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2,657,055

SKI PRACTICE BOARD

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Fig. 1.

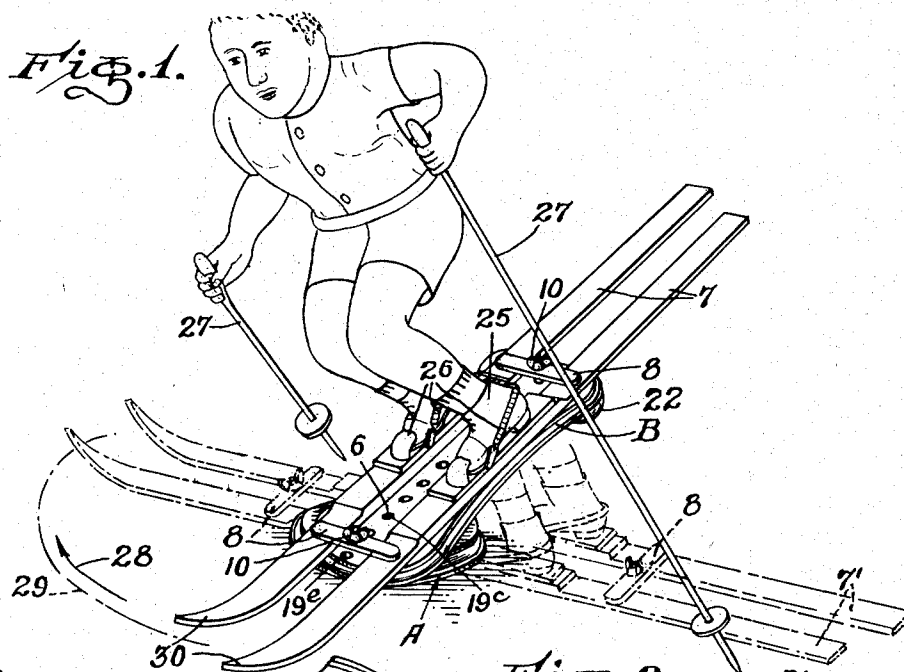


Fig. 2.

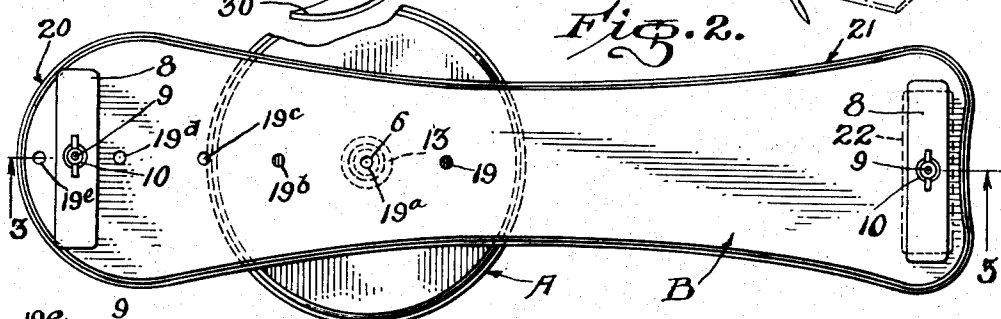


Fig. 3. B'

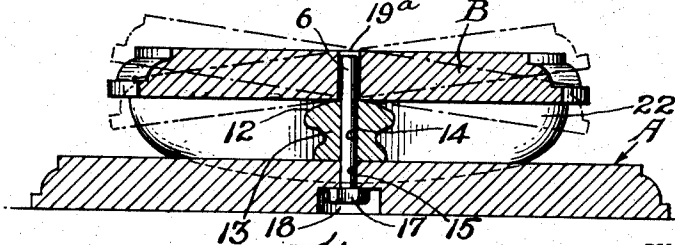
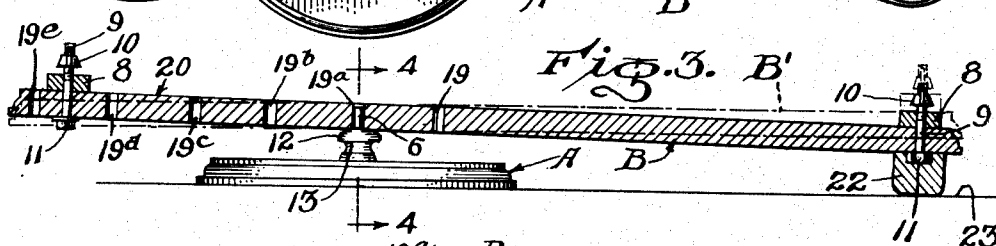


Fig. 4.

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SKI PRACTICE BOARD

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3 Claims. (Cl. 272-57)

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This invention relates to exercising apparatus in general, and in particular, to apparatus for training the body for the sport of skiing.

A particular object of the invention is to provide an apparatus especially adapted to train a skier to use the parallel method of skiing, in which the skis are kept quite close together and parallel, so as to minimize the danger of injury resulting from a fall.

Another object is to provide an exercising apparatus upon which a skier may exercise and train the body for the forward bending of the body relatively to the skis (known in skiing terminology as "vorlage") which is so important in maintaining proper balance in skiing.

A further object is to provide an exercising apparatus which is especially useful in practicing turns. To this end, the invention provides apparatus which is particularly adapted for supporting the skier and his skis, while he executes the forward bending and lateral twisting movements of the body which are essential to a properly executed turn.

A further object is to provide such an exercising apparatus which is adapted to permit the skier to actually swing his skis about a fixed pivot when the proper bending and twisting movements are executed, but which requires the proper degree of bending and balancing movement before it will permit a pivotal movement to occur.

A further object is to provide such an exercising apparatus which has means for adjusting the degree of forward bending which is required in order to achieve the balance through which the pivotal movement of the skis may be attained.

A further object is to provide an exercising apparatus of relatively simple and inexpensive construction, for use in enabling a skier to execute all of the above mentioned practice movements about a pivotal axis which is fixed relatively to an indoor supporting surface such as the floor of a gymnasium or any room.

A further object is to provide an apparatus adapted to be used in practicing what is known by professional skiers as the "horsekick" turn, in which the operator, on a turn, rides the forward rocker ends or "points" of the skis.

Other objects will become apparent in the ensuing specifications and appended drawings in which:

Fig. 1 is a perspective view of a ski practice apparatus embodying the invention, and of a skier and his skis, attached thereto and using the apparatus in executing the movement of a turn.

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Fig. 2 is a plan view of the apparatus;

Fig. 3 is a longitudinal vertical sectional view of the apparatus taken on the line 3-3 of Fig. 2; and

Fig. 4 is a transverse vertical sectional view of the apparatus taken on the line 4-4 of Fig. 3.

Referring now to the drawings in detail, I have shown, as illustrative of an apparatus embodying the invention, a ski practice device comprising generally a base section A and a platform B, which is pivotally mounted upon a post 6 carried by the base A, in order that the platform B may be rotated around pivot 6 while supported upon the base A which in turn rests upon a horizontal supporting surface such as the floor of a room.

The base B is relatively long and narrow, being just sufficiently wide at its respective ends so as to provide a support for a pair of skis 7, disposed in spaced parallel relation thereon, with the correct spacing for parallel skiing operations. The base B is provided with a pair of clamping bars 8 by means of which the skis 7 may be tightly clamped to the upper space of the base B. The clamping bars 8 are attached to the base B at the respective ends thereof, by means of bolt 9 and wing nut 10, the bolt 9 extending upwardly through the base B and through the respective clamping bars 8, and having head 11 engaging the underside of base B. By screwing the wing nut 10 downwardly, the clamping bars 8 may be forced against the skis 7 to clamp them in place.

Base B is mounted on post 6 both for pivotal movement around the axis of the post and also for lateral fore and aft tilting movement. To this end, the base B rests upon the crowned upper end 12 of a fulcrum member 13 through which the post 6 extends. Fulcrum member 13 is of spool form, having a central bore 14 through which the post 6 projects, and having its base portion cemented to base A. Post 6 has a press-fit in an opening 15 in base A, and has a head 17 engaging the underside of base A, being received within a recess 18 therein.

Post 6 has an upper end portion projecting upwardly from the crowned surface 12 and receivable in any one of a series of openings 19, 19a, 19b, 19c, 19d, in base B. Openings 19-19d are disposed along the central longitudinal axis of the base B and are positioned within the forward half of the base, which may be referred to as the head portion thereof, and is designated by the numeral 20. The other half of the base will be referred to as the tail portion and is designated by the numeral 21.

Secured to the underside of the tail portion 21,

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near the end thereof, is a foot member 22 which is adapted to engage the floor or other supporting surface 23 so as to cooperate with the base A in supporting the platform B in a position that is substantially level but is inclined very slightly downwardly and rearwardly as indicated in full lines in Fig. 3. A perfectly level position of the platform B is indicated at B' in Fig. 3, in broken lines.

Operation

In using the apparatus, the operator, indicated at 24, first attaches the skis to the platform B, clamping them securely beneath the clamping bars 8. The ends of the bars 8 may be used as guides or indicators to determine the proper spacing for the outer sides of the skis 1. Thus the proper spacing may be easily determined by arranging the skis with their outer edges flush with the outer ends of the clamping bars 10.

With the skis thus attached to the platform B, the skier, having donned his ski shoes 25, steps into the ski bindings (indicated generally by the reference numeral 26) and manipulates the latter to secure the shoes to the skis in the customary manner. He then takes in his respective hands the conventional ski poles 27, and is ready to use the apparatus in ski-movement exercises.

Previously to mounting the skis, the operator has selected one of the openings 19—19d, determined by the degree of "vorlage" that he expects to put into the exercises. The hole 19 is to be used by a beginner who is unable to bend very far forwardly. The succeeding holes 19a, 19b, etc., are for progressively advanced stages of proficiency. In the use of the apparatus, the skier attempts to shift his weight forwardly to the point where he can rest the heel 21 away from the supporting surface 23, and balance the platform upon the fulcrum crown 12. Having achieved a balanced condition, it will then be possible, by executing the proper twisting movements (counter ruade and ruade) to rotate the platform around the post 6 so as to simulate a turn.

In modern skiing, ski experts have become convinced that the older and perhaps more common technique of turning, known as the "stem-turn" or "stem-christie," should be discarded in favor of the more modern technique, utilizing what has been designated the "parallelschwung," in which the skis are kept practically parallel throughout the turn. In the stem-turn, the skier, assuming that he is going to make a left turn downhill, executes a preliminary counterswing to the right. He then goes into the left turn by shifting the heel of the left ski leftwardly downhill, keeping the point thereof adjacent the point of the right ski (a partial "snow plow" position) grips the snow for an instant and then makes a left swing into the turn (the "stem-christie"). Unfortunately, in this maneuver, if the inboard ski is projected with a shade too much "edge," the skis are very apt to cross, trip the skier and cause a dangerous head over heels tumble.

Most skiers, in executing this turn, feel that it is necessary to get a grip with the lower ski and give a heave up hill to start the skis around the turn. This is one of the primary factors in inducing the crossing of the skis. This necessity for pushing upwardly with the lower ski is involved with the belief that there must be executed what is called a "weight shift" in going into the turn. Again, in many cases the skis do not grip the snow as expected, the skier goes

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into the turn unbalanced, and has the skis shoot out from under him as he makes the turn down hill.

Perhaps the most common skiing technique employed by the beginner is what is known as "snow-plowing" in which the skis are kept spread apart anywhere from 18" to two feet apart. Almost invariably, a skier using this technique, when he attempts to go into a turn, will cross his skis and wind up tumbling head first into the snow.

The invention is operative to restrain the operator from any tendency to go into a "stem-christie."

Parallel skiing has the fundamental advantage of making it substantially impossible to cross the skis, the skis being held so closely together that any tendency to cross is "nipped in the bud," and there is very little tendency for the skis to cross under any circumstances, as long as they are held thus closely parallel. However, the technique of making a parallel turn is more difficult to acquire than the more common stem-turn.

In making a parallel turn, the skier executes the turn by a twist upon the center of the skis under the feet, and does not find it necessary to be concerned with "weight shift." The necessity for poking one ski out and diving off into space, hoping that the skis will go in the same direction as the dive, is eliminated. The skis are kept firmly under the operator at all times and he is able to lean as far forwardly or backwardly as he pleases.

In the preliminary state of the turn, the operator executes a counterrotation while bearing his weight on the heels (the running position). In this counterrotation ("counter ruade") he swings his shoulders in a direction opposite the direction of the turn that is to be made, with the result that there is a counter torque in the ankles in the direction of the turn that is to be made.

The execution of the "counter ruade" may be practiced upon the apparatus of my invention, and in doing so, the operator, keeping his weight on the heels, twists his body in the direction opposite the turn.

At the end of the "counter ruade," the skier commences the "ruade" or body swing in the direction of the turn. When half way through the "ruade," in order to properly execute the turn, the weight must be shifted forwardly towards the "points" of the skis. Accordingly, as he executes the "ruade," he leans forwardly. In practicing the "ruade" on the apparatus, the operator, at the middle of the turn, attempts to lean far enough forwardly to lift the tail portion of the platform B from the floor, balancing the platform upon the fulcrum crown 12. As soon as the tail portion of the platform leaves the floor, the swing of the body will cause the skis to swing in the direction of the turn, as indicated by the arrow 28 (right turn) and broken lines 29 (indicating the path of the points of the skis) in Fig. 1.

The skier winds up with the upper portion of his body facing forwardly in alignment with the skis, which are swung around to their new position at the end of the turn, indicated in broken lines at 7' in Fig. 1, pointing along the new path of travel.

In the shift from the "counter-ruade" to the "ruade," it is customary for the operator to lean laterally toward the axis of the turn, i. e. inboard. In practice on the apparatus, this leaning is accommodated by lateral tilting of the platform B.

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from one side to the other, the degree of inclination being limited by contact of the side edges of platform B with base A. In Fig. 4, the inclination of the platform from one side to another is indicated in the two broken line positions while a neutral level position is shown in full lines.

The invention is especially adapted for use in shifting directly from a right turn into a left turn and directly back into a right turn in a continuous "slalom" motion in which the body alternately swings first in one direction and then the other. It is not necessary (as it is in certain prior practice apparatus) to arrest the movement from an elevated position down to a bottom position on an inclined track on which foot supporting members are mounted, and climb back to the top of the track in order to commence the next movement.

It will now be apparent that for practicing the greater degree of forward leaning that is required for faster turns, the operator as he acquires proficiency, may utilize progressively forward openings 19b for engagement with pivot post 6, whereby to progressively shift the axis of fulcrum post 6 farther forwardly in the head portion 20 of the platform.

For executing what is known as the "horse-kick" which is utilized by expert skiers for making a turn in deep powdery snow where the skis are submerged, and in which, by suddenly dropping the hips and raising the heels, the weight is actually shifted onto the forward rocker portions, or "points" 30 of the skis (the "Allais technique") the invention may utilize opening 19e which is disposed at the very forward tip of the platform B, ahead of the forward clamping bar 8. This makes it possible to tilt the platform upwardly to a degree where the "points" of the skis may engage the floor surface without lifting the platform off of the post 6.

It will be understood that in each case in the practicing of a turn, the platform will ordinarily be tilted downwardly and forwardly to a point where the forwardly projecting portions of the skis will make light contact with the floor surface, and that the turn will actually be executed by sliding these forward portions of the skis against the surface, with a "feel" simulating that of an actual turn. Both platform and base are restricted in horizontal dimensions to allow such floor contact.

The apparatus may be used for practicing the more simple movements such as the lateral tilting of the skis when skiing down hill on the diagonal (at an angle to the line of steepest declivity) and for practicing the shifting of the weight from one foot to the other, as is utilized as a component of the movements executed in making a turn. Other simple practice exercises embody the simple bending of the body forwardly in the "vorlage," to strengthen the ankles and leg muscles for such vorlage movements. By adjusting the position of the pivot successively toward the head of the platform, the skier can set the apparatus so as to indicate the attainment of any desired degree of forward bending, the indication being the lifting of the heel of the platform off the floor.

The foot member 22 serves to support the platform in a substantially level position, with the weight centered between the universal pivot fulcrum and the heel of the platform, when the operator is not bending forwardly. It also facilitates lifting the heel of the platform off the floor when the proper degree of forward bend has

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been attained, since the platform is already in a substantially level position and need not be lifted upwardly from a position of substantial rearward inclination.

It may be noted that apertures 19—19d, being disposed on the longitudinal central axis of the platform B, are exposed between the skis 7 to facilitate insertion of the post in a selected aperture. By leaning backward on skis (to lift the points thereof) the shifting may be done without getting off the skis. This is accomplished by suddenly dropping the hips and utilizing the inertia of the upper torso in lifting the feet, skis and platform in an upward kick in which the platform is shifted to bring another hole into registry with the post.

I claim:

1. In an exercising device for use in practicing skiing movements, a platform of relatively narrow, elongated form, said platform having means for securing thereto a pair of skis in closely spaced parallel relation, paralleling the longitudinal axis thereof, said platform having along said longitudinal axis a plurality of apertures spaced fore and aft, and a base adapted to be supported upon a floor surface, said base having a centrally disposed fulcrum member projecting upwardly therefrom and having an upper crowned bearing surface adapted to bear against the underside of said platform for supporting the same for universal pivotal movement, said base having a pivot post projecting upwardly from the center of said fulcrum member and receivable selectively in any one of said apertures for providing a universally pivotal connection between said platform and said base, said pivotal connection being disposed forwardly of the center of attachment of the operator's feet to the skis as secured to said platform, whereby the heels of the skis normally gravitate toward the supporting surface, said center of attachment being sufficiently close to said pivotal connection to enable the operator, by leaning forwardly, to balance his weight over said pivotal connection and to elevate the heels of the skis to a floating position, said base and platform being shaped and proportioned so that said platform at all times remains clear of any contact with said base except at said pivotal connection, whereby said skier may, with the skis in said floating position, cause the platform and skis to rotate freely about the vertical axis of said pivotal connection, in a generally horizontal plane, so as to simulate the execution of a skiing turn, the selective insertion of said pivot post in various apertures providing for selective adjustment of the spacing of said pivotal connection from the forward end of said platform, whereby to determine the amount of forward leaning which must be executed by the operator in order to balance said platform for said floating movement.

2. A practice apparatus as defined in claim 1 wherein said apertures are exposed in the space between the skis as normally secured to the platform.

3. In a ski practice apparatus, a platform having means for clamping thereto a pair of skis having conventional shoe bindings, said platform being of relatively narrow, elongated form and having, forwardly of its longitudinal center, a series of openings arranged along its longitudinal median line; a base adapted to be supported on a floor surface; a fulcrum member projecting upwardly from said base and having a

crowned upper surface for supporting said platform for universally pivotal movement, said fulcrum member having a pivot post projecting upwardly for engagement in one of said openings to provide a pivotal connection between said platform and base at selected positions forwardly of said shoe bindings, all of which positions are sufficiently close to said bindings so as to enable an operator, mounted upon said skis, by leaning forwardly, to balance his weight above said pivotal connection and raise the heels of the skis to a floating position, said base and platform being shaped and proportioned so that said platform and skis at all times may remain clear of any contact with the base, whereby the platform and skis may, in said floating position, be freely rotated in a generally horizontal plane around the vertical axis of said pivotal connection, to simulate a skiing turn, or may be freely tilted either forwardly or rearwardly or laterally about said pivotal connection.

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