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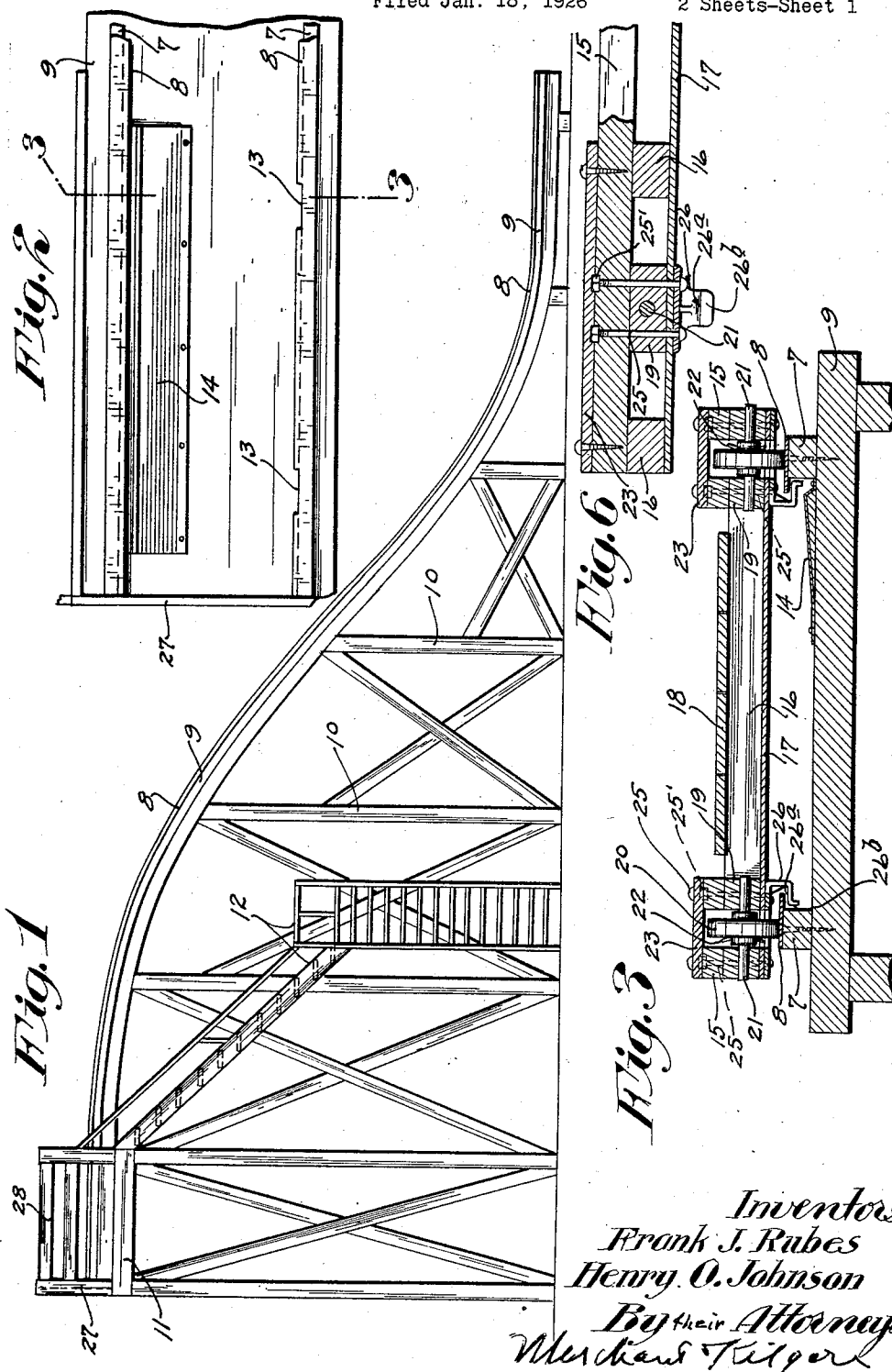
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TOBOGGAN SLIDE

Filed Jan. 18, 1926

2 Sheets-Sheet 1



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Fig. 4

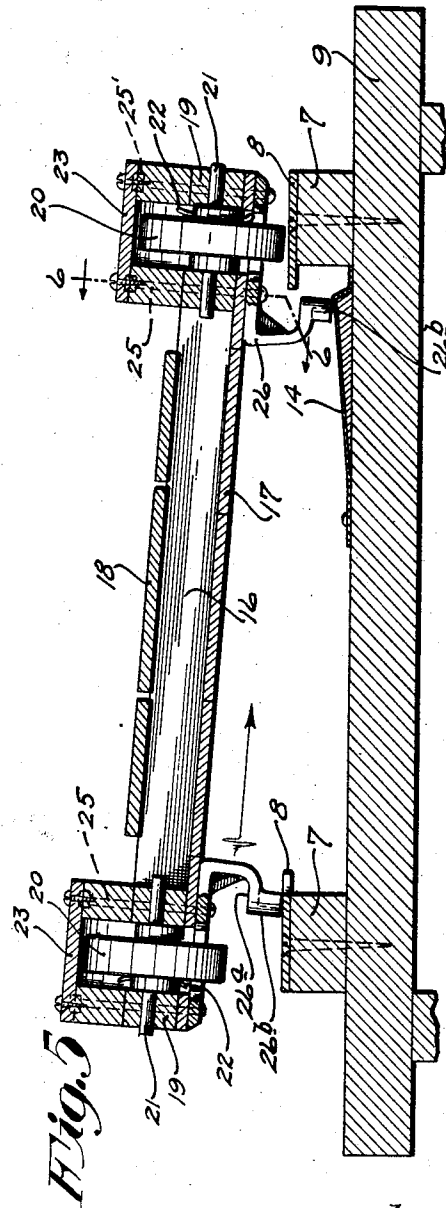
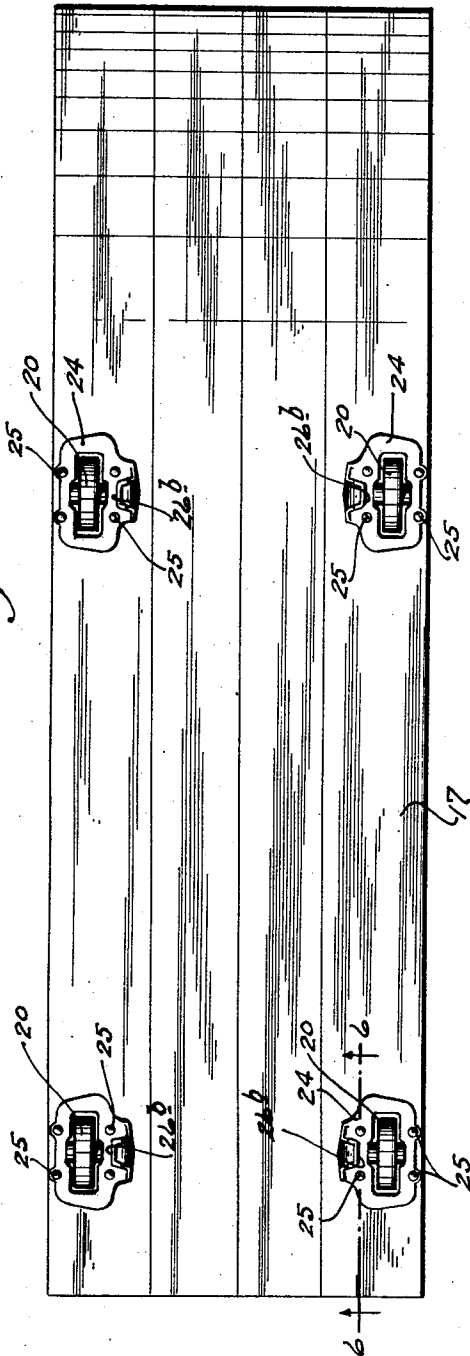


Fig. 5

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# UNITED STATES PATENT OFFICE.

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## TOBOGGAN SLIDE.

Application filed January 18, 1926. Serial No. 82,007.

*To all whom it may concern:*

Be it known that we, HENRY O. JOHNSON and FRANK J. RUBES, citizens of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Toboggan Slides; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Particularly, this invention relates to what is generally known as a water toboggan slide and is directed to improved features that insure safety, durability and general efficiency of such devices. It involves as its main elements an inclined or undulated toboggan runway or track and a wheel-equipped toboggan arranged to run on said track. The invention is found in certain devices and their novel association with the toboggan and its runway, whereby the functions above generally stated are accomplished. In principle and within the scope of the invention, the toboggan slide might be used elsewhere than at the water's edge, but its main utility will be found when used at bathing beaches, such as lakes and other shallow water places.

A commercial form of the device is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a side elevation showing the toboggan runway and its supporting trestlework;

Fig. 2 is a plan view of the upper portion of the toboggan runway;

Fig. 3 is a transverse section taken through the toboggan runway on the line 3—3 of Fig. 2, and showing also in transverse section a toboggan positioned on said runway;

Fig. 4 is a bottom plan view of one of the toboggans;

Fig. 5 is an enlarged section taken through the toboggan runway on the same line as

Fig. 3, but showing the toboggan in position to be properly seated on its runway by a slight further movement toward the right; and

Fig. 6 is a fragmentary section taken through the rear portion of the toboggan on the line 6—6 of Figs. 4 and 5.

The toboggan runway comprises rails with laterally projecting retaining flanges or plates and, preferably and as shown, such rails are made up of wooden beams 7 having metallic plates 8 rigidly secured on the tops thereof and projecting inward to form the retaining flanges just noted. Also, in this preferred arrangement, the wooden beams 7 are rigidly secured by latch screws or bolts directly to an inclined deck 9 formed on the line of an ogee curve and rigidly supported by a suitable trestlework 10. Of course, the rails 7—8 follow the curve of the deck 9. At their lower ends, the deck and rails are extended for a short distance on approximately straight and nearly horizontal lines for the proper delivery of the toboggan to the water. The trestlework 10 supports a starting platform 11 adjacent to the upper end of the toboggan runway and it also supports a stairway 12 on which persons may readily climb to said platform 11.

For an important purpose presently to be noted, the inwardly projecting retaining flange of one of the rail plates 8 is formed with longitudinally spaced notches 13, and adjacent to the other rail and opposite the notches 13, the upper and approximately level portion of the deck 9 is provided with an inclined cam plate or surface 14, the function of which will be hereinafter described.

The framework of the toboggan is made up of laterally spaced pairs of laterally spaced wooden side rails 15 and transverse wooden tiebars 16, said parts being rigidly connected by bolts, nails or other suitable means. The bottom of the toboggan is made up of thin board 17, nailed or otherwise rigidly secured to the side rails 15 and tiebars 16. Other thin boards 18 are prefer-

ably secured on the tops of the tiebars 16 to afford a suitable riding surface for persons on the toboggan.

At suitable points forward of the rear end of the toboggan and rearward of the upwardly curved front portion of the toboggan, bearing blocks 19, (preferably rectangular wooden blocks), are interposed between the side rails 15 and the underlying bottom boards 17, and the latter are cut away so as to afford clearance for toboggan wheels 20. These toboggan wheels are preferably of cast metal, such as aluminum or other metal that is not corroded by water, and they are secured on and for rotation with short shafts 21, the ends of which are arranged to rotate in the cooperating laterally spaced wooden bearings 19. As shown, said wheels are secured to their cooperating shafts by cotter pins 22 passed through perforations in said shafts and in the hubs of said wheels. Wheel guards in the form of cover plates 23 are nailed or otherwise secured on the tops of the side rails 15 above the front and rear wheels. Preferably, these cover plates are also of wood.

To guide the toboggan wheels on the tops or metallic plates of the rails, we provide metallic retaining brackets of special design and of such construction and arrangement that they also serve to reinforce and stiffen the toboggan. These retaining brackets, in the preferred arrangement just indicated, comprise flat plate-like body portions 24 formed with large recesses through which the lower portions of the toboggan wheels 20 project downward below the bottom board 17 for proper engagement with the rails. Nut-equipped bolts 25, of which, as shown, there are four for each bracket, are passed through the plates 24 of said brackets, through the overlying bottom boards 17, through the end portions of the bearing blocks 19 and through the overlying side rails 15. By this arrangement, one port is passed through the front portion and one through the rear portion of each bearing block, and the bearing blocks are rigidly clamped to the side rails and to the bottom boards and the brackets are caused to stiffen and reinforce the toboggan around the wheel passages. Preferably, the heads of the bolts 25 are at their lower ends and they are provided with nuts 25' that are drawn down part way into the wooden rails 15, the overlying cover plates 23 being slightly recessed clear of said nuts. Of course, the cover plates must be applied after the nuts on said ports have been tightened.

The plate portions 24 of the retaining brackets are provided at their inner sides with depending approximately L-shaped retaining lugs 26 formed at their lower ends with horizontal bearing surfaces 26<sup>a</sup> and vertical bearing surfaces 26<sup>b</sup>. The hori-

zontal bearing surfaces 26<sup>a</sup> underlap and engage the under surfaces of the projecting flange-forming portions of the rail plates 8 and thus hold the toboggan against vertical displacement from the rails. The vertical bearing surfaces 26<sup>b</sup> act as shoes and are engageable with the inner sides of the wooden rails 7 to hold the toboggan against lateral displacement from the rails. There is such normal clearance, however, between the bearing surfaces 26<sup>a</sup> and 26<sup>b</sup> and the rail portions with which they engage that the first noted engagement will take place only when the wheels jump slightly on the rails, and the latter noted engagement will take place only when the toboggan shifts from one side to the other, but such engagements will positively guide the toboggan and keep the wheels from jumping off from the tracks in the rapid descent of the toboggan down its runway. When the toboggan is too heavily loaded in front, there will be a tendency at certain parts in the descent of the toboggan for the toboggan to raise at its rear end, but this is prevented by the above described retaining lugs. Of course, the retaining brackets will freely run off from the lower ends of the rails as the toboggan leaves the runway.

It is, of course, of the utmost importance that the toboggan be properly located on the upper portions of the rails before starting its descent. This is insured by the cam plate 14 and notches 13. Fig. 5 shows the way in which the toboggan must be applied on the rails. By reference to said view, it will be seen that the left-hand lugs 26 are then riding on the tops of the rail plates 8 and that the cam plate 14 will properly direct the right-hand lugs under the projecting flange of the right-hand rail plate 8 when the toboggan is moved slightly further toward the right, and that such movement would then cause the lower portions of the left-hand lugs 26 to drop through the notches 13 so that, approximately simultaneously, the right and left-hand wheels will be properly dropped onto the respective rails. Then a very slight forward movement of the toboggan will interlock the lower ends of the left-hand lugs under the uncut projecting portion of the left-hand rail plate 8 and the toboggan, in its descent, will be securely held against displacement, as already described. Again directing attention to Fig. 5, it will be noted that the cam plate 14 terminates short of the adjacent wooden beam or rail 7, so that it does not interfere with forward travel of the right-hand retaining lugs.

To insure movement of the toboggan into a position interlocked to the rails before it is started on its travel down its runway, there is provided a stop in the form of a gauge board 27 shown as formed as part of the guard rail 28 applied on the platform 11.

This guard rail is shown in Fig. 1 but is broken away or removed from Fig. 2. The gauge board 27 is so located that the rear end of the toboggan will have to be in quite close engagement therewith at the time that the lugs 26<sup>b</sup> are passed downward through the notches 13 of the right-hand retaining flange or plate 8. By this arrangement, before the toboggan can be loaded, it must be moved slightly forward and such forward movement will interlock the toboggan with the rails.

The efficiency of the structure above described has been demonstrated in actual practice and the device has been found strong, durable, safe and generally efficient.

What we claim is:

1. A toboggan of the kind described having laterally spaced front and rear pairs of wheel bearings, wheels journaled to said bearings and projecting below the bottom of the toboggan, retaining brackets applied to the bottom of the toboggan and provided with depending guide lugs, said brackets having openings through which the lower portions of the wheels project for engagement with the track, and bolts passed through said brackets, wheel bearings and adjacent parts of the toboggan frame.

2. The structure defined in claim 1 in which the lugs of said retaining brackets are formed with integral horizontal and vertical bearing surfaces, the former of which are adapted to engage under the flanges of the rails and the latter of which are adapted to engage against the sides of the rails, said two bearing surfaces serving to guide the toboggan on the rails and to prevent the toboggan from jumping off from the rails.

3. A toboggan comprising a frame formed by longitudinal and transverse bars and a bottom member, said parts being rigidly connected, said side rails having laterally spaced longitudinally extended portions at the wheel mountings, bearing blocks arranged in pairs and interposed between the laterally spaced portions of said side rails and said bottom member, wheels located between the cooperating bearing blocks and provided with shafts mounted therein, said wheels depending through and below the bottom of the toboggan, and retaining brackets comprising plate-like members applied to the bottom of said toboggan below the corresponding wheel bearings and provided with openings through which the bottoms of the wheels depend, nut-equipped bolts passed through the plates of said brackets, through said bearing blocks and through the overlying laterally spaced portions of said side bars, the plate portions of said retaining brackets having depending lugs engageable with rails to guide the toboggan in its descent on the rails.

4. A toboggan comprising a frame formed

by longitudinal and transverse bars and a bottom member, said parts being rigidly connected, said side rails having laterally spaced longitudinally extended portions at the wheel mountings, bearing blocks arranged in pairs and interposed between the laterally spaced portions of said side rails and said bottom member, wheels located between the cooperating bearing blocks and provided with shafts mounted therein, said wheels depending through and below the bottom of the toboggan, and retaining brackets comprising plate-like members applied to the bottom of said toboggan below the corresponding wheel bearings and provided with openings through which the bottoms of the wheels depend, nut-equipped bolts passed through the plates of said brackets, through said bearing blocks and through the overlying laterally spaced portions of said side bars, the plate portions of said retaining brackets having retaining lugs formed with horizontal and vertical bearing surfaces, the former of which are adapted to engage under rail flanges and the latter of which are arranged to engage against the sides of the rails.

5. The structure defined in claim 4 in which said bolts are provided with nuts at their upper ends and in further combination with wheel guards in the form of plates secured to the sides of the frame overlying the wheels and covering the nuts of said bolts.

6. A toboggan runway comprising rails having laterally projecting retaining flanges, the flanges of one of said rails near the upper end thereof having longitudinally spaced notches and said runway opposite said notches and adjacent the retaining flange of the other rail having an inclined cam surface, in combination with a toboggan provided with wheels arranged to run on said rails and having retaining brackets with depending lugs arranged to engage under the retaining flanges of the rails and to bear against the sides of the rails, the lugs of said retaining brackets being so spaced that they will pass downward through the above noted entrance notches of the one rail flange, and said cam surface serving to raise the wheels on the opposite sides of the toboggan above the retaining flange of the adjacent rail when the toboggan is moved laterally to pass the lugs of the opposite side of the toboggan through said entrance notches.

7. The structure defined in claim 6 in which the above noted cam surface terminates short of the adjacent rail to afford clearance for longitudinal travel of the cooperating lugs.

8. A toboggan runway comprising rails having laterally spaced retaining flanges, the flanges of one of the rails near the up-

per end thereof having at least one entrance notch, in combination with a toboggan provided with wheels arranged to run on said rails and having at least one retaining bracket with a depending lug arranged to 5 pass through the notch of said retaining flange and to engage under the same, and a gauge stop at the rear end of the runway, with which the rear end of the toboggan must be quite closely engaged in order to 10 position its lug for passage through said entrance notch.

In testimony whereof we affix our signatures.

HENRY O. JOHNSON.  
FRANK J. RUBES.