(No Model.) 4 Sheets—Sheet 1.

C. H. EMERSON.

COASTING TOBOGGAN.

No. 367,280. Patented July 26, 1887.

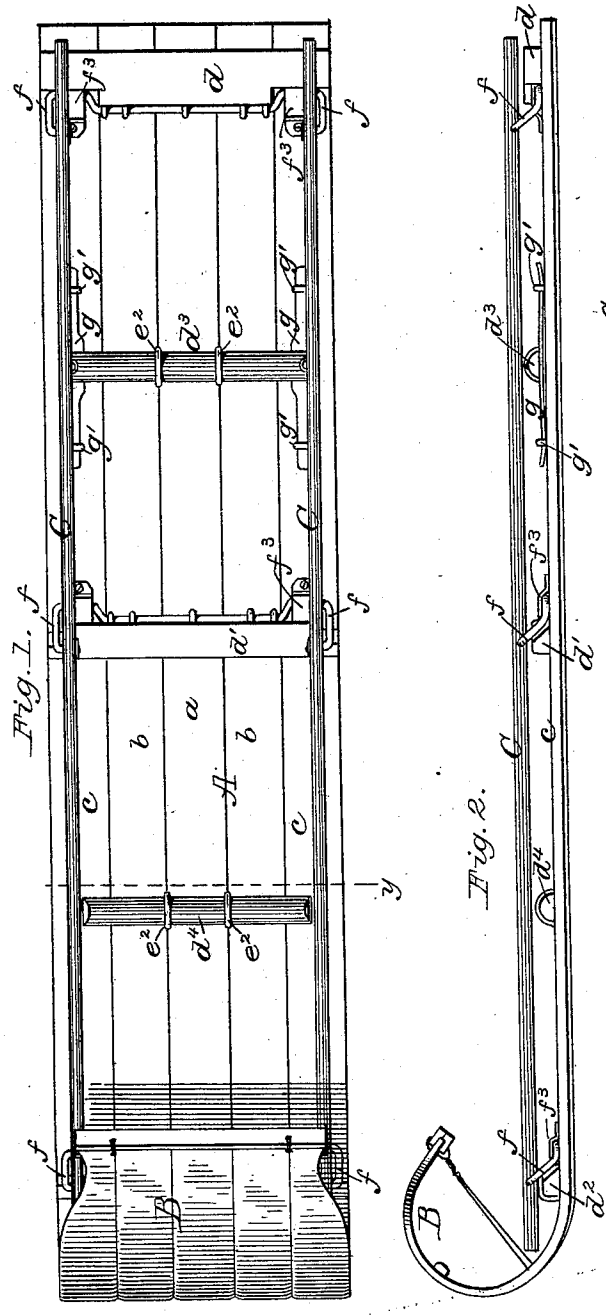


Fig. 1.

Fig. 2.

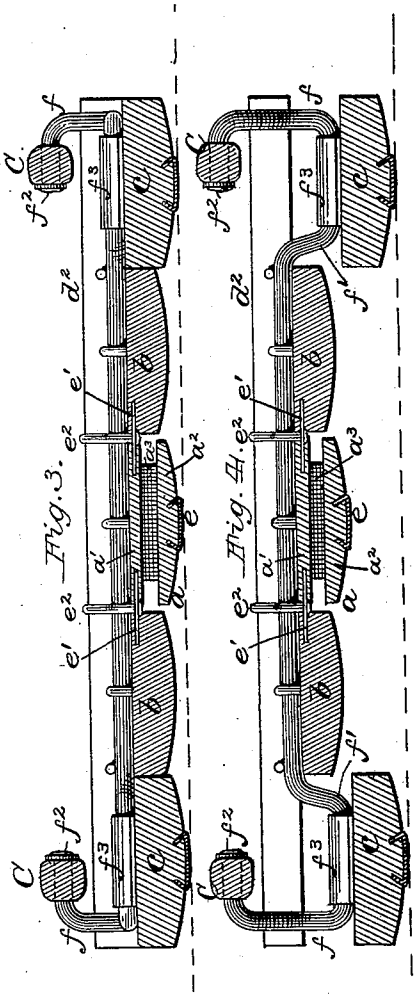


Fig. 3.

Fig. 4.

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By Wm. C. Mead
Attorney.

N. PETERS, Photo-Lithographer, Washington, D. C.

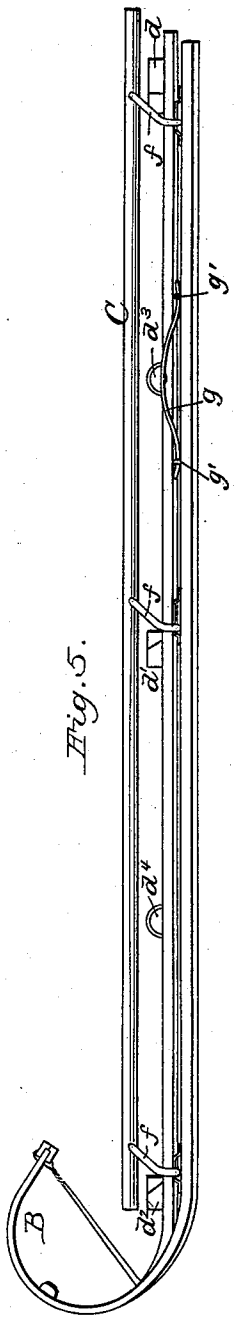
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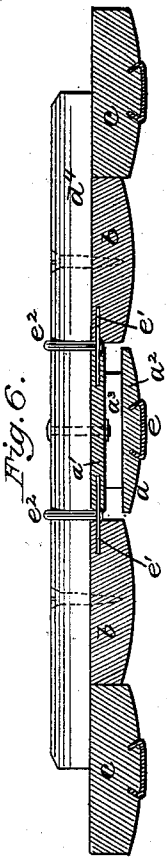
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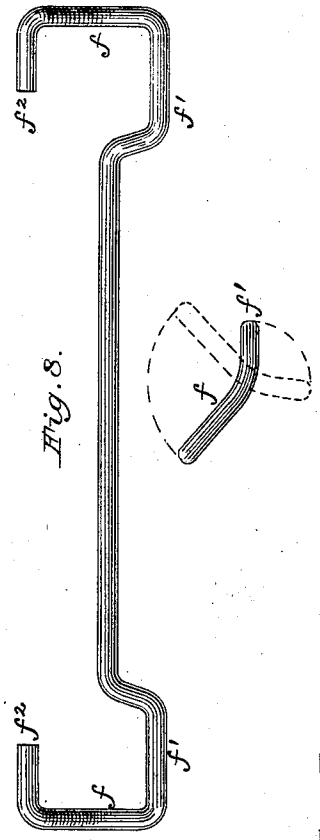
C. H. EMERSON.

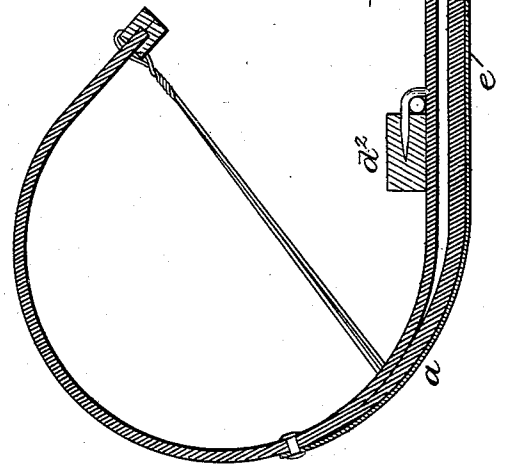
COASTING TOBOGGAN.

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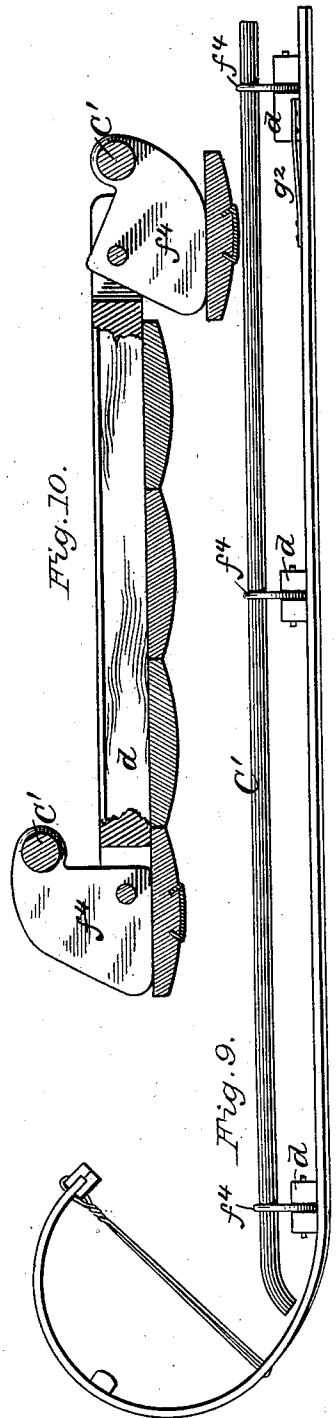
N. PETERS, Photo-Lithographer, Washington, D. C.

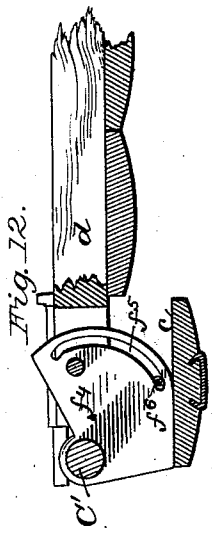
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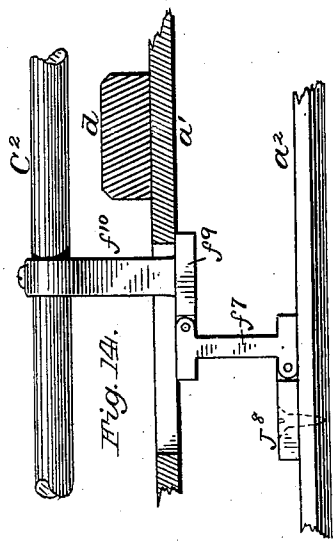
C. H. EMERSON.

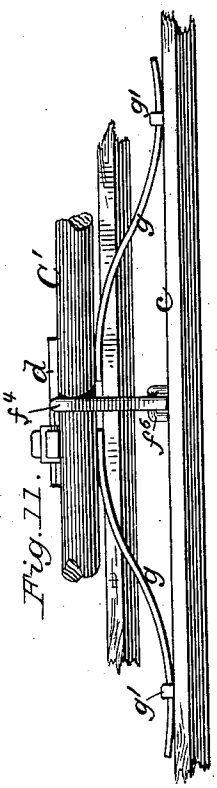
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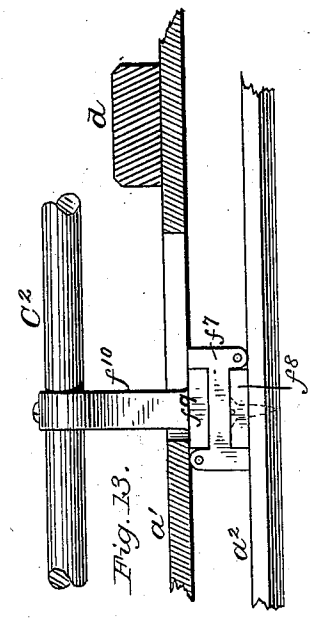
No. 367,280. Patented July 26, 1887.











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(No Model.) 4 Sheets—Sheet 4.

C. H. EMERSON.

COASTING TOBOGGAN.

No. 367,280. Patented July 26, 1887.

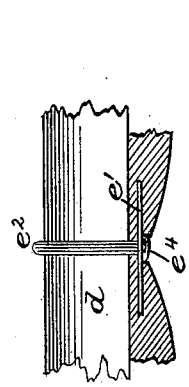
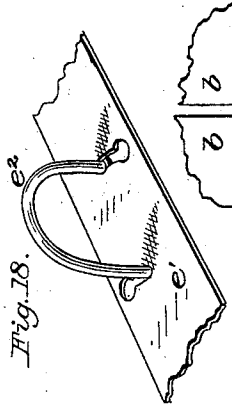


Fig. 18.



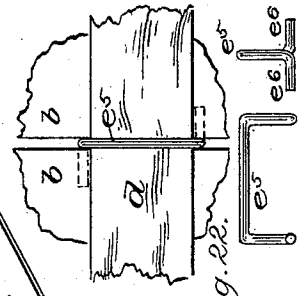


Fig. 22.

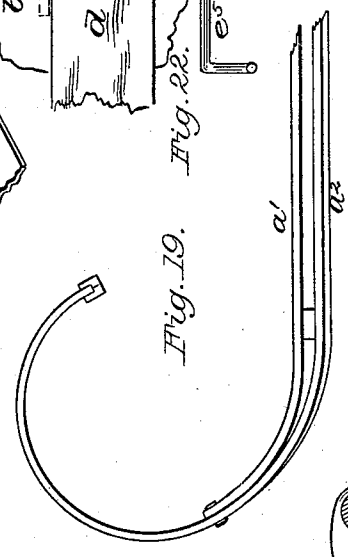


Fig. 19.

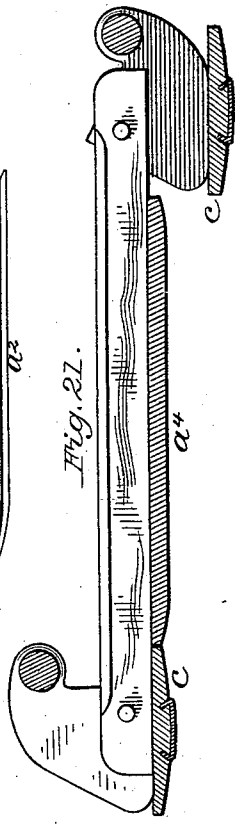


Fig. 21.

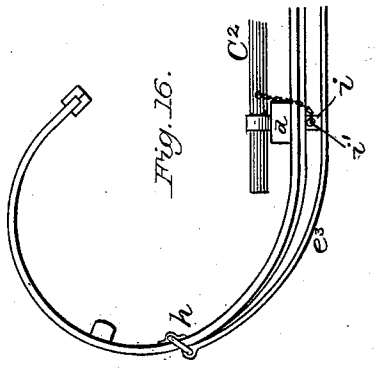


Fig. 16.

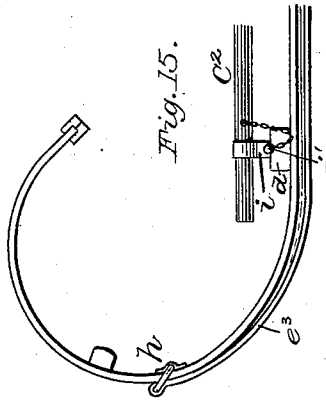


Fig. 15.

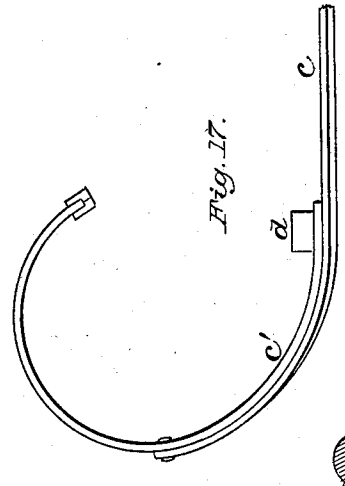


Fig. 17.

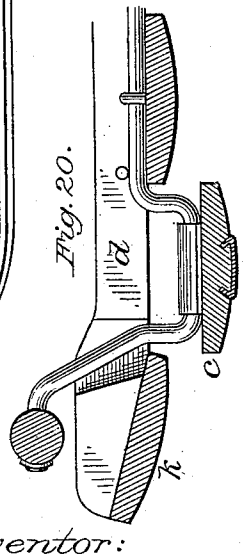


Fig. 20.

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UNITED STATES PATENT OFFICE.

CHARLES H. EMERSON, OF YONKERS, NEW YORK.

COASTING-TOBOGGAN.

SPECIFICATION forming part of Letters Patent No. 367,280, dated July 26, 1887.

Application filed April 28, 1887. Serial No. 236,455. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. EMERSON, of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Coasting-Toboggans; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of my invention.

The main feature of my present improvements has for its object an interchangeable capacity, whereby a coasting-toboggan can at will be adjusted to operate as a sled. Combined sleds and toboggans have heretofore been devised, in one form of which a combined runner and hand-rail is arranged to swing beneath the toboggan at one side to operate as a runner for the sled, and then again to swing upwardly to operate as a hand-rail for the toboggan. In another form the runner, swinging as in the first instance, swings upward and underlies the hand-rail when not operating as a runner. In still another form a bearing-slat at the side is hinged to swing downward and stand vertically and edgewise to operate as a runner; and in various other forms, each and all of them involving a hinging action and a mode of operation under which the bearing-face of the runner can only do duty when a sled is desired, although in the case of the said hinged slat-runner said slat has one bearing-face for use as in a toboggan and a second and distinct bearing-face for use as in a sled. In other words, each of said prior toboggans has sled-runners, each of which has a bearing-face which does not and cannot do duty as a toboggan bearing-face. As distinguished from anything heretofore known in this line, toboggans embodying the said main feature of my present improvements have bearing-faces which can be made to interchangeably operate in a sled or in a toboggan; or, otherwise stated, each adjustable bearing-face does duty as a bearing-face whether used as a portion of a sled-runner or as a portion of a toboggan-slat, because I have, for the first time, organized in a toboggan two or more bearing-faces, each of which is adjustable for bearing service in the plane occupied by the usual bearing-surfaces, as in a toboggan, and is also adjustable for service in a plane below the bottom of the toboggan, as in a sled. Toboggans embodying this main feature of my invention can be widely varied in construction without materially affecting the results, and I have embodied the same in many forms, of which a sufficient number will be illustrated to enable other skilled in the art to make such selection therefrom as may be deemed by them specially desirable, or even to make such variations therein as will be readily suggested through a knowledge of my disclosures.

I have also devised a novel sectional slat, of value in a combined sled and toboggan, but also serviceable in simple toboggans. This slat is split laterally and longitudinally, or, in lieu thereof, is composed of two parts or sections, the upper part being rigidly secured to cross-bars, and suitable supports are interposed between the sections at intervals throughout the length of the bearing-face of the slat, thus providing for a degree of resiliency which contributes greatly to the comfort of a rider. Whether said sectional slat be provided with a metal shoe or not, its use is desirable, although when used with a metal shoe its prime value accrues, because it relieves the toboggans from much of that rigidity which is otherwise incident to shoe-clad slats.

I have also devised various minor improvements, and, after a full description thereof, as illustrated in the drawings, the features deemed novel will be specified in the several clauses of claim hereunto annexed.

Referring to the four sheets of drawings, Figures 1 and 2 respectively illustrate, in top and side view, a toboggan embodying all of my said improvements in what I deem their most desirable form. Figs. 3 and 4 illustrate the same in lateral section, respectively, as adjusted to operate as a toboggan, Fig. 1, and as a sled. Fig. 5 illustrates the same, in side view, adjusted to operate as a sled. Fig. 6 is a lateral section near one of the cross-bars on line *y*, Fig. 1. Fig. 7 is a longitudinal central section of a portion of the toboggan, Fig. 1. Fig. 8 illustrates one of the slat or runner controllers detached from the toboggan. Figs. 9 and 10 respectively illustrate in side view and lateral section a toboggan containing the side-slat controllers in another

form. Figs. 11 and 12 illustrate such controllers as are shown in Figs. 9 and 10 in a modified form. Figs. 13 and 14 illustrate still another form of slat-controller, respectively showing the bearing-face of a slat in its normal position and then depressed. Figs. 15 and 16 illustrate the main feature of my invention in a toboggan, wherein I have organized a depressible bearing-face to operate interchangeably as a true sled-runner and as a shoe for the side slat of a toboggan. Fig. 17 illustrates the front end of a side slat coupled to a supplemental bent slat in the hood. Fig. 18 illustrates in detail my novel mode of connecting cross-bars and slats by means of metal plates and loops. Fig. 19 illustrates a compound slat similar to that shown in Fig. 7, but having its sections composed of separate pieces, instead of integral. Fig. 20 illustrates in lateral section a part of a toboggan having my adjustable combined slats and runners, and also additional side slats. Fig. 21 in section illustrates a toboggan having my depressible slats or runners and an intermediate bearing-surface afforded by a single wide board. Fig. 22 illustrates a modification of the cross-bar loop shown in Fig. 18.

In the bottom A of the toboggan illustrated in Figs. 1 to 7, inclusive, there are five slats. The central slat, *a*, the slats *b b* at each side thereof, and the side slats, *c c*, are all curved or bent upwardly at their front ends to form the hood B. The slats *b b* are thinner than the others, and they afford the usual intermediate or auxiliary bearing-surfaces when the vehicle is used as a toboggan and on a soft track. The central slat, *a*, is a novel slat, in that it is constructed in two longitudinal sections merging together at the bent or front ends, as clearly indicated in Fig. 7. Midway between the cross-bars d^2 d^1, &c., there is a support, a^3, which may be elastic, if desired, interposed between the upper section, a', and the lower section, a^2, of this slat, and the lower section has a metal shoe, *e*, affording a bearing-face.

It will be seen that between each cross-bar and the underlying portion of the bearing-face of the slat there is a free space between the upper and lower sections of the slat, and hence no sharp heavy shocks can be communicated to the rider while on a slide. I use more than one of these slats in a simple toboggan; but one is all that is needed in an interchangeable toboggan, because the cross-bars *d*, d', and d^2 are not rigidly coupled to the depressible slats, and when used as a sled there is resiliency enough in the then elevated bottom of the toboggan to render it comfortable for the rider. If, instead of having the supports a^3 thus located with reference to the cross-bars, they are located under alternate cross-bars, fairly good results will accrue.

The cross-bars and the slats *a* and *b b* are coupled together in part by means of flexible plates e', which are interposed between the slats and occupy transverse longitudinal grooves in the edges of the slats, as disclosed in my application for Letters Patent filed January 17, 1887, Serial No. 224,623; but I now use therewith, for the first time, the wire loops e^2, which are riveted or otherwise secured thereto on their under sides, so that each loop, standing vertically between the slats, snugly embraces a cross-bar, as clearly indicated in Figs. 3, 4, and 18. These slats should also be secured to some of said cross-bars by means of screws or rivets whenever the side slats are adjustable in different positions; but when said side slats are secured to cross-bars, as in common toboggans, the plates and their loops can be relied upon with but few, if any, screws or rivets.

The side slats, *c c*, have their bearing-faces adjustable, so that each may occupy different positions. As illustrated in Figs. 1 and 3, said slats occupy substantially the same plane as the other slats, as in a toboggan; but in Figs. 4 and 5 said slats are shown to be projected or depressed to serve as sled-runners. In some cases the bearing-faces of the slats *c c* are not shod; but as here shown each has a metal shoe, *c*, which affords a bearing-face. As before stated, these adjustable slats are at their front ends bent and united by means of the usual hood-bars and screws or rivets to form the hood; but they are coupled to the cross-bars *d*, d', and d^2 by means of slat-controllers *f*, one of which is shown detached in Fig. 8. In its best form said slat-controller is double and composed of a rod of iron or steel, bent to form at each end an arm, f', having a straight portion and an oppositely-projecting stud, f^2. When the controller is applied laterally on the top of the toboggan and secured thereto, so that it may be partially rotated, the arm f' will force the slat out of its normal position and then serve as a stud or post, as between the slat operating as a sled-runner and the upper portion of the toboggan; but when said controller is rotated back again the slat is returned to its normal position. This return movement may be wholly effected by means of springs; but as here shown the arm f' plays to and fro within a strap, f^3, secured to the top of the slat, and therefore said arm can force or carry the slat back into its normal position and at all times serve as a binding medium by which the main portion of each side slat is secured to the other portions of the toboggan.

It will be obvious that instead of having each slat-controller double, as shown, they may be single, and that each single or double controller can be separately actuated; but for operating all of them simultaneously the double controller is used, and the several studs f^2 at either side of the toboggan are pivoted to the hand-rails C, so that by pulling either or both rails longitudinally both side slats are fully controlled.

For promptly returning the depressible side slats or runners to their normal positions the lifting-springs *g* are applied to one of the cross-

bars and have their free ends in loops g', projecting upward from the top surface of said slats.

It will be seen that the bearing-faces of the runners or side slats, *c c*, are merely made to occupy different planes with reference to the auxiliary bearing-surfaces, according to whether they are used as sled-runners or toboggan-slats, and as this is a radically novel feature I do not confine the main portion of my invention to the particular construction thus far described.

In Figs. 9 and 10 I show a series of side-slat controllers, f^4, each of which has a cam-shaped face and is pivoted in a slot near the end of a cross-bar, *d*, and each has a cam-like action similar to that of the arms f', before described; but instead of swinging lengthwise of the toboggan, these swing laterally, and therefore with a hand-rail, C', attached thereto, as shown, said rail is moved laterally instead of longitudinally.

For causing the slat to resume its normal position, I have here shown flat springs g^2, each of which at one end is secured to the top of a slat, and at its other end it engages with or is secured to the rear cross-bar, *d*, so that said springs cause the side slats to resume their normal positions and also serve as binders for uniting them to the other portions of the toboggan. In Figs. 11 and 12 this same form of controller f^4 is shown; but the spring *g* is a double spring like those in Fig. 1, so set as to normally lift the side slat, *c*, as clearly indicated, because said spring is secured centrally to a cross-bar, *d*, and its free ends pass through the loops or staples g' in the top of the slat. This controller f^4 has also a curved slot, f^5, conforming with the cam-shaped face and occupied by a loop or staple, f^6, in the top of the slat *c*, so that as the controller is swung in one direction the slat will be lifted or carried to its normal position, said staple then operating like the strap f^3, before described. In Figs. 13 and 14 a more complex form of controller is shown, which is adapted for use either in depressing an entire slat or the lower section of a compound slat. As here shown, the upper section, *a'*, is secured to cross-bars *d*, and between the upper and the lower section, a^2, the controller f^7 is interposed in the form of a four-armed post, pivoted at one arm to a block, f^8, secured to the lower section; and diagonally opposite another arm is pivoted to a bar or link, f^9, in sliding contact with the under surface of the upper slat-section, *a'*, and said link has a rigid vertical stud, f^{10}, extending upward through a longitudinal slot in said upper section, *a'*, so that when said stud is moved to and fro the controller is made to assume either a vertical or a horizontal position, as clearly indicated. The several studs f^{10}, being secured to a sliding hand-rail, C^2, enable all of the controllers at one side of the toboggan to be operated simultaneously.

While I deem it advisable generally to employ mechanical devices for depressing and lifting the adjustable bearing-faces, it is not to be understood that the main feature of my invention essentially depends thereon, nor that an entire slat, nor the lower section of a slat, must necessarily be employed, it being obvious that so long as any one bearing-face is rendered adjustable to enable the interchangeable use of the vehicle as a sled and as a toboggan, it is immaterial whether that bearing-face be afforded by a slat, or a shoe on a slat or on a section of a slat, or a shoe which in one position operates as a sled-runner and in another position operates as a shoe for a toboggan-slat, as illustrated in Figs. 15 and 16. In this instance the side slat, *c*, is, as usual, secured firmly to the cross-bars *d*. The metal shoe e^3 at its straight portion which affords the bearing-face, is amply rigid to serve as a sled-runner; but its front end is thin, flexible, and springy, and has a set bend toward the hood, so that its upper end will always incline toward the front curved surface of the slat *c* and bear with more or less force against it.

The thin front bent end of the shoe has a transverse eye, and a similar eye projects rearwardly from the inner side of the bent end of the slat *c*. In said eyes there is a link, *h*, by which the shoe and slat are securely but flexibly coupled.

At each cross bar *d* there is a rigid shoe-post, *i*, sliding vertically in a hole through said cross-bar and the slat *c*, and all of said posts are secured to a hand-rail, C^2, so that by pulling up or forcing down said rail the shoe is made to occupy one or the other of the two positions shown, that in Fig. 15 indicating the shoe operating as a true toboggan-shoe and that in Fig. 16 as a sled-runner. For locking the shoe in either of these positions sliding bolts may be employed to occupy transverse holes in said posts. (Here shown as occupied by the strong pins *i'*.) This sliding-post arrangement is obviously not restricted to a shoe which is separable from a side slat, because if said slat had no shoe, or if it were shod, as in Fig. 1, and connected to the hood, as shown in that figure, it could be provided with the sliding posts and rendered depressible in the same manner as with this combined slat-shoe and runner e^3.

As shown in Fig. 1, the depressible or adjustable side slats have their front ends like other slats in the hood; but this construction can sometimes be varied to advantage—as, for instance, as shown in Fig. 17, wherein the side slat, *c*, is at its extreme front end riveted to a supplemental bent slat, *c'*, which at its lower end is secured to a cross-bar, *d*, and extended upward into the hood and connected to the usual hood cross-bars. As shown in Fig. 7, the compound slat *a* has its upper and lower sections, *a'* and a^2, integral near the front end of the slat; but, if desired, said sections may be in separate pieces, as illustrated in Fig. 19, wherein the lower section, a^2, has a full bent front end and the section *a'* is riveted thereto.

It must not be understood that my novel

combined toboggan-slats and sled-runners preclude the use of additional side slats outside of the adjustable slats. In that variety of toboggans having hinged and laterally-swinging runners, to which I have hereinbefore referred, additional side slats would be impracticable. In Fig. 20 I have illustrated such additional side slats, *k*, set angularly on specially-shaped cross-bars *d*, as disclosed in my application filed January 20, 1887, Serial No. 224,888. It will be seen that the adjustable slats or runners *c* are as free to be operated as when they are themselves the side slats, and that when the vehicle is used as a toboggan the inclined slats *k* prevent plowing into the banks or side walls of a slide, and that when used as a sled they afford much greater lateral supporting-surface than would be the case if the top of the sled were restricted to the three middle slats.

Referring again to Fig. 18, it will be seen that the metal plates *c'* have transverse slots, which are large at their outer ends, (but may extend to the edge of the plate,) so as to freely receive the heads c^1 on the loop c^2; but they are small at their inner ends for confining the loop when the slats are in their proper position. This combination of a cross-bar and slats with the loops interposed between the slats and secured in any manner to the coincident edges of the slats I deem a valuable feature, whether said plates be employed or the loops themselves be bent to serve the purpose of said plate as a loop coupling device—as, for instance, as shown in Fig. 22, wherein the loop c^3 has horizontal lateral spurs c^6, which, like said plate, occupy lateral apertures in the edges of the slats *b*.

It will be obvious that the central portion of the toboggan can be widely varied in construction without departure from the main feature of my invention—as, for instance, in Fig. 21 the bearing-surface between the adjustable combined slats and runners *c* is afforded by a single wide board, a^1, and the runner slats *c*, when in position as in a toboggan, project but slightly below the central or auxiliary bearing-surface.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a combined coasting-toboggan and sled, the combination, substantially as hereinbefore described, of a pair of longitudinal bearing-faces each of which is adjustable for service in one plane to co operate with auxiliary bearing-surfaces, as in a toboggan, and also for service in a plane below the bottom of the toboggan to operate as the bearing-faces of sled-runners.

2. In a combined coasting-toboggan and sled, a slat or runner which is adjustable in one plane to serve as a toboggan-slat, and is also adjustable in a projected position for duty as a sled-runner and has a bearing-face which is operative in both positions, substantially as described.

3. In a combined coasting-toboggan and sled, a pair of bearing-slats secured at their front ends to the hood, but depressible throughout the length of their bearing-faces and adjustable for duty in different positions with reference to the bottom of the toboggan, substantially as described, whereby the same bearing-faces are employed whether they are adjusted for use as in a toboggan or for use as in a sled.

4. In a combined coasting-toboggan and sled, the combination, substantially as hereinbefore described, of depressible bearing-slats or runners, each having a bearing-face which is employed for bearing service in different positions, and slat-controllers for projecting the bearing-face of each slat from the position normally occupied by it as when used in a toboggan and maintaining it in proper position for service as a sled-runner.

5. In a combined coasting-toboggan and sled, the combination, substantially as hereinbefore described, of a slat or runner adapted to perform duty as a toboggan-slat and as a sled-runner, pivoted slat-controllers located at intervals above said slats, and a rod or hand-rail coupled to said controllers, whereby all of them are simultaneously operated for adjusting the slat or runner.

6. In a combined coasting-toboggan and sled, the combination, substantially as hereinbefore described, of a pair of slats or runners adjustable for duty either as toboggan-slats or as sled-runners, pivoted slat-controllers which engage with both of said slats, and two hand-rails or rods coupled to all of said controllers, whereby both of said rails and all of said controllers will be moved simultaneously in adjusting said slats or runners.

7. In a combined coasting-toboggan and sled, the combination, with a depressible bearing-slat, of a spring which exerts its force in lifting said slat from its depressed to its normal position, substantially as described.

8. In a slat-bottomed toboggan, the combination, with a series of slats and the cross-bars, of a bearing-slat longitudinally divided into upper and lower sections, said upper section being directly secured to said cross-bars, and having supports interposed between said sections at intervals between the cross-bars throughout the length of the bearing-face of the slat, substantially as described.

9. In a slat-bottomed toboggan, the combination of the cross-bars, the slats, and the loops for coupling them together, said loops being located between the slats, secured to their coincident edges, and projecting upward therefrom to embrace the cross-bars, substantially as described.

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Witnesses:
HARVEY T. RUTTER,
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