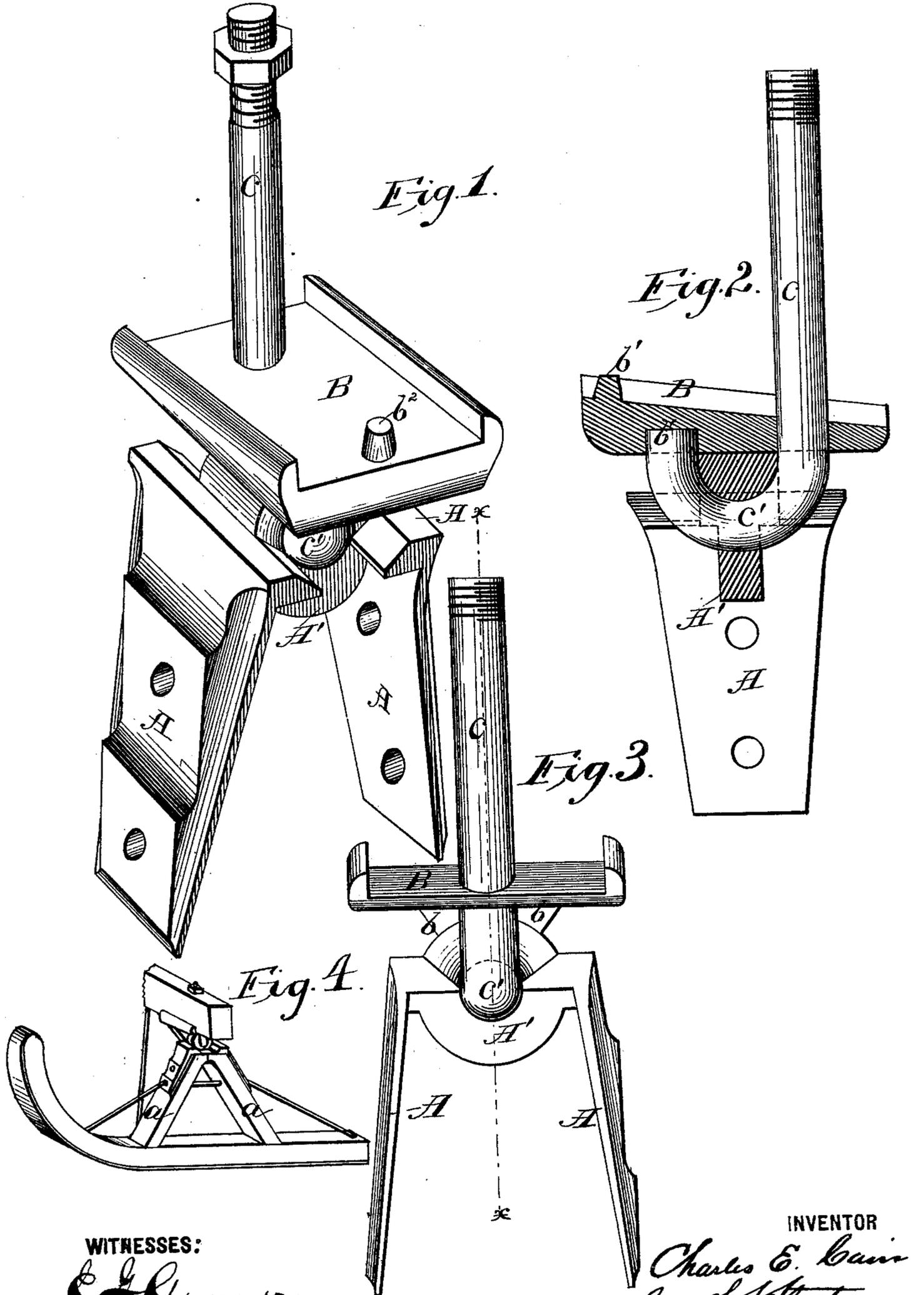


(No Model.)

C. E. CAIN.  
Bob Sled.

No. 231,267.

Patented Aug. 17, 1880.



WITNESSES:

*E. G. Asmus*  
*Charles F. Hunter.*

INVENTOR

*Charles E. Cain*  
by *A. H. Hunt*

ATTORNEY

# UNITED STATES PATENT OFFICE.

CHARLES E. CAIN, OF HOLLAND, WISCONSIN.

## BOB-SLED.

SPECIFICATION forming part of Letters Patent No. 231,267, dated August 17, 1880.

Application filed May 4, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. CAIN, of Holland, in the county of Sheboygan, and in the State of Wisconsin, have invented certain new and useful Improvements in Knees for Bob-Sleds; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to knees for bob-sleds; and it consists in the device hereinafter described.

In the drawings, Figure 1 is a perspective view of my invention; Fig. 2, a section on line *xx*, Fig. 3; Fig. 3, a side view, and Fig. 4 a detail illustrating the position of my device in the make-up of a bob-sled.

My improved sled-knee consists of a bracket, A, which fits over and joins the braces *aa*, that rise from the runner, a ring-bearing, A', cast with the bracket A, a plate, B, and a tie-bolt, C.

The ring-bearing A' joins the two members of the bracket A at its top, and depends between or into the braces *aa*, and through its center I pass the hook C' of the tie-bolt C. I then place the plate B, the shank of the tie-bolt passing through a perforation therein.

On the bottom of the plate B is a concaved lug, *b*, which, when the plate is in place, will fit over and rest upon the bearing A'. The end of the hook C will also enter a depression, *b'*,

on the bottom of the plate, to keep it from turning.

The device may now be secured to the cross-beam of the sled by the tie-bolt and a lug, *b''*, when the knee will be in position to do its work.

To give the necessary tilt to the runners I provide the plate B with a face which inclines outwardly.

My improved knees are all made alike, and adapted to the right or left simply by taking the tie-bolt out and putting it through the ring the opposite way, as the hook must always point to the longitudinal center of the sled.

What I claim is—

1. The sled-knee consisting of the bracket and ring-bearing, plate B, and hooked tie-bolt, in combination, as described.

2. The plate B, having concaved lug *b* and lug *b''*, in combination with the bracket having ring-bearing, and the hooked tie-bolt, as set forth.

3. The plate having inclined face, in combination with the tie-bolt and bracket, all constructed to operate as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of April, 1880.

Witnesses:

CHAS. E. CAIN.

STANLEY S. STOUT,

E. G. ASMUS.