Sept. 11, 1928. 1,683,846

W. J. ROBERTSON

SLEIGH

Filed Jan. 5, 1926

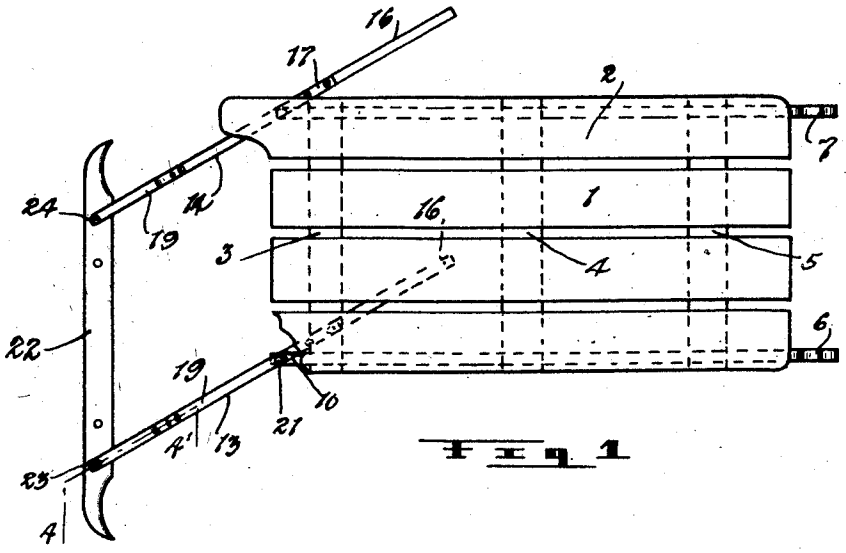


Fig 1

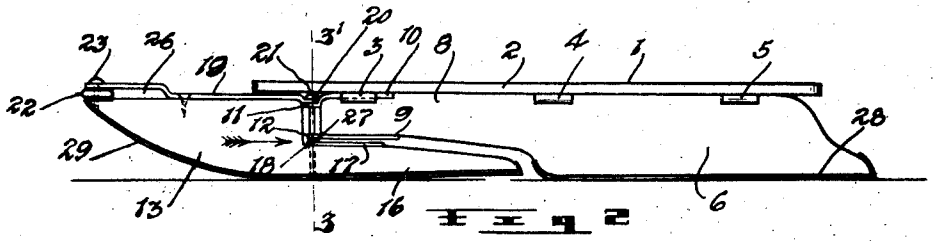


Fig 2

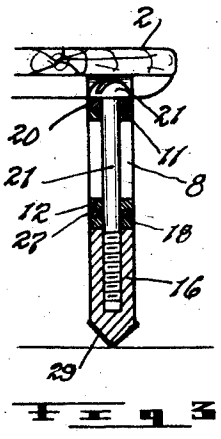


Fig 3

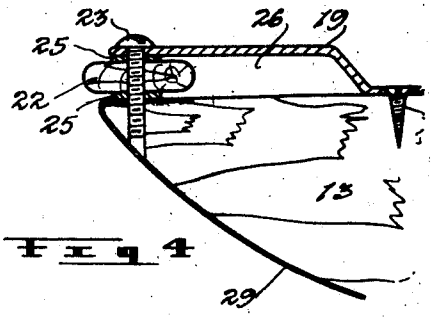


Fig 4

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UNITED STATES PATENT OFFICE.

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SLEIGH.

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The invention relates to improvements in sleighs, particularly children's sleighs and an object of the invention is to provide a sleigh having specially constructed front runners independently pivoted and connected so that they turn in parallelism, such construction permitting of the ready steering of the sleigh, preventing the over turning of the sleigh when making a turn, obviating the possibility of the rear end of the sleigh side skidding and also permitting of the stopping or braking of the sleigh when occasion demands.

A further object of the invention is to arrange the front runners such that the pressure of the snow has a natural tendency to return the turned runners to their normal straight position.

A still further object of the invention is to construct a durable sleigh of neat and pleasing appearance and one which can be manufactured at comparatively small cost.

A further object of the invention is to construct the front runners so that they can be readily steered and to provide them with V-shaped shoes which will track readily and which will also act to retard the skidding of the front runners when they are turned laterally.

With the above more important objects in view the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawing, in which:

Fig. 1 is a plan view of the sleigh with the front runners turned and part of the seat broken away to expose construction.

Fig. 2 is a side view of the sleigh.

Fig. 3 is an enlarged detailed vertical sectional view at 3—3' Figure 2.

Fig. 4 is a vertical sectional view at 4—4' Fig. 1.

In the drawing like characters of reference indicate corresponding parts in the several figures.

The body or seat 1 of the sleigh is of the usual type and presents the conventional spaced slats 2 carried by suitably spaced front, intermediate and rear cross bars 3, 4 and 5. The cross bars have their ends permanently secured to the rear runners 6 and 7.

These rear runners have the rear ends thereof of the usual shape but the runner in each instance actually terminates approximately midway of the length of the seat and in advance of this it is projected forwardly in the form of an extension arm 8 which supports the front cross bar 3 and has the lower side thereof well clear of the ground.

The forward ends of the extensions 8 are provided with upper and lower bearing plates 9 and 10 permanently fastened thereto and having their forward ends providing vertically aligned spaced opposing eyes 11 and 12. The front runners 13 and 14 are identically constructed and each has the rear end thereof formed complementary to the forward end of the adjacent rear runner, thereby presenting a rearwardly extending runner extension or tail piece 16 which normally underlies the forward extension 8 of the rear runner. A bearing plate 17 is secured to the upper edge of each extension 16 and this plate is provided with a forward eye 18 vertically aligned with but underlying the eye 12. A bar 19 is permanently secured to the upper edge of each forward runner and this bar has the rear end thereof formed to provide an eye 20 vertically aligned with and overlying the eye 11. A pivot screw 21 passes vertically through all of the aligned eyes, the lower end of the screw, screw threading into the extension 16 of each forward runner. In this way, the front runners are each independently pivotally attached to the forward ends of the extension of the rear runners.

The forward ends of the bars 19 are vertically offset to receive a cross bar 22, the cross bar being pivotally connected to the forward ends of the front runners by vertical screw bolts 23 and 24 passing through the forward ends of the bars 19 and into the forward ends of the front runners. Washers 25 are placed on the bolts 23 and 24 above and below the cross bar. The distance which the bolts 23 and 24 are apart is the same as the distance between the pivot bolts 21 connecting the front runners to the extensions 8. Ample clearance space is reserved at 26 to the rear of the cross bar to allow of the steering movement of the bar in the various turned positions of the runners. A washer 27 is inserted on each of the bolts 21 between the eyes 12 and 13.

The rear runners are provided with the customary flat or bar-like shoes 28 whilst the front runners have their lower edges V-

shaped in cross section and are provided with V-shaped shoes 29 receiving the similarly shaped lower edges of the runners.

From the above construction it will be apparent that one seated on the sleigh can steer the same by shifting the bar 22 and it is to be noted that when this bar is shifted the runners turn on the bolts 21 and remain at all times parallel. The sleigh can obviously be very easily steered and in this connection I might remark that when the front runners are turned such as is shown in Figure 1, the pressure of the snow in advance of the front runners is acting to return the front runners to their initial straight position, that is, into the vertical planes containing the rear runners. Accordingly when the rider of the sleigh releases his pressure on the bar 22, the front runners will naturally swing back to their initial straight position.

I wish also to point out that when the sleigh is making a turn, there is no possibility of it upsetting and throwing the occupant as the extensions or tail pieces of the front runners are at this time extending laterally and accordingly offset any upsetting action. With the runners also in a turned position as shown and the bar 22 firmly grasped, it is impossible for the rear ends of the rear runners to skid laterally as is common in the usual type of bob sleigh where the front runners are centrally pivoted.

If at any time, the rider desires to stop abruptly, he can brake the sleigh by pulling the bar 22 rearwardly as far as it will go. This action will turn the front runners broad side to the snow and such will obviously quickly arrest the advancing movement of the sleigh.

The V-shaped shape of the front runners also materially aids in stopping the sleigh as they naturally bite into the snow or ice. I might also point out that the lower edges of the front runners and shoes applied thereon, are curved so that the said shoes contact with the snow or ice at a point directly aligned with the pivot bolts and that in advance and to the rear of this point, they curve upwardly. This arrangement permits of easy steering.

What I claim as my invention is:—

1. A sleigh comprising a seat, a pair of similar, parallel, rear runners permanently secured to the seat and provided with forward extension arms, a pair of similar steering runners, each steering runner being pivotally connected to the forward ends of the extension arms and having a rearwardly extending runner extension normally underlying the extension arms and a steering bar pivotally connecting the forward ends of the steering runners and causing them to turn in parallelism.

2. A sleigh comprising a seat, a rear pair of similar runners permanently secured to the seat and provided with forwardly extending extension arms, a pair of similar steering runners having rearward runner extensions normally underlying the extension arms, a pivoted connection between the forward end of each extension arm and the adjoining steering runner and a steering bar pivotally connecting the forward ends of the steering runners and causing the same to turn in parallelism.

3. A sleigh comprising a seat, a rear pair of similar runners permanently secured to the seat and provided with forwardly extending extension arms terminating within the forward end of the seat, a pair of similar steering runners provided each with a rearwardly extending runner extension normally underlying the extension arms, vertically aligned eyes carried by the terminals of the extension arms and the intermediate portion of the forward runners and underlying the seat, vertically disposed pivot bolts passing through the eyes and into the runner extensions and a forwardly disposed steering bar pivotally connected to the steering runners and causing the steering runners to turn in parallelism.

4. A sleigh comprising a seat, a pair of similar rear runners permanently secured to the seat and provided with forwardly extending extension arms, a pair of similar steering runners having rearward runner extensions normally underlying the extension arms, a pivot connection between the forward end of each extension arm and the adjoining steering runner, a V-shaped shoe applied on the lower edge of each front runner and a steering bar pivotally connecting the forward ends of the steering runners and causing the same to turn in parallelism.

Signed at Winnipeg, this 2nd day of December, 1925.

WILLIAM J. ROBERTSON.