(No Model.)

J. H. REMPIS.

SLEIGH KNEE.

No. 435,666. Patented Sept. 2, 1890.

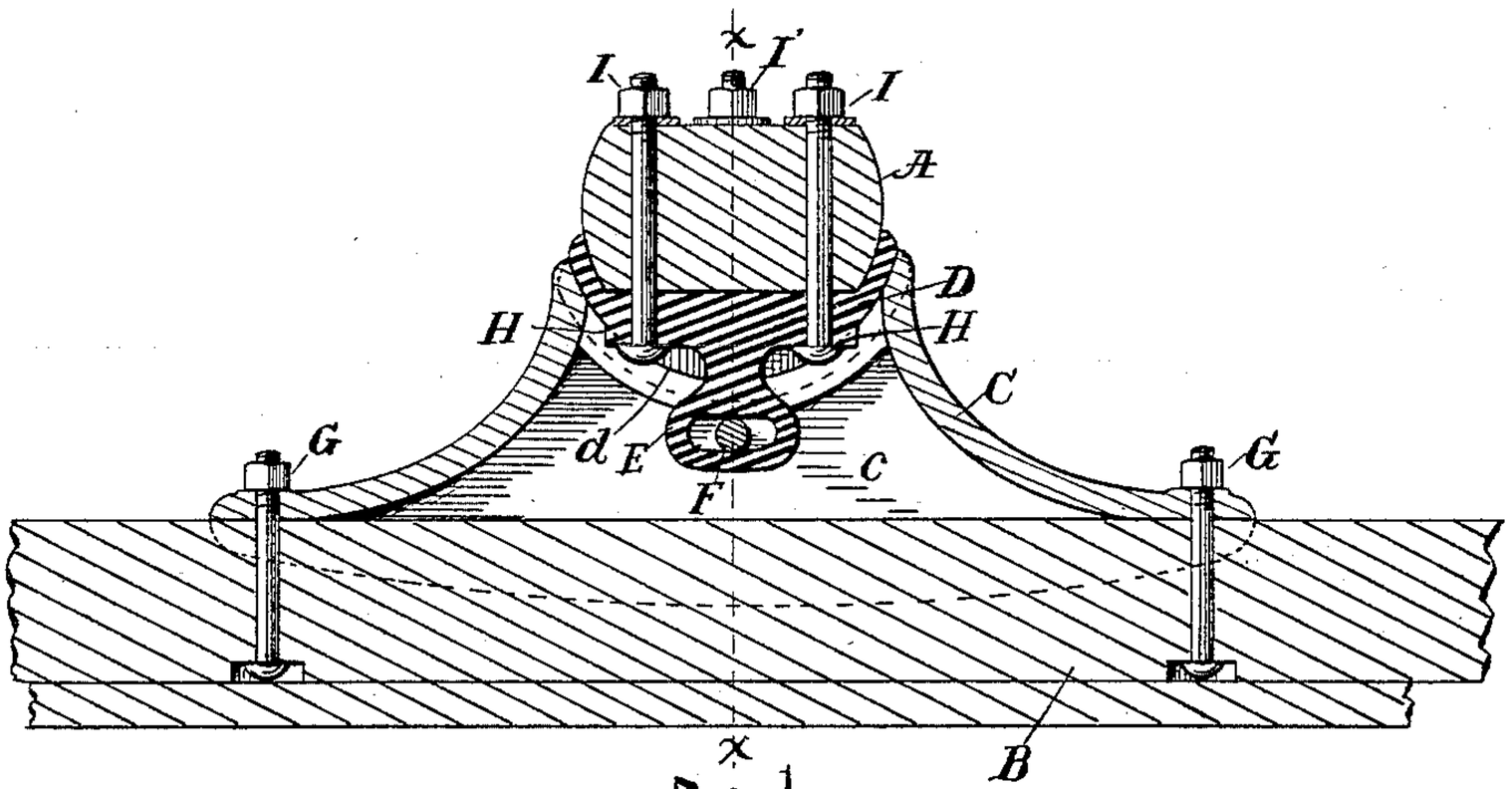

FIG. 1.

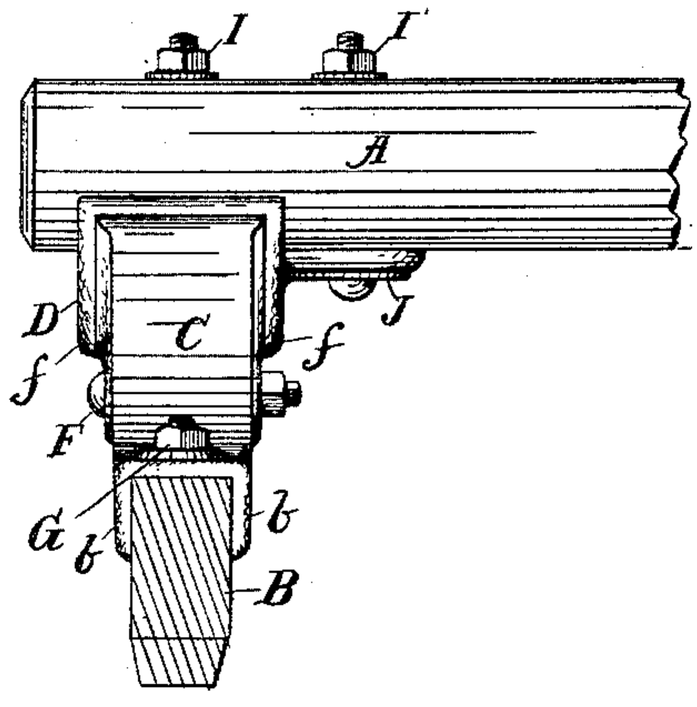

FIG. 2.

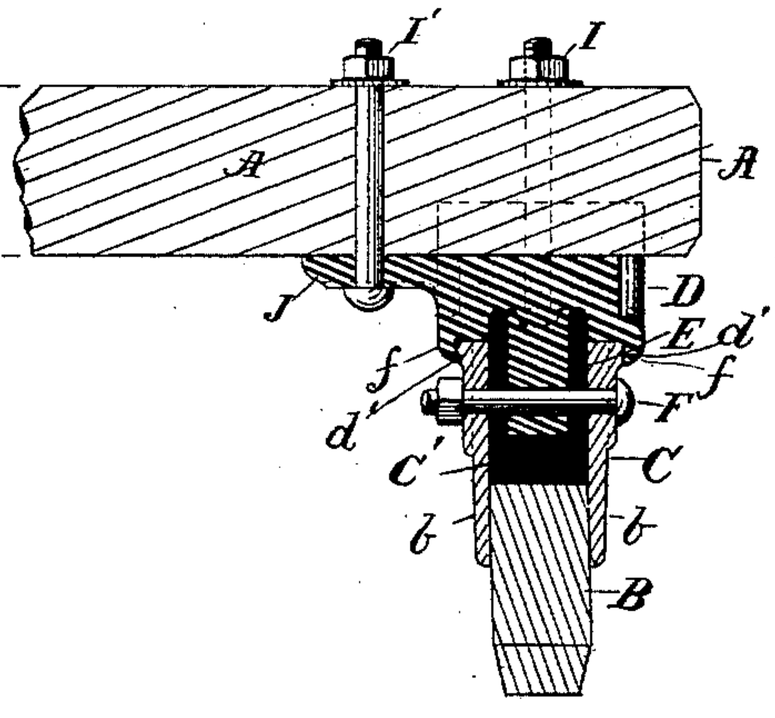

FIG. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN H. REMPIS, OF GRAND RAPIDS, MICHIGAN.

SLEIGH-KNEE.

SPECIFICATION forming part of Letters Patent No. 435,666, dated September 2, 1890.

Application filed September 9, 1889. Serial No. 323,465. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. REMPIS, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Sleigh-Knees; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a sleigh-knee, and my object is, first, to provide a knee that will have an oscillating movement about the axis of the beam; second, to confine such oscillation within certain prescribed limitations; third, to provide means whereby the runner may be readily attached to and detached from the beam; fourth, to provide a cheap, strong, durable, and practical structure. I accomplish these results by the mechanism illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical section on the line *y y* of Fig. 2. Fig. 2 is a front elevation. Fig. 3 is a vertical section on the line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts in each of the several figures.

A represents the beam, and B the runner.

C indicates the knee, which is cast integral, and is provided with a curved seat *d*, arranged concentric to the axis of the beam. The front and rear leg portions are connected by the web *c*, forming a chamber *c'*, and extending downward to form the flanges *b b* for engaging the sides of the runner, to which it is secured by bolts G. The sides of the seat *d* project, forming flanges *d'*, for a purpose hereinafter set forth, and beneath said projecting edges are arranged bolt-holes, through which the bolt F for securing the saddle to the knee passes.

D is the saddle, also cast integral, and is provided with a horizontally-projecting flange J, having a flat top for engaging the bottom of A, and a hole for receiving the bolt I', for securing it to the beam. The upper side of the saddle is fitted to the under surface of the beam, and the under surface is convex to fit the seat *d*, and is provided with the pendent loop E, which projects into the chamber *c'*, and is secured by the bolt F, passing through the knee and said loop, for securing said saddle to said knee, the slot shown in the bottom of the loop admitting of a limited rotary motion of the beam A upon its axis. This rotary motion is further limited by the shoulders H upon D, which form seats for bolts I I, and by striking against the sides of C form stops. At each end of the saddle are flanges *f f*, which abut against the edges *d'* of the seat *d*, forming curved ways, in which said edges slide somewhat when A is rotated, being limited in its movement as described. I secure the saddles D permanently to the beams A by bolts I I I' and attach the knees C permanently to the runners B by bolts G for convenience in transportation, and when it is desired to assemble the parts to form a sleigh they are placed together as described, the bolts F inserted and secured, and the sleigh is ready for use, while by removing the bolts F the sleigh is quite as easily taken apart again.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a sleigh, the combination, with a beam, as A, and a runner, as B, of a knee, as C, having a concave seat, as *d*, and a saddle, as D, having a convex under surface in contact with said concave seat, a loop, as E, and a bolt, as F, for securing the saddle to said knee, substantially as described, and for the purposes herein set forth.

2. In a sleigh, the combination, with a beam, as A, and a runner, as B, of a knee, as C, having a concave seat, as *d*, and a saddle, as D, having a convex under surface in contact with said concave seat, and a flange, as J, arranged between the beam and runner, substantially as specified.

3. In a sleigh, the combination, with a beam, as A, and a runner, as B, of a knee, as C, having a concave seat, as *d*, provided with projecting flanges, as *d'*, and a saddle, as D, having a convex under surface in contact with said concave seat, and provided with curved flanges *f f* for engaging said flanges *d'*, forming curved ways, substantially as and for the purposes specified.

4. In a sleigh, the combination, with a beam, as A, and a runner, as B, of a knee, as C, having a concave seat, as *d*, and having its front and rear leg portions connected by a web, as *c*, forming a chamber, as *c'*, and a saddle, as

D, having a convex under surface in contact with said concave seat, and provided with shoulders H, arranged in said chamber, for engaging said front and rear portions of C, substantially as and for the purposes set forth.

5. In a sleigh, the combination, with a beam, as A, and a runner, as B, of a knee, as C, having a concave seat, as *d*, having projecting semicircular flanges *d'*, flanges *b*, webs *c*, connecting the front and rear leg portions and chamber *c'*, and a saddle, as D, having a convex under surface in contact with said concave seat *d*, a flat upper surface, and a horizontally-projecting flange, as J, adapted to the under side of the beam, semicircular flanges, as *f f*, for engaging with the flanges *d'*, forming curved ways upon which the parts are adapted to slide, shoulders, as H, a loop, as E, arranged in said chamber, and a bolt, as F, substantially as set forth.

6. In a sleigh, the combination, with a beam, as A, and a runner, as B, of a knee, as C, having a concave seat, as *d*, provided with projecting semicircular flanges *d'*, webs *c* for connecting the front and rear portions, having projecting flanges *b* for engaging the runner, bolts G for securing the knee to the runner, and a saddle, as D, having a concave under surface in contact with said seat *d*, a flat upper surface provided with a flange J, adapted to the under side of the beam, bolts, as I I I', for securing the saddle to the beam, flanges *f*, shoulders H, loop E, and bolt F, all arranged substantially as described, and for the purpose herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. REMPIS.

Witnesses:
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