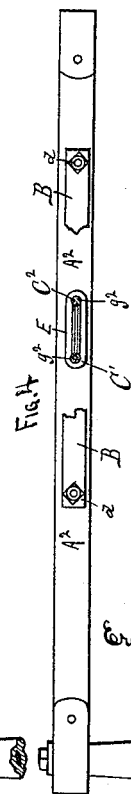
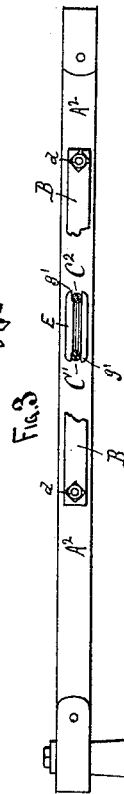
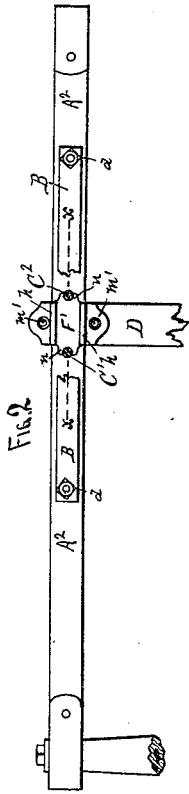
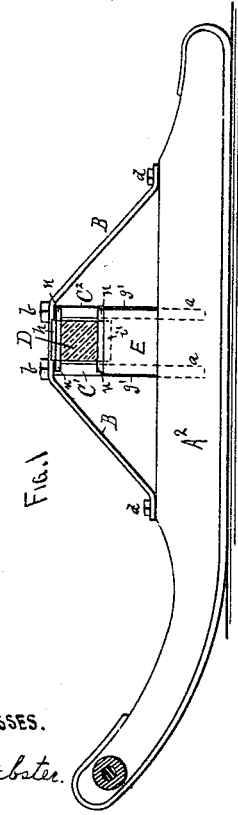
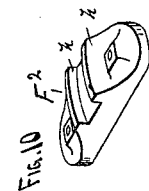
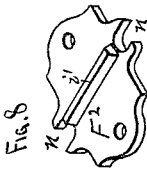
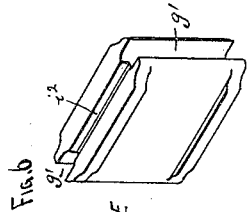
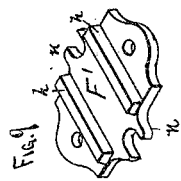
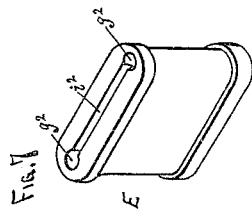
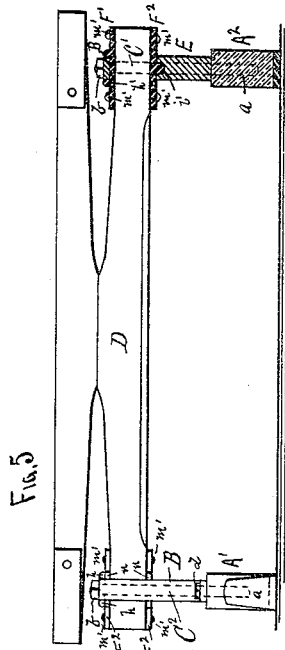


(No Model.)

E. M. DEANE. SLED.

No. 344,354.

Patented June 29, 1886.



WITNESSES.

H. S. Webster.

Albert J. Deane.

Erasmus M. Deane,
INVENTOR, BY
Charles N. Woodward
Atty.

UNITED STATES PATENT OFFICE.

ERASMUS M. DEANE, OF ST. PAUL, MINNESOTA.

SLED.

SPECIFICATION forming part of Letters Patent No. 344,354, dated June 29, 1886.

Application filed May 5, 1886. Serial No. 201,240. (No model.)

To all whom it may concern:

Be it known that I, ERASMUS M. DEANE, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Sleighs, of which the following is a specification.

In the drawings, Figure 1 is a side view of one of the runners of a sleigh with my improvements attached thereto, the bolster-beam and tongue head being in section. Fig. 2 is a plan view of Fig. 1, with a portion of the brace broken out to exhibit the position of the beam between the standards. Fig. 3 is a view similar to Fig. 2, with the beam removed. Fig. 4 is a view similar to Fig. 3, illustrating a slight modification in the manner of constructing the beam-supporting block. Fig. 5 is a rear view of a pair of runners with their connecting-beam and bolster, one of the runners and the coupling by which it is connected to the beam being in section. Fig. 6 is an enlarged perspective view of one of the beam-supporting blocks removed. Fig. 7 is a view similar to Fig. 6, showing a slightly different construction of the block. Fig. 8 is an enlarged inverted perspective view of one of the lower beam-plates. Fig. 9 is an enlarged perspective view of one of the upper beam-plates. Fig. 10 is an enlarged inverted perspective view of one of the lower beam-plates, illustrating a slight modification in its construction.

A' A² represent a pair of runners, each provided with a brace, B, and two standards, C' C², between the latter of which the ends of the bolster-beam D are inserted. The standards C' C² are "drifted" firmly down into the wooden runner, as shown by dotted lines at *a* in Figs. 1 and 2, and with heads *b* on their upper ends above the braces B, by which the latter are held down in place. If preferred, nuts may be used on the upper ends of the standards C' C² instead of the heads *b*; but the results would be the same. The ends of the braces B are shown secured to the runners by bolts *d*; but "clips" or other suitable means may be used to secure them, if preferred. By this means the braces, runners, and standards are all firmly secured together.

Between each pair of the standards C' C² and between the ends of the bolster-beam D and runners A' or A² is inserted a metal block, E.

The edges of the block E are grooved, as at *g'*, to partially embrace the standards to prevent the removal of the blocks from place between the standards.

In Figs. 4 and 7 the block E is shown with holes *g'*, through which the standards C' C² pass; but the effect is substantially the same, the object being to retain the blocks in position between the standards.

Attached by bolts *m'* to the upper and lower sides of the bolster-beam D, where they pass through beneath the braces B and above the blocks E, are two metal plates, F' F², each of the plates F' having ribs *h*, adapted to embrace the sides of its respective brace B, and each of the plates F² having a rib, *i'*, adapted to fit into a groove, *i'*, in the upper edges of its respective block E, as shown. By this means the bolster-beam is held in place between the standards and a coupling formed between the beam and runner.

The beam D, with its plates F' F², is made slightly smaller than space between the standards C' C² and the braces B and blocks E, so that the runners are free to play to a limited extent around the beam D, to permit a flexibility to the sleigh, and thus enable any one of the runners to pass over an obstruction without disturbing any of the others. Each runner is also thus made independent of all the others, so that, no matter how uneven the road may be, the runners will follow the uneven ground, while the load on the sleigh is not disturbed. This flexibility also renders the sleigh more easily operated, and does not strain the horses or the sleigh.

All the friction and strains are exerted upon the plates F' F², blocks E, and other metal parts, and no severe strains ever come upon the wooden parts. All the friction is between metal and metal, and never between wood and wood or between wood and metal.

The sleigh may be constructed of any size or for any class of work, from the largest "logging" sleigh to the lightest farm or business sleigh.

The plate F² is shown with one rib, *i'*, fitting into a socket, *i'*, in the block E; but this plate may be provided with two ribs, like the plate F', and adapted to embrace the upper edge of the block E, instead of resting in the groove *i'*, if preferred, and as shown in Fig. 10; but

the results and mode of operation would be the same, and one would be substantially the equivalent of the other.

The plates F' F'' are each shown in Figs. 1, 5, 8, and 9 with projections n partially embracing the standards C' C'' , to give additional strength to the connection; but I do not wish to be limited to their use, as they may be dispensed with, as illustrated by Fig. 10, in which a plate is shown without these projections n .

In Figs. 1, 5, 8, and 9 the surfaces of the plates F' F'' which come in contact with the block E and braces B are shown straight or flat, while in Fig. 10 this part of the plate (which comes between the ribs h) is shown curved or convex, so that the brace B and block E will roll upon the plates F' F'' when the runners pass over obstructions, and thus prevent jarring or unnecessary friction. When the single rib i is used on the lower plate, the convex surface will be formed on each side of

the rib; but the presence or absence of the convex surfaces is not an essential feature of my invention.

Having described my invention, what I claim as new is—

A sleigh-runner having standards C' C'' and bars B, in combination with block E upon said runner between said standards, and plates F' F'' , having ribs engaging said braces and block and attached to the upper and under side of said beam, whereby said runner has a rocking and swinging motion on said beam, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ERASMUS M. DEANE.

Witnesses:

W. H. WANAMAKER,
C. N. WOODWARD.