(No Model.)

R. E. LEE.

SLEIGH.

No. 365,392. Patented June 28, 1887.

Fig. 1.

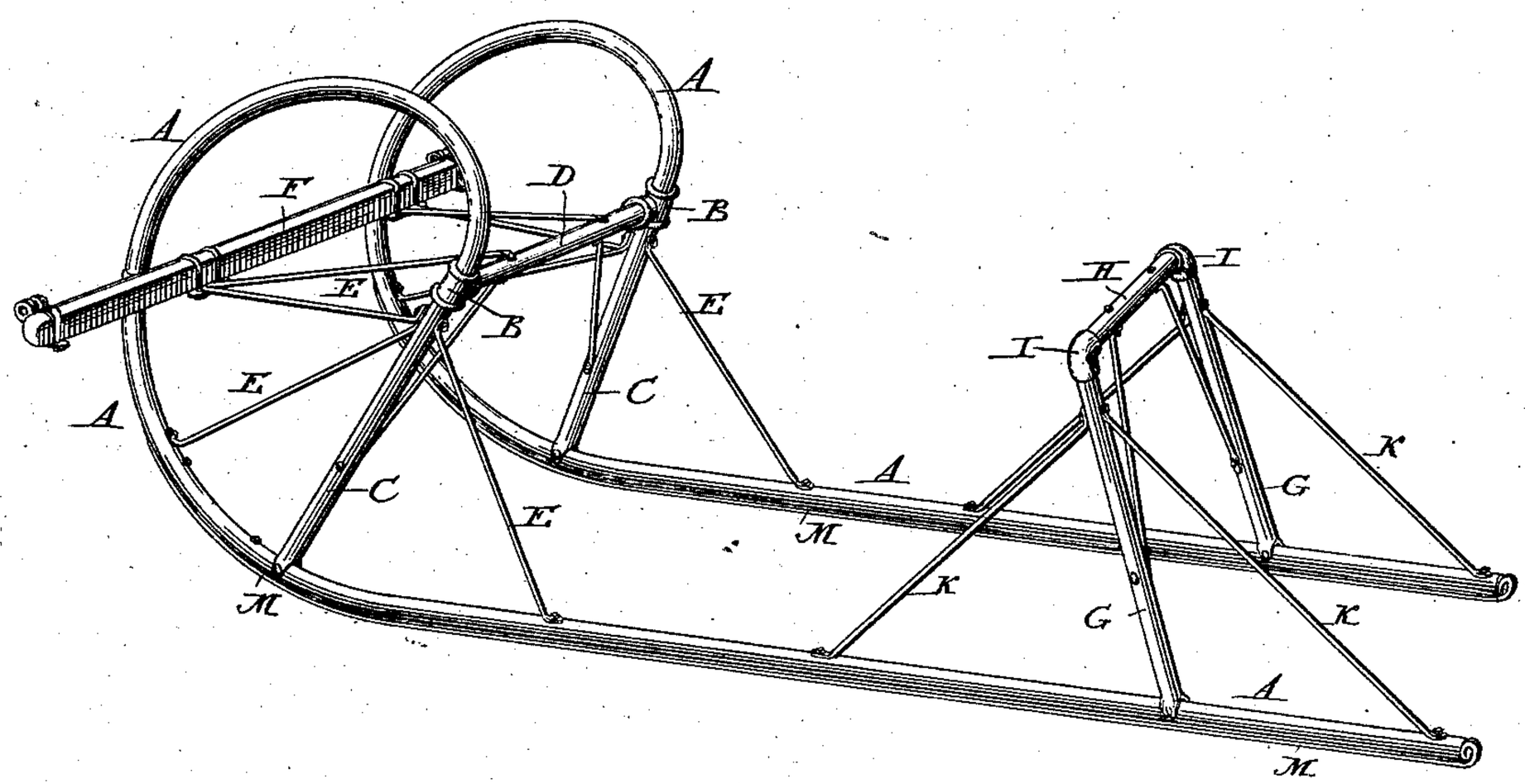
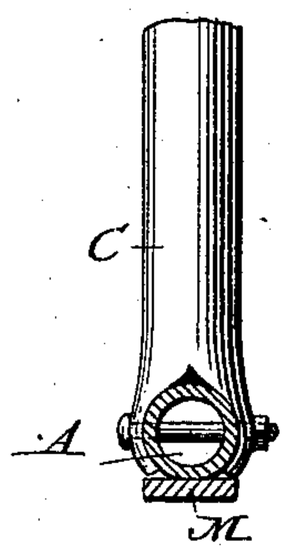


Fig. 2.



Attest:

Sidney P. Hollingsworth

H. R. Kennedy

Inventor.

R. E. Lee

By his Atty

P. T. Dodge.

UNITED STATES PATENT OFFICE.

ROBERT E. LEE, OF ALMONT, ASSIGNOR OF ONE-HALF TO WILLIAM M. GRAY, OF BRUCE, MICHIGAN.

SLEIGH.

SPECIFICATION forming part of Letters Patent No. 365,392, dated June 28, 1887.

Application filed February 14, 1887. Serial No. 227,479. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. LEE, of Almont, in the county of Lapeer and State of Michigan, have invented certain Improvements in Sleighs, of which the following is a specification.

This invention relates to that class of running-gear for sleighs in which tubular metal is used in place of wood; and it consists in certain features of construction hereinafter set forth.

In the accompanying drawings, Figure 1 is a perspective view of the running-gear of a sleigh constructed according to my invention. Figure 2 is a cross-section through one of the runners adjacent to one of the knees.

Referring to the drawings, A represents the runners of the sleigh bent into an upward and inward curve at the front, the ends returning toward the main part of the runners and being secured in T-couplings B, to which latter are secured the front knees, C, forming practically a continuation of the runners, and secured thereto at their lower ends, thus insuring a strong and rigid fastening for the front ends of the runners. The forward body-supporting bench, D, is secured to the couplings B and serves to connect and stiffen the front ends of the runners, suitable brace-rods, E, being employed to impart additional rigidity and strength to the forward end of the running-gear. These rods may be variously connected and extended in any desired direction, and I have shown them as extending from each side of the knees to the runners, from the knees to the bench, and from the bench to the runners. The brace-rods extending from the bench to the runners, and one of the rods extending from each knee C to the respective runners, I place in a substantially horizontal position, so as to support a draft-beam, F, to which shafts or a pole may be attached, and which extends across the front of the running-gear behind the upward-curved portions of the runners, and is fastened by suitable clips, or other means, either to the brace-rods or the runners, or to both. Near the rear of the runners are secured the rear knees, G, connected at their upper ends to the rear bench, H, by T-couplings I, and brace-rods K extend from the said knees to the runners and to the said bench.

To combine strength and rigidity with lightness, I construct the runners, knees, and benches of tubular material—such, for instance, as gas-pipe. As the rounded surface of gas-pipe runners will present but a very narrow surface to support the sleigh, even when worn, and the runners will sink deeply into the snow unless it is thoroughly packed and hard, and as the runners must be entirely renewed when worn, I protect them, and at the same time obtain a broad tread, by securing to their under sides runner-irons M—such as are used with sleighs having wooden runners—the said irons being preferably substantially rectangular in cross-section, as shown in Fig. 2, extending up the front of the runners for a suitable distance and being curved upward over the rear ends of the said runners. The irons may be secured to the runners by any suitable means—such, for instance, as bolts extending therethrough and having their heads countersunk into the said irons.

While the knees may be secured to the runners in any suitable way, I prefer to secure them by splitting or bifurcating the ends so that they will straddle or embrace the runners, being fastened by bolts passing through the split ends of the knees and the runners, as clearly shown in Fig. 2.

Having thus described my invention, what I claim is—

1. The combination, with a sleigh runner having an upward and inward curve, of a knee connected at the lower end to the main portion of the runner, in line with and forming a continuation of the curved portion of the runner, and a coupling connecting the upper end of the knee and the end of the curved portion of the runner together, substantially as described.

2. The combination, with a sleigh-runner having an upward and inward curve, of a knee in line with and forming a continuation of the curved portion of the runner, a T-coupling connecting the end of the runner and the upper end of the knee together, and a bench connected to one branch of the said coupling, substantially as described.

3. A running gear for sleighs, consisting of tubular runners provided with runner-irons and bent upward and inward at the front ends,

tubular knees and benches, the front knees being connected to the ends of the runners, and brace-rods connected to the runners, knees, and benches, substantially as described.

4. The combination, with a sleigh-runner, of a knee having one end split or bifurcated to embrace said runner, and fastening devices securing the knee to the runner, substantially as described.

In testimony whereof I hereunto set my hand, this 15th day of January, 1887, in the presence of two attesting witnesses.

ROBERT E. LEE.

Witnesses:
C. R. FERGUSON,
F. P. MCHARDY.