W. F. REACH.

SKEE ATTACHMENT FOR VEHICLES.

APPLICATION FILED MAY 25, 1918.

1,303,388.

Patented May 13, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

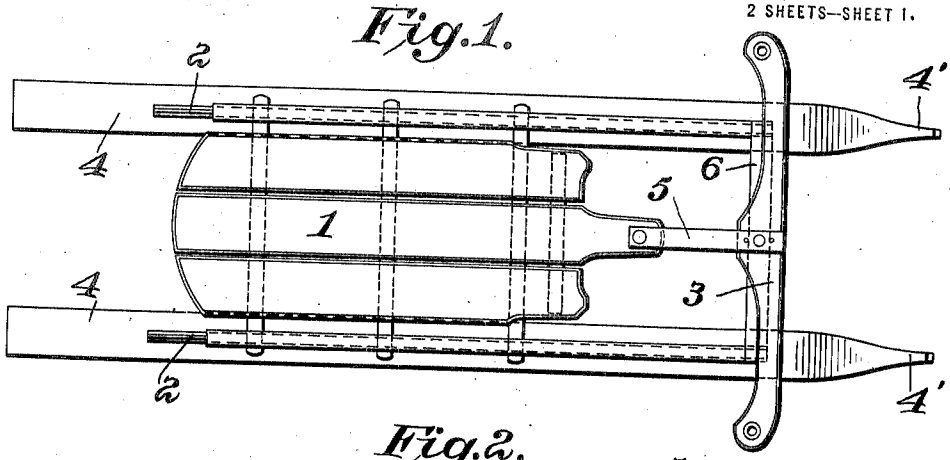


Fig. 2.

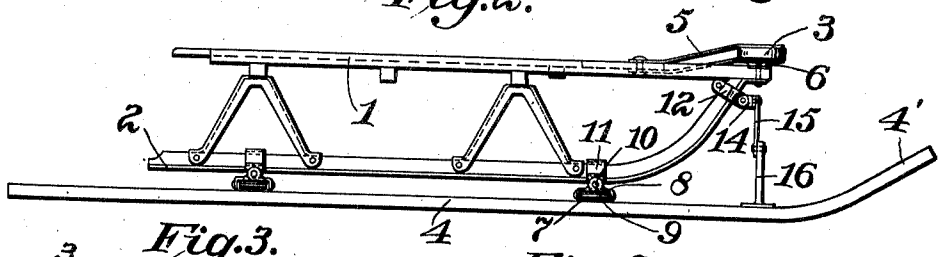


Fig. 3.

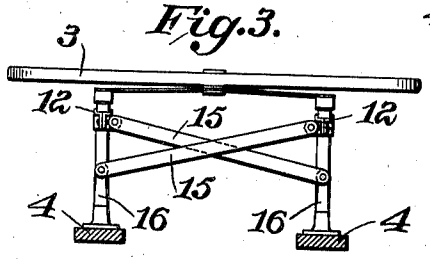


Fig. 6.

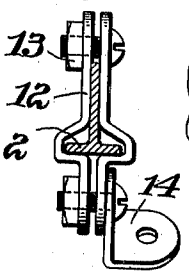


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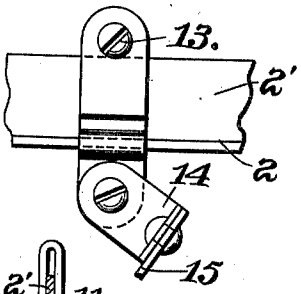


Fig. 4.

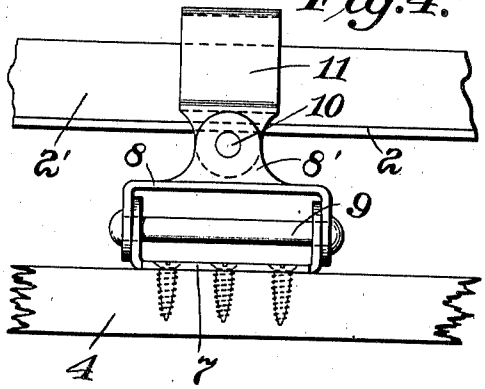
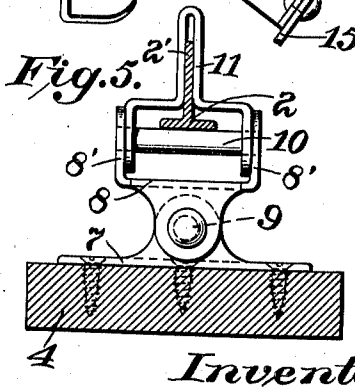


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 8.

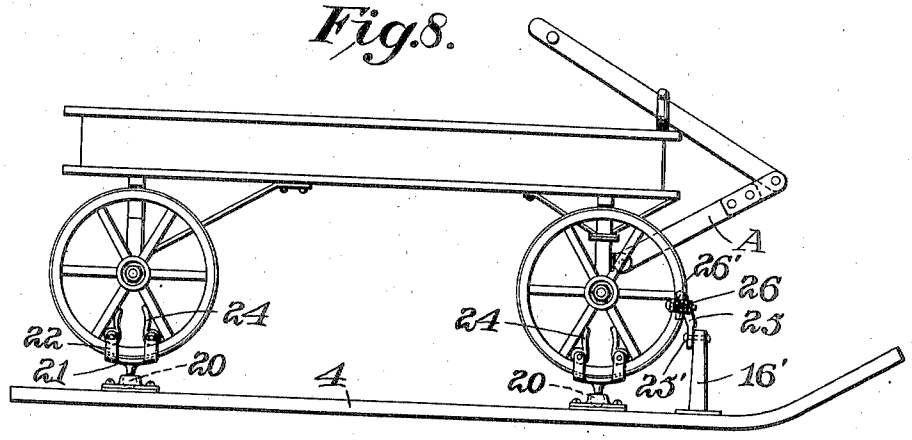


Fig. 9.

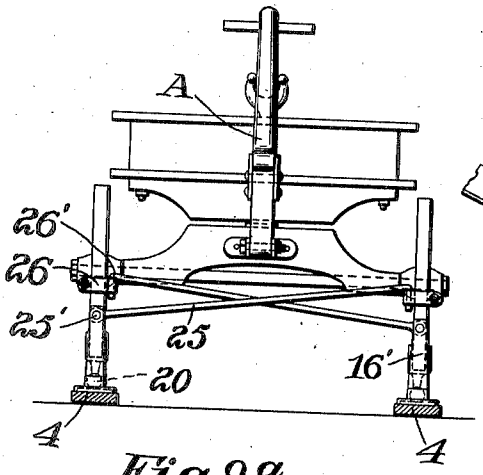


Fig. 10.

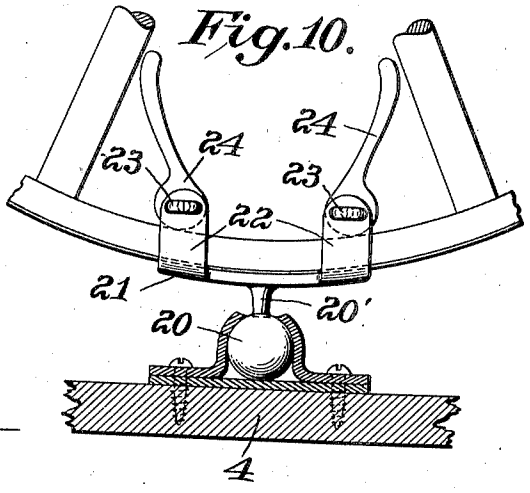


Fig. 9a

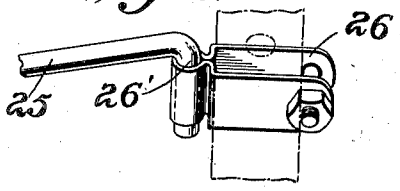


Fig. 11.

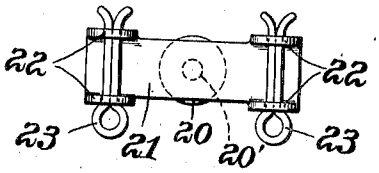
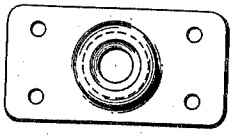


Fig. 12.



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SKEE ATTACHMENT FOR VEHICLES.

1,303,388. Specification of Letters Patent. Patented May 13, 1919.

Application filed May 25, 1918. Serial No. 236,508.

To all whom it may concern:

Be it known that I, WILLIAM F. REACH, a citizen of the United States, and resident of Chicopee, Massachusetts, have invented certain new and useful Improvements in Skee Attachments for Vehicles, of which the following is a specification.

My invention is a skee attachment for vehicles, such as sled or children's express wagons, which are capable of being guided by operating a lever at the front to flex the runners, in the case of a sled, or turn the wheels in the case of the wagon, the movement of said parts adjusting the skee runners for guiding the vehicle.

The invention consists in the features and combination and arrangement of parts hereinafter described, and particularly pointed out in the claims.

One object of the present invention, when applied to a sled, is to provide for the attachment of runners of the skee type to the ordinary runners, and without interfering with the guiding quality of the sled which is an important characteristic of the flexible flier. The use of runners of the skee type will enable the sled to be used in soft snow.

In the accompanying drawings:

Figure 1 is a plan view of a sled embodying my invention.

Fig. 2 is a side view.

Fig. 3 is a front view partly in section.

Fig. 4 is an enlarged view of the coupling for attaching the skee runner to the ordinary runner.

Fig. 5 is a view looking from the right of Fig. 4.

Figs. 6 and 7 are views of means for attaching operating connections for the skee runners to the upper fore parts of the ordinary runners.

Fig. 8 is a side view of the invention as applied to a child's express wagon.

Fig. 9 is a front view of Fig. 8 with the skee runners in section.

Fig. 9ª is a detail view of a coupling.

Fig. 10 is a detail view partly in section of the connection between the wheel and the skee runner.

Fig. 11 is a plan view of a part of Fig. 10.

Fig. 12 is a plan view of a detail part.

In these drawings 1 is the sled body; 2 the ordinary runners; 3 the lever for flexing the forward parts of the runners, and 5 and 6 are the ordinary connections forming parts of the flexing means.

The skee runners 4 are of the usual broad flat type having upturned front ends 4′.

The skee runners are connected with the ordinary runners of the flexible flier type by jointed connections and as a suitable form therefor I show a plate 7 screwed to the skee runner having upturned ends fitting within downturned ends of a similar plate or member 8, these two plates being pivotally secured together by a bolt or rivet 9. The plate or bracket 8 has upturned ear portions 8′, which are secured by means of a rivet or bolt 10 to the downwardly turned ears of a plate 11. This latter plate or bracket is adapted to embrace the upwardly extending flange 2′ of the ordinary runner. There are two of these couplings for each of the skee runners, one located near the front of the ordinary flexible runner and the other located near the rear end thereof. This coupling connection will allow the skee runners to tip laterally, and in order to effect this tipping action to guide the sled, connections are provided from the front ends of the flexible runners 2 to the said skee runners, so that when the ordinary runners are flexed, as in ordinary practice in guiding the sled, the movement will be imparted through the said connections to tip the skee runners in a lateral direction, so that they will guide the sled. These connections in the particular construction shown include clips 12, suitably secured as by the bolts and nuts 13 to the upper forepart of the ordinary runners. Each of these clips is provided with a supplemental clip or ear portion 14, and these are connected with rods or bars 15, which in turn are connected with upstanding arms or brackets 16 secured at their lower ends to the upper surfaces of the skee runners, as shown in Fig. 3. The rods or bars 15 are pivotally connected with the clips 14, and brackets or standards 16. As will be seen from Fig. 3 the skee runner of the right-hand side of the sled is connected with the usual flexible runner at the left-hand side of the sled, and the skee runner at the left-hand side is connected with the usual runner at the right-hand side, and it will thus be seen that should, for instance, the usual runners be flexed toward the left both of the skee runners will be tipped similarly toward

the left, and therefore as the sled moves onward it will be turned or guided leftward.

As shown in Figs. 8 to 12 the invention may be applied to a child's express wagon, in which case the skee runners 4 will be connected with the wheels of the wagon by universal joints, indicated at 20, these being of any suitable construction, the ball member of the universal joint being connected with a stem 20′ depending from a clip member 21 having ears 22 carrying pins 23, on which are journaled the clamp members 24 to engage the felly or rim of the wheel. The ordinary steering apparatus is employed on the express wagon, and for tipping the skee runners to guide the same I provide standards 16′ extending up from the skee runners and connected through rods 25 to couplings 26, which grasp the rims of the wheels. The rods 25 are pivotally connected at 26′ to the coupling members 26 and are also pivoted at 25′ to the tops of the standards 16′ and it will be seen from this construction that when the front axle is turned to guide the vehicle in the ordinary way by means of the tongue or handle A the rods 25 will impart the lateral movement of the wheels to the standards 16′ and thus the skee runners will be tipped from their horizontal planes to guide the vehicle in the proper direction.

What I claim is:

1. In combination in a vehicle having ground engaging means upon which the vehicle ordinarily runs, shiftable from one position to another for guiding the vehicle, operating connections for shifting said ground engaging means, skee runners movably attached to the ground engaging means to be tipped laterally in relation thereto and connections between the ground engaging means and skee runners for tipping the skee runners when the said ground engaging means is shifted to guide the vehicle, substantially as described.

2. In combination in a sled, flexible runners, means for flexing the same for guiding the sled, skee runners attached to the flexible runners, and means for tipping the skee runners when the flexible runners are flexed, substantially as described.

3. In combination with a sled having flexible runners with means for flexing the same to guide the sled, skee runners below the said flexible runners, pivotal connections between the skee runners and the flexible runners to permit the skee runners to be tipped laterally and means for tipping the said skee runners when the flexible runners are flexed, said last mentioned means being connected with and operated from the flexible runners, substantially as described.

4. In combination with the flexible runners of a sled, and means for flexing the same, skee runners pivotally connected with the flexible runners to tip laterally and connections between the forward ends of the flexible runners and the skee runners to effect the tipping action, when said runners are flexed, substantially as described.

5. In combination with the flexible runners of a sled, and means for flexing the same, skee runners pivotally connected with the flexible runners to tip laterally and connections between the forward ends of the flexible runners and the skee runners to effect the tipping action, said connections comprising a rod or bar connecting each flexible runner on one side of the sled with the skee runner on the opposite side of the sled, substantially as described.

6. In combination with a sled having flexible runners and means for flexing the same, skee runners pivotally connected with the flexible runners to tip laterally, each of the skee runners having an upstanding arm attached thereto, near their front ends, and a rod extending from said arms to the opposite flexible runner to be operated thereby, substantially as described.

In testimony whereof I affix my signature.

WILLIAM F. REACH.