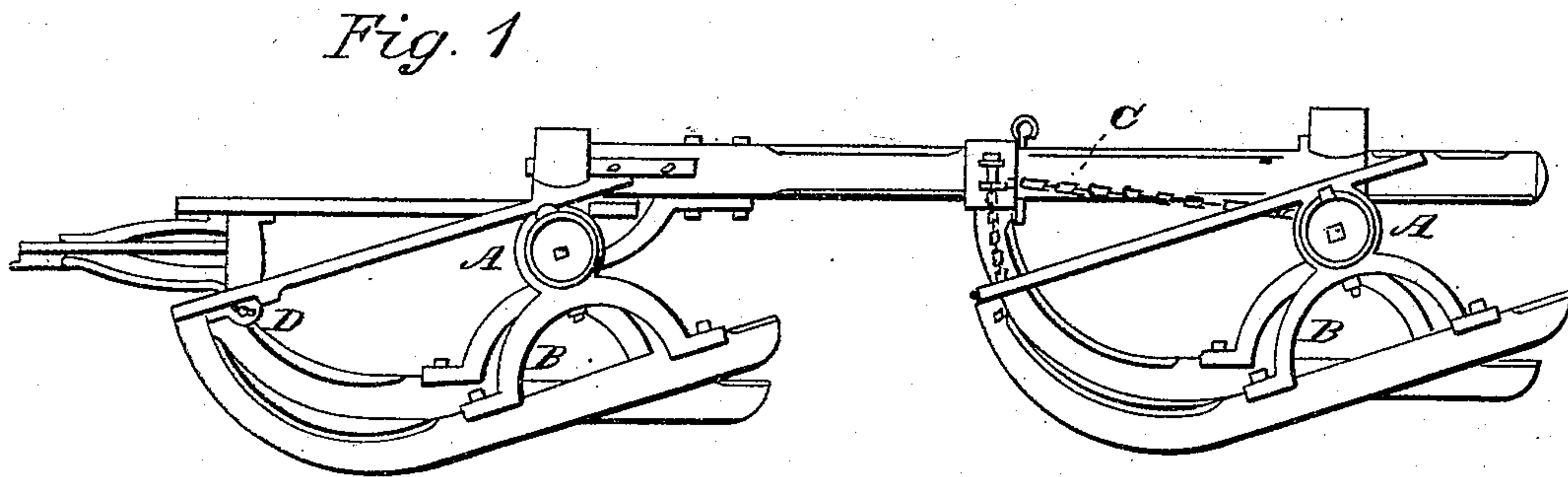
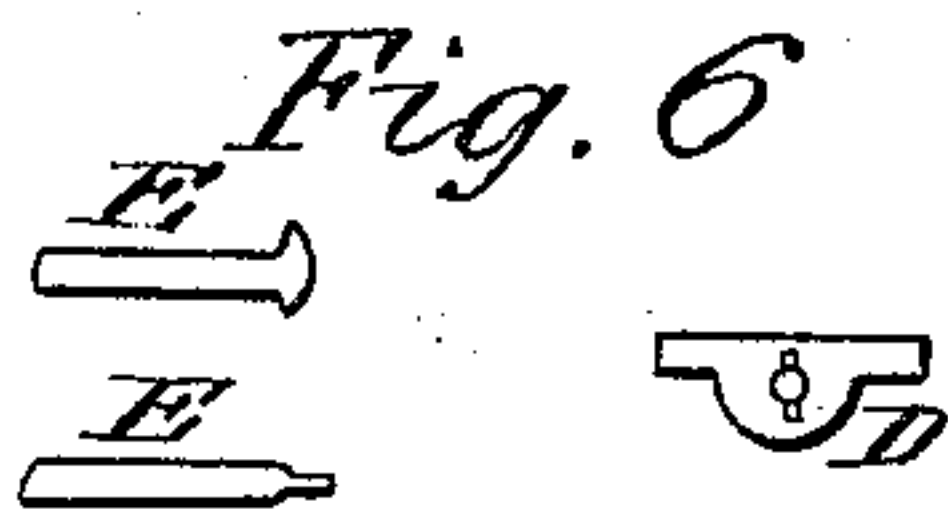
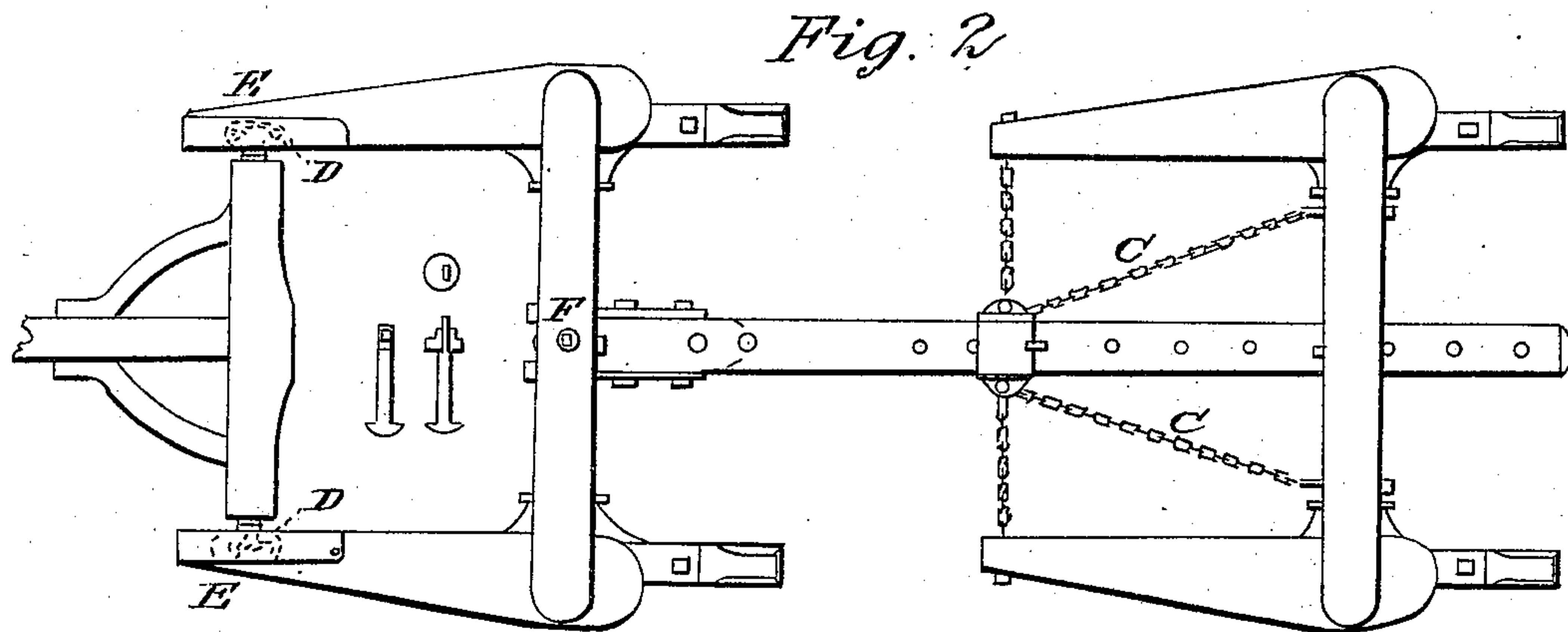


J. KILLEFER.

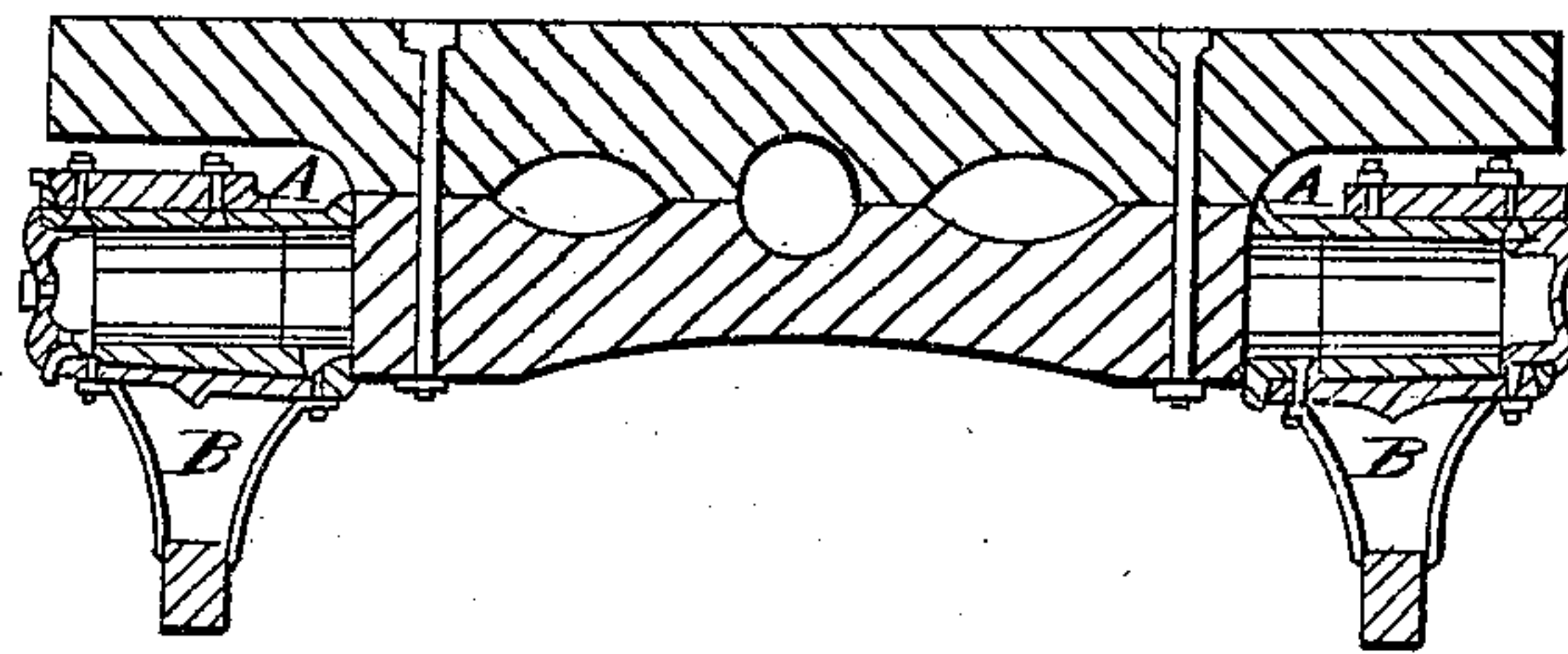
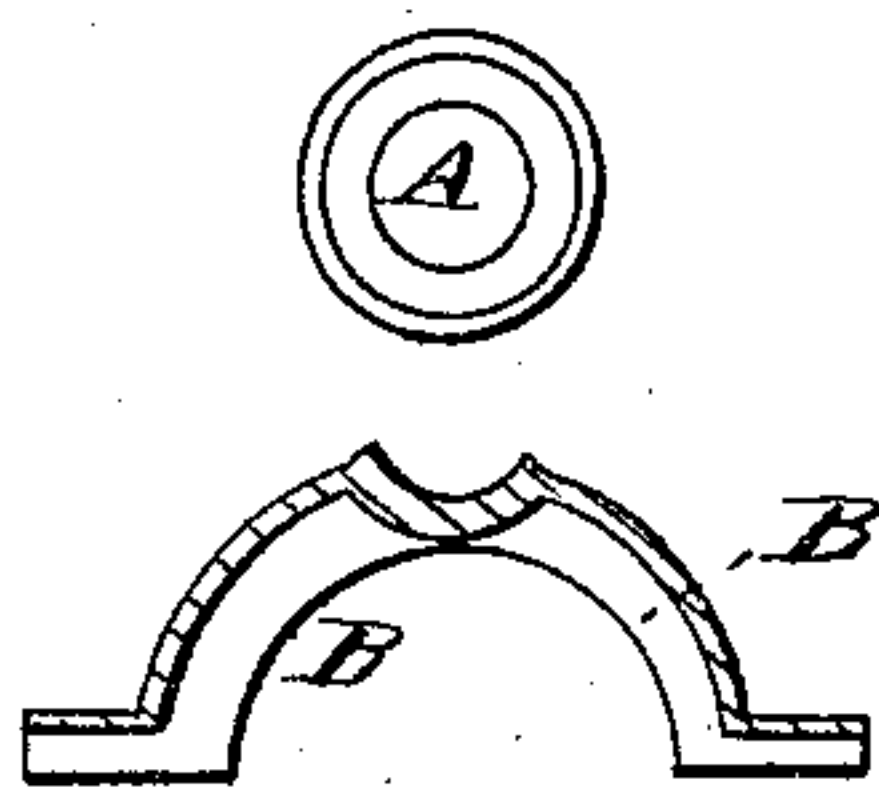
Sleigh.

No. 98,274.

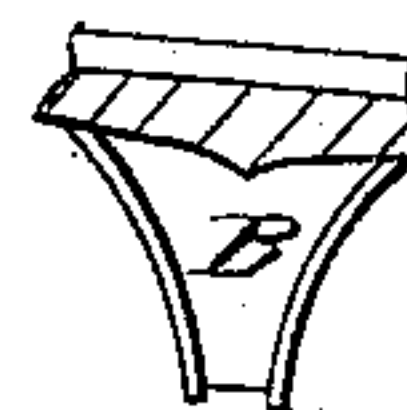
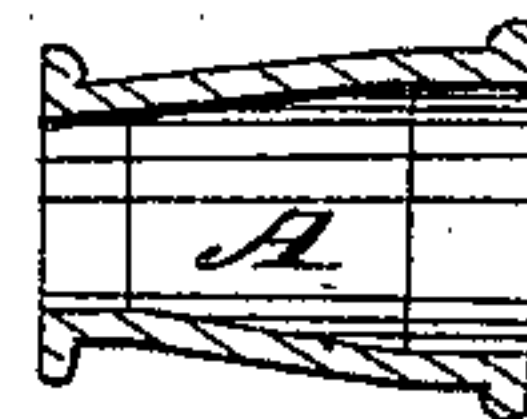
Patented Dec. 28, 1869.



*Fig. 5*



*Fig. 4*



Witnesses:  
Job Abbott  
D Hammond

Inventor:  
John Killefer



# United States Patent Office.

JOHN KILLEFER, OF WEST RICHFIELD, OHIO.

Letters Patent No. 98,274, dated December 28, 1869.

## IMPROVEMENT IN BOB-SLEDS

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN KILLEFER, of West Richfield, Summit county, Ohio, have invented certain new and useful Improvements in Bob-Sleds; and I do hereby declare that the following is a full, clear, and exact description of my invention, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon, of which drawings—

Figure 1 is a side view of my improved bob-sled.

Figure 2 is a plan of the same.

Figure 3 is a rear-end view of the same, showing the runner-standards and axle-pipes in section.

Figure 4 is a cross-section of the runner-standard, and transverse section of the axle-pipe.

Figure 5 is a transverse section of the runner-standard, and cross-section of the axle-pipe.

Figure 6 is a side view of coupling-piece, and side view and plan of coupling-pin, for the coupling between the tongue-roll and runners.

My invention consists, first, in the novel construction of a runner-standard and axle-pipe, for that class of bob-sleds in which the runners are arranged on axle under the sled-body, said runner-standard being constructed in a semicircular form, or a U-form, or any similar form which would give it two separate points of attachment on the runner, having each of its legs made of a hollow or corrugated cross-section, and having a concave seat formed on it, on which the axle-pipe is secured by bolts or their equivalents. The advantages resulting from this construction are, that by making the legs of the runner-standard of a hollow or corrugated section, a much stiffer and stronger standard is obtained with the same material than could be obtained in the old form of standards, with square, or rectangular, or solid round legs; and, by putting the material in this shape, its thickness at any section is so diminished as that the standard can readily be made of malleable cast-iron, thus making it much cheaper to manufacture than a wrought-iron standard, and obtaining a better standard for practical use than could be made of common cast-iron.

My invention consists, secondly, in the novel construction of a coupling for the tongue-roll and runners of a bob-sled, having the front runners arranged to work on an axle independent of each other, whereby a cheap and strong coupling is obtained, which allows of the tongue being put in or taken out of the front bob in a very simple manner.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The bolsters, reach, axles, and runners in the sled represented in the drawings are of an ordinary form, and are arranged as shown, the rear end of the reach

passing through the hole formed in the rear bolster and axle, as shown in figs. 1, 2, and 3, and being bolted, by side strap-bolts, to the front bolster, as shown in figs. 1 and 2.

The runner-standard B is of the general form shown, being made with its legs of a hollow section, convex on the upper side, as shown in figs. 1, 3, and 5, and having a concave seat formed on its upper side, and at its centre, to receive the axle-pipe A.

The ends of the legs of the runner-standards B are flattened out, and have side flanges, between which are secured the runners, as shown in figs. 1 and 3.

The axle-pipe A is secured on its seat on the standard B by bolts or rivets, as shown, and has two bearing-surfaces formed in it, each of a cylindrical form, and one at each end of the axle-pipe, as shown in fig. 4, from which it is readily seen that both bearings in the pipe can be bored out, by an ordinary drill, in a very cheap and simple manner.

The axle-pipe is held on the axle by a cap and bolt screwing into the end of the axle, as shown in figs. 1 and 3, and the rave is bolted on to the pipe A, and extends forward to the toe of the runner, as shown in figs. 1, 2, and 3.

The draught-chains C C are fastened, by eye-bolts, to the rear axle, and extend forward to the sliding reach-collar, and the rear bob-runners are secured at any desired point on the reach by bringing the rear bolster and axle up against a pin inserted in one of the holes in the reach, and then sliding the reach-collar forward until the chains C C are drawn tight, when it is fastened by a pin inserted behind it in a hole in the reach, as shown in figs. 1 and 2.

The toes of the hind runners are united, by chains, to the reach-collar, as shown in figs. 1 and 2, by which the rocking movement of the runners is confined within proper limits.

The front axle is pivoted to the bolster by means of a bolt, F, shown in detached views in fig. 2, which is made with a flattened end, and is passed up through the axle and bolster, where it is secured by the slotted washer and key, as shown in fig. 2.

The coupling-piece D is made with a circular hole, having a slot cut at each side, as shown in fig. 6, and is secured to the rave, as shown in fig. 2; or, if preferred, it could be attached to the runner.

The coupling-pins E are made with a flattened head, as shown in fig. 6, and are secured in the ends of the tongue-roll in an ordinary manner.

The hole in the coupling-piece D is of about the same diameter as the pins E, and the flattened head of the pin E is of a suitable size to pass through the slots at the sides of the hole in the piece D, from which it is readily seen, that by raising the toe of one runner, or depressing the toe of the opposite one, and



turning up the tongue, the pin E can be slid into the hole in the coupling-piece, D, on one runner, when, by bringing the pin E, on the other end of the roll, opposite the hole in the other coupling-piece D, and bringing the toes of the runners to the same level, the pins E will be both slid into the pieces D, and the tongue will then be secured in the runner by turning it down to its working-position.

I am aware that runner-standards with two legs have been before shown; hence I make no claim to such standards, except when constructed with legs of a hollow or corrugated section, and with concave seat for the axle-pipe, as is herein shown. Nor do I claim the axle-pipe, except when combined with the runner-standards, constructed as herein shown; but

What I claim herein as new, and of my invention, and desire to secure by Letters Patent, is—

1. The runner-standard B, constructed with legs of

a hollow or corrugated section, and with a concave seat for the axle-pipe, as is hereinbefore specified.

2. The axle-pipe A, constructed with two cylindrical axle-bearings, when used in combination with the runner-standard B, constructed with legs of a hollow or corrugated section, as is herein specified.

3. The coupling-piece D and pin E, when constructed as shown, and used in combination with the tongue-roll and independent runners, substantially as is herein specified.

4. The draught-chains C C, when used in combination with the sliding reach-collar, rear runner-axle, and independent rear runners, having their standards constructed of a hollow or corrugated section, as is hereinbefore specified.

Witnesses:

JOHN KILLEFER.

W. W. CLARK,

ROBT. D. KUHN.