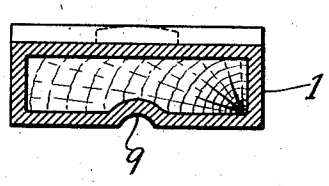

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Fig. 7.

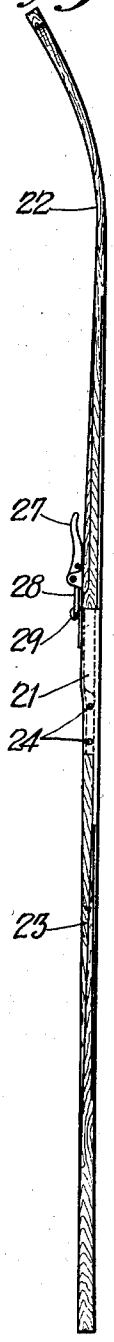


Fig. 8.

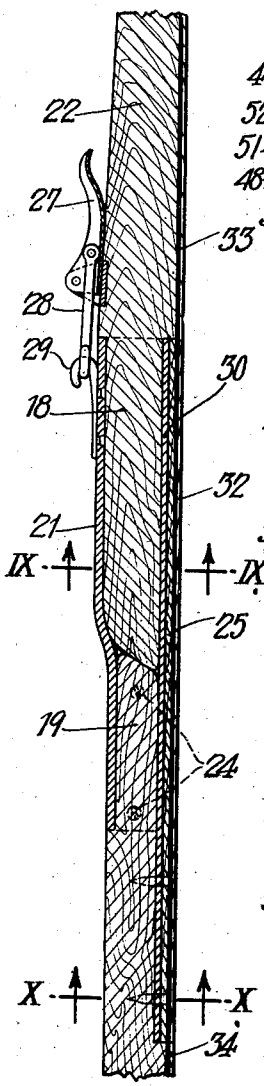


Fig. 11.

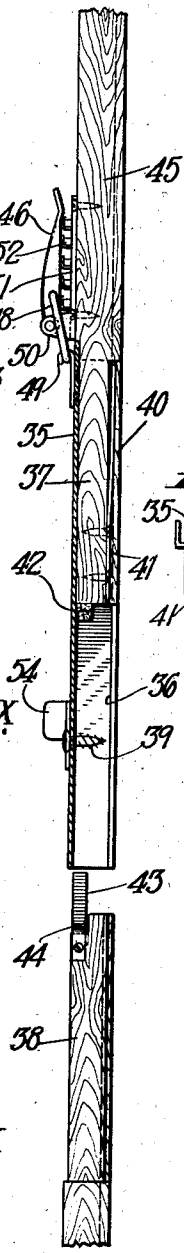


Fig. 12.

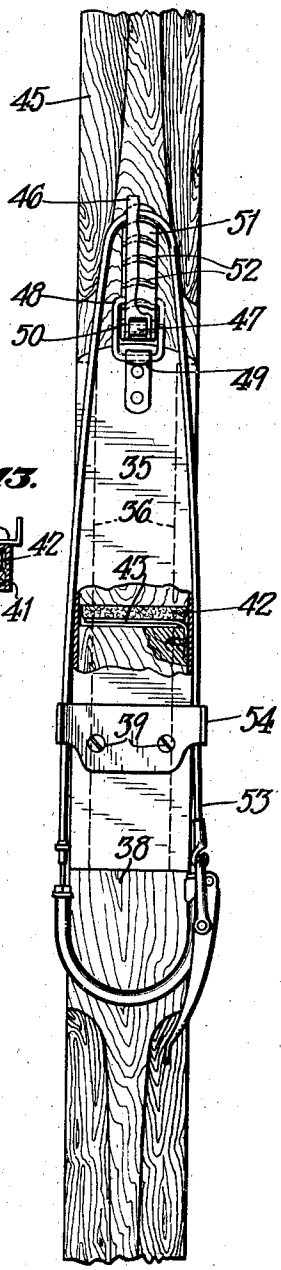


Fig. 13.

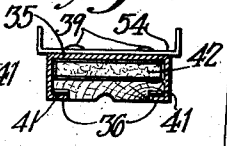


Fig. 9.

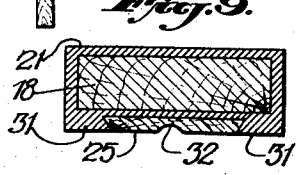
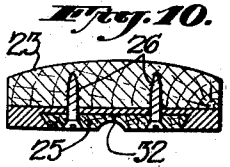


Fig. 10.



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Patented Apr. 23, 1940 2,198,361

UNITED STATES PATENT OFFICE

2,198,361

SKI

Henri Altorfer, Zurich, Switzerland, assignor of three-tenths to Paul Sidler, New York, N. Y.

Application November 26, 1937, Serial No. 176,524
In Switzerland December 3, 1936

7 Claims. (Cl. 280—11.13)

The present invention relates to a ski, more particularly to a ski which is made up of a plurality of parts which can be taken apart for facilitating transportation of the ski and replacement of individual parts.

It is an object of the present invention to provide a ski consisting substantially of a fore end part and of a rear end part and a middle part which rigidly yet disconnectably interconnects said other parts. The individual parts of the ski according to the present invention are of a size which is convenient for transportation in a motor car, railroad, rucksack or direct carrying by the skier.

Another object of the present invention resides in the provision of a demountable ski comprising a center part which is substantially made of metal or other particularly hard material and to which a wooden fore end part and a wooden rear end part is connected whereby at least one of said end parts can be readily detached from and attached to said center part. The edges of the center part of the ski which are particularly subjected to wear are thus of metal or a material which is harder than wood and lasts longer. To the center part of the ski according to the present invention the harness can be more conveniently and more rigidly and reliably connected than to an all-wood ski.

Further and other objects of the present invention will be hereinafter set forth in the accompanying specification and claims and shown in the drawings which, by way of illustration, show what I now consider to be preferred embodiments of my invention.

In the drawings:

Figure 1 is a longitudinal side view of a ski according to the present invention.

Fig. 2 is a top view of the ski shown in Fig. 1.

Fig. 3 is a part longitudinal sectional large scale view taken along line III—III of Fig. 2.

Fig. 4 is a cross sectional view of a ski according to the present invention taken along line IV—IV of Fig. 3.

Fig. 5 is a cross sectional view of a ski according to the present invention taken along line V—V of Fig. 3.

Fig. 6 is a cross sectional view of a ski according to the present invention taken along line VI—VI of Fig. 3.

Fig. 7 is a longitudinal side view of a modified ski according to the present invention.

Fig. 8 is a large scale part longitudinal sectional view of the center part of the ski shown in Fig. 7.

Fig. 9 is a cross sectional view taken along line IX—IX in Fig. 8.

Fig. 10 is a cross sectional view taken along line X—X of Fig. 8.

Fig. 11 is a large scale side view of a modified ski according to the present invention in dismantled condition.

Fig. 12 is a top view of the ski shown in Fig. 11.

Fig. 13 is a view towards the rear end of the center part of the ski shown in Figs. 11 and 12.

Referring more particularly to Figs. 1 to 4 of the drawings, 1 is the center part, 2 is the pointed fore or front end part and 3 is the rear end part of a ski according to the present invention. The fore and rear end parts are generally made of wood whereas the center part is made of a material more lasting than wood, for example, metal. In the embodiment of my invention shown in the drawings, part 1 is a hollow sheath-like body made of cast light metal, the outer cross sectional configuration being like that of the adjacent wooden parts. The latter have plug-like ends 7 and 8 which snugly fit into the hollow of the center part 1. The lower exterior side of part 1 which is in contact with the ground when skiing is provided with the customary groove 9 which continues in the wooden end parts. The thickness of the center part may be somewhat reduced where the shoe of the skier is tied to the center part by means of the harness. The upper edges of the center part 1 are left away at both ends so that tongues 10 and 11 are formed which are provided with gripping means or hooks 12 and 13 respectively. The top sides of the inner ends of the wooden end parts are provided with lock plates 14 and 15 onto which the hooked ends of the upper parts of part 1, i. e., the tongues 10 and 11 snap when parts 2 and 3 are pushed far enough into the center part 1; falling of parts 2 and 3 out of the center part is thereby prevented.

The tongues 10 and 11 are pressed to parts 2 and 3 and to the plates 14 and 15 by means of the eccentrics 4 and 6 which form the fulcrum ends of levers 5 and 5' respectively which levers swing about pivots which are supported by the eyes 16 and 17 which are part of the center piece 1. By turning levers 5 and 5' upwards the pressure on tongues 10 and 11 is relieved and parts 2 and 3 may be freed from the hooks 12 and 13 pulled out of the center piece.

The center piece may also be made of pressed metal instead of being cast. The elasticity of such center pieces is greater and the reduction of the cross section of the plug ends of parts

2 and 3 is smaller so that these ends are stronger.

Since the center part is made of light metal or other light material the ski according to the present invention is just as light as any other ski.

In the ski illustrated in Figures 7 to 10 the ski is divided into a front or fore end 22 and a rear end 23 which have plug-like inner ends 18 and 19 which abut one another at an inclined end surface. For connecting both parts 22 and 23 a hollow sheath-like center part or shoe 21 is provided which may be made of light metal or other strong and light material. The shoe or center part 21 has a substantially rectangular cross sectional configuration. The surfaces of the rear end are flush with those of the rear part of the ski and the shoe is permanently connected thereto by means of lateral screws 24. The lower part 30 of the shoe projects beyond the main rear end of the shoe and is set into the wood so that its surface is flush with the running surface of the ski. In order to produce a continuous wooden running surface, a layer of wood is held to the lower surface of the shoe by means of the dove tail tongues 31 and the screws 26. The wooden lining 25 is provided with a groove 32 which continues in grooves 33 and 34 at the fore end 22 and of the rear end 23 of the ski respectively. The edges of the hard shoe prevent wearing off of the edges of the running surface of the ski. The fore part 22 of the ski is made stouter at the part adjacent to the shoe 21 so that plug 18 has approximately the same cross sectional dimensions as has the unrestricted rear part 23 of the ski.

To the upper surface of part 22 an eccentric lever 27 is fulcrumed, said lever having a buckle 28 movably connected thereto which buckle can be hooked into the hook 29 connected to shoe 21. The rear end of the plug 18 is slightly tapered so that the plug is forced into the shoe and waggling is prevented.

In order to dismantle the ski, eccentric lever 27 is moved counterclockwise whereby buckle 28 is freed from the hook 9 and the fore end 22 of the ski can be pulled out of shoe 21 which remains fixed to the rear end 23 of the ski.

The harness is fixed to the shoe 21 in the same manner as is customary with the conventional skis.

In the embodiment of the present invention illustrated in Figs. 11 to 13 no wooden lining is required at the bottom surface of the shoe. The shoe 35 is of substantially U shaped cross sectional configuration and is provided at its lower end with inwardly extending flanges 36 between the inner edges of which is sufficient space for a wooden ski surface. The end plug 37 of the fore part of the ski is formed by a slight reduction of the width of the ski and lateral niches or recesses 40 at the bottom of the ski and extends into the shoe 35. The lateral recesses 40 may be provided with plate springs 41 which resiliently press the plug end to the shoe. The rear end of plug 37 may have a projecting part 42 which may be made, for example, of leather.

The plug 38 of the rear end of the ski is formed by a reduction of the width of the ski and, by taking some material off the upper part of the ski. Plug 38 is permanently connected with the shoe 35, for example, by means of screws 39 which may be used at the same time for fixing the jaw part 54 of the harness to the center part 35. From the fore end of plug 38 a plate spring 43 projects which, when the ski is assembled, abuts against part 42. The latter part matches with a recess 44 in member 38.

For pulling the fore part 45 of the ski into the shoe 35 against the tension of spring 43 a toggle joint acting fastener is provided. This comprises an eccentric lever 46 which swings about fulcrum 47 which is fixed to part 45. Lever 46 swingably carries the buckle or bracket member 48 which can be hooked into hook 49, the latter being rigidly connected with the shoe 35.

The brackets 50 carrying fulcrum 47 may be directly connected with a longitudinal base plate which is screwed or otherwise rigidly connected with the fore part of the ski. Base plate 51 may be used for carrying a plurality of half-moon shaped members 52 around which the flexible cable or tie 53 of the harness can be laid as shown in Fig. 12. By choosing a more forward or more rearward situated member 52 the position of the harness with respect to the ski particularly to the clamp part 54 can be changed at any time for taking up a change of slack in said cable.

While I believe the above described embodiments of my invention to be preferred embodiments, I wish it to be understood that I do not desire to be limited to the exact details of design and construction shown and described, for obvious modifications will occur to a person skilled in the art.

I claim:

1. A ski comprising a fore end member having a fore end and an inner end, a rear end member having a rear end and an inner end, a sheath-like center part snugly fitting substantially around said inner ends, and resilient connecting means resiliently yet disconnectably connecting at least one of said members and said center part, the outside cross-sectional configuration of said center part being substantially like that of the adjacent parts of said members whereby a ski is formed which can be taken apart and which has substantially continuous outside surfaces.

2. A ski comprising, in combination, a fore end member, a rear end member, and a sheath-like center part snugly fitting around a substantial part of the inner ends of said members and being permanently rigidly connected with said rear end member and being completely separably connected with said fore end member, and a toggle joint acting fastener comprising a part connected with the upper side of said center part and a part connected with the upper side of said fore end member and tightly pulling said fore end member into said center part.

3. A ski comprising a fore end member having a fore end and an inner end, a rear end member having a rear end and an inner end, said inner ends having longitudinal recesses at their lower longitudinal edges, a center part having a substantially U shaped cross-sectional configuration with flanges projecting inwardly from the extreme ends of the legs of the U and filling up said recesses, said center part snugly embracing said inner ends and rigidly yet disconnectably connecting said members, the outside configuration of said center part being substantially like that of the adjacent parts of said members, whereby a ski is formed which can be taken apart and which has substantially continuous outside surfaces.

4. A ski comprising a fore end member having a fore end and an inner end, a rear end member having a rear end and an inner end, said inner ends having longitudinal recesses at their lower longitudinal edges, a center part having a sub-

stantially U shaped cross-sectional configuration with flanges projecting inwardly from the extreme ends of the legs of the U and fitting into said recesses, said center part snugly embracing said inner ends and being rigidly connected with said rear end member, resilient means adjacent to the inner end of said fore end member and interiorly pressing said last mentioned inner end to said center part, the outside configuration of said center part being substantially like that of the adjacent parts of said members, whereby a ski is formed which can be taken apart and which has substantially continuous outside surfaces.

5. A ski comprising a fore end member having a fore end and an inner end, a rear end member having a rear end and an inner end, said inner ends having longitudinal recesses at their lower longitudinal edges, a center part having a substantially U shaped cross-sectional configuration with flanges projecting inwardly from the extreme ends of the legs of the U and fitting into said recesses, said center part snugly embracing said inner ends and being rigidly connected with said rear end member, resilient means interposed between the inner end of said rear end member and the inner end of said fore end member, and a toggle joint acting fastener comprising a part connected with said fore end member and a part connected with said center part for tightly pulling together said center part and said fore end member against the action of said resilient means.

6. A ski comprising a fore end member, a rear end member, a center part, a clamp member for holding the shoe of the skier, connecting means connecting said clamp member and said rear end member to said center part, said fore end member being rigidly yet disconnectably completely separably connected with said center part.

7. In a ski comprising a fore end member, a rear end member, a center part which is permanently connected with said rear end member, the combination of a toggle joint acting fastener comprising a part connected with said center part and a part connected with said fore end member for tightly pulling together said center part and said fore end member, a harness having a flexible tie, with a plurality of tie holding means connected with one part of said fastener directly holding said tie, whereby the position of said tie with respect to the ski can be changed by using different tie holding means.

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