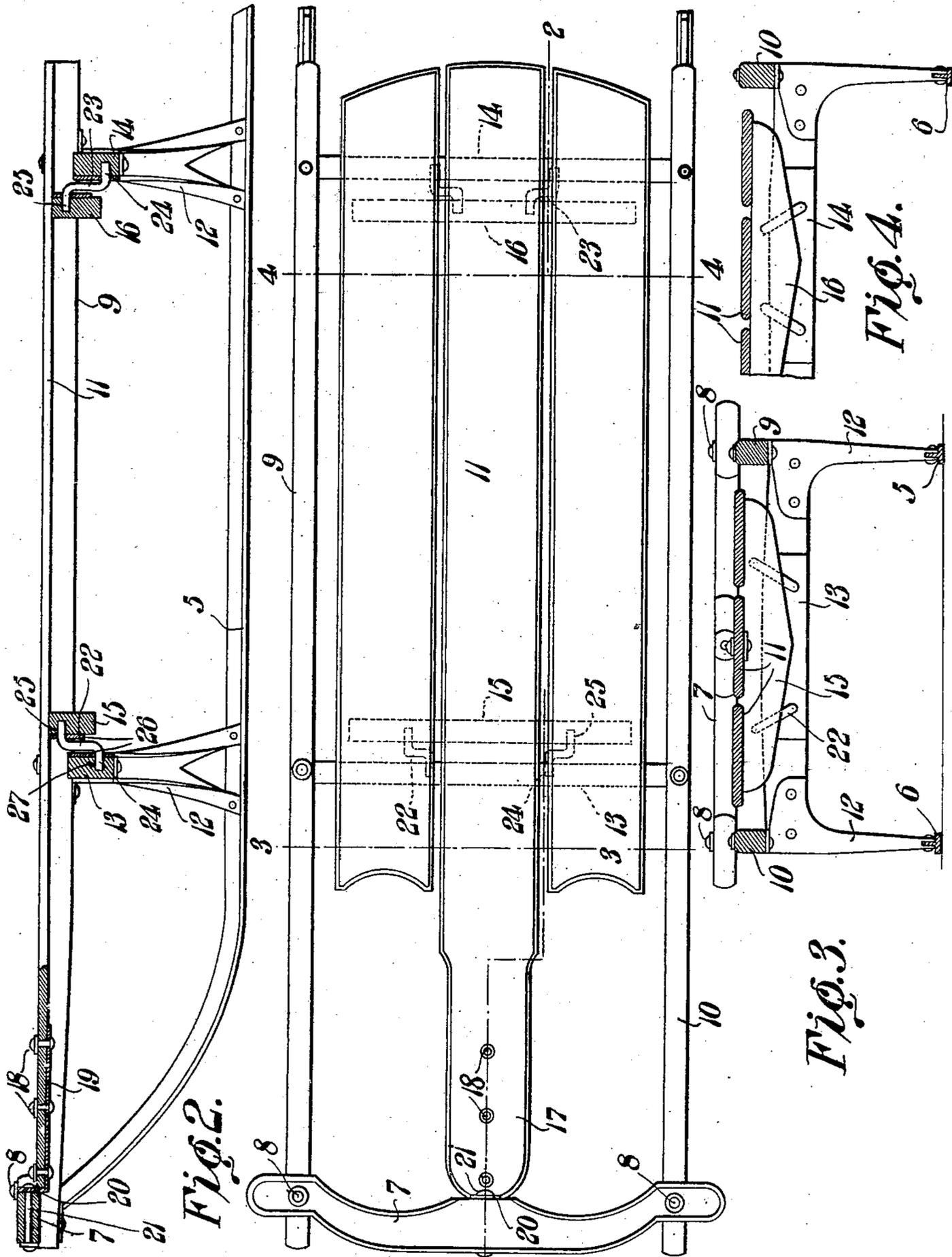


No. 883,882.

PATENTED APR. 7, 1908.

N. HIGHLAND.
SLED.

APPLICATION FILED MAY 8, 1907.



WITNESSES:

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Fig. 1.

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UNITED STATES PATENT OFFICE.

NORBERT HIGHLAND, OF LIMA, OHIO.

SLED.

No. 883,882.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, NORBERT HIGHLAND, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented a new and useful Sled, of which the following is a specification.

This invention relates to sleds of that general class in which the guiding or steering of the sled is effected by the deflecting of the runners.

The object of the invention is to provide a sled having resilient runners adapted to be deflected laterally when the weight of the body is shifted to either side of the center of the sled thereby to direct or change the course of the same.

A further object is to provide a sled having an oscillating seat operatively connected with the runners of the sled whereby the tilting of the seat will effect the deflection of the runners.

A further object is to provide a link connection between the seat and transverse bridge pieces of the sled, said links being arranged in reverse order so that the movement of the seat will curve or bend the intermediate portions of both runners simultaneously in the same direction.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a top plan view of a sled constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view taken on the line 2—2 of Fig. 1. Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1. Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 1.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved sled forming the subject matter of the present invention includes a pair of spaced longitudinal resilient runners 5 and 6 preferably T shaped in cross section and having their forward ends curved or

bent upwardly and connected by a cross bar 7. The cross bar 7 is pivotally connected at 8 with the resilient side bars 9 and 10 of the sled, which bars are preferably formed of hickory and extend approximately the entire length of the sled in spaced relation to the seat 11, as shown. Bolted or otherwise rigidly secured to the vertical webs of the runners 5 and 6 are spaced supporting feet or standards 12, the upper ends of which are riveted or otherwise rigidly secured to the adjacent longitudinal bars 9 and 10 and also to the adjacent transverse bridge pieces 13 and 14.

The seat 11 is preferably formed of a plurality of spaced slats connected by transverse bars or bolsters 15 and 16, the intermediate slat 17 of the seat being extended longitudinally beyond the adjacent ends of the side slats for pivotal connection with the cross bar 7. Secured to the lower face of the intermediate slat 17 by bolts or similar fastening devices 18 is a plate 19 having its free end bent upwardly to form a vertically disposed ear or lug 20 which bears against the central portion of the cross beam 7 and is pivotally combined therewith by a bolt 21.

The oscillating seat 11 is pivotally connected with the bridge pieces 13 by means of a plurality of links 22 and 23 preferably arranged in pairs and provided with laterally extending arms 24 and 25 which engage the adjacent bolsters and bridge pieces, respectively, as shown. The arms 24 and 25 of the connecting links extend through suitable wear plates 26 and are loosely mounted in correspondingly shaped recesses or sockets 27 formed in the bolsters and bridge pieces so as to permit free oscillation of the seat when the weight of the rider is shifted on either side of the center of the said seat. The links of each pair are preferably arranged in reverse order so that when a downward pressure is exerted on one side of the seat the links of the forward pair will exert a lateral pressure on the adjacent bridge piece 13 and thus curve or deflect the intermediate portion of the runner 6 laterally, while at the same time the links 23 of the rear pair will curve or deflect the resilient runner 5 inwardly so that both runners will be deflected in the same direction and thus control the direction of travel of the sled. It is obvious that when the weight of the rider is shifted on the opposite side of the seat 11 a reverse

action will take place, that is to say, both runners will be simultaneously curved or deflected in the opposite direction so as to change the course of said sled.

5 Attention is here called to the fact that the intermediate portion of the resilient runners are deflected as contra-distinguished from the terminals thereof, the latter being maintained in spaced relation and caused to travel
10 in the direction of the deflection of said runners by means of the cross bar 7. It will also be observed that by reason of the pivotal connection between the intermediate slat 17
15 and the cross piece or bar 7 the seat 11 is free to oscillate in either direction without danger of upsetting the sled.

While it is preferred to employ links to effect the shifting of the bridges it is obvious that the same result may be accomplished in
20 different ways and I therefore do not desire to limit myself to the exact details of construction shown and described but reserve the right to make such changes as fall within the scope of the appended claims.

25 From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

30 Having thus described the invention what is claimed is:

1. A sled having resilient runners, an oscillating seat, and means forming a connection between the seat and runners for deflect-
35 ing said runners laterally when the seat is tilted.

2. A sled having resilient runners, bridge pieces connecting the runners, and a seat operatively connected with the bridge pieces
40 for deflecting the runners laterally when the weight of the rider is shifted to either side of the seat.

3. A sled having resilient runners, an oscillating seat, and means operatively con-
45 nected with the runners and seat for deflect-

ing said runners laterally when the weight of the rider is shifted to either side of the seat.

4. A sled having resilient runners, a cross bar connecting the forward ends of the run- 50
ners, a seat, and means operatively connected with the seat and runners for deflecting the runners laterally when the weight of the rider is shifted to either side of the seat.

5. A sled including resilient runners connected by transverse bridge pieces, a seat, 55
and means forming a pivotal connection between the seat and bridge pieces for deflecting the runners.

6. A sled having resilient runners, bridge pieces connecting the runners, a seat, and a 60
plurality of pairs of links forming a pivotal connection between the seat and bridge pieces for deflecting the runners laterally, the links of each pair being disposed in reverse order. 65

7. A sled having runners, bridge pieces connecting the runners, a seat having de-
pending bolsters, and links having oppositely disposed arms seated in the bridge pieces and
bolsters, respectively, for deflecting the run- 70
ners laterally when the weight of the rider is shifted to either side of the seat.

8. A sled having resilient runners, bridge pieces connecting said runners, a cross bar pivotally connected with the free ends of the 75
runners, a seat having a longitudinal extension pivotally connected with the intermediate portion of the cross bar, bolsters secured to the bottom of the seat, and links having oppositely disposed arms for engage- 80
ment with the bolsters and bridge pieces, respectively, said links being inclined in opposite directions.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature 85
in the presence of two witnesses.

NORBERT HIGHLAND.

Witnesses:

HENRY L. ROMNEY,
WM. GOOD.