C. R. VANDERVOORT & C. P. CARVER.

Sleigh.

No. 219,189. Patented Sept. 2, 1879.

Fig. 1.

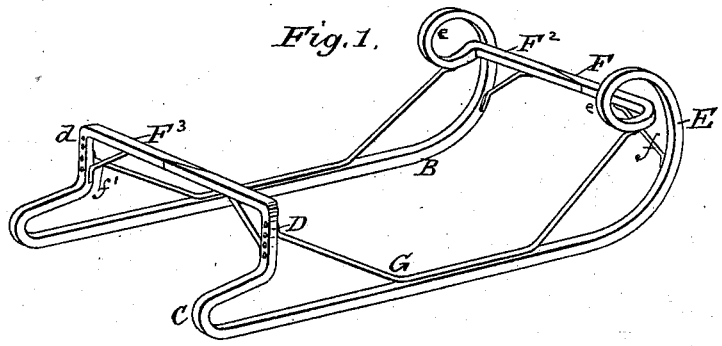


Fig. 2.

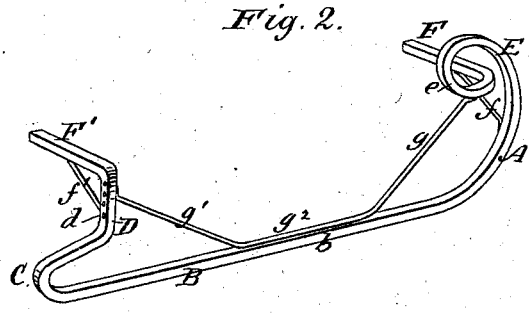


Fig. 3.

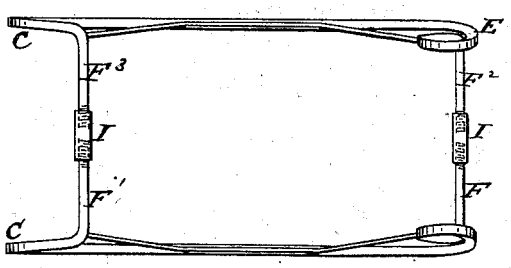


Fig. 5.

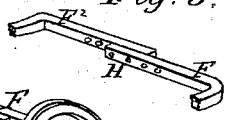
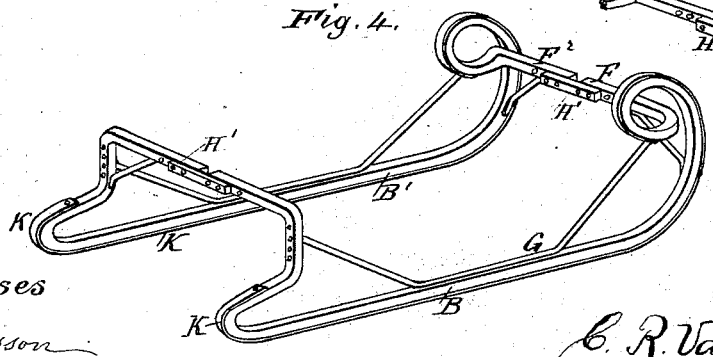


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES R. VAN DERVOORT AND CHARLES P. CARVER, OF ANGELICA, N. Y.

IMPROVEMENT IN SLEIGHS.

Specification forming part of Letters Patent No. **219,189**, dated September 2, 1879; application filed March 24, 1879.

To all whom it may concern:

Be it known that we, CHARLES R. VAN DERVOORT and CHARLES P. CARVER, of Angelica, in the county of Allegany and State of New York, have invented certain new and useful Improvements in Sleighs; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in running-gear for sleighs; and it consists in combining, with a runner which is formed of a bar of metal thin enough to be readily bent at various points to form the heel, toe, and cross-beams all of one piece, a supplemental bar or brace of metal adapted to increase the strength of the runner at the points of greatest strain.

It consists, also, in forming a runner, a spring-heel, a knee, and a cross-beam from a single bar in such manner that the position of the beam can be adjusted to suit boxes of different constructions.

Figure 1 is a perspective view of our improved gear. Fig. 2 illustrates a portion of the same. Figs. 3, 4, and 5 illustrate methods of securing the parts of the gear together.

In the drawings, A represents a bar of steel or iron, which is bent so as to form the runner B, the heel C, the knee D, the toe E, and the beams F F^1 all of one piece of metal.

Heretofore in the manufacture of metal sleigh-runners it has been necessary, in order to strengthen them at the points of greatest strain, to construct them of varying thickness of metal, for if a bar of uniform thickness were used capable of being bent at short angles there would be weak points left in the runner. This great objection we obviate by a brace of peculiar construction.

The bar of metal A is thin enough to readily permit the bending necessary to form the heel C, the toe E, the knee D, and the beams F F^1; but a bar thin enough to readily permit this bending will generally be weak at the parts where great strain is felt by the runner—that is, along its central portions, as at *b*. In order to strengthen the runner at this part, where it has been formed in one piece with the beams, we combine with the runner a continuous piece, G, the forward arm, *g*, of which bears against the under side of the toe E, and the rear arm, g^1, against the knee D.

The central part, g^2, of the brace is welded or otherwise secured to the upper side of the runner B, and extends for some distance on each side of the center, supporting it from the ends of the frame, and increasing the amount of metal at that part sufficiently to effectually prevent the breakage that would be endangered with an unsupported runner formed of a thin and comparatively long bar of metal.

ff represent braces constructed to bear respectively against the beams F F^1 and the runner, and adapted to prevent any lateral springing or turning of the runner.

The runner B′ and its heel, knee, toe, and cross-beams F^2 F^3 are formed in a manner similar to that described for runner B. The two runners are joined by welding together the ends of the cross-beams F F^2 and F^1 F^3, respectively, as shown in Fig. 1; or they may be joined by means of bolts H through the beams, which may be provided with a series of holes to permit a limited adjustment of the width of the gear, as shown in Fig. 5, or by means of a supplemental bar, H, as shown in Fig. 4.

We also unite the two parts of the gear by a nut, I, adapted to engage with the ends of the beams, they being provided, the one with a right-hand and the other with a left-hand screw-thread, as shown in Fig. 3.

If desired, the two runners B B′, with the various intermediate parts, may be formed of one continuous piece of metal, thus avoiding the necessity of welding or otherwise joining at more than one point.

The toe E is formed by bending the bar so that it shall turn backward, downward, and forward before it is bent at right angles to form the front cross-beam, F. From an examination of the drawings it will be seen that constructing the toe in this manner throws the cross-beam F so far forward that the bent parts *e e* serve as lateral supports to prevent any displacement of the box or carriage-body that may be attached to the gear.

The heel C and the standard D are con-

structed to be adjusted so that the rear beam, F^1, can be raised or lowered, as may be required by boxes of different lengths, or for other reasons. The heel C has sufficient flexibility to permit the bar to be sprung up or down at that part, and thus elevate or lower the beam; and the standard or knee D is provided with a series of holes, *d*, which allow the brace to be secured to the knee at any desired point.

The most available material for the manufacture of runners of the kind described is malleable or wrought iron, which, however, as is well known, is so soft as to stick when passing over spots of bare ground, and thus has been found objectionable for this use. We obviate this difficulty by attaching to the runner a strip of steel, K, which provides a hard sliding-surface.

What we claim is—

1. In combination with the bar A, bent to form the runner B, the knee D, and the beams F F^1 of one piece, the continuous brace G, having the extended central part, g^2, welded or secured at several points to the runner, substantially as set forth.

2. The knee D, provided with a series of perforations, *d*, and formed in one piece with the runner, in combination with the detachable brace G *g*, substantially as set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

C. R. VAN DERVOORT.
C. P. CARVER.

Witnesses:
D. P. RICHARDSON,
A. LOCKHART.