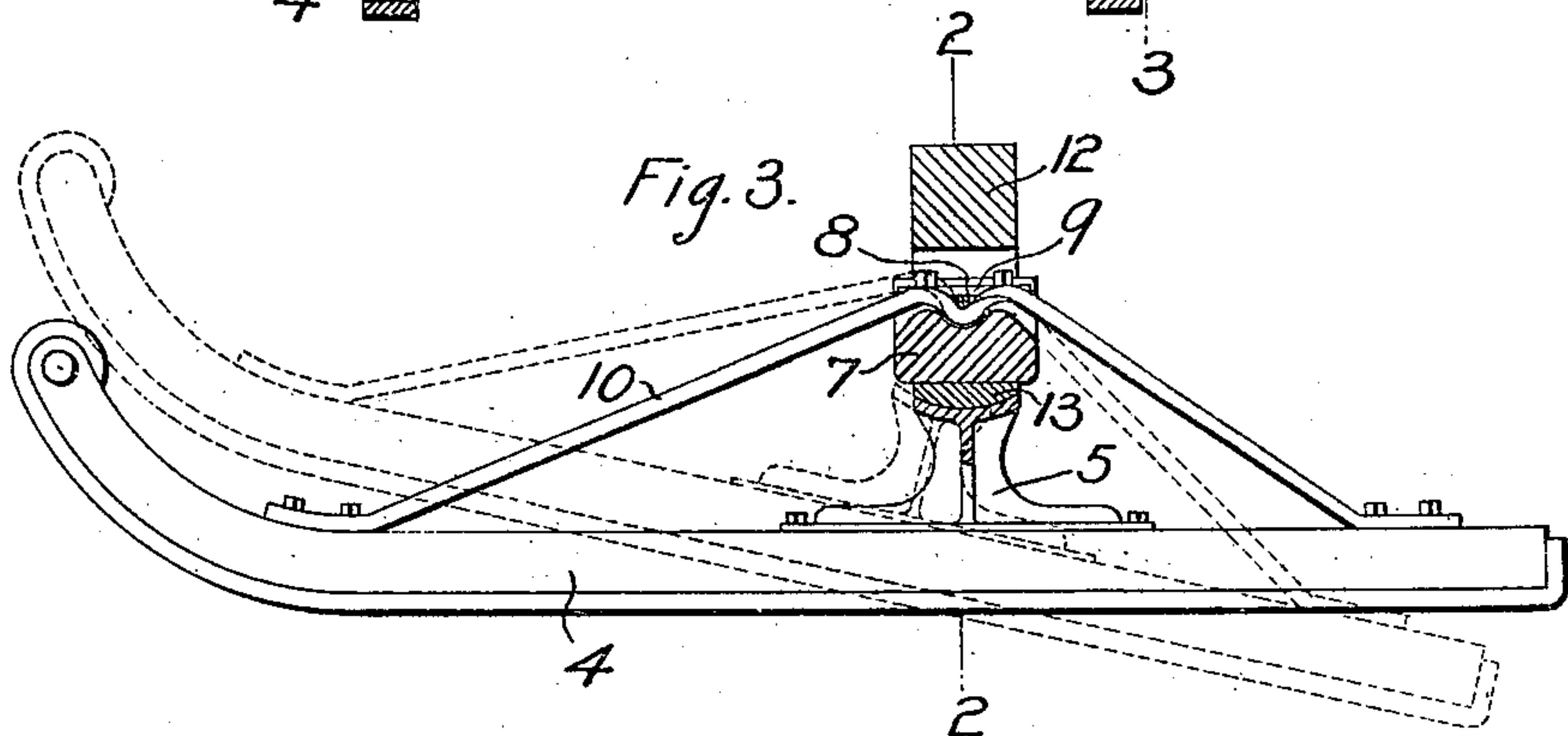
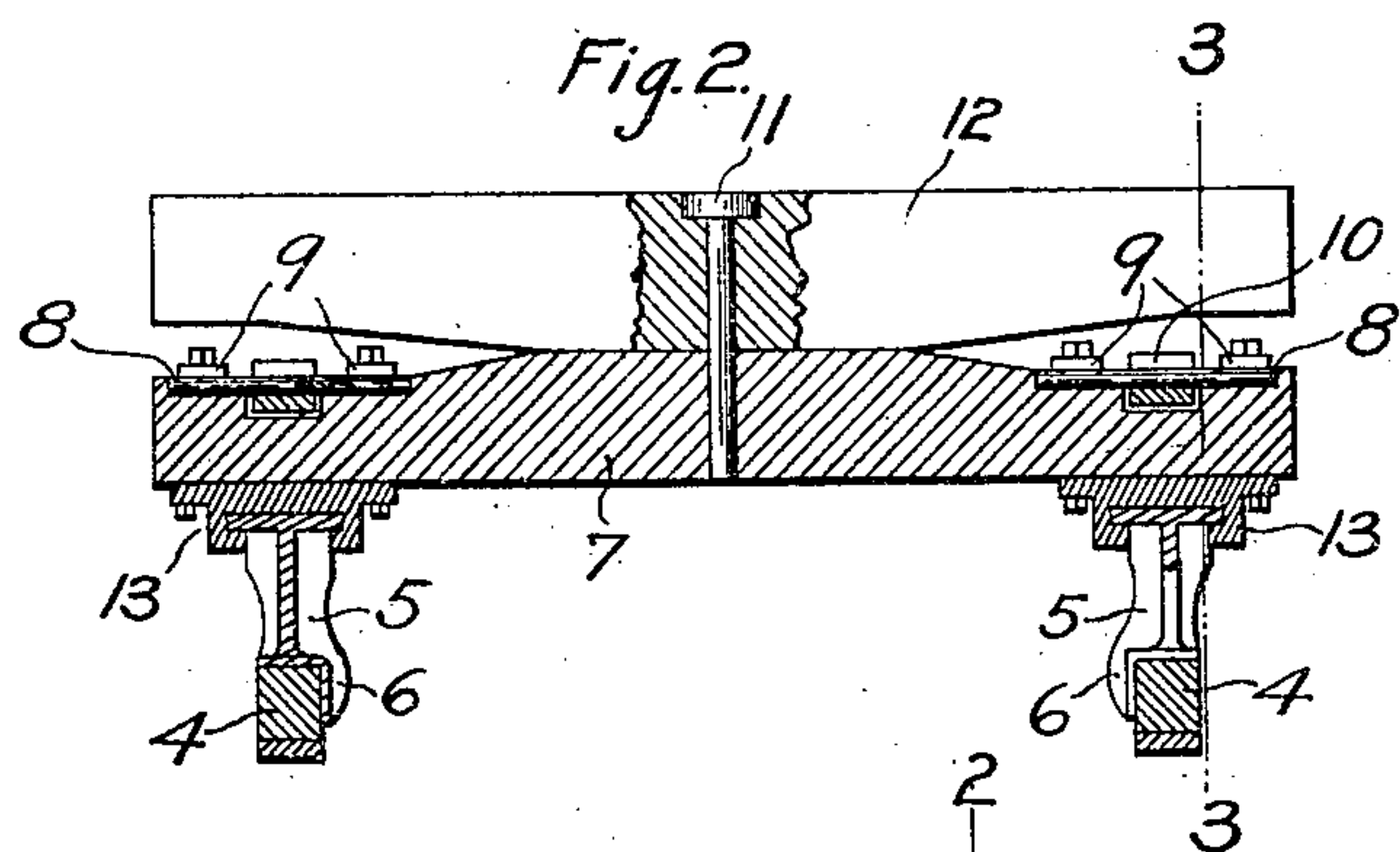
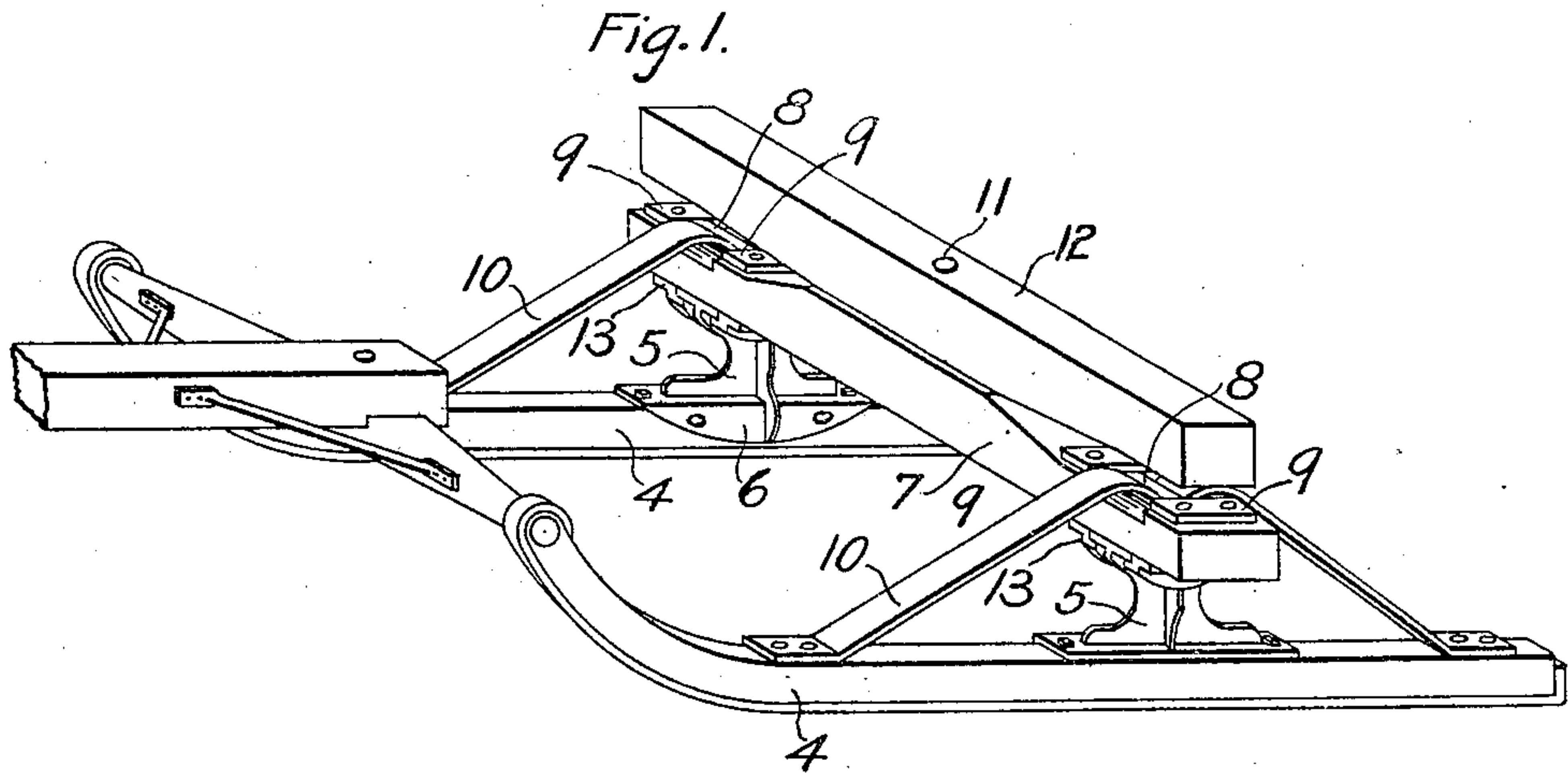


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BOB SLEIGH.  
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Witnesses:  
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# UNITED STATES PATENT OFFICE.

CHARLES HOJOHN, OF AMSTERDAM, NEW YORK.

BOB-SLEIGH.

951,187.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed February 4, 1909. Serial No. 475,953.

*To all whom it may concern:*

Be it known that I, CHARLES HOJOHN, a citizen of the United States, residing at Amsterdam, in the county of Montgomery and State of New York, have invented a certain new and useful Improvement in Bob-Sleighs, of which the following is a specification, reference being had therein to the accompanying drawings, forming part thereof.

My invention relates to sleighs and particularly to bob-sleighs having flexible knees.

One object of my invention is to provide simple, cheap, efficient and durable means for connecting the runners to the cross beam so that the runners may rock on the cross-beam independently of each other, and thereby render them capable of passing over unevennesses in the road, with no effect on the cross beam and without increasing the strain on the king bolt.

Other objects and advantages of my invention will appear from the following description.

I shall now describe my invention with reference to the accompanying drawings and shall thereafter point out my invention in claims.

Figure 1 is a perspective view of my improved sleigh. Fig. 2 is a rear elevation of the same partially in section on the line 2—2 of Fig. 3. Fig. 3 is a side elevation partially in section on the line 3—3 of Fig. 2.

Broadly my invention includes a knee on the runner and an arcuate slide or rocking portion on the cross beam supported on the top of the knee, and means secured to the runner and pivotally connected to the cross beam to maintain the knee and rocking plate in coöperative relation.

In the illustrated embodiment of my invention, I secure on the runners 4, knees 5 which may have reinforcing flanges 6 on one or both sides of the runners. A cross beam 7 is supported on top of the knees 5, and in the top of the cross beam near each end there is a pivot pin 8 laid in flush with the top and longitudinally of the cross beam.

Retaining plates 9 for the pivot pins are bolted to the cross beam across the ends of the pivot pins and hold the pins in their sockets. A brace or rave 10, secured to each runner near the forward and rear ends, passes up over the cross beam 7 between the

retaining plates 9 and is bent under the pivot pin 8, thus providing a pivotal connection between the runners and the cross beam with the pins 8 as the pivot point.

Joined to the cross beam 7 by the king bolt 11 is the usual bolster 12, on which rests the sleigh box or platform. To permit the runners to ride over obstructions and unevennesses in the road by merely rocking on the pivot pins 8, while the cross beam 7 remains relatively stationary, I make a sliding joint between the knees 5 and the cross beam, which is curved to an arc described about the pivot pins 8 as a center. The upper surface of the knee 5 is so curved and has laterally projecting sides or flanges, as shown in the drawings.

Secured on the under side of the cross beam 7 are rocker or sliding plates 13, which are supported on the top of the knees 5 and the under face of which is convex and conforms in shape to the engaging face of the knees 5. Flanges on the rocker plates 13 extend around or embrace the laterally projecting flanges on the upper face of the knees 5 and thus form guides for the sliding parts and also assist in holding the coöperative parts in coöperative relation. As shown in the drawings, the same bolts which secure the retaining plates 9 to the cross piece may extend through the sliding plates 13 and serve to also attach them to the cross piece.

As shown in Figs. 1 and 3, the cross beam has a groove beveled in its upper edges underneath the brace 10 to provide clearance for the brace as the runner rocks or oscillates. This beveled groove limits the oscillation of the runner, the extreme position in one direction being shown in dotted lines in Fig. 3. The sides of this groove and of the recess provided for the brace underneath the pivot pin serve as stops to assist in bracing the runner against lateral motion.

It is obvious that the character and position of the pivot point may be changed and that various other modifications may be made in the construction shown and above particularly described within the principles and scope of my invention.

I claim:

1. In a sleigh, the combination of a cross-piece, a runner pivoted to the cross-piece as an axis, and a knee having a separate arcuate sliding connection with the cross-piece, the arcuate connection being curved to an



are described about the pivot point and the pivotal and sliding connections being in the plane of the runner.

2. In a sleigh, the combination of a cross-piece, a runner, a pivotal support for the runner on the cross-piece, and an arcuate sliding support for the runner on the cross-piece and in substantially vertical alinement with and curved to an arc about the pivotal support, the arcuate support being located below the cross-piece and the pivotal support being located above the cross-piece.

3. In a sleigh, the combination of a runner, a cross-piece, a pivotal support on the cross-piece, means carried by the runner and pivotally engaging the support to permit the runner to oscillate relatively to the cross-piece, a knee for the runner having an upper face concavely curved to an arc concentric with the axis of the pivotal support, and an arcuate support on the cross-piece curved to the arc of and substantially in vertical alinement with the pivotal support and supported on the upper concavely curved surface of the knee.

4. In a sleigh, the combination of two members, a runner and a knee for the runner, the knee having a concavely arcuate sliding face thereon, a cross-piece having a convex slide adapted to cooperate with the sliding face on the knee whereby the knee and runner may rock about the cross-piece, a pivot pin on the cross-piece, and means fixedly carried by said rocking members and engaging the pivot pin to maintain the sliding parts in cooperative relation.

5. In a sleigh, the combination of a runner, a cross piece, a pivot pin in the cross piece, a brace attached to the runner and pivotally engaging the pivot pin to permit the runner to oscillate relative to the cross

piece, a knee for the runner having an upper face curved to an arc described about the pivot point, and an arcuate slide on the cross piece and supported on the curved upper face of the knee.

6. In a sleigh, the combination of a runner, a cross piece, a pivot pin laid in the top of the cross piece, a brace attached to the runner and passing over the cross piece and bent under the pivot pin, a knee for the runner, and an arcuate slide on the cross piece and supported on the knee.

7. In a sleigh, the combination of a runner, a cross piece, a brace attached to the runner and pivotally engaging the cross piece to permit the runner to oscillate relative to the cross piece, a knee for the runner having an upper face with side flanges and curved to an arc described about the pivot point, and an arcuate slide on the cross piece and supported on the curved surface of the knee and embracing the side flanges thereof to form a guide therefor.

8. In a sleigh, in combination with a runner, a cross piece, a pivot pin laid in the cross piece, a brace attached to the runner and passing over the cross piece and bent under the pivot pin, a knee for the runner having an upper face with side flanges and curved to an arc described about the pivot point, and an arcuate slide on the cross piece and supported on the curved surface of the knee and embracing the side flanges thereof to form a guide therefor.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES HOJOHN.

Witnesses:

ARTHUR B. CARPENTER,  
BENJAMIN H. WEISBROD.