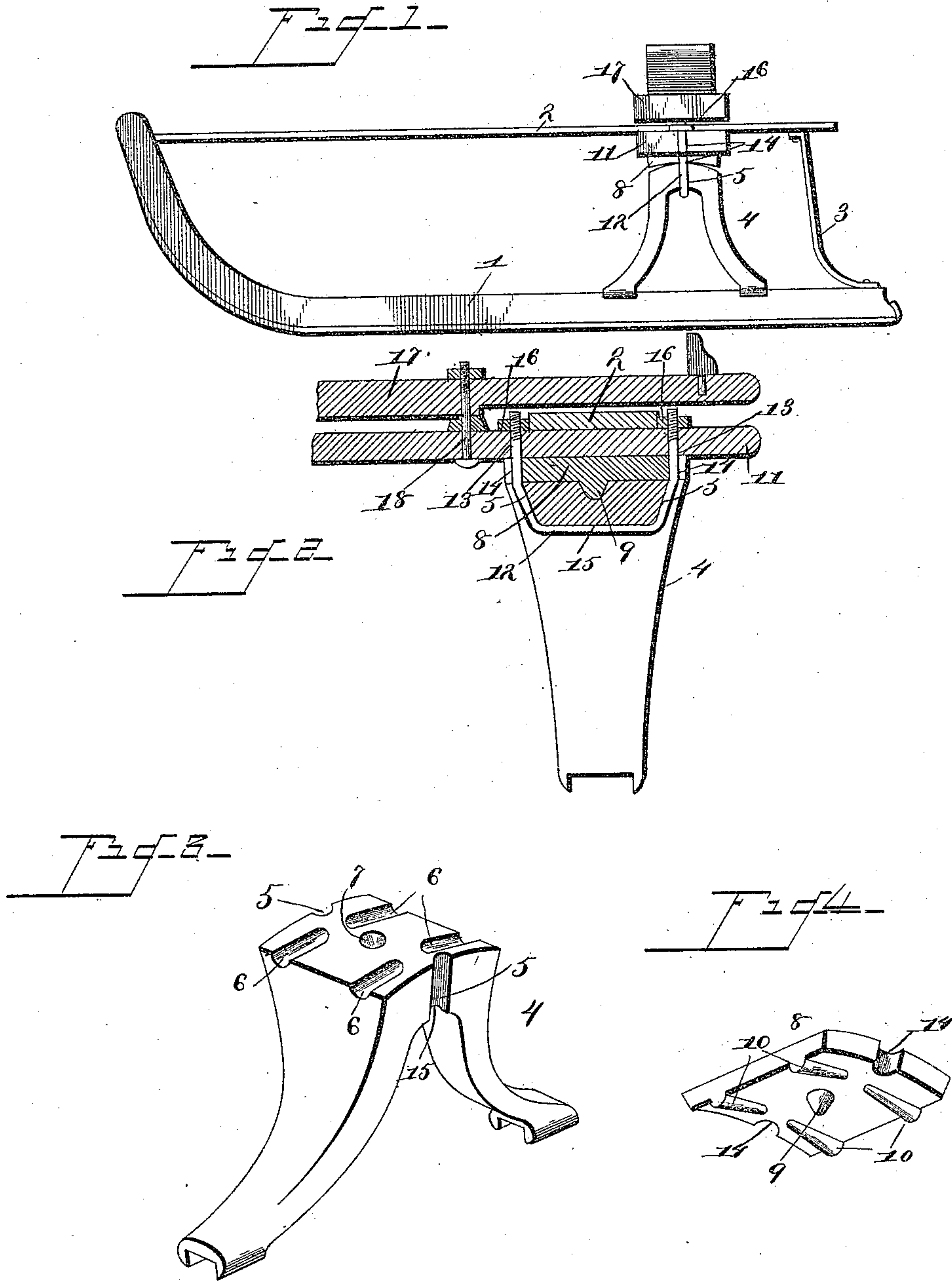


(No Model.)

F. C. KLIPSTEIN.
SLEIGH.

No. 438,164.

Patented Oct. 14, 1890.



Witnesses:

Geo. C. Frech.

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By his Attorneys

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UNITED STATES PATENT OFFICE.

FRIEDRECK C. KLIPSTEIN, OF LELAND, WISCONSIN.

SLEIGH.

SPECIFICATION forming part of Letters Patent No. 438,164, dated October 14, 1890.

Application filed January 30, 1890. Serial No. 338,587. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRECK C. KLIPSTEIN, a citizen of the United States, residing at Leland, in the county of Sauk and State of Wisconsin, have invented a new and useful Sleigh, of which the following is a specification.

The invention has relation to sleighs, and has particular reference to the knees thereof; and the objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a sleigh constructed in accordance with my invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a detail in perspective of the sleigh-knee. Fig. 4 is a detail in perspective of the knee-block.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 represents the runner and 2 the rave, the front end of the former being curved and connected to the rave, and the latter being supported at its rear end upon the runner by the usual support 3.

4 represents the knee, which is of inverted-U shape, the lower ends of the branches of the knee being recessed to receive the runner 1. The upper end of the knee is provided at opposite sides with vertical recesses 5, and upon its upper face, which is slightly convex, with opposite pairs of transverse grooves 6, the inner ends of which are curved near the center of the knee, said knee being also provided at its center with a countersunk conical recess 7.

8 represents the knee-block, the upper surface of which is plain, and the under surface of which is concaved, the radius of the concave being greater than the convex upper end of the knee. The under surface of the block is provided with a depending conical stud 9, and at each side of the same are formed gradually-reduced ribs 10, occurring opposite the grooves 6 in the upper end of the knee.

11 represents the cross-bar, which is mounted upon the upper surface of the block 8, and 12 represents a U-shaped clip, the terminals of which take through openings 13, formed in

the cross-bar at opposite sides of the knee, said clip embracing the block 8 and resting in recesses 14, formed in the edges of the same, in the recesses 5, formed in the edges of the knee, and in a recess 15, formed between the branches of the knee, and to the upper ends or terminals of the clip are applied nuts 16, whereby the knee, block, and cross-bar are securely bound together.

By reason of the difference in curvature existing between the upper end of the knee and the lower surface of the block it is apparent that the knee may work with the runners independently of the block, which is adapted to permit of such an action, and yet by reason of its ribs serve to limit the movement of the knee and prevent the same from getting out of alignment with the block and rave.

17 represents the bolster, which is bolted, as at 18, to the cross-bar, the bolster being recessed at its ends and upon its under surface, for the purpose of overlapping the rave.

Having thus described my invention, what I claim is—

1. The combination, with the runner, of the inverted-U-shaped knee secured thereto, and having its upper end convexed, a block mounted on the knee and having a concaved under surface less than the convexity of the knee, a cross-bar having openings occurring at each side of the block mounted thereon, and a U-shaped clip passing under and between the terminals of the knee at each side of the block and through perforations in the bar, and nuts for binding the same in position, substantially as specified.

2. The combination, with the sleigh-runner, of the inverted-U-shaped knee, the terminals of which are secured thereto, the upper end of the knee being convexed and provided with a countersunk recess, and opposite lateral recesses, a block 8, the under surface of which is concaved less than the convexity of the knee and provided with a stud adapted to enter the countersunk recess, and with ribs for taking in the lateral recesses, a cross-bar mounted on the block, and a device for binding the knee, block, and cross-bar together, substantially as specified.

3. The combination, with the runner, of the inverted-U-shaped knee, the terminals of

which are secured thereto, the upper end of the runner being convexed and provided with opposite side recesses, and upon its upper surface with a conical countersunk recess, 5 and opposite pairs of lateral recesses, a knee-block mounted on the knee, the under surface of which is concaved less than the convexity of the knee and provided with a depending stud adapted to enter the recess, opposite 10 pairs of lateral lugs formed on the block and adapted to enter the recesses in the knee and opposite side grooves formed at the edges of the block, the cross-bar mounted on the block and provided with opposite openings at each 15 side of the block, and the U-shaped clip mounted in the openings and provided with binding-nuts, and having its opposite terminals resting in the grooves at the sides of the block and knee, substantially as specified.

20 4. The combination, with the sleigh-runner, of the knee, the upper end of the knee being convexed and provided with a countersunk recess and opposite lateral recesses, a block 8, the under surface of which is concaved and 25 provided with a stud adapted to enter the

countersunk recess, and with ribs for taking in the lateral recesses, a cross-bar mounted on the block, and a device for binding the knee, block, and cross-bar together, substantially as specified. 30

5. The combination, with the runner, of the knee, the upper end of the runner being convexed and provided with opposite side recesses and upon its upper surface with a conical countersunk recess, a knee-block mounted 35 on the knee, the under surface of which is concaved less than the convexity of the knee, and provided with a depending stud adapted to enter the recess, opposite pairs of lateral lugs formed on the block and adapted to enter 40 the recesses in the knee, the cross-bar mounted on the block, and the clip provided with binding-nuts, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRIEDRECK C. KLIPSTEIN.

Witnesses:

THOMAS BAKER,
FRED W. JOHNS.