

No. 612,475.

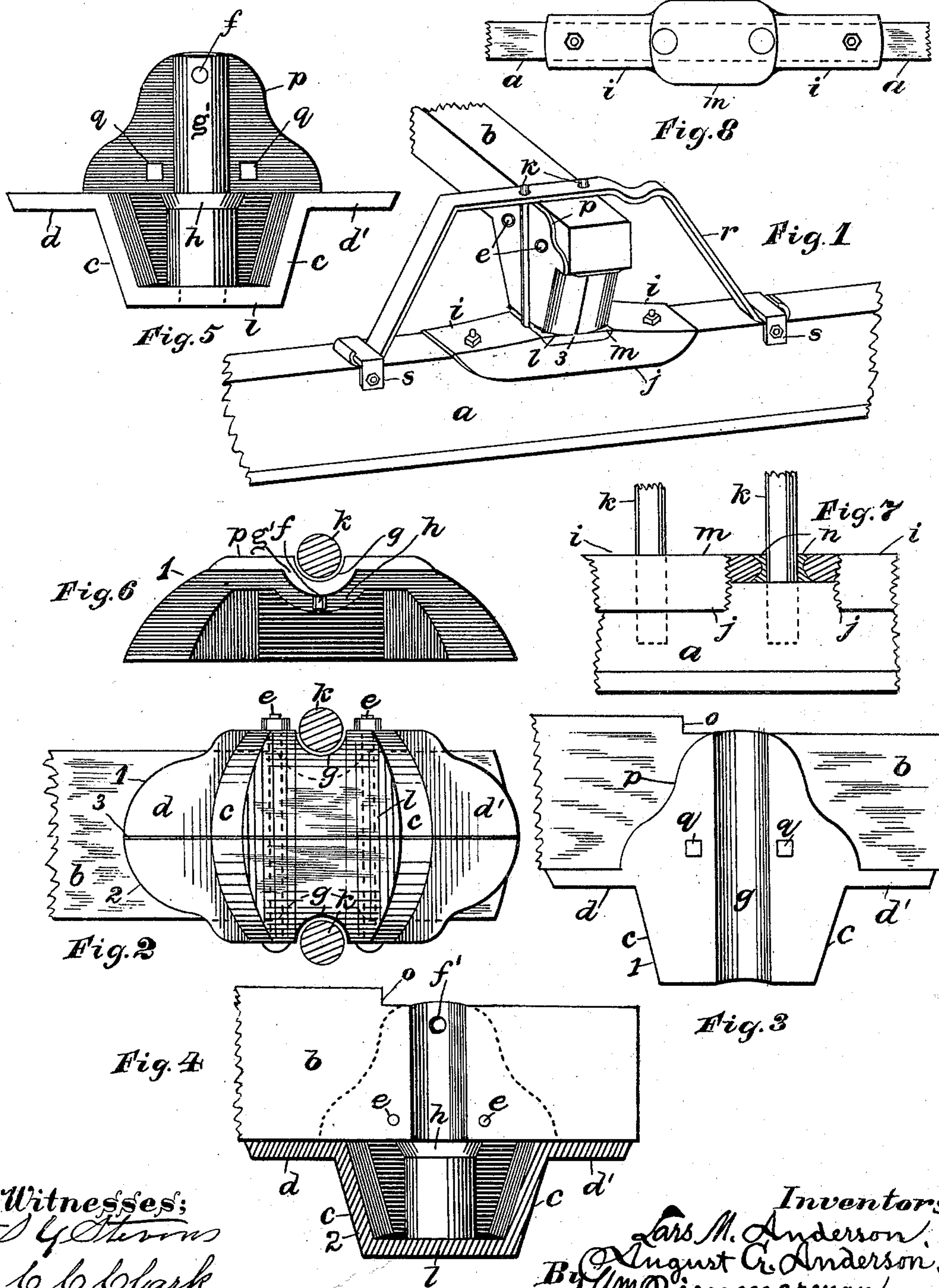
Patented Oct. 18, 1898.

L. M. & A. G. ANDERSON.

SLED.

(Application filed July 5, 1898.)

(No Model.)



Witnesses;
J. G. Peterson
C. C. Clark

Inventors
Lars M. Anderson
August G. Anderson.
By Wm. J. Zimmerman
Atty.

UNITED STATES PATENT OFFICE.

LARS M. ANDERSON AND AUGUST G. ANDERSON, OF MOORHEAD, MINNESOTA,
ASSIGNORS TO THE ANDERSON COMPANY, OF MINNESOTA.

SLED.

SPECIFICATION forming part of Letters Patent No. 612,475, dated October 18, 1898.

Application filed July 5, 1898. Serial No. 685,113. (No model.)

To all whom it may concern:

Be it known that we, LARS M. ANDERSON and AUGUST G. ANDERSON, citizens of the United States, residing at Moorhead, in the county of Clay and State of Minnesota, have invented certain new and useful Improvements in Sleds, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof, and in which—

Figure 1 shows our sleigh construction in perspective. Fig. 2 shows the under side of the knee and its beam. Fig. 3 shows a side view of the beam with one side of the knee. Fig. 4 shows a side view of the beam with the opposite half of the knee to that shown in Fig. 3, the near half being removed. Fig. 5 shows part of the knee shown in Fig. 4 without the beam. Fig. 6 shows Fig. 5 in plan view with the start-pin. Fig. 7 shows fragments of both runner and saddle with part of saddle in central vertical longitudinal section, showing the method of fastening the start-pins. Fig. 8 shows the saddle on a fragment of the runner in plan view.

Like letters and numerals of reference denote like parts.

The object of our invention is to improve the construction of sleds so that each runner may adapt itself more readily to the surface of the ground and at the same time that the parts may be united more securely and yet be of more economical construction. To attain said desirable ends, we construct our said new and improved device in substantially the following manner, namely:

Upon the runner *a*, of usual construction, we place a cast-iron saddle *i*, having flanges *j* projecting down each side of the runner, which they clasp closely, besides being bolted thereto, as shown. Centrally thereon and between the start-pins *k* the saddle is widened and provided with a level surface *m*, upon which stands the knee *c*, of which the lower end or foot is rounded in the direction of the runner, as shown in Figs. 1 and 2, while in the transverse direction to said rounding it is straight, so as to form a line of contact across the entire surface of the saddle on the part *m*. The knee *c* is cast in halves 1 and 2,

which meet at the center line 3, with flanges *d* and *d'* extending longitudinally under the beam *b*, and each half part has an ear *p*, which extends to the top of the beam, and through it are cast holes *q*, which pass bolts *e* to draw said parts of the knee tightly against the beam, and through the center of each of said half parts extends a vertical groove *g* to receive the start-pin *k*. The said pins are loose in said grooves *g*, as shown in Fig. 2, but slight room being necessary to allow sufficient play, which thereby enables the runner to rock on the rounded knee end *l*, and thus adapt itself to the unevenness of surface, and thus run lighter and produce less injurious strain on the structure.

On the inside surface of the knee the metal *g'*, forming the groove *g*, is enlarged and provided with a flange *h*, which supports the beam *b*, and from the top of said groove projects a short spur *f* to hold in the beam. Through the part *m* of the saddle are cast holes of parabolic central section, as shown in the sectional cut in Fig. 7, through which pass the start-pins *k* into the wood of the runner. Said pins are fastened to their place by means of Babbitt metal *n*, cast on the wood, until said holes in the iron are full. This metal clings tightly to the start-pins and at the same time is soft enough to give sufficient yield should a twist on the beam require it. The upper ends of the start-pins pass through a rave-iron *r*, held by fasteners *s* of usual form. The long straight-line contact-surface over the saddle-surface *m* tends to hold the runner *a* from any tendency to tip laterally, and thus prevents that kind of injurious strain. The vertical half-round channels through the beam sides, together with said shoulders *h* and flanges *d d'* and spur *f* in holes *f'*, give the connected parts a very firm support, calling for only very slight bolts *e* to keep the parts in place. The shoulder *o* makes room for the rave-iron below the main surface of the beam, and by constructing each knee in opposite halves we are enabled to make the parts complete in the casting in the foundry. We make but a single knee for each runner, and thus the play of each runner on its knee resembles the motion it would have on a hub.

Another point in the use of the Babbitt metal is that if the holes are cast approximately near the right place the metal *n* will always connect the saddle and pins firmly.

5 What we claim is—

1. The combination with the runner provided with saddle having widened and level central knee-bearing surface and start-pin holes, of start-pins secured by cast soft-metal
10 collars, and metal knees with ears having start-pin channels through both ear and knee to receive said start-pins and knee ends contacting in a straight line across the saddle and rounded convexly in a direction trans-
15 versely to said saddle, substantially as specified.

2. The combination with a sleigh-beam vertically grooved with half-round grooves, on opposite sides, and near each end, of a metal

knee in two halves meeting in the longitudinal center of the beam, having horizontal flanges at the top of the knee, longitudinal under the beam, and ears at the top of the sides provided with grooves extending to the bottom of the knee, and a cylindrically-
25 rounded foot end having its axis transverse to the runner, substantially as specified.

LARS M. ANDERSON.

AUGUST G. ANDERSON.

Witnesses to the signature of Lars M. Anderson:

WM. V. DOMARUS,

J. F. MOSSMAN.

Witnesses to the signature of August G. Anderson:

JOHN H. ANDERSON,

EDWIN WEBB.