Oct. 31, 1950 G. F. STOF 2,528,397

SKI-BIKE

Filed May 6, 1948

Fig. 3.

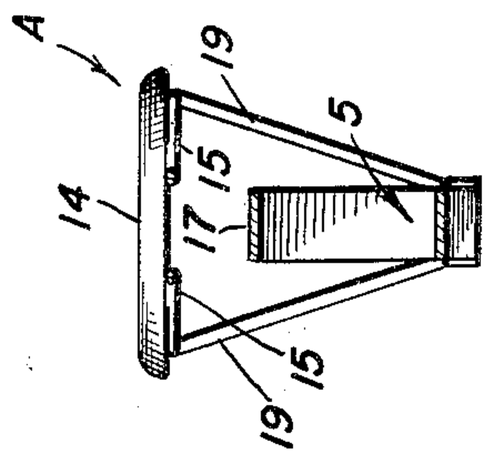


Fig. 2.

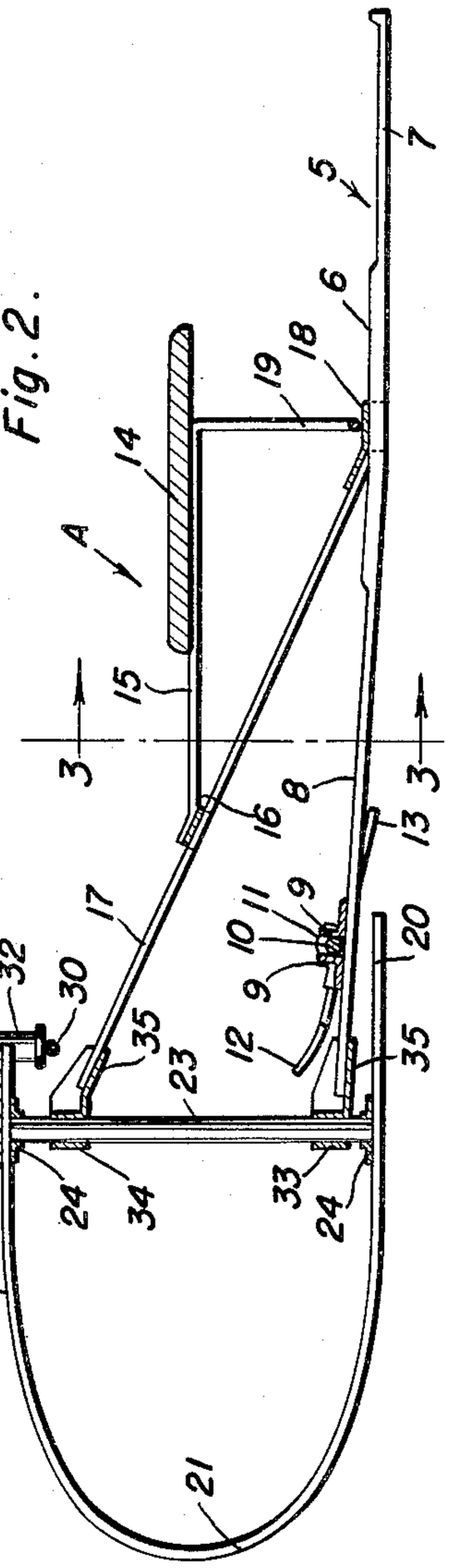
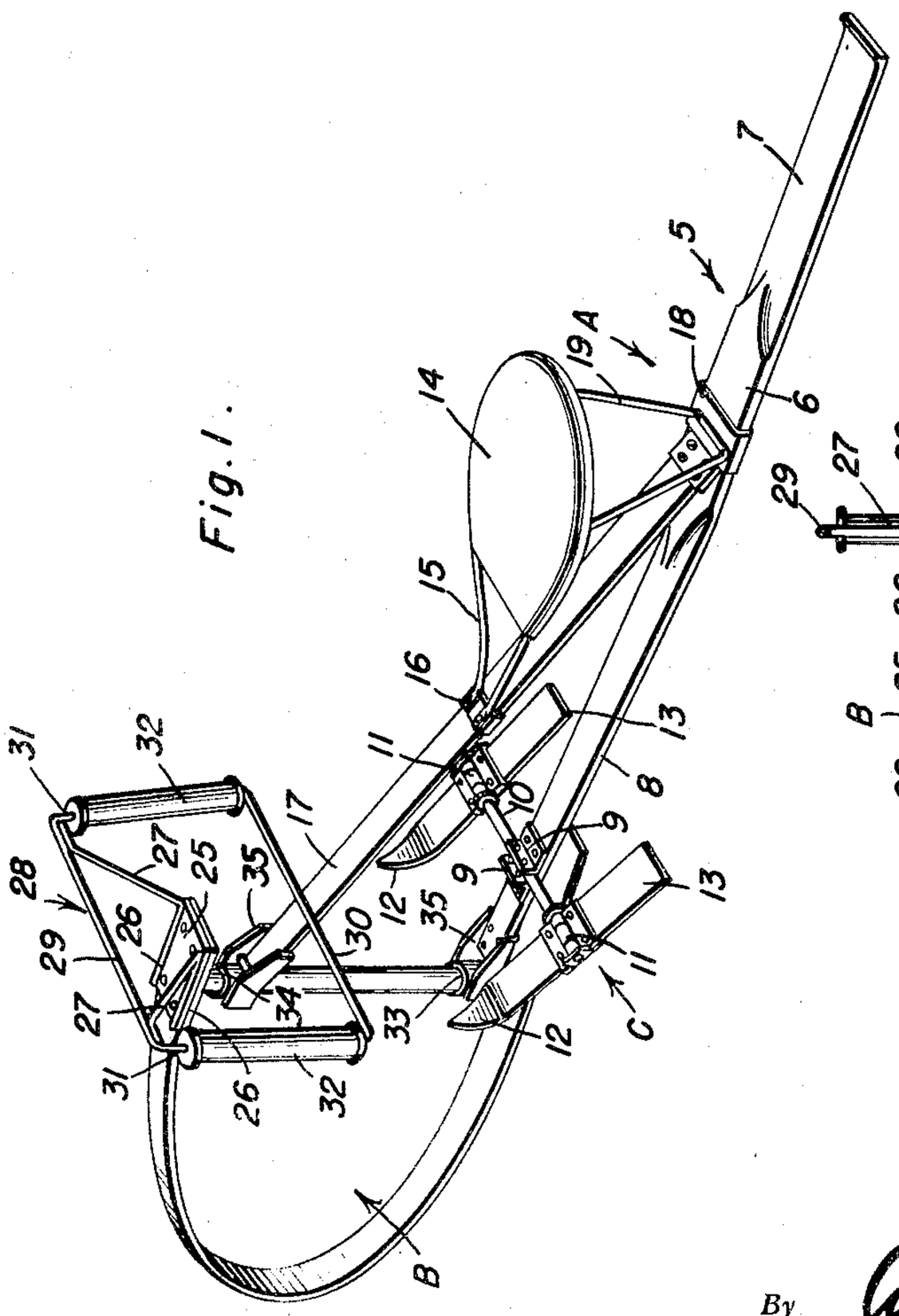


Fig. 1.



Inventor

Gustav Felix Stof

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Patented Oct. 31, 1950

2,528,397

UNITED STATES PATENT OFFICE

2,528,397

SKI BIKE

Gustav Felix Stof, Salzburg, Austria, assignor of one-half to August Gnehm, Bozeman, Mont.

Application May 6, 1948, Serial No. 25,459
In Austria November 11, 1946

5 Claims. (Cl. 280—16)

1

The present invention relates to certain new and useful improvements in winter-sports equipment and has more particular reference to a device which resembles a ski but which may be used by a person while seated. Devices of this type are usually termed ski-bike or ski-sleds.

An object of the invention is to provide a simple, practical, readily maneuverable device which is characterized by a seat equipped ski runner, and by means located in the fore portion for steering and controlling the actions of same; said means have readily steerable hand grips for convenient and practical use, whereby to provide a device for bobsledding or toboggan slides and for skiing while seated, on certain snow-covered slopes.

One object of the invention is to provide novel steering means characterized by a substantially U-shaped runner provided with a fixed vertical post between its limbs and having its upper limb provided with a frame arrangement with conveniently located and satisfactorily actuable hand grips.

Another object of the invention is to provide a trailing ski forming a runner connected with said first named steering runner by way of the post in such a way that the said runners overlap and are arranged close to each other in the overlapping sections, while being substantially or nearly parallel provided with a well braced and systematically balanced and arranged seat for the occupant.

Another object of the invention consists in the provision of a dual pedal means which is detachably and rockably mounted on the forward portion of the ski, the pedals being adapted to be controlled by the feet of the driver and being so arranged that they serve as effective stabilizers and brakes to assist in insuring controlled maneuverability of the improved ski-sled.

Other objects and advantages will become more readily apparent from the following description and the accompanying illustrated drawings.

In the drawings:

Figure 1 is a perspective view of a ski-sled constructed in accordance with the present invention.

Figure 2 is a side view with parts in section to bring out the construction and arrangement of structural details and parts.

Figure 3 is a transverse vertical section on the line 3—3 of Figure 2, looking in the direction of the arrows.

Referring now to the drawings it will be seen

2

that the structure according to the invention is characterized, broadly speaking, by a rear unit or section A by a complemental forward steerable section B and by a foot pedal unit C.

The rear section A comprises a single runner or ski 5 having a relatively thick central portion 6, a trailing end portion 7, and a forward bendable portion 8 carrying adjacent its outer end a pair of L-shaped clips 9 defining a keeper for the twin-type foot pedal unit C. This unit comprises a shaft 10 removably fitted between the clips 9 and having foot pedals hingedly mounted as at 11, on opposite ends thereof. The toe portions of the pedals, denoted at 12, are suitably shaped and arranged to accommodate the feet of the user. The rear end portions constitute drag brakes 13 and function in a substantially obvious manner. By having the unit C as a separate part, it may be readily applied and removed, and angularly tilted at right angles to the longitudinal axis of the ski for bringing them into advantageous angular positions to control maneuvers and to enable the driver, with his feet, to manipulate the entire sled skillfully and to best advantage. Unit A also includes a suitably shaped seat 14 which is poised centrally and properly balanced on the ski. The seat is mounted on horizontal frame members 15 connected with a U-cleat 16 which fits over the intermediate portion of a diagonal upwardly inclined brace 17. The lower end of the brace has a similar cleat 18 and this is fitted over the portion 6 of the runner or ski. The same clip serves to accommodate the vertical portion 19 of the triangular seat frame means.

The steering means or unit B comprises a flexible runner which is bent into U-shaped form and this provides a horizontal gliding or runner portion 20 gliding over the snow covered surface, a return bend 21 defining a piloting nose, and an upper limb 22 substantially parallel to the gliding portion 20. A vertical post 23 is fitted into collars 24 secured between the runner 20 and limb 22 at a distance from their free ends. A steering plate 25 is mounted above the upper end of the post and riveted to the limb 22 to accommodate attaching ends 26 of adaptor braces 27 which serve to accommodate a substantially rectangular handling frame 28. This comprises upper and lower longitudinal members 29 and 30, and vertical or transverse end members 31, which members 31 accommodate elongated spools 32 forming hand grips. The vertical frame is arranged rearwardly of the post and above the sled with the handles so placed

that the occupant of the seat may have clear vision and perfect control of the unit B in relation to the unit A.

Collars **33** and **34** having channel-like adaptor portions **35** accommodate the free ends of the ski and brace respectively. Through the medium of the collars **33** and **34** and adaptors **35**, the ski unit A is swingably mounted on the post carried by the steering unit B, the two units being thus freely swingable with respect to each other.

The ski unit A is characterized by a single ski or flat runner and a diagonal brace for connecting it to a post, a seat being centrally arranged on the ski and partly supported by the ski, and partly supported by the brace. A further characteristic of the invention consists in the twin foot pedals C, mounted on the unit A. The unit C is arranged to allow the occupant of the seat to assist the steering maneuvers by using the pedals, to stabilize the vehicle to provide the necessary braking, dragging and other actions. The substantially U-shaped runner forming the steering unit B and carrying the vertical post **23**, and rectangular frame means **28** with swivelly mounted hand grips **32**, is placed so close to the flat runner carrying the weight that it acts merely as a movable fore section to the latter.

Minor changes in shape, size, materials and rearrangement of parts may be resorted to in actual practice so long as no departure is made from the invention as claimed.

I claim:

1. A ski-type sled for tobogganing and other purposes comprising a U-shaped steering unit including a vertical post and adaptor brackets, a rectangular frame mounted on and suspended from said adaptor brackets in parallelism and spaced rearwardly of the post, swivelly mounted hand grips on the vertical portions of said frame, and a trailer unit embodying a ski operatively attached at its forward end to said post.

2. A ski-type sled for tobogganing and other purposes comprising a U-shaped steering unit including a vertical post and adaptor brackets, a rectangular frame mounted on and suspended from said adaptor brackets in parallelism and spaced rearwardly of the post, swivelly mounted hand grips on the vertical portions of said frame, a trailer unit embodying a ski operatively attached to its forward end to said post, including a seat on the intermediate portion of the ski, and foot pedal means on the forward portion of the ski.

3. A ski-type sled for tobogganing and other uses comprising a substantially U-shaped member with a lower horizontal portion forming a runner, with an upper horizontal portion forming a return limb and with an intermediate portion forming a piloting nose, a vertical post secured rigidly between the rear ends of said runner and limb, a vertically disposed rectangular frame, means attaching said frame to the upper portion of said post, a pair of spaced vertically disposed and swivelly mounted hand grips on said frame, and a seat-equipped ski attached operatively to said post.

4. In a single track ski-type sled a flat ski member forming a runner, a seat supported intermediate its ends, a steering apparatus, including a further flat ski member bent to U-shape and having a gliding portion and a return limb substantially parallel to the gliding portion, a steering pivot extending between points of said return limb and gliding portion at a distance from their respective free ends, a brace running from the point of support of the seat towards the upper end of the steering pivot, the flat ski member forming a runner overlapping the free end of the gliding portion of the U-shaped ski member and running to a point close to the lower end of the steering pivot in approximate parallelism with the said gliding portion, collars with adapter brackets pivotally holding the steering apparatus said adapter brackets being attached to the ends of the brace and to the flat ski member forming a runner respectively, and handle means attached to the free end of the return limb of the steering apparatus.

5. A single track ski type sled comprising a piloting and steering unit of U-shape embodying a flat ski like guiding portion in contact with the ground surface, an outstanding piloting nose and a return limb, substantially parallel to the gliding portion, said piloting and steering unit being formed by bending a flat ski like member, a steering pivot mounted between the limb and the gliding portion at a distance from their free ends, a steering structure attached to the free end portion of the return limb and including members held in approximately vertical position, said members being provided with handles, a trailer unit comprising a flat ski member having its forward end swivelly connected to said steering pivot close to the point of attachment of the latter to the gliding portion of the steering unit, said forward end being substantially parallel to but overlapping the free end of the gliding portion of the steering unit, a brace leading from an intermediate point of the flat ski member of the trailer unit carrying at its end a swivel connection for the steering pivot, arranged in the upper end of the said steering pivot, a triangular frame formed by the lowermost portion of the said brace and an angularly bent support, connecting the point of attachment of the brace with the flat ski member to an intermediate point of the brace and a seat supported by said bent support.

GUSTAV FELIX STOF.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,117,807	Diener et al.	Nov. 17, 1914
1,462,889	Slater	July 24, 1923
1,613,722	Robinson	Jan. 11, 1927
2,109,826	McCleary	Mar. 1, 1938

FOREIGN PATENTS

Number	Country	Date
45,574	Switzerland	Nov. 9, 1908
42,505	Austria	June 10, 1910