No. 636,261. Patented Nov. 7, 1899.

J. HARPMAN.

BOB SLEIGH.

(Application filed May 27, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

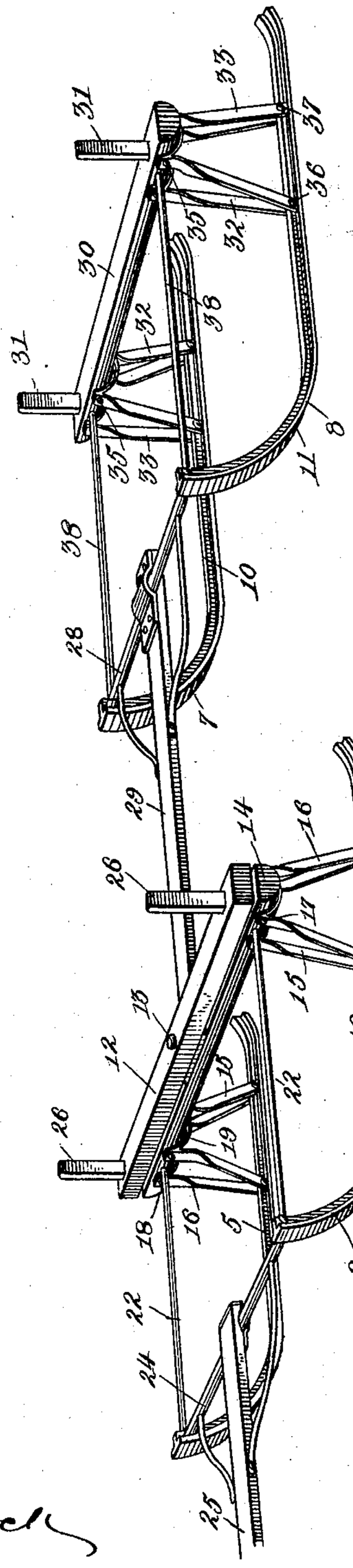

Fig. 5.

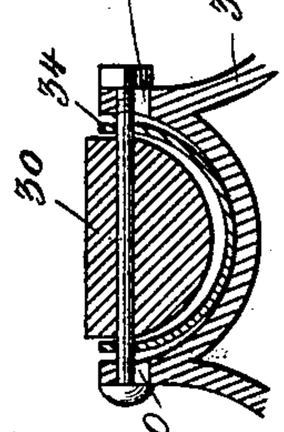

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Fig. 3.

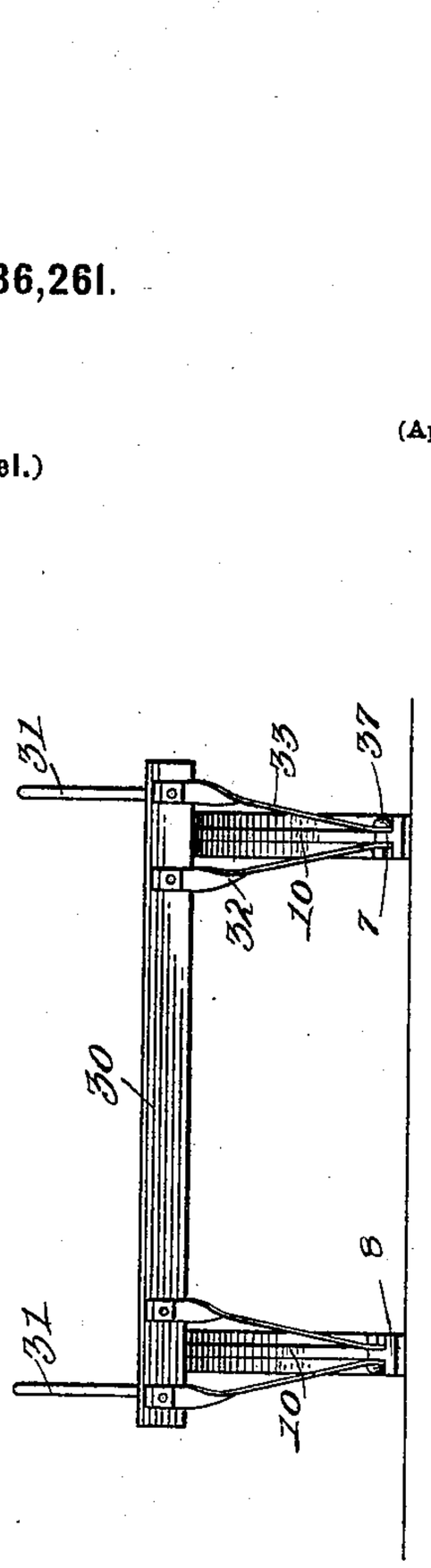


Fig. 4.

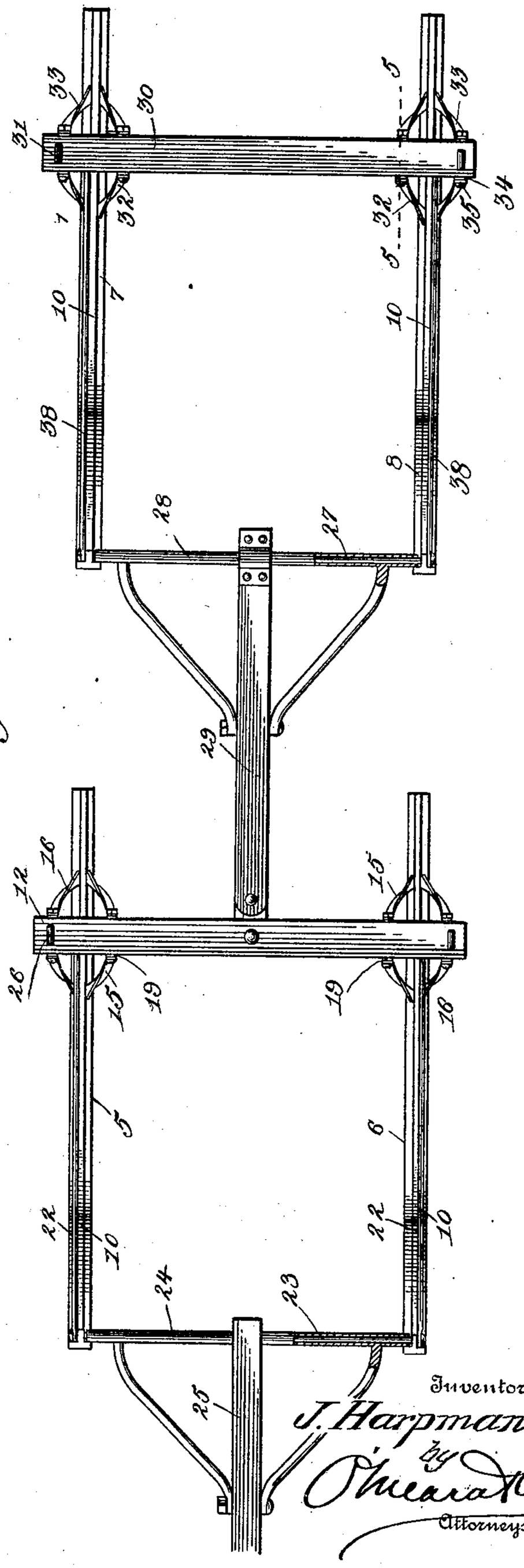
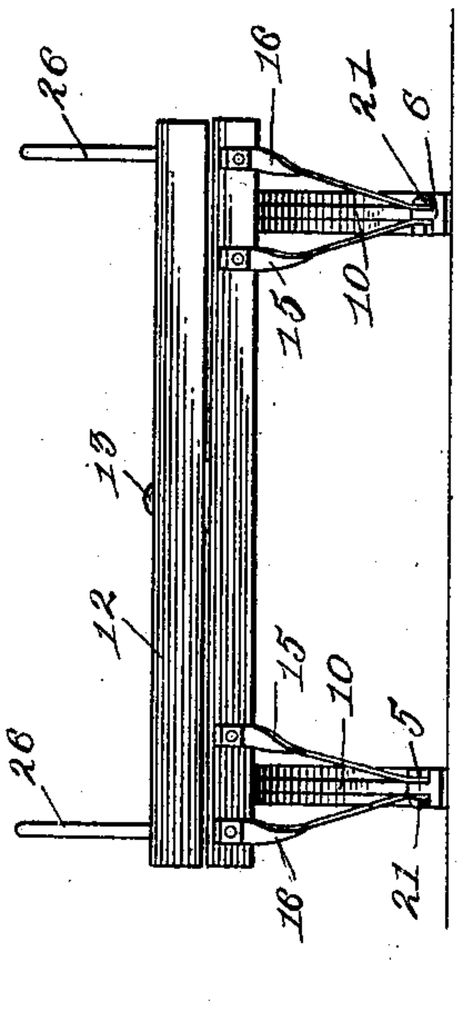


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN HARPMAN, OF VICTORIA, ILLINOIS.

BOB-SLEIGH.

SPECIFICATION forming part of Letters Patent No. 636,261, dated November 7, 1899.

Application filed May 27, 1899. Serial No. 718,567. (No model.)

To all whom it may concern:

Be it known that I, JOHN HARPMAN, a citizen of the United States, residing at Victoria, in the county of Knox and State of Illinois, have invented a new and useful Improvement in Bob Sleds and Sleighs, of which the following is a specification.

My invention is in the nature of improvements in bob sleds and sleighs, and has for its object to provide means whereby the frames of such structures are strengthened, the weight carried by them more evenly distributed on the runners, the operation rendered easier, and the structure more efficient and durable.

With this object in view the invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the claims.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a perspective view of a bob-sled embodying my invention. Fig. 2 is a rear end elevation of the front sled. Fig. 3 is a rear end elevation of the rear sled. Fig. 4 is a top plan view of the whole sled, parts being shown in section. Fig. 5 is a detail sectional view on the broken line 5 5 of Fig. 4.

Like numerals of reference mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by numerals, 5 and 6 indicate the runners of the front sled, and 7 and 8 the runners of the rear sled. These runners are all alike in construction, being formed of T-steel reversed, with the flat sides forming the treads 9 and the stems the uprights 10 of the runners, the treads being shod with spring-steel, as at 11. On the front sled is a bolster 12, pivoted by a king-bolt 13 to a rear cross-beam 14, said beam being connected to the runners 5 and 6 by means of knees 15 16 on each side. These knees are preferably made of malleable, cast, or wrought iron and are secured to the beam 14 by bolts 17 and 18, which also pass through curved spring-plates 19, the beam being curved on its under side to correspond with the curvature of the spring-plates and the bolts passing through vertical slots 20 in the knees to permit of an oscillatory motion of the runners and knees when the sled is passing over obstructions. From the beam the knees 15 incline inwardly to the line of the runner and frontward and rearward to points on the runners at a short distance from the vertical line of the beam, while the knees 16 incline outward and frontward and rearward to the same points on the runners, where the lower ends of knees 15 and 16 on opposite sides of the uprights 10 are secured by bolts 21, thus bracing the runners and beam both longitudinally and vertically. A brace-rod 22 on each side connects the beam 14 at its ends with the front ends of the runners, and the runners 5 are connected together at this point by a cross-rod 23, upon which is loosely fitted a pipe 24, to which is secured the tongue 25 of ordinary form. The bolster is provided with the usual side standards 26. A cross-rod 27 connects the front ends of runners 6 of the rear sled and carries a loosely-fitted pipe 28, to which is secured the rear end of a coupling-pole 29, attached by the king-bolt to the beam of the front sled. The rear sled has a beam 30, with standards 31, raised to the level of the bolster on the front sled by knees 32 and 33, slightly longer than knees 15 and 16, the knees 32 and 33 being of the same general form as knees 15 and 16, inclined in the same directions, connected to the under side of the beam over curved spring-plates 34 by bolts 35 in the same way, and secured to the uprights of runners 6 by bolts 36 and 37. The ends of beam 30 are also likewise connected to the front ends of runners 6 by brace-rods 38.

By my construction and arrangement of parts I provide light, strong, and serviceable frames and runners for bob sleds and sleighs and at an extremely low cost. The tongue is pivotally attached to the sled by means of the pipe extending from side to side, which renders the connection secure and prevents wabbling of the tongue. The runners are light, strong, and durable, and their attachment to the beams by bolts passing through vertical slots gives an oscillatory or rocking movement in a vertical line in passing over obstructions, thus preventing bumping and jarring and consequent breakage and disarrange-

ment of the load. The coupling-pole has a horizontal oscillation on the king-bolt and a vertical pivotal movement with the pipe on the cross-rod. By making the knees of the rear sled higher the beam is brought up to the level of the bolster on the front sled, thus insuring a level load.

While I have described what I consider the best means now known to me for carrying out my invention, I do not wish to be understood as restricting myself to the exact forms and constructions shown, as many slight changes therein or variations therefrom might suggest themselves to the ordinary mechanic, all of which would be clearly included within the limit and scope of my invention.

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

1. In a bob sled or sleigh frame, the combination with runners and a rear cross-beam rounded on its under side, of curved spring-plates fitting transversely around it, inclined knees having curved seats to fit under the spring-plate and beam and provided with vertical slots and bolted to the runners, and bolts passing through the beam, the curved spring-plates and the vertical slots in the knees, substantially as described.

2. In a bob sled and sleigh, the combination with the runners, of knees secured thereto having semicircular seats at their upper ends, and diametrically opposite slots, a transverse bolt projecting through said slots and a beam connected to said bolt, the lower side of which is of approximately the same curvature as the above-mentioned seat, substantially as described.

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