(No Model.)

C. E. BELKNAP.

SLEIGH KNEE.

No. 338,384. Patented Mar. 23, 1886.

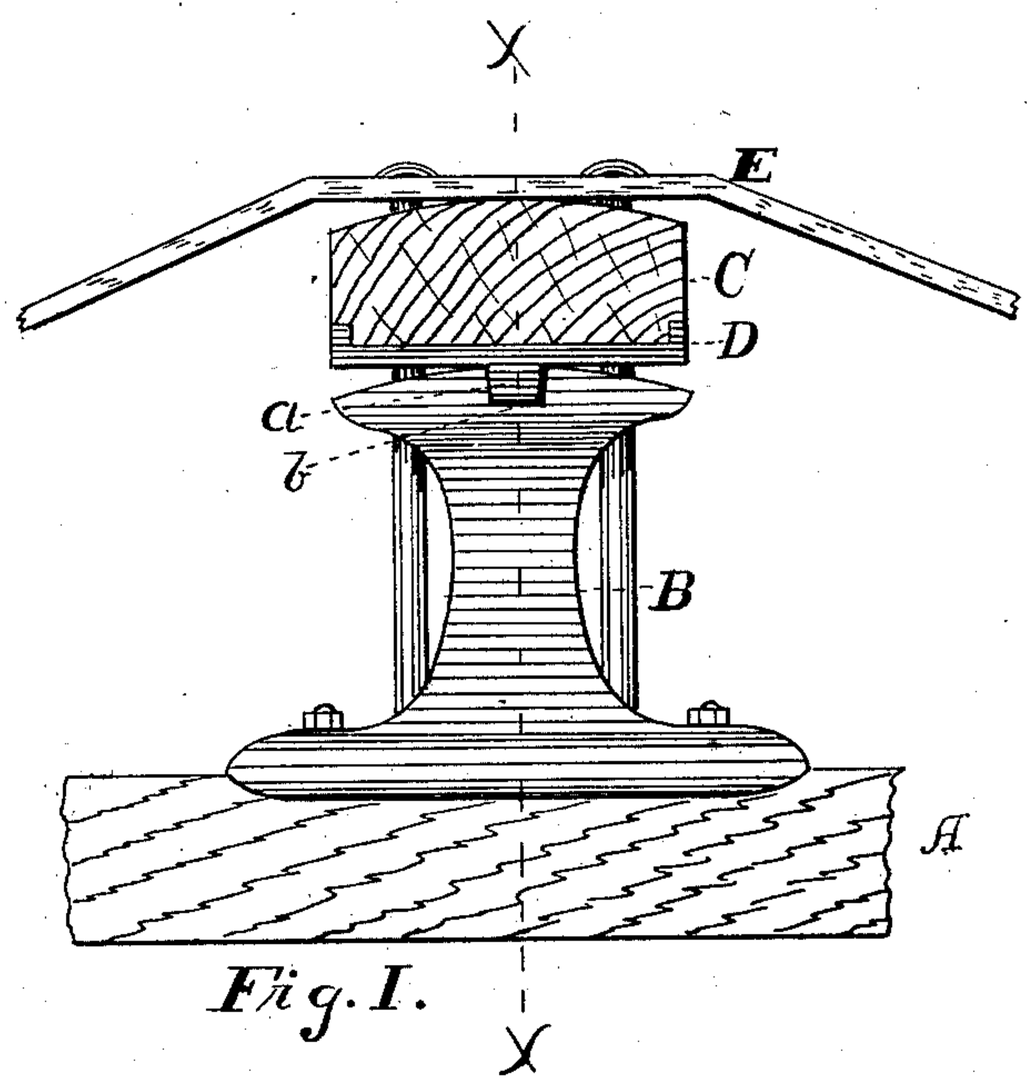

Fig. 1.

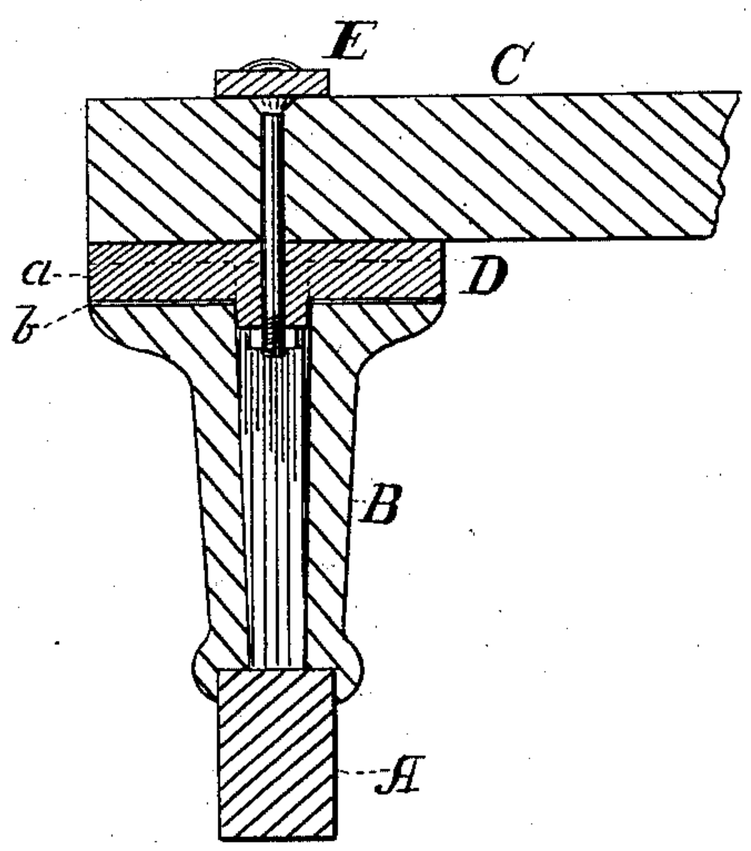

Fig. 2.

WITNESSES:

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CHARLES E. BELKNAP, OF GRAND RAPIDS, MICHIGAN.

SLEIGH-KNEE.

SPECIFICATION forming part of Letters Patent No. 338,384, dated March 23, 1886.

Application filed December 7, 1885. Serial No. 184,992. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. BELKNAP, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Sleigh-Knee, of which the following is a specification.

My invention relates to that class of sleigh-knees which have a rounded upper surface, upon which the beam has a rocking or rolling motion, for the purpose of allowing the runner to adapt itself to the inequalities of the surfaces over which it is moved.

When in use, there are certain strains upon the sleigh which tend to twist or turn the runner under the beam. It is desirable that the beam and runner should remain at right angles to each other at all times. To secure this result, it is usual to depend upon pins or bolts rigidly secured to the runner and rave and passing loosely through holes in the beam; also upon a small square projection upon the under side of the beam, which enters a corresponding opening in the upper side of the knee. These are liable to be worn, broken, or bent by use in a short time, and fail to operate in a satisfactory manner.

The object of my invention is to provide reliable means for securing the beam and runner at right angles to each other at all times without interfering with any of the other operations of the device.

My invention consists in providing the contiguous surfaces of the knee and beam with one or more tongues and grooves, so that they interlock and effectually prevent any twisting motion of these parts relative to each other, as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is an elevation of my device and the adjacent parts of a sleigh. Fig. 2 is a section of the same on the line *x x* of Fig. 1.

Like letters refer to like parts in each figure.

A represents the runner; B, the knee; C, the beam; D, the plate, and E the rave.

Across the under surface of the plate D, at right angles to the runner, is a ridge or tongue, *a*, which resembles the cog or tooth of a gear. In the upper surface of the knee is a groove or channel, *b*, to receive the tongue *a*, resembling the space between two cogs or teeth in a gear-wheel. These tongues and grooves may be increased in number or reversed in position, or the contiguous surfaces of the plate and knee may be corrugated in reverse to serve the same purpose.

The gist of my invention is the interlocking of the surfaces in question by alternate elevations and depressions in each, to prevent any twisting or rotating motion of the runner under the beam.

What I claim and wish to secure is—

1. In a sleigh, a knee having an upper rounded surface, and a beam adapted to rock or roll upon said surface, and one or more interlocking projections and depressions on the contiguous surfaces of said knee and beam, substantially as and for the purpose specified.

2. In a sleigh, a knee having an upper rounded surface and a groove in said surface, in combination with a beam adapted to rock or roll upon said rounded surface, said beam having a tongue or ridge on its under surface to fit within said groove, substantially as and for the purpose specified.

3. In a sleigh, a knee having a groove or depression in its upper surface at right angles to the runner, in combination with a beam having a corresponding tongue or elevation upon its under surface, substantially as and for the purpose specified.

CHARLES E. BELKNAP.

Witnesses:
HERBERT P. BELKNAP,
LUTHER V. MOULTON.