

(No Model.)

2 Sheets—Sheet 1.

B. B. FLOYD.

SLIDING HILL AND TOBOGGAN TO BE USED THEREWITH.

No. 417,817.

Patented Dec. 24, 1889.

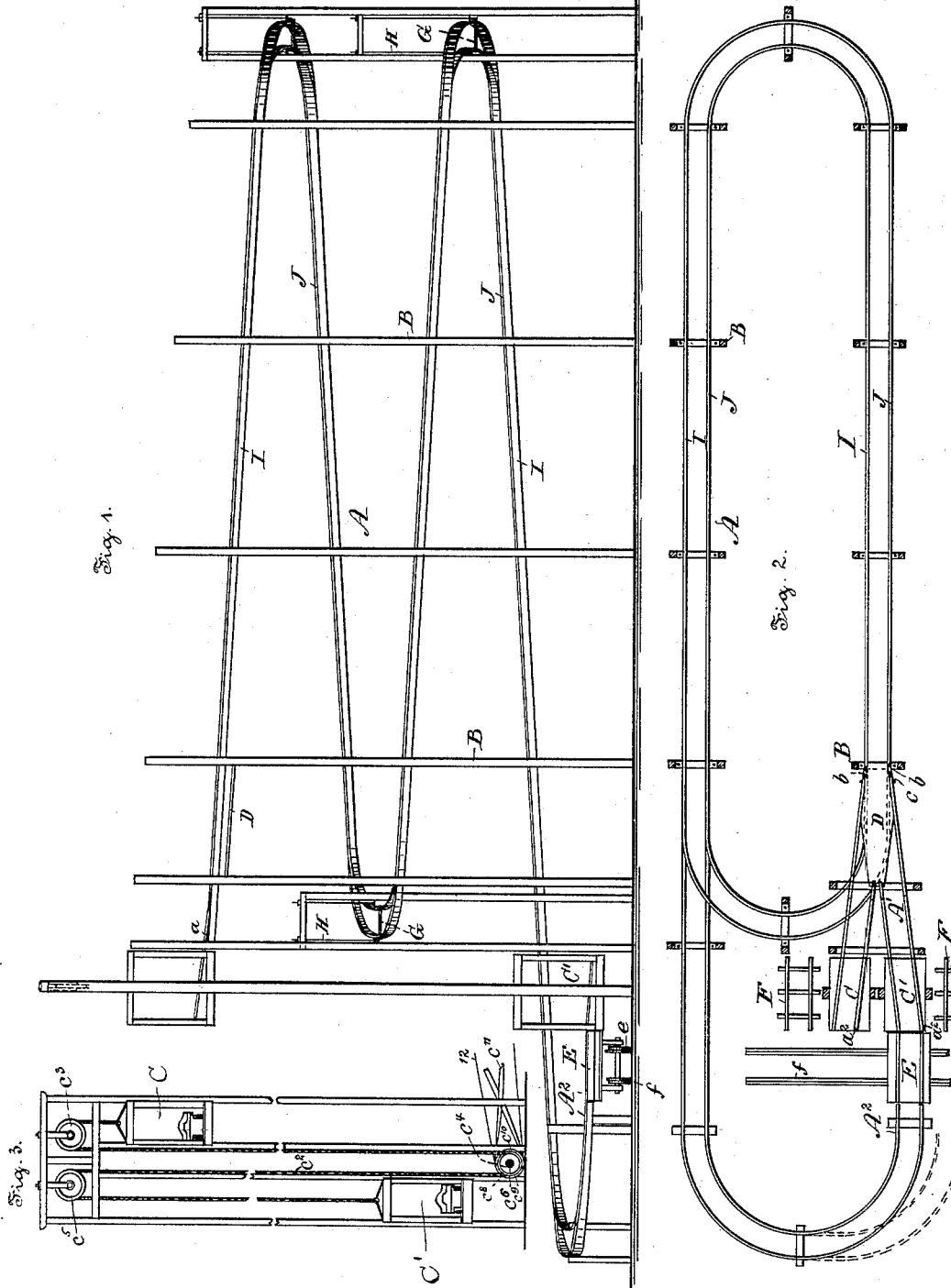


Fig. 1.

Fig. 2.

Fig. 3.

Witnesses:
 Hermann Bornmann.
 Thomas M. Smith.

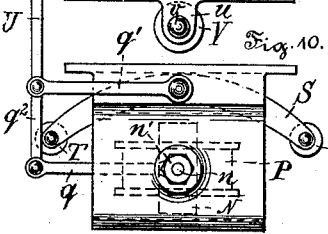
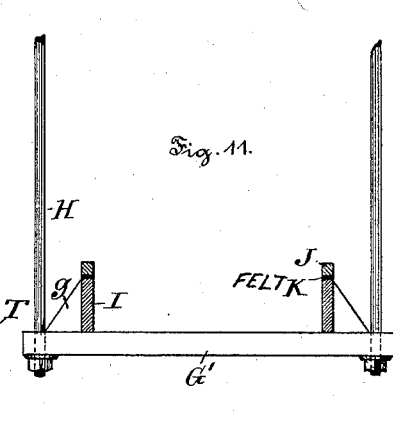
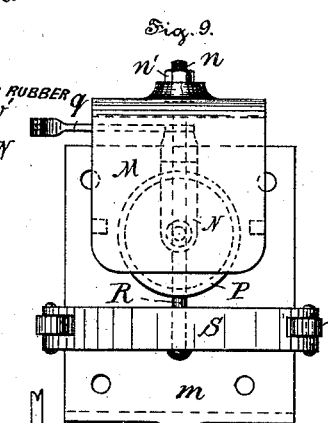
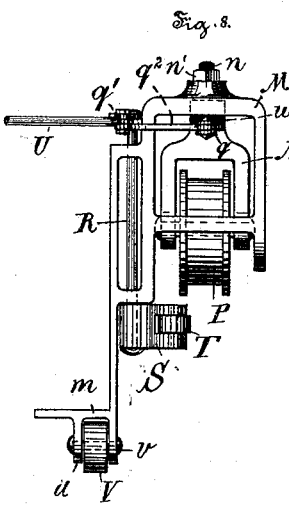
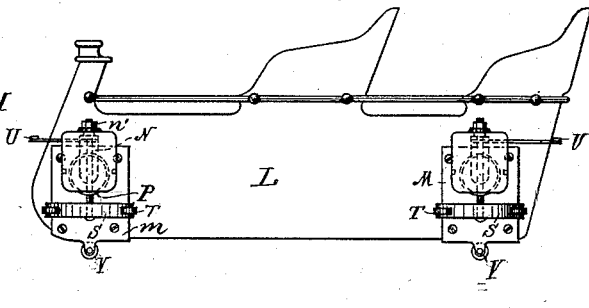
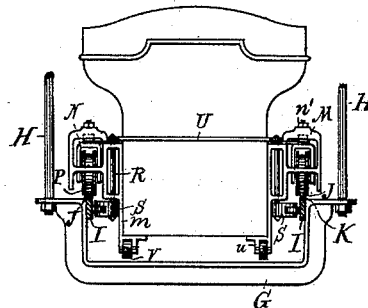
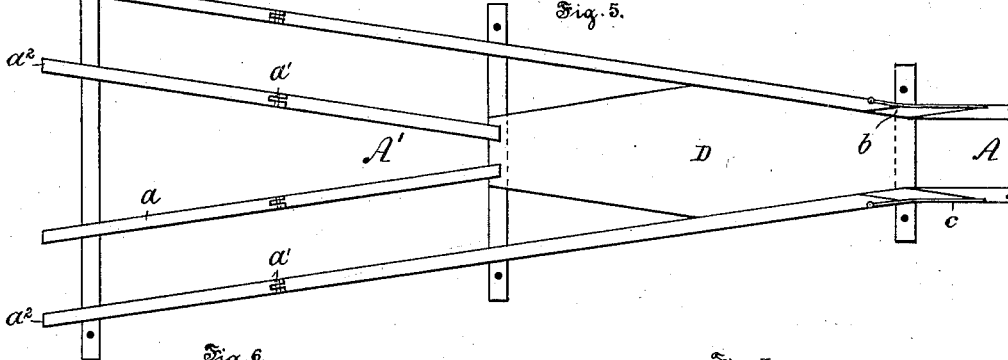
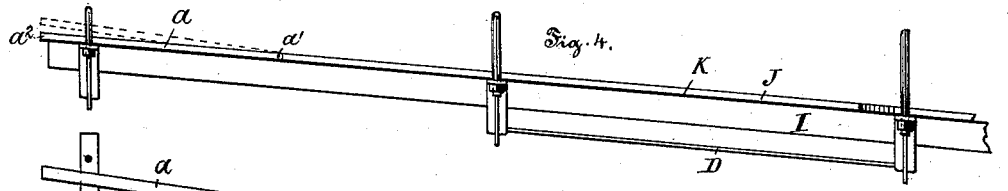
Inventor:
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B. B. FLOYD.

SLIDING HILL AND TOBOGGAN TO BE USED THEREWITH.

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UNITED STATES PATENT OFFICE.

BYRON B. FLOYD, OF HAVERHILL, MASSACHUSETTS, ASSIGNOR OF THREE-FOURTHS TO JOHN F. NORTON, FREDERICK W. HAMMETT, AND FRANK HALL, ALL OF PHILADELPHIA, PENNSYLVANIA.

SLIDING-HILL AND TOBOGGAN TO BE USED THEREWITH.

SPECIFICATION forming part of Letters Patent No. 417,817, dated December 24, 1889.

Application filed September 7, 1889. Serial No. 323,267. (No model.)

To all whom it may concern:

Be it known that I, BYRON B. FLOYD, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Sliding-Hills and Toboggans to be Used Therewith, of which the following is a specification.

My invention relates to a class of sliding-hills adapted for use in halls, rinks, and at seaside or other places of summer resort.

My invention consists of the peculiar construction and arrangement of a sliding-hill of elliptical or other similar form, and having the starting-point at substantially the highest elevation, adjacent to or to one side of an elevator, and the terminal point at substantially the lowest plane, but extending beyond the starting-point and in rear of another elevator, and a truck or carriage interposed between the terminal point and the said last-mentioned elevator to convey a toboggan to the first-mentioned elevator for lifting the same to the starting-point again for another trip.

My invention further consists of the peculiar construction and arrangement of wheels and trucks for a toboggan to be used on such type of sliding-hills; and my invention further consists of the construction, arrangement, and combination of parts in a sliding-hill and in a toboggan for such a hill, as hereinafter described, and pointed out in the claims.

The nature and characteristic features of my invention will be more particularly understood taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a side elevation of the superstructure, showing the sliding-hills embodying the features of my invention. Fig. 2 is a plan or top view thereof. Fig. 3 is a side elevation of the elevators and the mechanism for actuating the same propelled by suitable motive power. Fig. 4 is a side view of the upper end portion of the tracks adjacent to the elevators. Fig. 5 is a plan or top view thereof. Fig. 6 is a transverse sectional view

of the supported tracks of the superstructure and an end view of a toboggan. Fig. 7 is a side elevation of a toboggan, showing the wheels and trucks embodying the features of my invention. Figs. 8, 9, and 10 are respectively end, side, and plan views of one of the wheels or trucks and its connections, drawn to a larger scale; and Fig. 11 is a transverse sectional view of a modified form of tracks of the superstructure or sliding-hills for the toboggans to run over.

Referring now to the drawings for a further description of my invention, A is the superstructure or sliding-hills, elliptical or spiral in form. These sliding-hills are supported by posts or pillars B B, and they may be provided with any preferred form of tracks supported upon suitable frame-work, and if the superstructure or sliding-hills are to be erected in a hall or rink they may be suspended from the roof or from brackets secured to the walls of the building.

C and C' are two elevators by which the toboggans are lifted to the upper ends *a* of the tracks. The platforms of the elevators are provided with inclined ways upon which the toboggans rest, and are held in position by means of a spring-bolt (not shown in the drawings) or by any other convenient means.

In the drawings two elevators have been shown and arranged so that as one elevator is being raised with a toboggan the other is descending ready to receive another to lift the same to the starting-point.

The elevators C and C', Fig. 3, are secured, respectively, to the ends of a rope or cable *c*². The end of the rope or cable *c*², attached to the elevator C, passes around a pulley *c*³ to a grooved drum *c*⁴, mounted on a shaft *c*⁶. The rope or cable *c*² is wound two or more times around said grooved drum and fastened at the center thereof, and the other part of the rope or cable then passes from this drum to and around the pulley *c*⁵, and thence to the other car or elevator C'. The drum *c*⁴, mounted on the shaft *c*⁶, is provided with a fast pulley *c*⁸ and two loose pulleys *c*⁹ and *c*¹⁰. Onto the loose pulleys are mounted straight and cross belts *c*¹¹ and *c*¹² in connection with an

engine, whereby motion may be communicated to said drum c^4 . A belt-shifter of any preferred construction may be employed to shift either the straight or cross belts c^{11} or c^{12} onto the fast pulley c^8 , whichever may be preferred, and of course this will depend entirely upon what car is to be lowered or raised from or to the starting-point of the course.

Each of the elevators connects with the sliding-hills A by means of a forked section A'. The rails or tracks a on the upper ends of said section are hinged at a' to the main tracks, and the other ends a^2 project beyond said section A', so that when an elevator is raised said end portions of the tracks a^2 will be lifted a short distance, as illustrated in dotted lines in Fig. 4, and form a continuation of or connection between the inclined ways of the elevator and the rails of the sliding-hill or inclined plane A.

At the lower end of the forked sections A' is provided a platform D, upon which run the small wheels of the toboggan, (to be hereinafter more particularly described,) and at a point where the outer rails of the forked section A' join the main track an opening or space b is formed to permit the flanges of the wheels on the toboggan to pass through, the said openings b being closed on the outer sides by hinged gates or flaps c .

From the highest or starting point the sliding-hills or descending planes assume elliptical or spiral forms until the terminal or lowest point A² is reached beyond the superstructure and in rear of an elevator C', as shown in Figs. 1 and 2.

At the terminal point of the course sufficient space is left between the ends of the tracks and the elevator C' to permit of a truck or carriage E being interposed between them. The truck or carriage E, provided with wheels e , is mounted upon short sections of rail f , so that when a toboggan has completed its course over the sliding-hills the same may be run onto the ways of the truck or carriage E corresponding with those of the sliding-hill or descending planes A and be readily brought into connection with either the elevator C or C', or the toboggan shifted onto the side tracks F to either side of the respective elevators.

The extremity of the slide or incline may terminate immediately opposite either elevator or beyond or within the same, as may be preferred. In the drawings have been illustrated in full lines the slides or descending curvilinear planes terminating opposite the outside elevator; but they may terminate outside thereof, as shown in dotted lines, or within the same, whichever plan may prove most convenient.

The tracks consist of a series of angle-irons G, bent or caused to assume the form shown in Fig. 6, and supported by rods H from bars extending from the respective posts or pillars B B, or from the roof of the hall or other place wherein the sliding-hills may be erected. On

each side of the upright portion of these angle-irons are secured friction-strips I, onto which are secured the rails J. A layer of felt or other soft or flexible material K is interposed between the strips I and rails J to deaden the sound as the toboggan travels over said rails of the course.

Instead of the angle-irons bent into the form as shown in Fig. 6 to form the track of the inclines, pieces G' may be employed, as shown in Fig. 11, in which instance the friction-strips I, carrying the rails J, are secured to the top of the cross-pieces G' and held in position by brackets or stays g .

The toboggan L is mounted upon trucks, the construction and arrangement of which are fully illustrated in Figs. 8, 9, and 10. These trucks consist of a frame M, of saddle shape, the inner portion m of this frame being extended downward beneath the bottom of the toboggan and is secured thereto. To the upper portion of the frame M is pivoted a saddle N, provided at its upper end with a bolt n , which passes through the frame M and is held to place by means of a nut n' .

P is a wheel provided with flanges on both sides thereof and adapted to embrace the rails J. This wheel is suitably journaled to the sides of the saddle N.

R is a rod extending downward adjacent to the side of the toboggan, and to the lower end of which is secured an arm S, having journaled to the respective extremities thereof friction-rollers T.

To the bolt n is secured an arm q , and to the top of the rod R is secured a corresponding arm q' , the outer ends of which are connected together by means of a bar q^2 . The arms q' on opposite sides of the toboggan are connected or bound together by means of a rod or bar U, so that when the toboggan is passing around a curve the friction-wheels T, being in contact with the friction-strip I, will cause the wheel P to assume its proper relative position to the curve, and by the rod U the wheels P on both sides of the track will be turned in the same direction, thereby running in unison with each other.

The saddle-shaped frame M is recessed by preference around about the bottom of the aperture for the reception of the bolt n , and a cushion w , of rubber or other preferred material, introduced therein with the lower portion of the cushion resting upon the top of the saddle N, thereby lessening the jar incident to the use of the toboggan running over the sliding-hills or descending planes and insuring greater comfort to the riders.

To each of the depending side pieces m are cast lugs u , forming bearings for the journal v of the roller V. These rollers V, when the toboggan is passing from the forked section A' of the track, run upon the platform D, which is sufficiently elevated for said rollers V to come in contact therewith without the outside wheel P leaving the rail J.

The mode of operation of my invention is

as follows: A toboggan L is raised by one of the elevators C or C', and upon reaching the highest elevation of the course or starting-point the hinged sections *a* of the rails are raised, thereby forming a connection between the inclined ways of the elevator and the main tracks. The spring-bolt is then withdrawn and the toboggan passes onto the section A', and when the inner wheels of the toboggan leave the rails the small wheels V rest upon the platform D, and the toboggan is guided by the outside wheels, which do not leave the rails when the wheels arrive at the end of said platform, while the outer flanges of the inner wheels pass through the openings *b*, and the gates or flaps *c* on that side yielding to allow the same to pass onto the rails of the slide. The toboggan then passes down the descending planes or slides to the lowest or terminal point, where the toboggan is stopped. It is then run onto the truck or carriage E and can be readily shifted opposite the elevator C, to be again raised to the elevated starting-point, or run onto either of the side tracks F, if not required for another trip over the sliding-hills.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The sliding-hill A, in combination with the elevators C C', and the truck or carriage E, interposed and capable of running between the terminal point of said hill and said elevators, substantially as shown and described.

2. A sliding-hill of elliptical or spiral form and having the starting-point at substantially the highest elevation and adjacent to an elevator and the terminal point at substantially the lowest plane and extending beyond and curving to the rear of an elevator adapted to receive a toboggan for its elevation to the starting-point, substantially as shown and described.

3. In combination with a sliding-hill, a forked section A', with inner rails terminating on a platform D and the outer rails, at their junction with the main tracks, having openings *b*, which are closed by hinged gates or flaps *c*, substantially as shown, and for the purposes set forth.

4. A sliding-hill consisting of a series of angle-irons G, as shown, and supported by rods H, friction-strips I, secured to said angle-irons, rails J, secured to said friction-strips, and felt or other material K, interposed between said strips and rails, substantially as described.

5. In combination with a toboggan provided with a saddle-shaped frame M, a saddle N, mounted in said frame, and a double-flanged wheel P, substantially as shown and described.

6. The combination, in a toboggan, of trucks consisting of a saddle-shaped frame M, adapted to be secured to the side of said vehicle, a saddle N, mounted in said frame and having a flanged wheel P journaled thereto, a rod R, having at its lower extremity an arm S, with friction-rollers T, arms *q* and *q'*, bar *q²*, and a rod U, forming a connection with said arms *q'* on each side of said vehicle, substantially as and for the purposes set forth.

7. The combination, with a toboggan provided with trucks consisting of a frame M, adapted to be secured to the side of the vehicle, and the inner arm of said frame extending beneath the bottom of said vehicle, and a roller journaled thereto, of a saddle mounted in said frame, and a flanged wheel journaled to said saddle, substantially as shown and described.

8. A sliding-hill of elliptical form, having the starting-point at the highest elevation, an elevator disposed adjacent thereto, and the several courses of said hill terminating at a lower plane beyond the starting-point and curving to the rear of another elevator, and a toboggan with its trucks and wheels arranged, as described, to travel over said hill.

9. A sliding-hill of elliptical or similar form, having the starting-point at the highest elevation and adjacent to an elevator and the series of courses of the hill disposed beneath one another and terminating beyond the starting-point in rear of another elevator, a truck or carriage interposed between said terminal point and elevator, and a toboggan, as described, to run over the courses of said hill, substantially as and for the purposes set forth.

10. A sliding-hill, elevators disposed adjacent to the starting and terminal points of said hill, means, substantially as described, to raise and lower said elevators, and a truck or carriage interposed between the terminal point of said hill and said elevators, substantially as shown and described.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

BYRON B. FLOYD.

Witnesses:

JOHN P. S. CHURCHILL,
JOHN H. O'NEIL.