

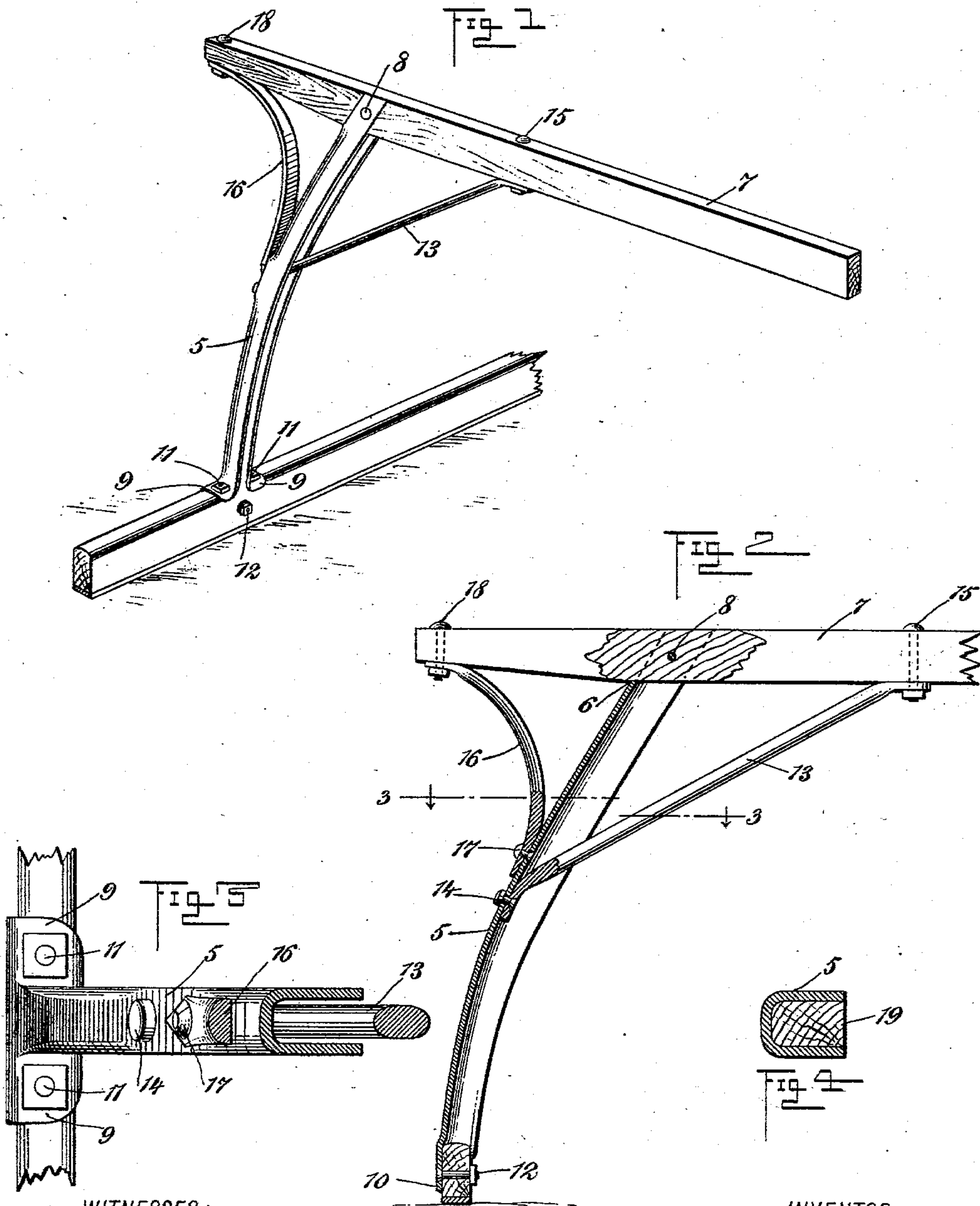
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M. CREIGHTON.
SLEIGH KNEE.

(Application filed Feb. 20, 1902.)

(No Model.)



WITNESSES:

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MELVIN CREIGHTON, OF RENSSELAER FALLS, NEW YORK.

SLEIGH-KNEE.

SPECIFICATION forming part of Letters Patent No. 716,674, dated December 23, 1902.

Application filed February 20, 1902. Serial No. 94,905. (No model.)

To all whom it may concern:

Be it known that I, MELVIN CREIGHTON, a citizen of the United States, and a resident of Rensselaer Falls, in the county of St. Lawrence and State of New York, have invented a new and Improved Sleigh-Knee, of which the following is a full, clear, and exact description.

My invention relates to improvements in sleigh-knees, which may be used on all kinds of sleighs, such as cutters, light sleighs, and hand-sleighs.

In my present invention it is my object to provide a pressed-steel knee which can be manufactured by machinery at a very low cost. The improved knee possesses great strength with a minimum of weight, so that it will not collapse under weight and strain, and at the same time the knee does not appreciably increase the weight of the structure. While I prefer to make the knee of pressed steel, it has the external appearance of the common knee of wood; but this effect may be enhanced by the employment of a wooden filler. The terminal portions of the knee are constructed for application to a sleigh-beam and to the sleigh-runner, respectively, and said knee is adapted to receive internal and external braces.

With these ends in view the invention consists in the construction and arrangement of parts, as will be hereinafter described, and the actual scope of the invention will be defined by the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view illustrating my improved pressed-steel sleigh-knee applied to a runner and to a cross-beam. Fig. 2 is a vertical sectional elevation through the improved knee and showing it applied to the runner and beam. Fig. 3 is a sectional plan view taken in the plane of the dotted line 3-3 of Fig. 2; and Fig. 4 is a vertical detail cross-section through the sleigh-knee, illustrating a wooden filler occupying the space of the pressed-steel knee.

In carrying my invention into practice I employ a knee 5, which is made in a single piece of steel and is preferably manufactured

according to the process employed in making pressed-steel articles. The knee is stamped or struck up in blank form from a single piece of pressed steel, and the blank is then bent to produce the complete article, which is represented by Figs. 1 to 3, inclusive. The knee 5 is curved longitudinally, as shown more clearly in Fig. 2, and in cross-section the knee is substantially U-shaped. (See Figs. 3 and 4.) The upper end of the pressed-steel knee is provided with a notch 6 in the closed outer face, thus leaving the side members or plates integral with the knee and making them extend beyond the inner edge of the notch. This notch constitutes a seat for the sleigh-beam 7, and the side portions of the knee are adapted to embrace this beam, as shown by Figs. 1 and 2. A bolt, pin, or rivet 8 is adapted to pass through the beam and the upper forked end of the knee, thus securely uniting the beam and knee together.

The lower end of the knee is expanded to produce a foot, which consists of the side wings 9 and the depending plate 10, the parts comprising said foot being integral with the lower extremity of the knee. The wings 9 extend laterally from the side members of the knee, while the plate 10 extends downwardly, so as to be at right angles to the wings. The wings of the foot are adapted to rest upon the top edge of the runner, as shown by Figs. 1 and 3, while the said plate 10 is arranged to lie against one face of the runner, preferably the outer face thereof, as shown by Fig. 2.

In order to firmly unite the knee to the runner, I employ three bolts or rivets, which are indicated at 11 12. The rivets or bolts 11 are disposed in vertical positions, so as to pass through the wings 9 and the runner, said bolts lying on opposite sides of the knee. The other bolt 12 passes horizontally through the runner and through the plate 10, whereby the bolt 12 lies between the vertical bolts 11.

In order to prevent the knees and the runners from spreading, I employ external and internal braces. The internal brace 13 is secured at its lower end within the channeled portion of the knee by means of a bolt or its equivalent 14, the latter passing through the closed side of the knee at a point intermediate of the length thereof. This brace extends in an inclined direction from the knee to the

beam 7, and it is fastened to the latter by a vertical bolt 15.

The external brace 16 is curved or bowed, as shown more clearly by Figs. 1 and 2, and this brace has its lower end fastened to the knee by a rivet 17 or its equivalent, while the upper end of said brace is attached to the outer end of the beam 7 by a vertical bolt 18. The braces are fastened to the knee at points quite close together, and these braces serve to stay the knee and the beam, so that the runners cannot spread laterally, thereby stiffening the construction of the skeleton work on the under part of the sleigh-body.

My improved sleigh-knee can be finished in any suitable way, so as to closely resemble an ordinary wooden knee, and this effect may be increased by employing a filler, such as a wood filler, as indicated at 19 in Fig. 4. This filler is adapted to occupy the channel or the space which is provided in the pressed-steel construction of the knee, and the filler may be held in place by any suitable means. I would have it understood, however, that I do not restrict myself to the employment of the core or filler 19, which is made of wood, because it is evident that this part may be omitted.

The employment of pressed steel in the manufacture of the knee enables me to rapidly and economically produce these articles, and the channeled or skeleton construction of the knee reduces the weight thereof with-

out sacrificing the necessary strength and stability. It is evident that the knee can be made in different sizes and styles in order to suit the particular type of sleigh on which the article is to be employed. Under some conditions I may employ a straight knee instead of the curved knee shown by Fig. 2, such straight knee being adapted to occupy an inclined position between the runner and the beam.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination with a sleigh-runner, and a knee-beam; of a knee made of a single piece of pressed steel and comprising a single channeled column curved lengthwise, the curvature of the knee extending inwardly and upwardly from the runner, and the knee as an entirety lying in the vertical plane of the beam, the upper end of said knee having a notch which receives the beam, and the lower end of the knee provided with a foot-bearing secured to the runner; and outer and inner braces secured to the beam and riveted to the knee.

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

MELVIN CREIGHTON.

Witnesses:

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