Nov. 23, 1937. L. GELBMAN 2,099,731

SKI PLANE

Filed Sept. 12, 1936

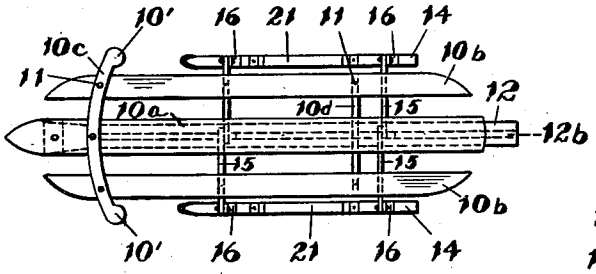


Fig. 1

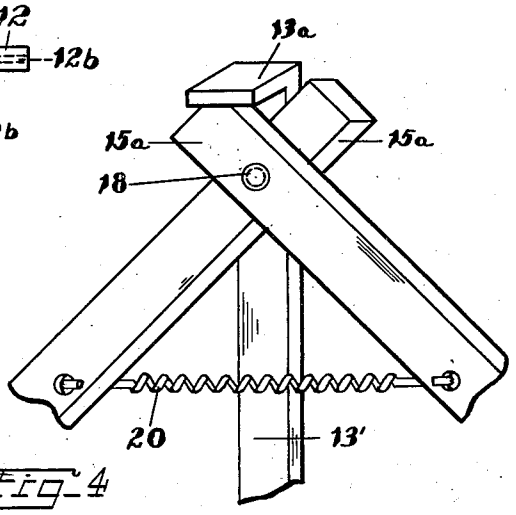


Fig. 4

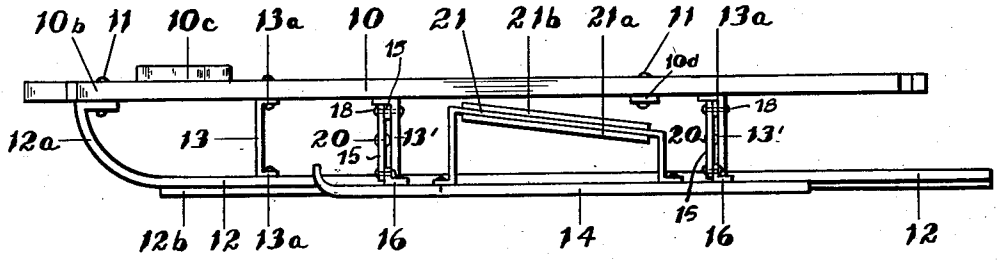


Fig. 2

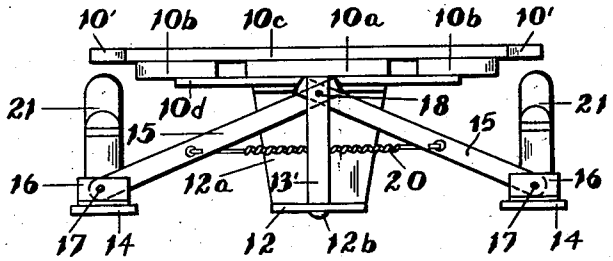


Fig. 3

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SKI PLANE

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8 Claims. (Cl. 280—8)

This invention relates to new and useful improvements in a ski plane, and has more particular reference to a ski plane of the type disclosed in my Patent No. 2,043,374 dated June 9, 1936 for a Snow plane and scooter plane.

The invention has for an object the construction of a ski plane which is characterized by a one piece body without an auxiliary steering head or a mechanism for flexing the runners, members or ski elements thereof. When thus constructed the cost of the ski plane may be materially reduced.

A further object of the invention resides in the specific arrangement of the side supporting ski elements or members which will permit steering of the ski plane in a manner very similar to the steering of a regular pair of skis. More specifically, it is proposed to so arrange the side supporting ski elements or members that the operator of the ski plane may lean towards one side or the other to steer the ski plane—and to so arrange the supporting ski elements or members in a manner that the operator may support the ski plane against spilling during the steering operation.

More specifically, the invention contemplates the provision of support ski elements or members arranged along the sides of the ski plane and resiliently supported so that they may engage the ground or be lifted therefrom, and furthermore arranged so that they may be placed flatly against the ground during the steering of the ski plane. In a specific embodiment of the invention it is proposed that each support ski element or member be pivotally supported and arranged so that it may be manually pivoted into the correct position for assisting in steering the ski plane.

Another object of the invention is the construction of a device as described which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

Fig. 1 is a plan view of a ski plane constructed according to this invention.

Fig. 2 is an enlarged side elevational view of Fig. 1.

Fig. 3 is a rear end view of Fig. 2.

Fig. 4 is a fragmentary enlarged detailed view of a portion of the mechanism which supports the side support ski elements or members.

The ski plane, according to this invention, comprises a one piece body 10 for a rider to sit on. This one piece body is shown made from a plurality of elements rigidly connected together. More specifically, the one piece body 10 comprises a central longitudinal board 10*a*, a pair of side longitudinal boards 10*b* parallel to and slightly spaced from the board 10*a*, a front brace 10*c* and a rear brace 10*d*. The front brace 10*c* has extended end portions 10′ which form rests for the feet of a rider. The braces 10*c* and 10*d* are rigidly connected with the longitudinal boards of the body by rivets 11.

A main ski 12 is attached along the longitudinal center of the body 10 and is adapted for running upon ice or snow. At one end this main ski 12 has a bent up portion 12*a* which is fixedly attached to a front portion of the central board 10*a*. At an intermediate point the ski 12 is reinforced by a brace 13 which is rigidly attached between the ski element and the central board 10*a*. At several additional points along the length of the ski 12 there are supporting braces 13′ which furthermore assist in rigidly connecting the main ski with the body 10. A longitudinal bead portion 12*b* is formed along the bottom face of the main ski for digging into the snow or ice when the ski is in operation to assist in holding it true to its course. Each of the brackets 13 and 13′ has bent head portions 13*a* through which rivets or other fastening elements may engage to attach the brackets to the body and to the ski element.

A pair of support ski elements or members 14 are disposed along the sides of the body 10 parallel to the main ski 12 and are supported on arms 15. These arms are arranged to movably support and hold the support ski elements or members 14.

Each ski 14 is supported by the arms 15 in the following manner: At spaced positions the ski 14 has lugs 16 riveted thereon. A pintle 17 pivotally connects the lugs upon the extremities of the arms 15. The inner end portions of the arms are pivotally supported by rivets 18 to the brackets 13′. These rivets 18 are set in from the ends of the arms 15 so that there are extending portions 15*a* of the arms 15 which are adapted to strike against the adjacent head portions 13*a* from the brackets 13′. Thus, the arms 15 are limited in their pivoting so that the outer ends may move downwards to positions in which

the support ski elements 14 are in a plane substantially in the plane of the main ski 12.

A spring 20 is connected between the arms 15 of each of the brackets 13'. These springs 20 serve to normally urge the arms 15 into positions in which the support ski elements or members 14 are moved to their lowermost positions. A handle 21 is attached to each of the support ski elements 14 by which these elements may be lifted from the ground or may be forced against the ground as desired. Each handle 21 comprises a metallic support portion 21*a* having its ends attached to the support ski element and having an upward extended central portion to the opposite sides of which there are attached semi-cylindrical handle portions 21*b*.

The operation of the device is as follows:—

A rider sits upon the body 10 and holds his feet upon the end portions 10' of the front brace 10*a*. The rider then grips the handles 21. The ski plane is then permitted to travel down a grade and when sufficient speed has been attained for the rider to easily balance himself, he simultaneously lifts the support skis 14 by pulling upon the handles 21. Should he feel himself falling to one side or the other he supports himself by pushing down the support ski at the side to which he is falling. Another way for the rider to support himself would be to release the support ski and permit the springs 20 to engage both of them into operative position against the ground.

The rider may steer the ski plane in the following manner: While riding with the support ski elements 14 lifted he may throw the weight of his body towards one side or the other to cause the main ski 12 to partly stand up on one longitudinal edge or the other and so accomplish steering of the ski plane in a manner very similar to the actual steering of a ski.

Should the rider desire to steer the ski plane in a smaller curve he may engage the support ski 14 which is upon the inner side of the curve against the ground in a manner so that the outer edge of this support ski engages the ground. This is possible by merely pivoting the ski 14 upon the pintles 17. The handles 21 permit such pivoting. With the assistance of the side ski elements—by engaging the outer edges thereof against the ground—the ski plane may be steered in a very sharp curve.

While I have shown and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed, and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:—

1. In a ski plane a body for a rider to sit on, a main ski attached along the longitudinal center of said body for running on snow or ice and upon which a rider may balance himself, arms transversely of said body and movably mounted upon said body to move in planes transversely of said body, a support ski element on each side of said main ski and mounted upon said arms and adapted to move arcuately upwards and outwards and resilient means urging said support skis downwards against the snow or ice.

2. In a ski plane a body for a rider to sit on, a main ski attached along the longitudinal center of said body for running on snow or ice and upon which a rider may balance himself, arms transversely of said body and movably mounted upon said body to move in planes transversely of said body, a support ski element on each side of said main ski and pivotally mounted upon said arms and adapted to move arcuately upwards and outwards, and resilient means urging said support skis downwards against the snow or ice, and handles on said support ski elements by which they may be manually pivoted on the ends of said arms and by which they may be lifted upwards out of contact with the snow or ice.

3. In a ski plane a body for a rider to sit on, a main ski attached along the longitudinal center of said body for running on snow or ice and upon which a rider may balance himself, arms transversely of said body and movably mounted upon said body, a support ski element on each side of said main ski and mounted upon said arms and adapted to be selectively manually lifted, and resilient means urging said support skis downwards against the snow or ice, said arms being arranged in pairs extending in opposite directions from the center of the body, the inner ends of each pair being pivotally mounted upon a bracket supported on the body.

4. In a ski plane a body for a rider to sit on, a main ski attached along the longitudinal center of said body for running on snow or ice and upon which a rider may balance himself, arms transversely of said body and movably mounted upon said body, a support ski element on each side of said main ski and mounted upon said arms and adapted to be selectively manually lifted, and resilient means urging said support skis downwards against the snow or ice, said arms being arranged in pairs extending in opposite directions from the center of the body, the inner ends of each pair being pivotally mounted upon a bracket supported on the body, said brackets being also attached to said main ski.

5. In a ski plane a body for a rider to sit on, a main ski attached along the longitudinal center of said body for running on snow or ice and upon which a rider may balance himself, arms transversely of said body and movably mounted upon said body, a support ski element on each side of said main ski and mounted upon said arms and adapted to be selectively manually lifted, and resilient means urging said support skis downwards against the snow or ice, said arms being arranged in pairs extending in opposite directions from the center of the body, the inner ends of each pair being pivotally mounted upon a bracket supported on the body, said brackets having head elements against which the inner ends of said arms may engage to act as a stop for limiting the downward pivoting of the outer ends of said arms.

6. In a ski plane a body for a rider to sit on, a main ski attached along the longitudinal center of said body for running on snow or ice and upon which a rider may balance himself, arms transversely of said body and movably mounted upon said body, a support ski element on each side of said main ski and mounted upon said arms and adapted to be selectively manually lifted, and resilient means urging said support skis downwards against the snow or ice, said arms being arranged in pairs extending in opposite directions from the center of the body, the inner ends of each pair being pivotally mounted upon a bracket supported on the body, said brackets having head elements against which the inner ends of said arms may engage to act as a stop for limiting the downward pivoting of the

outer ends of said arms, and said resilient means comprising springs between the arms of each pair of arms.

7. In a ski plane a body for a rider to sit on, a main ski attached along the longitudinal center of said body for running on snow or ice and upon which a rider may balance himself, arms transversely of said body and movably mounted upon said body, a support ski element on each side of said main ski and mounted upon said arms and adapted to be selectively manually lifted, and resilient means urging said support skis downwards against the snow or ice, said arms being arranged in pairs extending in opposite directions from the center of the body, the inner ends of each pair being pivotally mounted upon a bracket supported on the body, said brackets having head elements against which the inner ends of said arms may engage to act as a stop for limiting the downward pivoting of the outer ends of said arms, said support skis being transversely pivotally mounted on said arms.

8. In a ski plane a body for a rider to sit on, a main ski attached along the longitudinal center of said body for running on snow or ice and upon which a rider may balance himself, arms transversely of said body and movably mounted upon said body to move in planes transversely of said body, a support ski element on each side of said main ski and mounted upon said arms and adapted to move arcuately upwards and outwards, and resilient means urging said support skis downwards against the snow or ice, said support skis being pivotally mounted on said arms so that they may be manually pivoted to have their outer longitudinal edges engage the ground.

LOUIS GELBMAN.