

(No Model.)

O. A. MOE.
SLEIGH RUNNER.

No. 555,580.

Patented Mar. 3, 1896.

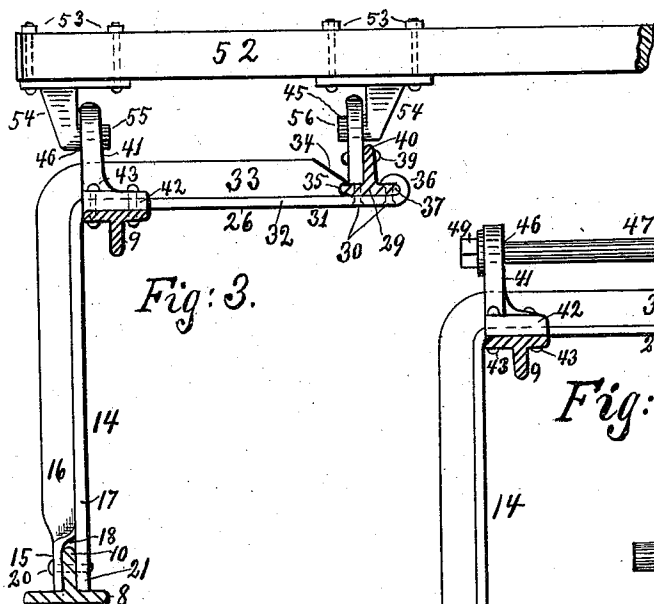


Fig: 3.

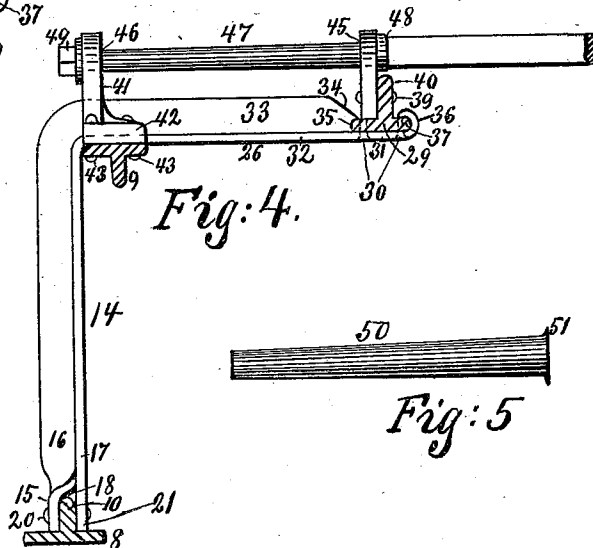


Fig: 4.

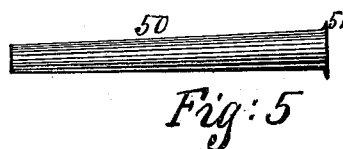


Fig: 5

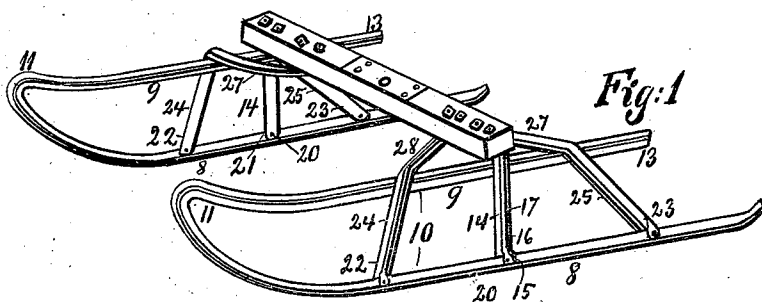


Fig: 1

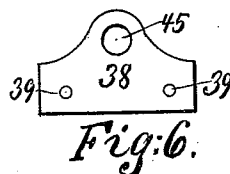


Fig: 6.

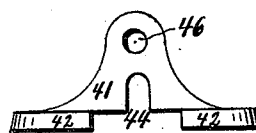


Fig: 7.

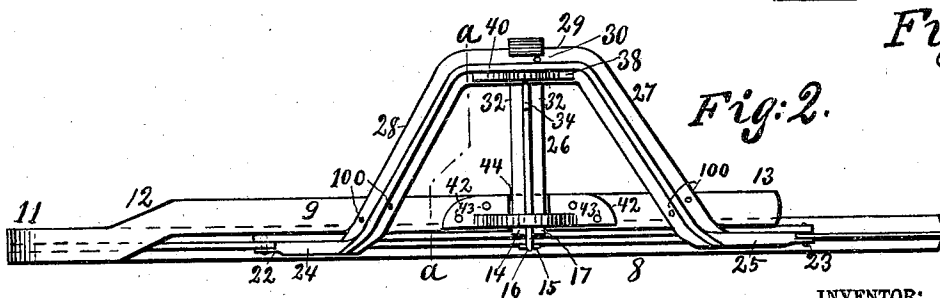


Fig: 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

OLAF A. MOE, OF ELLSWORTH, WISCONSIN.

SLEIGH-RUNNER.

SPECIFICATION forming part of Letters Patent No. 555,580, dated March 3, 1896.

Application filed February 21, 1895. Serial No. 539,310. (No model.)

To all whom it may concern:

Be it known that I, OLAF A. MOE, a citizen of the United States, residing at Ellsworth, in the county of Pierce and State of Wisconsin, have invented certain new and useful Improvements in Sleigh-Runners; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in sleigh-runners, and has special reference to the construction and connection of metallic runners to sleighs and in winter to the axles of wagons, buggies, &c., as a substitute for the wheels.

The objects of my invention are, first, to provide sleigh-runners of T-shaped steel formed in a simple and cheap but very strong, compact shape or construction; second, to provide sleigh-runners of steel or iron without the usual oblique knee-braces extending from the runner to a point of the beam underneath the sleigh and thus are apt to catch on stumps and other obstructions.

A third object is to provide metallic sleigh-runners which may readily be adjusted to either the beam of a sleigh or to the ends of the axles of buggies and wagons as a substitute for wheels when driving on the snow in winter.

The fourth object of my invention is to provide runners that will tilt or bob and thus adjust themselves to the ground, each single runner independently.

With these as the main objects in view my invention consists in the novel construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a pair of sleigh-runners of my novel construction secured to an ordinary beam. Fig. 2 is a top plan view of one of my runners ready to be put onto either a sleigh or a wagon. Fig. 3 is a sectional front elevation, as on the line *a a* in Fig. 2, with the beam of a sleigh added. Fig. 4 is the same as Fig. 3, only that a portion of a buggy-axle is substituted for a por-

tion of a sleigh-beam. Figs. 5, 6, and 7 are detail views.

Referring to the various parts in the drawings by reference-numerals, 8 is the runner proper, and 9 is the bar or strip, usually termed the "reef," which are both formed of one single piece of T-shaped steel into the shape shown, with the center rib 10 of the steel turned upward on the runner and downward on the reef.

It will be observed that the reef 9 continues from the curve 11 of the runner rearward to the point 12, where it is offset inward, and then extends rearward to its free end 13 in a parallel position to the straight portion of the runner 8, but with its outer edge only slightly overhanging the inner edge of the runner.

14 is a vertical foot or brace made of T-steel and secured to the runner near the middle of it by splitting the lower end 15 of the center rib 16 away from the double rib 17, as shown at 18, then twist or turn the rib portion 15 over, as shown at 19, until the gap 18 fits over the center rib 10 of the runner and the rivet 20 is passed through the lips 15 and the rib 10. This description of securing the end of the brace 14 to the runner applies also to the securing of the runner to the ends 22 and 23 of the oblique braces 24 and 25, which are made in one single piece of T-steel with the center rib of the steel turned outward. The three braces 14, 24, and 25, after reaching the outer top edge of the reef 9, are bent about horizontally inward, so as to form the transverse horizontal brace 26 and the horizontal oblique braces 27 and 28, which latter two are made integral with the horizontal and with the reef parallel bar 29, which is secured by the rivets 30 to the inner end 31 of the double rib 32 of the brace 26 after the center rib 33 is cut away as at 34. The crossing of the bars 29 and 31 is made all the more strong and rigid by providing for the bar 29 a notch, as 35, in the end of the rib 33, and by bending over the free end 36 of the rib 32 upon the inner rib, 37, of the bar 29, as clearly shown in Figs. 3 and 4. The braces 24, 25, 27 and 28 are secured to the reef by the rivets 100. (Best shown in Fig. 2.)

38 is a casting, preferably of malleable iron, secured by the rivets 39 to the center rib, 40,

of the bar 29. 41 is another and larger casting provided with the lugs 42, secured by the rivets 43 to the reef 9 in the front and rear of the brace 26, for which reason the casting 41 is provided with a notch 44, fitting over the horizontal arm 26 and its rib 33. The said castings 38 and 41 are each provided with a round hole 45 and 46, respectively, of which the hole 45 is a trifle the larger of the two, so as to fit the thickest portion of the round end or skein of the axle of a buggy or wagon when inserted in the said two holes, as shown in Fig. 4, where 47 represents the skein of the inserted axle, which is retained in place by the usual shoulders 48 and the nut 49.

In order to make the slightly-different-sized axles fit the same holes 45 and 46 in a pair of runners which may be considered strong enough for the axle it is desired to use, I provide loose bushings, like 50 in Fig. 5, which may simply be formed of a piece of sheet-iron with a small flange, as 51, on the big end, so as to keep it in its place while the axle is being inserted, after which the shoulder 48 and the nut 49 will keep the bushing in place. Thus I make my smallest runners with the holes 45 46 to fit the skein of the biggest buggy-axle, which is one inch in diameter, and furnish with them bushings for the only two smaller sizes—viz., seven-eighths and three-fourths of an inch in diameter. In the next larger size of runners the holes 45 and 46 are for a one-and-one-fourth-inch axle, and the corresponding bushings reduce the holes so as to fit the next smaller axle, which is one and one-eighth inches in diameter, and so on, so that the smallest-size runners will fit the three smallest-sized axles, and each pair of larger runners will fit two different sizes of axles, and in this way any buggy or wagon box may have its wheels removed and my runners substituted for use on the snow in winter.

When the runners are used for a cutter or sleigh of any kind, I employ the usual beam 52, to the under side of which I secure by the bolts 53 the two cast-brackets 54, which are provided with the trunnions 55 and 56, fitting loosely in the holes or journal-bearings 45 and 46 of the castings or boxes 38 and 41, the trunnion 56 being the largest, so as to fill the larger hole 45.

In operation it will be observed that in order to remove the beam 52 from the runner when the latter is to be applied to a wagon, buggy, &c., all that is necessary is to loosen the bolts 53 and remove one of the brackets 54 from the beam, so that the trunnion of the other bracket may be slipped out of its journal. It will further be observed that, owing to the round shape of the holes 45 and 46 in the castings or brackets 38 and 41, my runners are

free to adjust themselves each one independently to the unevenness of the ground, and as a further advantage they have no inside braces to catch on stumps, stones, or other obstructions, and their construction is strong, safe, cheap and simple.

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

1. In a metallic runner for sleighs, the combination of the runner 8, being made of T-steel and having its front end returned rearward so as to form the reef 9, integral with the runner, and having the offset 12, with the vertical foot or brace 14, the oblique braces 24 and 25, leaning toward the vertical brace 14, and being bent inward, over the outer edge of the reef, so as to form the horizontal oblique braces 27, and 28, and the longitudinal bar 29, made integral with all four of the said braces, said brace or foot 14 being also bent over the outer edge of the reef 9, so as to form the bar 33, or a knee 14 33, with the inner end of the bar 33, secured by rivets and by the notch 35, and overbent end 36, to the longitudinal bar 29, all of the braces being made of T-steel with the double rib riveted as at 100 to the reef and having their bottom ends bifurcated as at 18, by parting and twisting the rib 16, into a lip as 15, which together with the lip 21 are secured by a rivet as 20, one upon each side of the center rib of the runner, substantially as shown and described, and for the purpose set forth.

2. The combination with the sleigh-runner 8, having the reef 9, the knee 16 33, and the braces 22, 23, 27 and 28, and the longitudinal bar 29, formed of T-steel, and secured together as shown and described, of the journal-boxes 38 and 41, secured one upon the bar 29, and the other upon the reef 9, the brackets 54, having trunnions 55, and 56, turned in opposite directions and working in the said journal-boxes, which, as well as the journals or trunnions, are one smaller than the other, so as to fit the taper-skein of an axle of a buggy or wagon; said brackets having holes and bolts as 53, by which they may readily be secured to or released from the beam of the sleigh; taper-bushings as 50, having the flange 51, for reducing the size of the journal-bearings 45, and 46, so as to make them fit different sizes of axles, substantially as shown and described, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

OLAF A. MOE.

Witnesses:

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E. S. DOOLITTLE.