

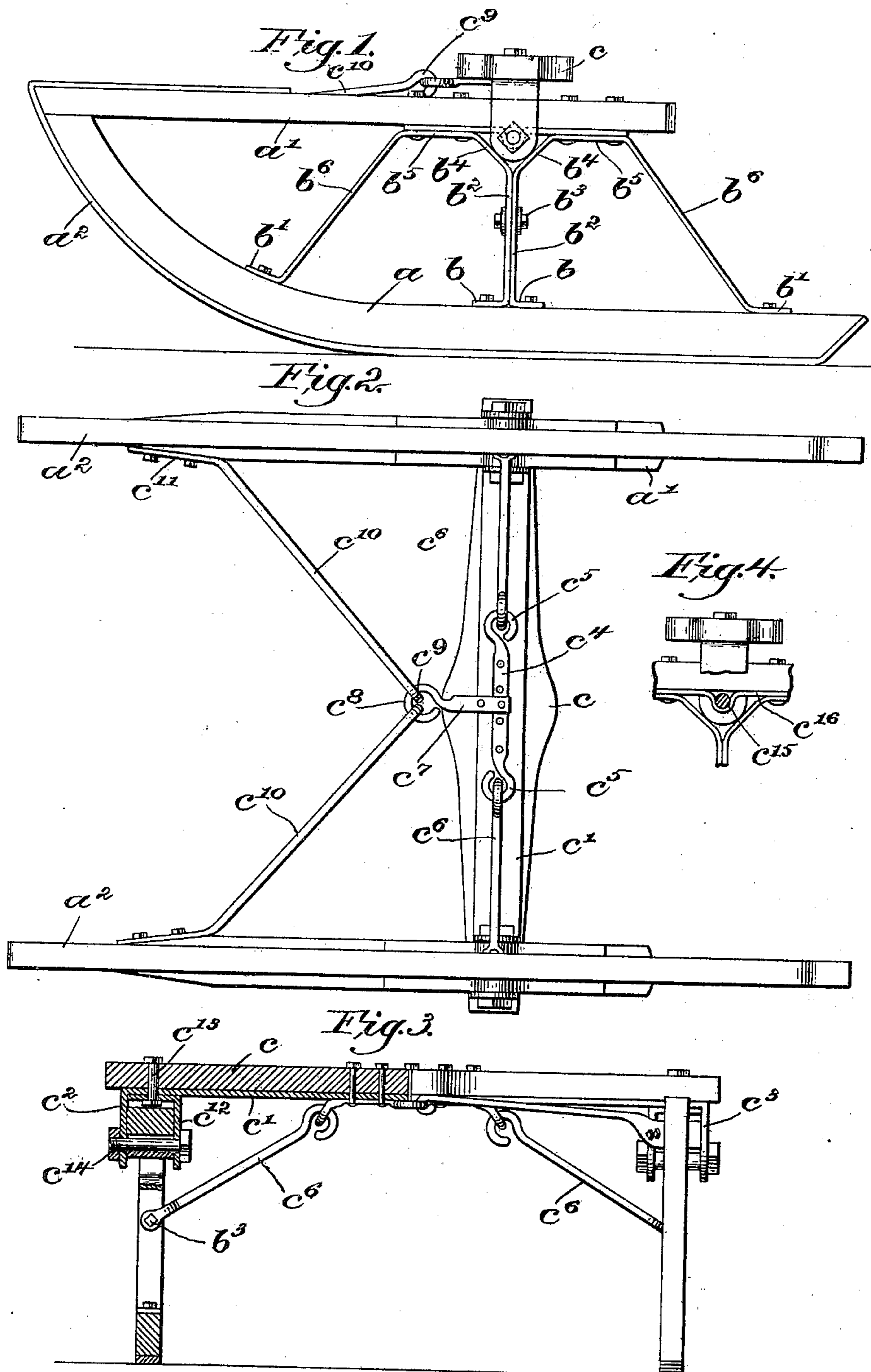
No. 628,863.

H. A. SPALDING.  
SLED.

Patented July 11, 1899.

(Application filed Nov. 23, 1898.)

No Model.)



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## SLED.

SPECIFICATION forming part of Letters Patent No. 628,863, dated July 11, 1899.

Application filed November 23, 1898. Serial No. 697,266. (No model.)

*To all whom it may concern:*

Be it known that I, HOMER A. SPALDING, of Marlborough, county of Middlesex, and State of Massachusetts, have invented an Improvement in Sleds, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is an improved sled, being intended for use in a "bob-sleigh," so called. A large number of this variety of devices have been patented, and a great many varieties of constructions have been proposed having for their general objects increase of strength, lightness, and durability, together with an economy of cost and material; and my present invention aims at the same objects, providing, however, an improved construction of braces and connections whereby great rigidity and simplicity are secured at a minimum cost.

The details of construction and various advantages of my invention will be more fully pointed out in the course of the following description, reference being had to the accompanying drawings, illustrating a preferred embodiment of the invention, and the latter will be more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of a sled embodying my invention. Fig. 2 is a bottom plan view thereof. Fig. 3 is a front elevation partly in section and broken away. Fig. 4 is an end view of a bolster, partly broken away to show more clearly a detail of construction.

The frame of the sled may be of any usual or preferred style, being herein shown as comprising a bent runner  $a$  and top beam  $a'$ , having secured thereon a metallic shoe or runner  $a^2$  in usual manner.

On each side of the sled a brace or set of braces is provided, herein shown as composed of very heavy strap-iron, bent at their ends  $b$   $b'$  to receive bolts for fastening them to the runner  $a$  and having vertical knee portions  $b^2$  extending upwardly from their ends  $b$  and bolted together at  $b^3$ , the upper ends of said knee portions being flared at  $b^4$  to constitute struts bolted at  $b^5$  to the horizontal beams  $a'$ , whence the braces extend divergently downward at  $b^6$  to their ends  $b'$ .

The opposite runners of the sled are connected by a bolster  $c$ , on the under side of which is bolted a plate  $c'$ , having opposite ends  $c^2$   $c^3$  bent downwardly at right angles thereto, a plate  $c^4$  being also bolted along the middle on the under side of the plate  $c'$  and having opposite eyes or hooks  $c^5$ , in which links or tension-bars  $c^6$  are secured by eyes or hooks at their inner ends, the outer ends of said bars being bifurcated, so as to straddle the knees  $b^2$ , to which they are firmly bolted by the bolts  $b^3$ , before mentioned. A bar  $c^7$  projects forward from the center of the plate  $c^4$  and has an eye  $c^8$ , which retains the eyes or hooks  $c^9$  of opposite brace-rods  $c^{10}$ , bolted at  $c^{11}$  to the inner sides of the beams  $a'$ , as shown best in Fig. 2.

The construction thus far described gives a most efficient bracing effect to the sled, as the rods  $c^{10}$  take up all thrusts due to a sudden forward movement of the sled relatively to the platform and load, which, it will be understood, are supported on the bolster  $c$ , and the braces  $c^6$  effectually resist all spreading tendency of the runners, while the knees  $b^2$  and special construction of braces including them reinforce each other. Being made of strap iron—that is, of flat bar metal—they aid the braces  $c^6$  in withstanding lateral thrusts and also give extreme rigidity in sustaining crushing loads.

One important feature of my invention resides in the construction which I provide for mounting the bolster or cross-beam  $c$  on the runners. Opposite and adjacent the ends of the plate  $c'$  I provide L-plates  $c^{12}$ , the upper horizontal leg of which is secured to the cross-beam  $c$  by a bolt  $c^{13}$ , which passes through the beam or bolster plate  $c$  and plate  $c^{12}$ . The depending leg of the plate  $c^{12}$  and the opposite end  $c^2$  have alining perforations connected below the top beam  $a'$  by a heavy bolt  $c^{14}$ , which occupies a rest or seat  $c^{15}$ , formed by a depression in a horizontal plate  $c^{16}$ . (See Figs. 1 and 4.) This construction permits the bolster to have the necessary rocking movement relatively to the rest of the sled, while at the same time it gives an extremely-strong support by reason of the opposite depending portions or ears  $c^2$   $c^{12}$ , and, moreover, as the beam  $a'$  wears away and becomes narrower plates  $c^{12}$  can be adjusted

or changed without requiring that the whole sled be taken to pieces or reconstructed.

In point of strength and cheapness the above construction is quite superior, and in practice it is found to possess many advantages over heavier and more expensive constructions.

I have aimed to provide an exceedingly strong and light construction with only a few independent parts.

The plates  $c'$   $c^4$   $c^7$  while preferably separate and bolted together may, if preferred, be made integral with each other by welding or other formation.

I do not limit myself to every detail of the construction shown.

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

1. In a sled of the kind described, opposite runners connected by a cross-beam, said cross-beam having secured on its underside a single plate with downturned ends, L-shaped pieces secured adjacent and opposite said ends, the downhanging parts of said pieces and said adjacent ends being perforated and closing between them the upper parts of said runners, bolts passed through said perforations and clamping said runners in place, substantially as described.

2. In a sled of the kind described, opposite runners connected by a cross-beam, said cross-beam having secured on its underside a single plate with downturned ends, L-shaped pieces secured adjacent and opposite said ends, the downhanging parts of said pieces and said adjacent ends being perforated and closing between them the upper parts of said runners, bolts passed through said perforations and clamping said runners in place, the runners having horizontal plates with depressions therein partially surrounding said bolts and constituting bearings therefor, substantially as described.

3. In a sled of the kind described, opposite runners each having a top beam and a runner, braces connecting them and including a two-part knee made of heavy plate metal having its vertical parts bolted together and a divergent top part  $b^4$ , a horizontal plate having a depression between said divergent parts, a cross-beam connecting said two runners and

carrying on its under side a plate with downturned ends, depending ears secured to said plate adjacent said ends, the top beams of said runners being held between said downturned ends and said ears, and bolts connecting said ends and ears and having bearings in said depressions, substantially as described.

4. In a sled of the kind described, opposite runners each having a top beam and a runner, braces connecting them and including a two-part knee made of heavy plate metal having its vertical parts bolted together and a divergent top part  $b^4$ , a horizontal plate having a depression between said divergent parts, a cross-beam connecting said two runners and carrying on its under side a plate with downturned ends, depending ears secured to said plate adjacent said ends, the top beams of said runners being held between said downturned ends and said ears, and bolts connecting said ends and ears and having bearings in said depressions, braces secured at their inner ends to and beneath said cross-beam, and at their outer ends being bifurcated to inclose said two-part knee and being bolted thereto, substantially as described.

5. In a sled of the kind described, opposite runners each having a top beam and a runner, braces connecting them and including a two-part knee made of heavy plate metal having its vertical parts bolted together and a divergent top part  $b^4$ , a horizontal plate having a depression between said divergent parts, a cross-beam connecting said two runners and carrying on its under side a plate with downturned ends, depending ears secured to said plate adjacent said ends, the top beams of said runners being held between said downturned ends and said ears, and bolts connecting said ends and ears and having bearings in said depressions, and forwardly-extending braces connected at their rear ends to said cross-beam, and at their forward ends to said opposite runners, substantially as described.

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

HOMER A. SPALDING.

Witnesses:

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