

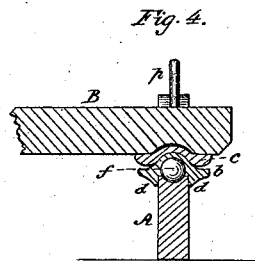
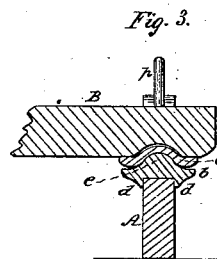
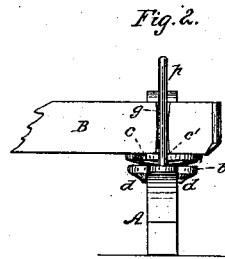
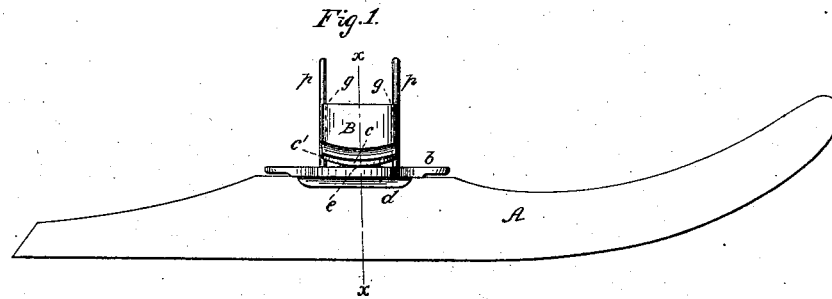
(No Model.)

A. SANFORD.

SLED.

No. 260,243.

Patented June 27, 1882.



Witnesses:

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# UNITED STATES PATENT OFFICE.

ALBERT SANFORD, OF OSHKOSH, WISCONSIN.

## SLED.

SPECIFICATION forming part of Letters Patent No. 260,243, dated June 27, 1882.

Application filed April 14, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT SANFORD, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Sleds; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of a sled, showing my improved means for connecting the beam to the runner. Fig. 2 is a rear elevation of the same. Fig. 3 is a sectional view taken on the line *x x*, Fig. 1. Fig. 4 is a detail view, showing a mode of strengthening the connection.

Similar letters of reference in the several figures denote the same parts.

My invention relates to an improved manner of connecting the beams to the runners of sleds, whereby the runners are permitted to move in a measure independently of each other when one runner alone is passing over an obstacle, and whereby, also, the sled is enabled to run much lighter and rendered generally easier to handle.

I will first describe my invention, and then define it particularly in the claims at the end of this specification.

In the drawings I have shown but one beam and one runner of a sled connected in accordance with my invention; but in practice it is intended that all the beams and runners should be similarly connected.

A represents the runner, and B the beam. The runner is provided with vertical pins *p p*, and upon these pins and down upon the runner is set a plate, *b*. This plate *b* projects considerably on each side of the runner, so as to form a wide bearing, and is provided with a central hemispherical projection, *e*, and with depending side flanges, *d d*, resting against the sides of the runner, as shown in Figs. 2 and 3, and operating to assist in holding the plate in place upon the runner. In addition to the pins *p p*, other bolts or spikes may be employed, if necessary, to more securely hold the plate to the runner.

Bolted or otherwise secured to the under side of the beam B is a small plate, *c*, which has a concave recess on its under side for the

reception of the projection *e* of the plate *b*, and a corresponding projection or boss, *c*, on its upper side, that fits a cavity in the under side of the beam, as shown. The beam is grooved vertically in its sides, as shown at *g g*, for the accommodation of the pins *p p*, and the plate *c* is also cut away at *c'* for the same purpose. By the employment of these means of connection a loose joint is formed between the runners and beam, and the runners are permitted to move independently in passing over obstacles, thus relieving the sled of great strains. The connection is much stronger than by any other form of loose joint known to me, owing to the manner in which the two plates are fitted together and the width of the plate on the runner, and for the same reason the tendency of the runner to tilt over to the right or left is obviated. The connection permits a slight rocking or rolling motion in the beam, which greatly relieves the strain on the sled and facilitates the independent tilting of the runner in passing over obstacles.

The great difficulty of starting a loaded sled is by my invention greatly lessened, for each runner being in a measure independent, it is much easier for a team to rack the forward sled from right to left, or the reverse, so as to start one runner forward and the other backward without wrenching the sled from the track. In doing this the form of the iron plates greatly reduces the friction between the beam and runners.

My invention is especially adapted for pinery (logging) sleds, but is applicable generally to any sled used for heavy transportation.

The plates *b c* perform the function of relieving the pins *p p* and preventing them from being broken, as in other sleds. To still further strengthen the connection, an additional pin or bolt can be passed down through the center of the beam and through the convex and concave portions of the plates into the runner. When deemed advisable, also, a ball of iron, *f*, may be inserted under the plate *b*—one half in the cavity in said plate and the other half in a cavity corresponding thereto in the runner made for the purpose—as shown in Fig. 4. This ball strengthens the projection *e* on the plate *b* and prevents its being crushed or broken by any unusual strain. It also pre-

vents any lateral strain from breaking the plate away from the runner.

Having thus described my invention, I claim as new—

- 5 1. The combination, with the runner, of the plate *b*, made broader than the runner and having the central projection, the plate *c* on the under side of the beam, having the cavity  
10 corresponding to the projection on the plate *b*, and the cut-away portions *c'* for the accommodation of the pins *p p*, the beam having the

grooves *g g* in its sides, and the pins *p p* for holding the parts together, substantially as described.

2. The ball *f*, in combination with the plate 15 *b* and the runner, substantially as described, for the purpose specified.

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Witnesses:

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