(No Model.)

H. MEEK.

SLED.

No. 355,775. Patented Jan. 11, 1887.

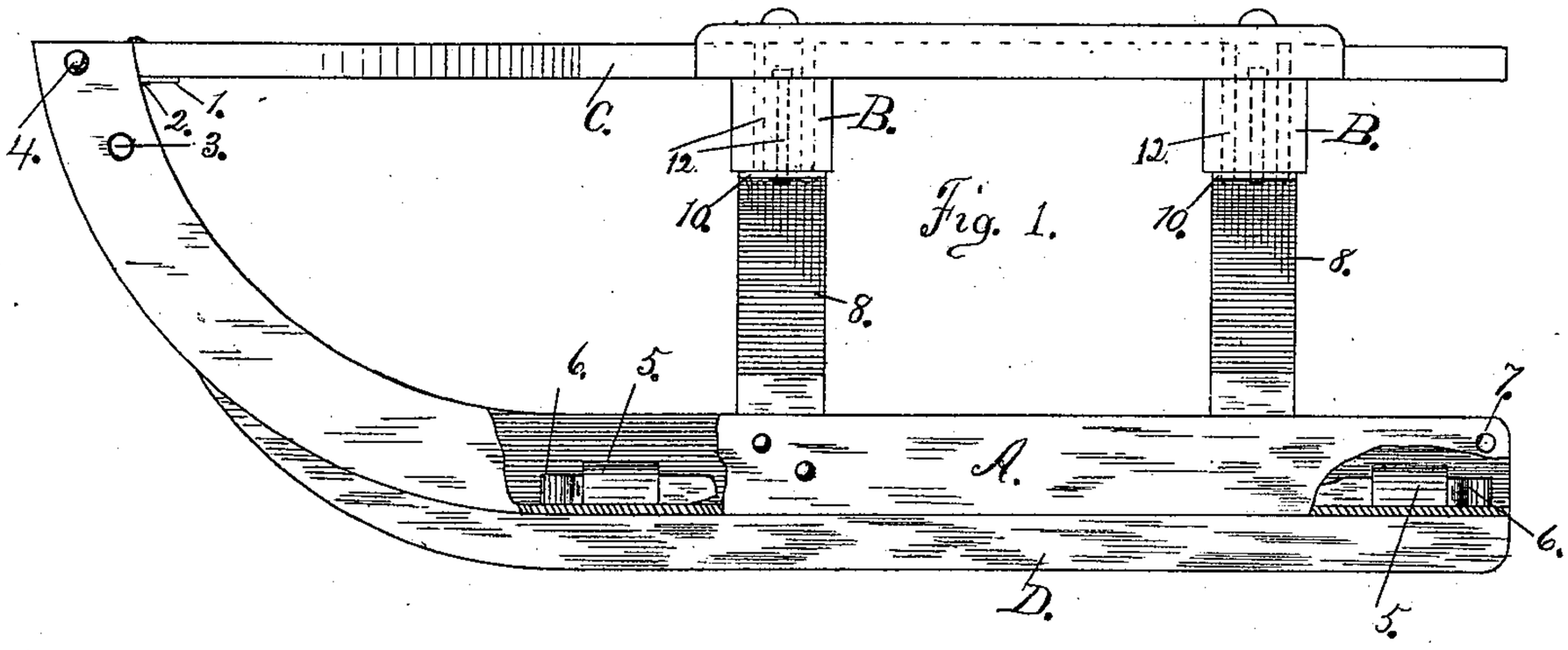


Fig. 1.

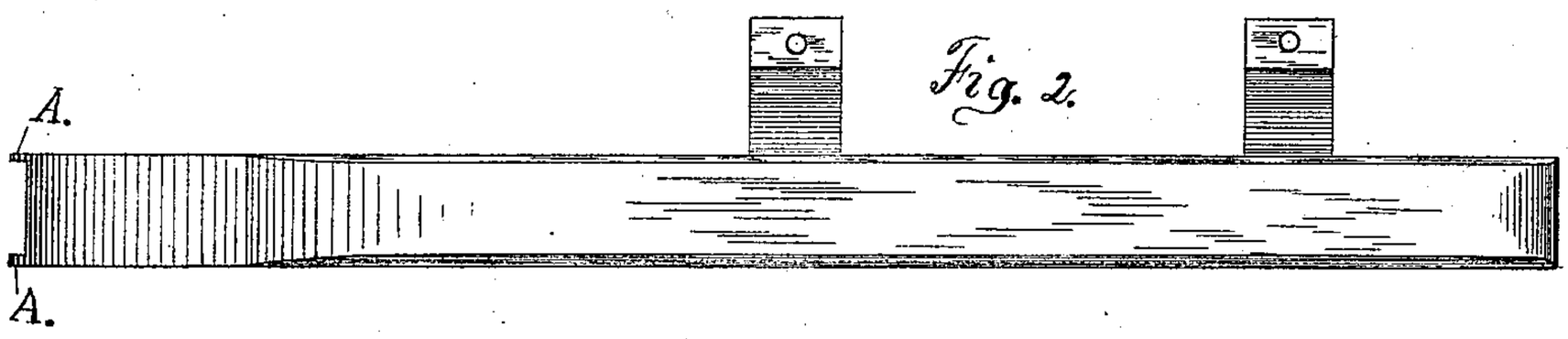


Fig. 2.

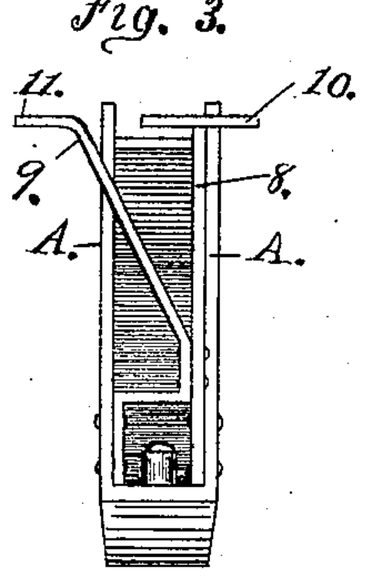


Fig. 3.

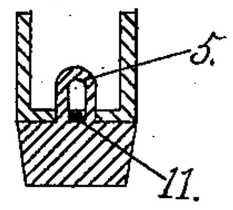
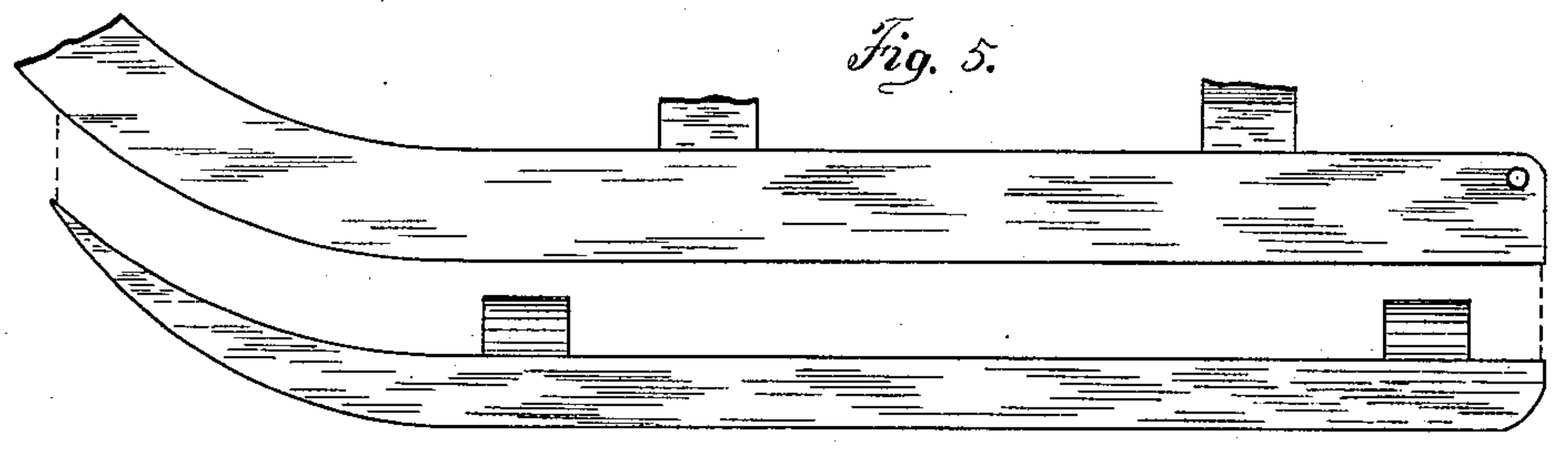


Fig. 4.

Fig. 5.



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HENRY MEEK, OF OREGON, ILLINOIS.

SLED.

SPECIFICATION forming part of Letters Patent No. 355,775, dated January 11, 1887.

Application filed July 12, 1886. Serial No. 207,767. (No model.)

To all whom it may concern:

Be it known that I, HENRY MEEK, a resident of Oregon, in the county of Ogle and State of Illinois, have invented certain new and useful Improvements in Sleds; 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.

The object of my invention is to increase the strength and decrease the weight of a sled or sleigh, particularly as to the runners, and to avoid weakening the shoe by bolt-holes. The runner is made U-shaped in cross-section, and the shoe is attached thereto by means of keys lying within the runner and passing through loops formed integrally with the shoe.

In the accompanying drawings, to which this specification refers, Figure 1 is an elevation of one runner and the parts immediately connected therewith; Fig. 2, a view of the runner inverted or seen from below; Fig. 3, a rear elevation of the same; Fig. 4, a section on the line *x y*, Fig. 1; Fig. 5, a side elevation of a portion of the runner, the shoe being dropped vertically a little below its normal position.

In the drawings one runner only is shown, as the two are exactly similar. The general plan of the sled offers no novelty, the runners, knees, beams, and raves occupying the usual relative positions. The runner is of cast metal and U-shaped in cross-section at all points, the side flanges, A, projecting upward to a distance nearly equal to the width of the runner in parallel planes, as shown in Figs. 1, 3, 4, and 5. The shoes of soft cast-iron chilled upon the lower surface are provided at intervals along their upper surfaces with lugs or loops 5, adapted to project through and fit closely in apertures 11, Fig. 4, on the bottom of the runners, and to receive tapering keys 6, Figs. 1 and 3, by which the shoes are retained in position upon the runners.

The construction of the knee is shown in Figs. 1 and 3, where 8 is a vertical member riveted to one of the runner-flanges upon its inner surface, and 9 an oblique or bracing member rigidly joined to the other near the runner and then carried across the runner and riveted upon the inner surface of the other flange. Both members terminate at the top in horizontal flanges in the same plane. Upon these flanges 10 11 rest the cross-beams B, Fig. 1, and upon the beams lie the raves C. Bolts 12 pass through flanges, beams, and raves, and bind them firmly together.

The forward end of the rave C rests upon and is bolted or riveted to a plate, 1, Figs. 1 and 3, formed integrally with the runner. The flanges A, A extend above the plate 1, and through them and the rave is passed a bolt, 4. By this arrangement the end of the rave, usually a weak point, is held with great firmness, protected against blows, and prevented from splitting. The perforations 3 in the flanges of each runner serve for the attachment of ordinary devices for drawing the sled.

The key 6 is made slightly curved upon its lower edge to facilitate its insertion, and, as shown, is what is known as a "split key," although it is not necessarily of this form.

It is to be observed that the form of the knee is such that its main portion is in line with the outer face of the runner, and that the inclined member is in a great degree protected by the curved forward portion of the runner, which is a valuable feature wherever stumps or like obstructions are frequently to be passed over.

Heretofore it has been customary to fasten together the shoe and runner of a sled by means of bolts passing through suitable openings in the shoe and engaging either with the runner itself or with nuts placed above the runner. The openings in the shoe necessarily weaken it, and it is a well-known fact that when a sled-shoe is broken by any shock the fracture is always through one of the bolt-holes. The use of a shoe provided with integrally-formed lugs which pass through the runner completely obviates this difficulty, since the shoe, being solid throughout its entire length, is equally strong at every point.

I am aware that it is old to form a sled-runner of an angle-iron consisting of a horizontal member having a vertical flange at the outer margin. The use of the U-shaped bar or channel-iron is new, however, in sled-runners, and its advantages over the old angle-iron are evident from an examination of the drawings, and especially of the manner of connection of the knee and runner, as shown therein.

What I claim as new, and desire to secure by Letters Patent, is—

1. In sled or sleigh runners, a U-shaped

beam curved in the form desired for the runner, combined with sleigh-knees rigidly attached to or formed integrally with said runner.

2. In a sled or sleigh, the combination, with a suitably-curved runner having in it a series of apertures, of a shoe lying beneath the runner and provided with integrally-formed lugs projecting upward through said apertures, and keys for preventing the escape of said lugs from said apertures.

3. A sled or sleigh having runners U-shaped in cross-section, said runners being provided with apertures adapted to receive attaching-lugs upon the sleigh-shoes, substantially as set forth.

4. A sled-runner consisting of a curved U-beam perforated at intervals, a cast shoe provided with integrally-formed loops upon its upper surface at intervals corresponding to those between said perforations, and suitable keys for insertion in said loops, all combined substantially as set forth.

5. The runner A, shoe D, and knee 8 9, constructed substantially as shown and described and combined with the beam B and rave C, substantially as set forth.

6. In combination with a sled-runner of U-shaped cross-section, a knee consisting of a vertical and an oblique member rigidly united to each other near the runner and to the respective flanges of the runner upon the interior of said flanges, substantially as specified.

7. The combination of a U-shaped single-piece runner perforated at the bottom and having an integrally-formed plate adapted to support the forward end of the rave, a shoe having integrally-formed loops adapted to enter the perforations in the runner, and keys adapted to enter said loops and to prevent the removal of the shoes from the runner.

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

HENRY MEEK.

Witnesses:
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