(No Model.)

W. H. SPEAR.

SLEIGH KNEE.

No. 396,005. Patented Jan. 8, 1889.

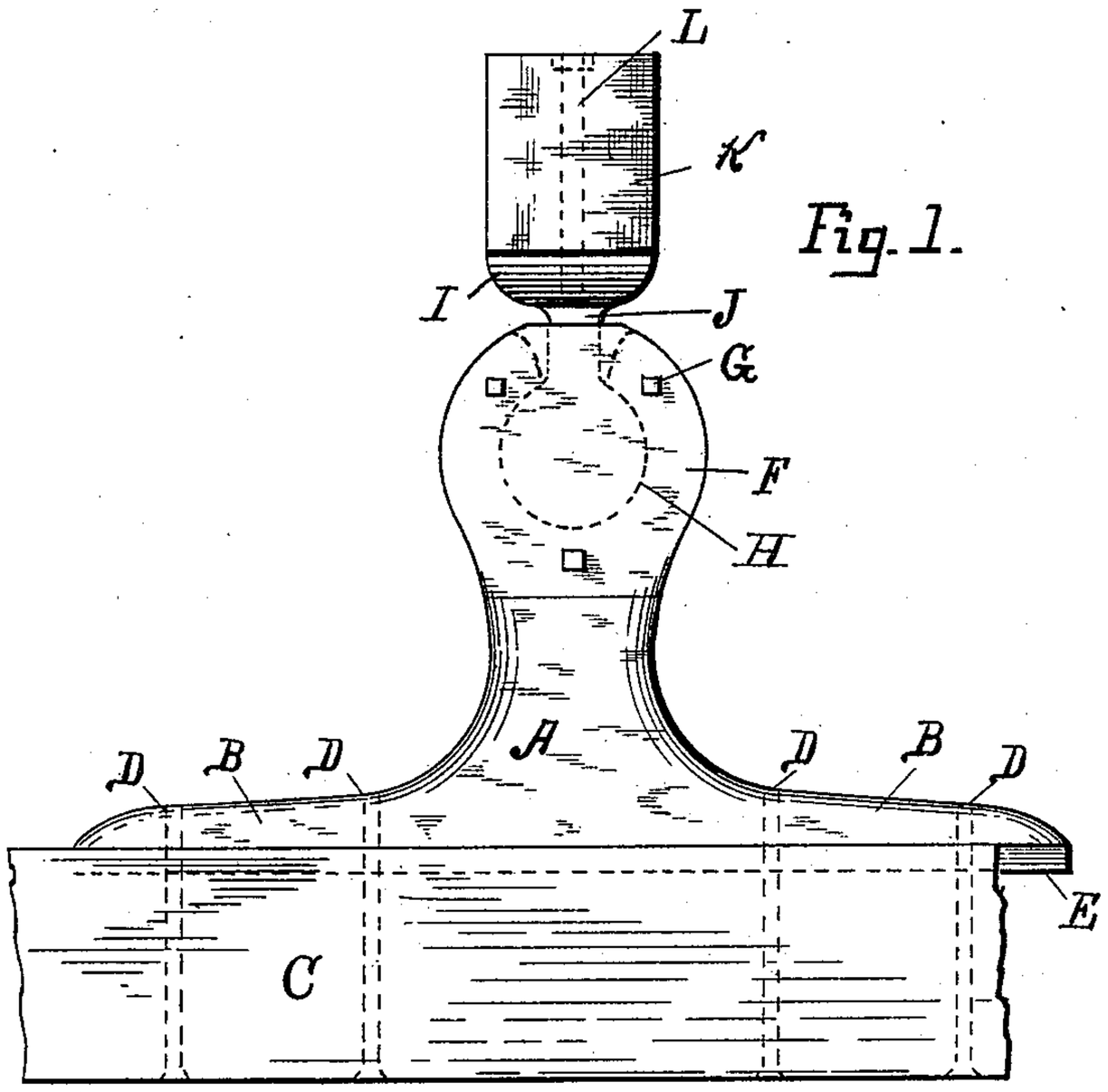


Fig. 1.

Fig. 2.

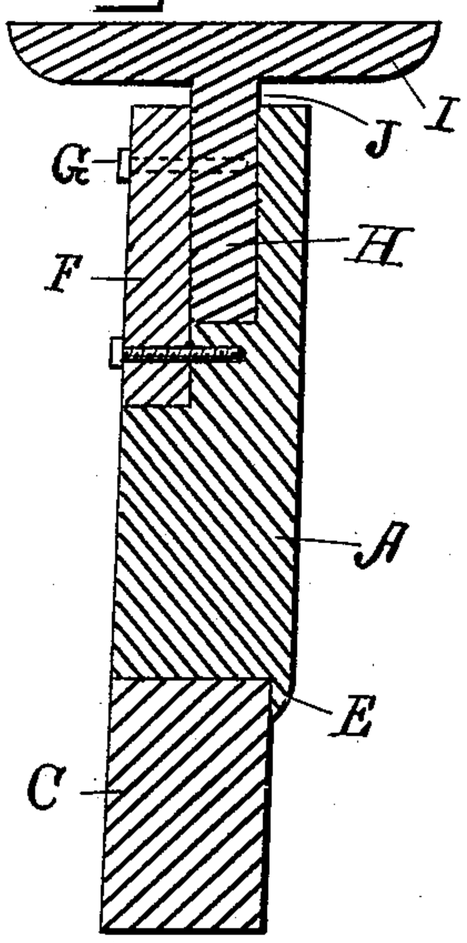
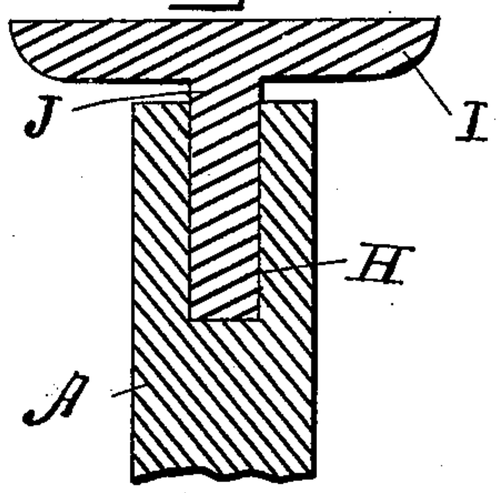


Fig. 3.



Witnesses.
F. P. Rohrer
John O'Connell

Inventor.
W. H. Spear
By Niles & Greene,
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM H. SPEAR, OF HUMBOLDT, IOWA.

SLEIGH-KNEE.

SPECIFICATION forming part of Letters Patent No. 396,005, dated January 8, 1889.

Application filed September 18, 1888. Serial No. 285,752. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. SPEAR, a resident of Humboldt, in the county of Humboldt and State of Iowa, 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 pertains to make and use the same.

My invention relates to improvements in sleigh-knees of the class that permit a slight rocking of the beam; and the novelty lies, principally, in the construction allowing such limited movement, and at the same time preventing all motion in a transverse plane.

In the accompanying drawings, which fully illustrate this invention, Figure 1 shows the knee in place, seen in the direction of the beam's axis. Fig. 2 is a section on the line $x\ y$ of Fig. 1. Fig. 3 is a section similar to Fig. 2, but with the construction slightly modified.

In the drawings, A is the body of the knee, and is provided at its lower end with the usual extensions, B B, secured to the top of an ordinary runner, C, by bolts D D, and having a slight flange, E, extending down along the vertical face of the runner. At the upper end this body is cut away upon one side in a vertical plane and to a depth equal to the thickness of a plate, F, which is secured to the face so formed by bolts G.

Beneath the plate the knee is cut away to form a circular recess of uniform depth, and at the top of the recess an upwardly-flaring notch of the same depth. A disk, H, fills and closely fits this recess. It is formed integrally with a plate, I, the two being connected by a short neck, J, equal in thickness to the depth of the notch, but in width, in the plane of the disk, somewhat less than the width of the latter. It may therefore swing in this plane until it meets the side walls of the notch. The plate I is rigidly fastened to the beam K by bolts L.

The plane of the disk is perpendicular to the beam, whether or not the knee is vertical, when in operative position, and consequently is not parallel to the axis of the knee when the latter is inclined.

From the construction it is evident that the joint permits motion in the plane of the disk, but not in a transverse direction, such motion being resisted by the heavy plate F. This plate may be formed integrally with the knee, as shown in Fig. 3, if desired, the knee being cast about the previously-formed disk by well-known methods. In either form the device avoids one of the principal strains to which a knee is subjected when no provision is made for the rocking here permitted, and it affords a very simple, strong, and durable knee that is believed to be novel.

What I claim is—

1. A sleigh-knee composed of two parts, the first terminating in a circular disk united to the part at one side by a narrow neck in its own plane, and the second having a recess receiving and closely fitting said disk, whereby the two parts are articulated in a manner permitting limited motion in a single vertical plane only, substantially as set forth.

2. The combination, with the runner C and the beam K, of the plate I, secured to said beam and bearing the integrally-formed neck J and disk H, the knee-body A, provided with the recess in its upper end to receive said disk and bolted at its lower end to said runner, and the plate F, retaining said disk in said recess, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM H. SPEAR.

Witnesses:
W. W. STERNS,
P. F. SAUL.