(No Model.)

J. J. GARDNER.

HINGED SLEIGH KNEE.

No. 347,103. Patented Aug. 10, 1886.

FIGURE 3

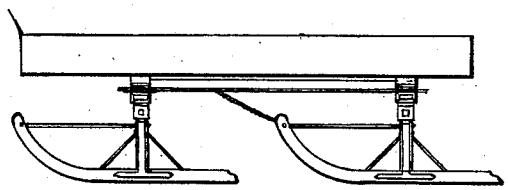


FIGURE 2

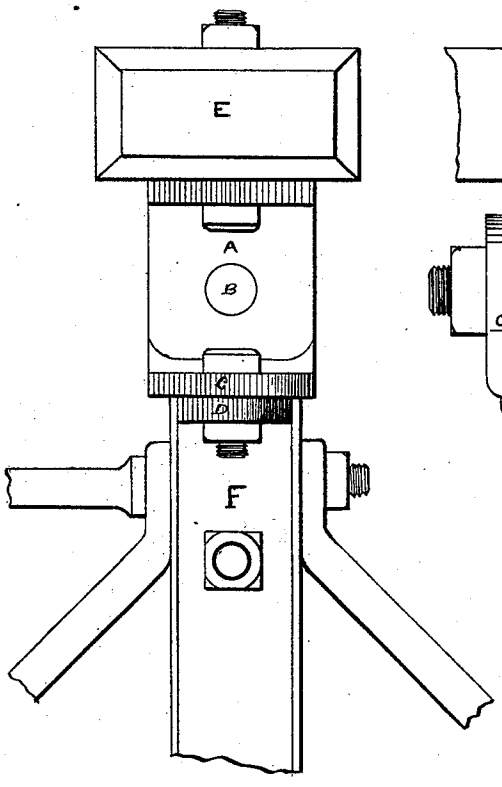
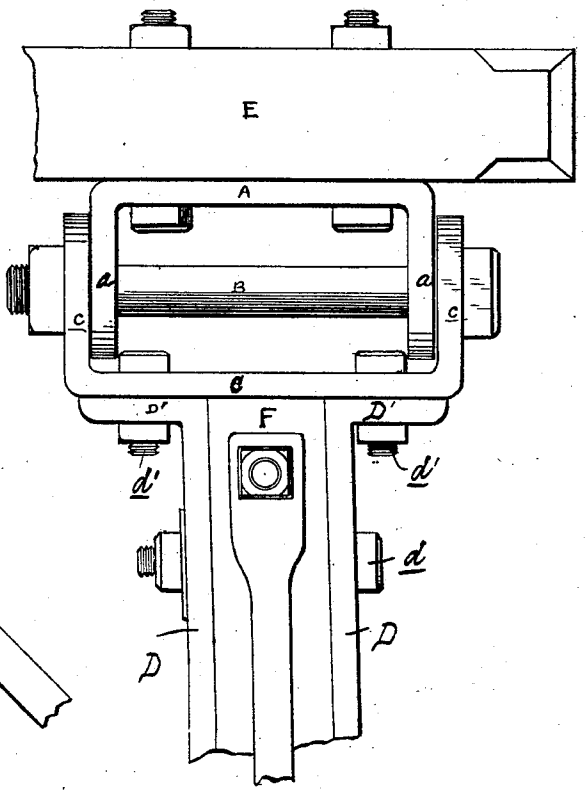


FIGURE 1



WITNESSES

James E. Hirst

Elmer Sutton

John J. Gardner

INVENTOR.

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UNITED STATES PATENT OFFICE.

JOHN J. GARDNER, OF SAULT SAINTE MARIE, MICHIGAN.

HINGED SLEIGH-KNEE.

SPECIFICATION forming part of Letters Patent No. 347,103, dated August 10, 1886.

Application filed November 11, 1885. Serial No. 182,479. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. GARDNER, a citizen of the United States, residing at the village of Sault Sainte Marie, in the county of Chippewa, in the State of Michigan, have invented a new and useful Hinged Sleigh-Knee Attachment, of which the following is a specification.

My invention relates to securely attaching bob-sleigh knees to the cross-beams and allowing an independent action of each runner when one of the runners is in an inclined or elevated position; also, to allow the runners and cross-beams to be separated by simply removing one bolt in each knee attachment. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side section of the entire attachment. Fig. 2 represents an end section of the entire attachment, and Fig. 3 shows a side section when fully attached to the sleigh-knee and cross-beam.

The cross-beam E has attached to it firmly by bolts the upper jaw, A, of the attachment, and the knee F has attached to it by bolt the lower jaw, C, of the attachment. Each of these jaws is provided with arms *a c*, as shown, and through the arms of both jaws is the coupling-bolt B, connecting the jaws, which forms the hinge, and which allows the play for separate action of the runners and bears the weight which may be placed on cross-beam E.

D D are angle-braces, secured upon opposite sides of the knee F by the bolt *d*, and the bolts *d'* pass through the cross-bar of the jaw C and into the arms D' D' of said angle-irons, as clearly shown in Fig. 1. This forms a rigid connection.

The parts A, B, and C are of iron, and can be attached to the parts F and E, which parts may be either of wood or iron.

It will be readily seen that by this attachment the front or back end of either or both runners can be elevated or lowered, the bolt B acting as a hinge, and not disturb the position of the opposite runner, and preventing any strain on any other parts of the runners and cross-beams.

I am aware of the Patents Nos. 209,251 and 327,168, and make no claim to the construction shown therein as forming part of my invention.

What I claim, and desire to secure by Letters Patent from the United States, is—

The combination, with the knee F and the angle-irons D D, secured thereto, as described, of the cross-beam E, the jaw A, rigidly secured by bolts to said cross-beam and formed with arms *a a*, the jaw C, having arms *c c*, embracing the arms *a a*, the bolts *d' d'*, passed through the cross-bar of the jaw C into the arms D' D' of said angle-irons, and the removable bolt B, passed through openings in the arms *a a c c* and pivotally connecting said jaws, substantially as herein shown and described.

JOHN J. GARDNER.

Witnesses:
JAMES E. WIRT,
ELMER SUTTON.