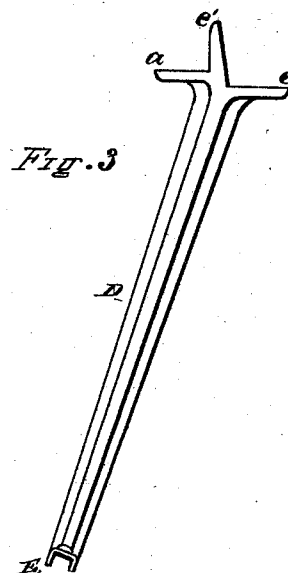
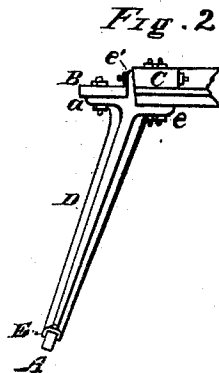
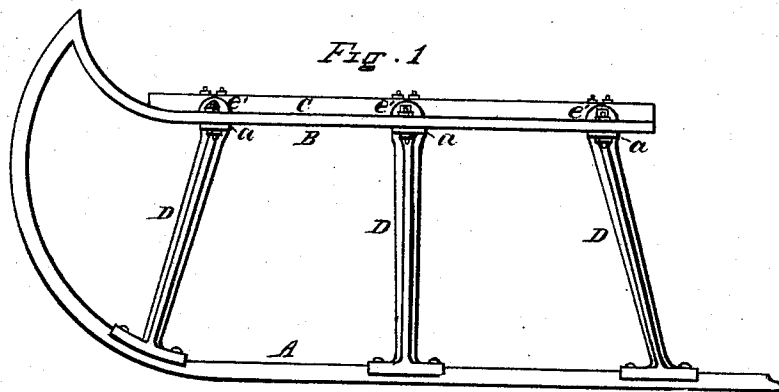


A. A. ABBOTT.
Sleighs.

No. 166,055.

Patented July 27, 1875.



WITNESSES.

F. F. Warner.
A. C. Guidley

INVENTOR.

Arthur A. Abbott

UNITED STATES PATENT OFFICE.

ARTHUR A. ABBOTT, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN SLEIGHS.

Specification forming part of Letters Patent No. **166,055**, dated July 27, 1875; application filed April 27, 1875.

To all whom it may concern:

Be it known that I, ARTHUR A. ABBOTT, of Chicago, in the county of Cook and State of Illinois, have invented a new, useful, and Improved Cast-Iron Sleigh-Knee, of which the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part hereof, and in which—

Figure 1 is a side elevation of a part of a sleigh provided with knees embodying my invention; Fig. 2, an end elevation of the same, and Fig. 3 an enlarged representation of one of the knees.

Like letters of reference indicate like parts.

In the drawing, A represents one of the runners, which are made preferably of wood. B is a rave, also preferably made of wood. C is the frame to which the body is attached. D D are the knees. *a* is a flange or shoulder extending outwardly from the upper part of the knee, and *e* is a like projection extending inwardly therefrom. These projections extend horizontally, while the knee is inclined in the usual manner, as represented in Figs. 2 and 3, and I deem it preferable to extend the outer shoulder from a point somewhat higher than that from which the inner shoulder extends, as shown. *e'* is a projection extending vertically, or nearly so, from the junction of the parts *a* and *e* with the main part of the knee. E is a socket to receive the upper edge of the runner.

The knees now described may be applied to use as follows: The knees are arranged on the runners in the manner represented, and firmly attached thereto by means of screws,

bolts, or other suitable fastening. The parts *a a* serve as supports or brackets for the raves, and the latter are firmly attached thereto by means of bolts and nuts, as represented in Figs. 1 and 2. The frame is arranged on the extensions *e e*, which support it, and the parts *e' e'* prevent a lateral movement of the frame. The frame should be secured in place by means of bolts passing vertically through it and the part *e*, and horizontally through it and the part *e'*, as shown. The part *e'* should also be inclined, as shown, and the frame correspondingly beveled, so that the frame may be readily arranged in its proper position. The projection *e'* also prevents the inward lateral movement of the rave. The lateral movement of the frame will also be prevented independently of the projection *e'*, for the reason that a shoulder is presented to the outer edges or sides of the frame by arranging the part *a* above the part *e*, as shown. The knee, including all the parts shown in Fig. 3, is cast in one piece.

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

A sleigh-knee consisting of a standard provided with the socket E to receive the runner, the outward projection *a* to support the raves, the inward projection *e* to support the body of the sleigh, and the intermediate upright projection *e'*, all cast in one piece, and having substantially the form and construction herein described and shown.

ARTHUR A. ABBOTT.

Witnesses:

N. C. GRIDLEY,
F. F. WARNER.