Oct. 10, 1939. J. M. FORBES 2,175,628

COASTER SLED

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Fig. 1.

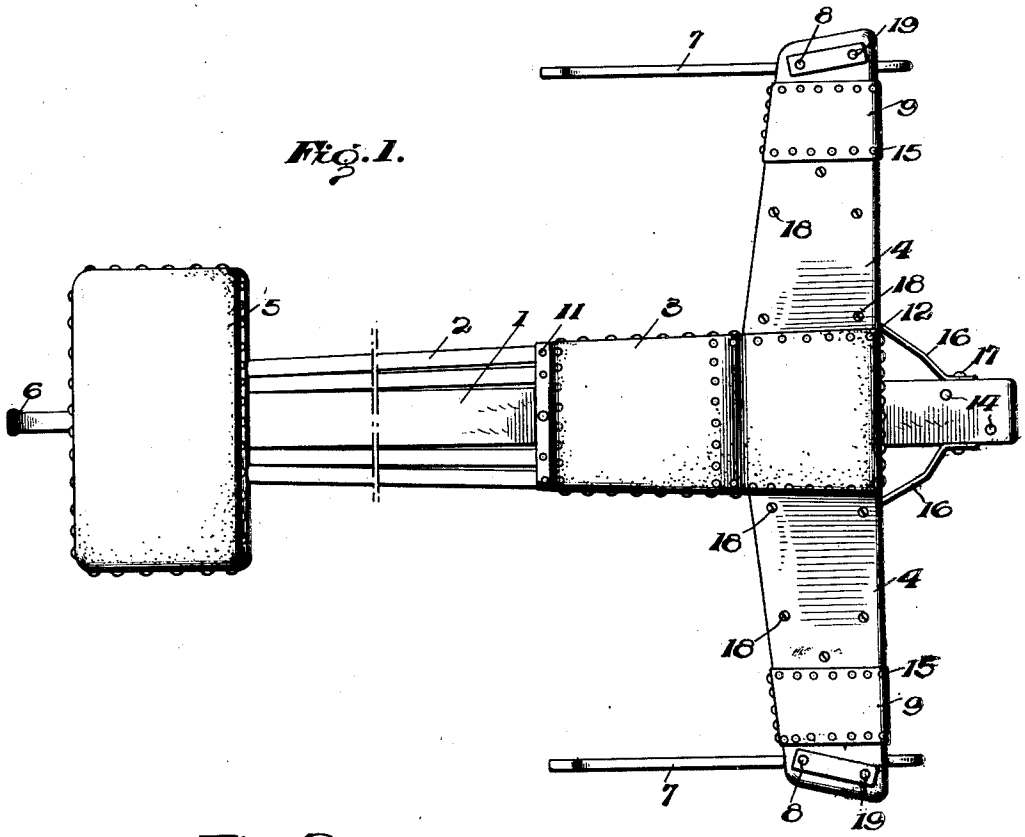
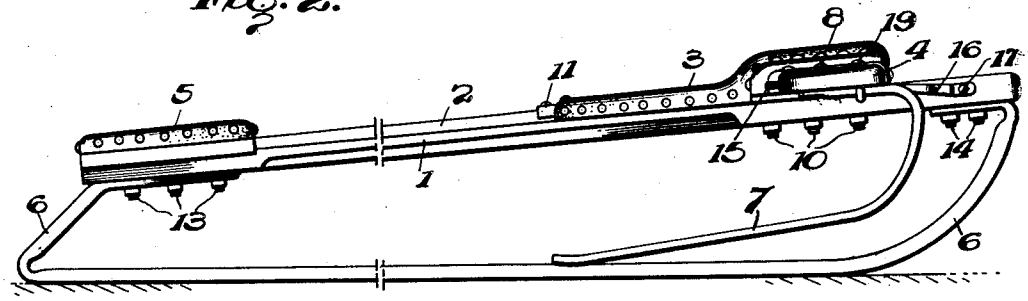


Fig. 2.



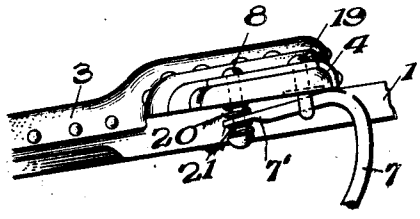


Fig. 3.

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COASTER SLED

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6 Claims. (Cl. 280—16)

This invention pertains to improvements in single-runner coaster sleds adapted to be used on ice, snow or other non-resistant surfaces.

The primary object of the present invention is to make a more efficient and practical single-runner sled.

Another object is to produce a single-runner sled which is more easily handled than the former types.

Another object is to produce a single-runner sled which may be steered easily by the operator by the mere shifting of his weight and which has a greater turning range than former sleds of this type.

Another object is to produce a single-runner sled which may be stopped in a short distance by the operator.

Another object is to produce improved means for steering and stabilizing such a sled.

A further object is the provision of means for graduated, controlled and predetermined steering and braking under wide variations of speed and for wide variations of the turning arc desired.

Another object is to so construct the sled that it will be capable of greater speeds than former types.

Another object is to improve the shape of the main runner to decrease friction.

Another object is to form such a sled in an improved and novel shape.

Other and further objects of this invention will become apparent as this specification proceeds.

In the drawing:

Fig. 1 is a top view of the improved single-runner coaster sled showing the improved body form and the lateral steering members;

Fig. 2 is a side view of the improved coaster sled showing the improved shape of the main single runner and the position of the lateral steering members with respect to said main runner;

Fig. 3 is a detail of the extremity of one of the forward wing members of the sled showing an alternative method of attaching the lateral steering members to said forward wing members.

Referring to the drawing, 1 indicates the main longitudinal beam of the sled which may be made of any suitable shape and material, a hard wood such as oak or hickory being preferred. Reinforcing members such as slats 2 are provided laterally of the main beam 1 and are preferably of the same material as beam 1. Main body member 3 of any suitable shape and material is illustrated as positioned toward the forward extremity of main beam 1 and is secured thereto as by bolts 10. Main body member 3 is preferably roughly rectangular in shape and may be constructed of wood or any suitable material. Lateral slats 2 are secured to the rear extremity of main body member 3 as by bolts 11.

Extending laterally at right angles from main body member 3 are arm members 4 which are preferably made in one piece and are secured between body member 3 and main beam 1 as by bolts 12. It will be noted that body member 3 is suitably raised at its forward end to accommodate arm member 4. Arm member 4 is preferably constructed with a forward straight edge and with rear edges tapering slightly to the extremities. It may be constructed of any suitable material, a hard wood being preferred. A suitable knee rest 5 is positioned at the rear of main beam 1; and as shown it is preferably considerably wider than main body member 3 and roughly rectangular in shape. It is secured to main beam 1 as by bolts 13. The lateral slats 2 are preferably bolted to the underside of knee rest 5, but may be attached thereto in any suitable manner.

The main runner 6 is positioned in a medial fore and aft plane below the center of main beam 1 and is preferably attached thereto by bolts 13 and 14 at its rear and forward extremities, respectively. Main runner 6 is preferably made of tubular steel and is preferably smoothly curved at its forward end to reduce resistance. It is flattened and turned at its forward and rear extremities to make a rigid bearing with main beam 1 at these points. The forward extremity of main runner 6 is preferably made higher than the rearward extremity to impart to main beam 1 a rearward slope.

Lateral spring members 7 are provided for a purpose hereinafter stated and are preferably affixed near the extremities of wing members 4 as by bolts 8 and shackle bolts 19. These spring members 7 are preferably constructed of spring steel and are curved and flattened rearwardly. They are so shaped and mounted as to be parallel to main runner 6 with their planes of action at an elevation above the plane of action of main runner 6 so that when the sled is moving without appreciable cant the lateral spring members 7 will clear the ground. As shown herein the rearward projection of flexible members 7 is substantial for controlled and predetermined degree of contact thereof with the supporting surface.

Hand grip members 9, preferably of metal, are suitably affixed, as by bolts 15, adjacent the extremities of wing members 4.

Bracing members 16, preferably of steel, are suitably affixed at the forward extremity of main beam 1 as by bolt 17. They are preferably curved to pass under wing members 4 to which they are suitably secured.

In Fig. 3 an alternative mounting for lateral spring members 7 is shown in which the upper extremity 7' passes through a shackle bolt 19 in which it has some freedom of movement. The end 7' of spring member 7 is suitably bored to allow passage of bolt 8, and between the end of spring member 7 and wing member 4 a suitable coiled spring 20 is positioned on bolt 8. Between the end of bolt 8 and the end of spring member 7 is positioned a suitable coiled spring 21. This construction permits spring member 7 large freedom of motion and flexibility in case of striking an obstruction and gives greater scope of turning.

The improved sled functions as follows: The operator lies horizontally on the sled with his chest supported by main body member 3. The arms are extended and the hands grasp hand grips 9. The knees are supported by knee rest 5 in such position that if sudden braking is needed the feet may be dropped.

If the operator desires to turn he merely moves his weight to the desired side. This shift of weight forces the proper spring member 7 downward into contact with the coasting surface and the sled will turn due to increased resistance on that side. The degree of pressure modifies the turning arc. If a sudden stop or cessation of forward motion is desired the operator may throw his weight heavily to one side or the other and cause an abrupt lateral swing of the sled which will stop its forward motion. The spring members 7 being flexible and resilient constitute a variable and effective turning and braking means as any desired portion of the rearwardly extending parts can be pressed against the snow or ice; and in addition they serve to balance the sled.

The rearward cant imparted to the sled body by raising the front portion of main runner 6 higher than the rear portion gives a thrust in the direction of motion which greatly increases the speed of the sled.

Forward wing members 4 and knee rest 5 are so shaped as to give the sled a maximum of comfort with a minimum of weight. Due to this construction the sled is light, easily handled and exceedingly fast. Because of the flexible and resilient members 7 it has great maneuverability and may be stopped in a very short distance, thus eliminating many of the dangers formerly attendant on sledding.

The invention is not limited to the preferred embodiments described herein as the inventive concept is susceptible of various other embodiments within the limits of the appended claims.

What is claimed is:

1. In an improved sled, a longitudinally disposed beam, a lateral member arranged transversely of said beam, a main single runner affixed beneath said beam, and resilient rearwardly inclined members of substantial length affixed to the extremities of said lateral member and normally out of contact with the ground, said resilient members being so constructed and arranged that varying amounts of their surfaces may be brought into contact with the ground for turning and stopping the sled.

2. In an improved sled, a sled body, laterally disposed arms affixed at the forward portion of said sled body, a runner extending longitudinally below said sled body and affixed thereto, and rearwardly inclined vertically resilient members of substantial length disposed at the extremities of said laterally disposed arms, the linear extent of which in contact with the supporting surface may be varied.

3. In an improved sled, a body member, a laterally disposed cross piece affixed to said body member, a single runner carried by said body member, vertically resilient steering members affixed to the extremities of said laterally disposed cross piece and slanting rearwardly a substantial distance for controlled and predetermined contact thereof with the supporting surface.

4. In an improved sled, a body member, a runner disposed longitudinally below said body member and affixed thereto, a laterally disposed member affixed at the front portion of said body member, springs affixed at the extremities of said laterally disposed member, downwardly curved resilient steering members engaging said springs and mounted at the extremities of said laterally disposed member.

5. In an improved sled, a body member, a runner disposed longitudinally below said body member and affixed thereto, a laterally extending member affixed to said body member, and resilient steering and stabilizing members positioned at an elevation above said runner and carried by said laterally extending member and projecting rearwardly and downwardly a substantial distance for controlled and predetermined contact thereof with the supporting surface.

6. In an improved sled, a beam, a body portion affixed to the forward extremity of said beam, a laterally extending member affixed between said beam and said body portion and extending at right angles to said beam, a support member affixed to the rear extremity of said beam, slats arranged laterally of said beam and affixed to the under portions of said body portion and said support member, a main single runner disposed longitudinally beneath said beam and affixed thereto, and rearwardly inclined curved spring steel members affixed to the extremities of said laterally extending member for steering, stabilizing and braking.

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