

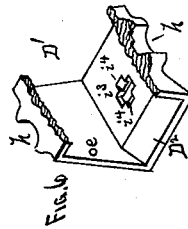
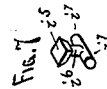
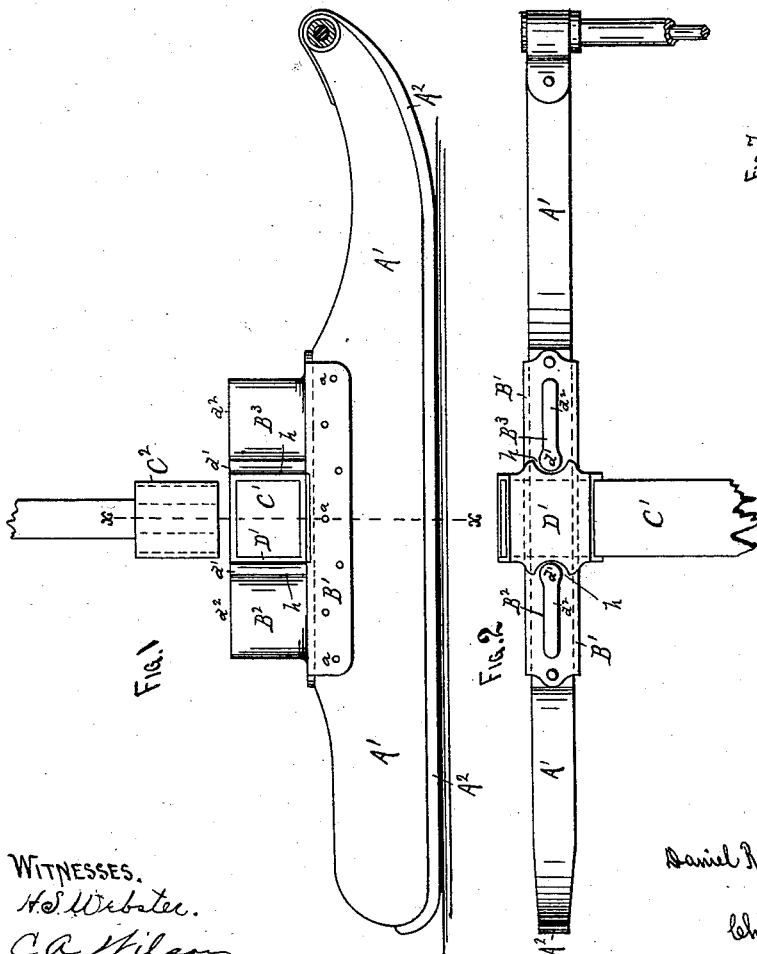
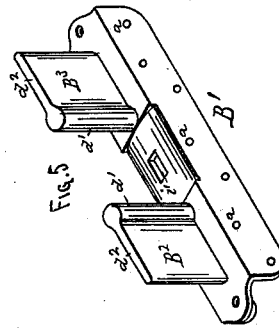
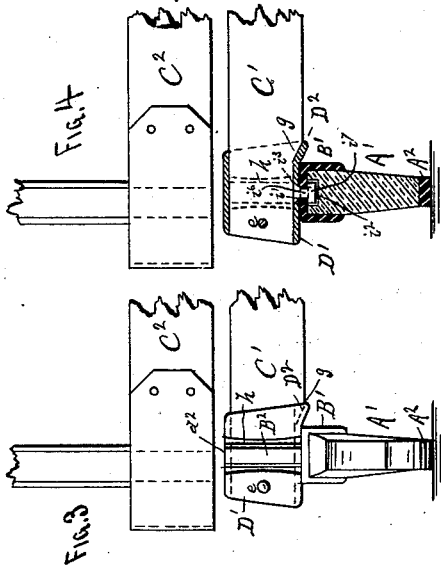
(No Model.)

D. R. McLAREN.

SLED.

No. 347,436.

Patented Aug. 17, 1886.



WITNESSES.
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UNITED STATES PATENT OFFICE.

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SLED.

SPECIFICATION forming part of Letters Patent No. 347,436, dated August 17, 1886.

Application filed May 5, 1886. Serial No. 201,238. (No model.)

To all whom it may concern:

Be it known that I, DANIEL ROY McLAREN, a citizen of the United States, residing at Hinckley, in the county of Pine and State of Minnesota, have invented certain new and useful Improvements in Logging-Sleds, of which the following is a specification.

This invention relates to sleighs, more particularly to that class of sleighs employed in hauling heavy logs or timber and other similar material; and it consists in the manner of constructing and arranging the knees and supports for the bolster-beams, as hereinafter set forth.

In the drawings, Figure 1 is a side elevation, Fig. 2 is a plan view, and Fig. 3 is a rear elevation, of a sleigh-runner and a portion of one of the bolster-beams and bolsters with my improvements attached thereto. Fig. 4 is a cross-sectional elevation on the line *xx* of Fig. 1. Fig. 5 is a detached perspective view of the main base-frame, which is attached to the runner. Fig. 6 is a detached perspective view of the cap or ferrule of the bolster-beam with a section broken out to illustrate the manner of connecting it with the main runner-frame. Fig. 7 is a detached perspective view of the coupling-pin.

This invention may be applied to nearly all forms of sleighs used for hauling heavy material, such as logs, timber, &c., but is more particularly applicable to logging-sleds used in hauling logs in timber districts.

In the drawings I have shown one runner and a portion of one end of the bolster-beam and bolster of one of these logging-sleds with my improvements attached thereto, which is sufficient to illustrate the invention.

A' represents the runner, which is formed in the usual manner, with the shoe A² attached to its lower surface.

B' represents a frame or "cap-plate," resting upon top of the runner A', and embracing it on both sides and secured thereto by bolts or rivets *a*. Rising from the upper side of this frame B' are two flat brace-plates, B² B³, the adjacent edges, *d'*, of the plates being rounded and larger than the main bodies of the plates, as shown. The main bodies of the plates B² B³ are mere extensions or supporting webs or braces to the circular parts *d'*; but at the same time the upper edges, *d'*, of the plates

serve as supports and carriers to the bolsters when the latter are swinging around at an angle to the bolster-beams when the sleds are turning curves or corners, as hereinafter more fully explained.

C' represents the wooden bolster-beam, only one end being shown, but which connects two of the runners A' together, and is of the ordinary construction.

C² represents a portion of the wooden bolster, which is pivoted to the center of the bolster-beam C' in the ordinary manner, and whose ends extend over the frame B' and webs B² B³, as shown.

Surrounding the ends of the bolster-beam C' are metal ferrules or caps D', secured to the bolsters by bolts *e* or set-screws, rivets, or other means, as shown. The sides of these ferrules D' are formed with channels *h*, adapted to embrace the parts *d'* of the plates B² B³ when the ferrules are set down between them, as shown in Fig. 2, the channels *h* being larger than the parts *d'*, so that the frame B' and runners A' will be free to "play" slightly around the ferrules and bolster-beam when running over uneven ground. The channels *h* are curved slightly, as shown in Figs. 3 and 4, so that they are smaller at the centers of the ferrules than at their tops and bottoms, this curving insuring additional strength to the ferrules, while at the same time not interfering with the free movement of the ferrules on the frame B', but on the contrary rather improving the movement by causing the ferrules to work upon the parts *d'* with a rolling motion and without rattling or noise.

Each of the frames B' and its plates B² B³ will be formed in one single piece of malleable iron, and each of the ferrules D' will also be formed in one single piece of malleable iron, thus combining great strength with lightness and cheapness.

I claim a great advantage by forming the joint between the ferrules D' and web B² B³ so that a certain degree of free play exists between them, as the runners are thus free to adapt themselves to the uneven surface of the ground without cramping or straining the parts. The upper side of the cap-plate B' between the standards *d'*, or the lower side of the ferrule D', will also be slightly convex, as shown in Figs. 4 and 5, so that the runner and

its attached cap-plate will have a rolling motion beneath the ferrule and bolster-beam at right angles thereto, whereby the friction is greatly reduced and nullified. Another point to be noted is, that the bearing-surfaces are all of metal, so that all the friction is borne by metal against metal; hence the wooden parts A' and C' are not subjected to any wear.

The inner lower edges of the ferrules D' are formed inclining downward and inward, as shown at D², and the ends of the bolster-beams C' are formed with inclinations *g*, to conform to this incline D² of the ferrules, the inclinations *g* serving to prevent the bolster-beams from being forced inward through the ferrules, or the ferrules from being driven inward upon the bolster-beams. These inclined parts D² of the ferrules D' also serve to assist in the support of the ferrules on the frame B' by bearing a portion of the end-thrust of the bolster-beams, and thus prevent the strains from all coming upon the plates B² B³.

Formed through the centers of each of the frames B', midway between the plates B² B³, is a slot, *i'*, and a cavity, *i²*, (see Fig. 4,) will be formed in the top of each runner A' beneath the slot *i'*. A similar slot, *i³*, will be formed through the bottoms of each of the ferrules D', corresponding with the slots *i'*, and in line therewith when the ferrules are in position on the plates B'. In the edges of the slots *i³* are formed small notches or cavities *i⁴*, (see Fig. 6,) adapted to receive the sides of the square head *i⁵* of a bolt, *i⁶*. (See Figs. 4 and 7.) This bolt *i⁶* has a cross-bar, *i⁷*, on its lower end, adapted to be inserted down through the two slots, *i³*, into the cavity *i²*, and then turned at right angles to the runner A', and the head *i⁵* dropped down into the notches *i⁴*. The ends of the cross-bar *i⁷* thus project beneath the sides of the slot *i'* in the frame B' and prevent the bolt *i⁶* being lifted upward, while the head *i⁵*, by fitting into the notches *i⁴*, prevents the bolt *i⁶* from turning around in the slots. By this means the ferrule D' is "locked" to the frame A', and when the bolster-beam C' is inserted into the ferrule D' the bolt *i⁶* will be held thereby down into place, and by no possible chance can the bolster-beam and runner be accidentally separated.

The upward strains of the ferrules are very slight, only occurring when the sleds are empty and being lifted from place to place; hence any one of the bolts *i⁶* will never have to be subjected to a strain greater than the weight of one of the runners A' and its frame B'.

When turning curves and corners the bolster-beams of course swing around at an angle to the bolster, with the ends of the latter projecting out over the upper sides, *d²*, of the

webs B² B³; and when heavy loads are being carried on the sleds the tendency is for the ends of the bolsters to drop downward when running over uneven ground; hence it will be readily seen that under these circumstances the webs B² B³, with their extended upper edges, *d²*, perform a very important function in receiving and supporting the ends of the bolsters and preventing the loads from overturning.

Small projecting wings or webs may be formed upon the sides of the webs B² B³, to strengthen and support them.

The cap-plates B', by projecting down over the upper edges of the runners, serve to strengthen and protect them from abrasion from the loads upon the sleds.

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

1. In a sleigh, the runners A', cap-plates B', embracing the upper edges of said runners and having brace-webs B² B³, provided with circular adjacent sides *d'* and flat upper edges, *d²*, and all formed in one piece, ferrules D', having channels *h*, with curved sides, all formed in one piece and adapted to be inserted between said webs B² B³, said ferrules supporting and encompassing the ends of the bolster-beams C', substantially as set forth.

2. In a sleigh, the runners A', cap-plates B', embracing the upper edges of said runners, and having brace-webs B² B³, provided with circular adjacent sides *d'* and flat upper edges, *d²*, and all formed in one piece, ferrules D', having channels *h*, with curved sides and downwardly-inclining end D², all formed in one piece and adapted to be inserted between said webs B² B³, and ferrules D' supporting and encompassing the ends of the bolster-beams C', whose outer ends are inclined at *g* to fit said inclined ends D², substantially as set forth.

3. In a sleigh, the combination of the cap-plate B', adapted to be attached to the upper edge of the runners A' and provided with webs B² B³ and slot *i'*, ferrule D', encompassing the ends of the bolster-beams C', and having channels *h*, and adapted to be inserted between said webs B² B³, and provided with notched slot *i³*, corresponding to said slot *i'*, and a bolt, *i⁶*, having head *i⁵* and cross-foot *i⁷*, and adapted to be inserted into said slots *i³*, to lock said ferrule and cap-plate together, substantially as set forth.

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

DANIEL ROY McLAREN.

Witnesses:

FRANK P. BLAIR,
H. S. WEBSTER.