

(No Model.)

H. B. ELLSWORTH.
SLEIGH.

No. 510,123.

Patented Dec. 5, 1893.

Fig 1

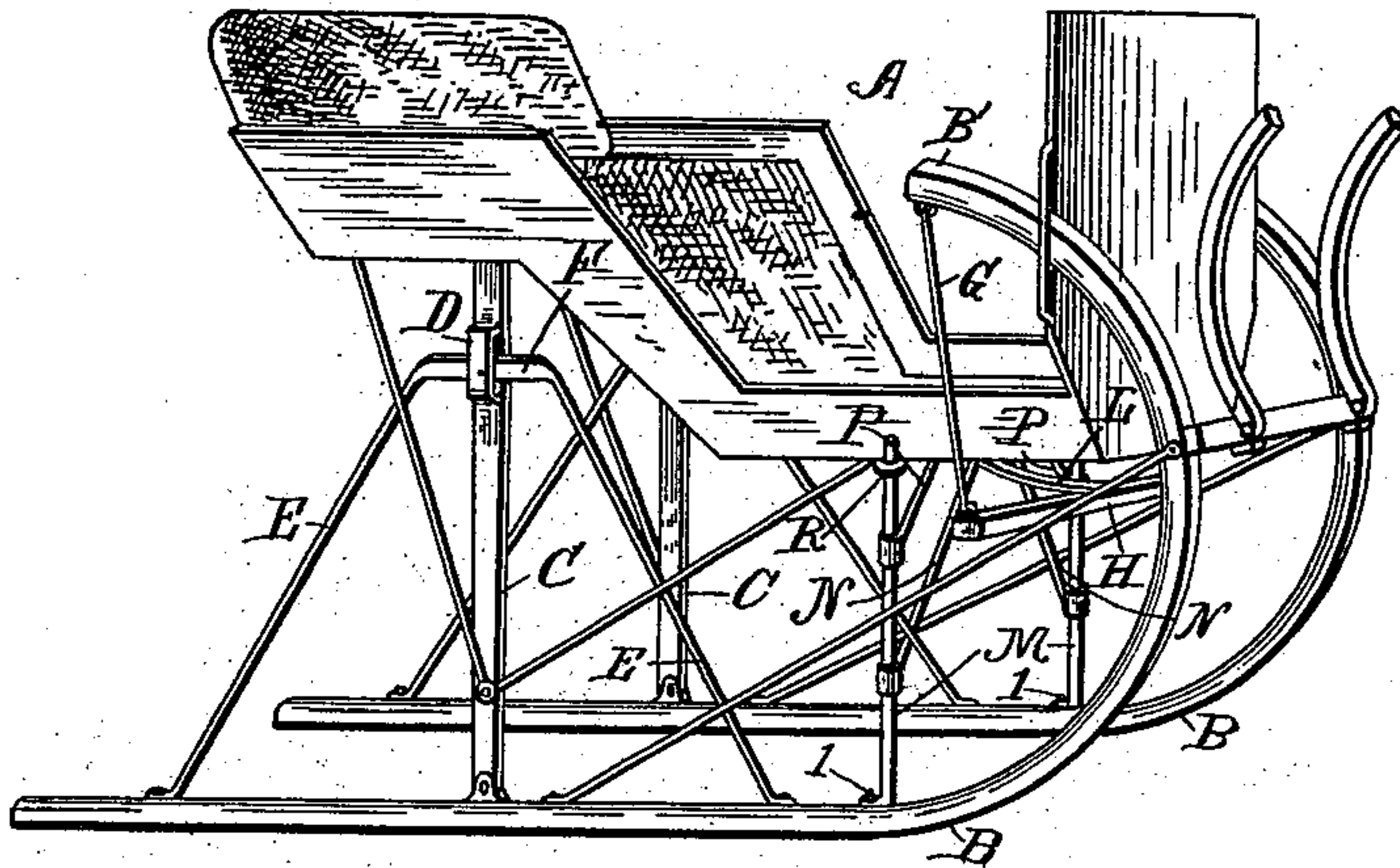
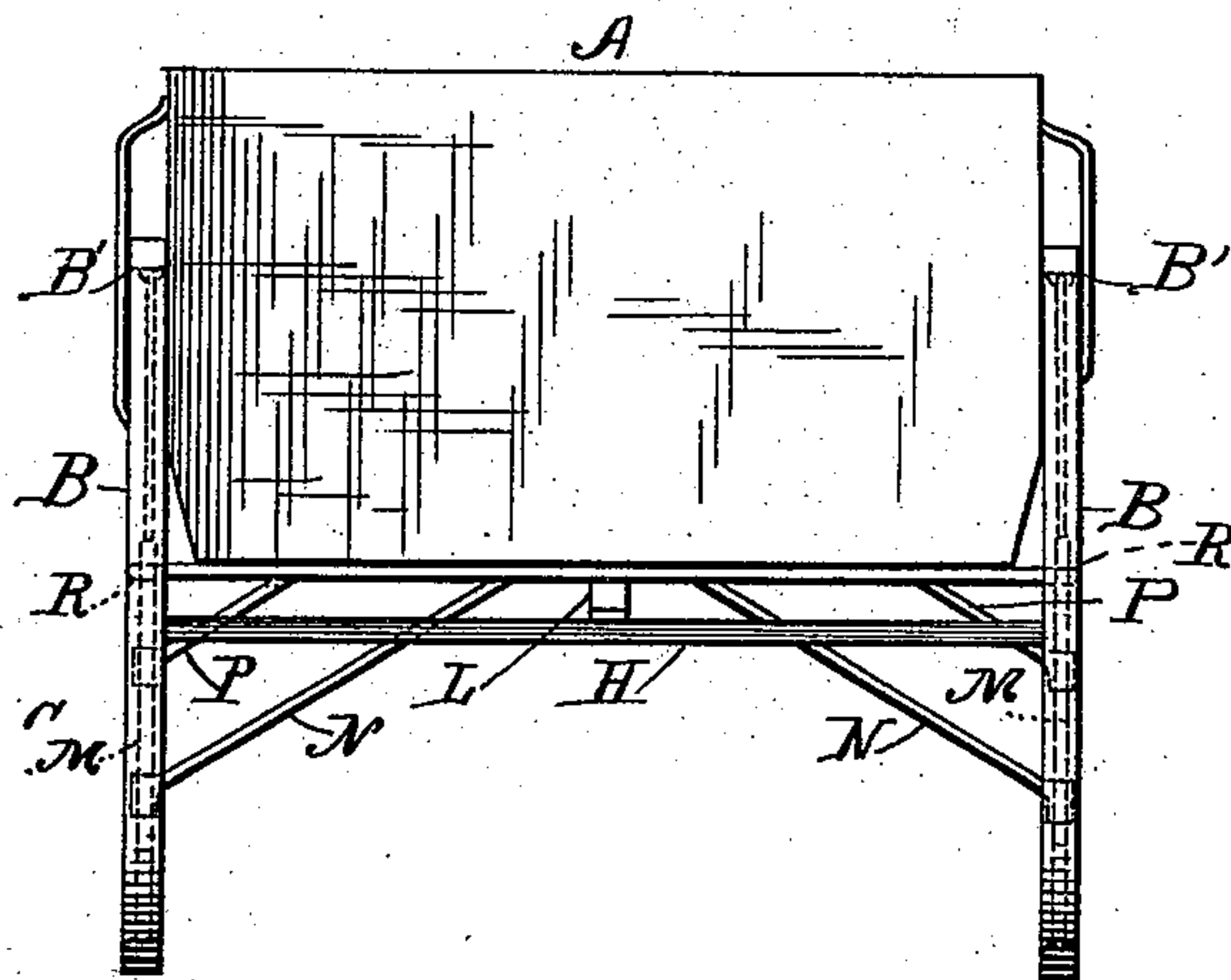


Fig 2



Witnesses

C. C. Burdine

J. D. Owen

Inventor

Harry B. Ellsworth
per John G. Manahan
his Attorney

UNITED STATES PATENT OFFICE.

HARRY B. ELLSWORTH, OF EXCELSIOR, WISCONSIN.

SLEIGH.

SPECIFICATION forming part of Letters Patent No. 510,123, dated December 5, 1893.

Application filed March 3, 1893. Serial No. 464,594. (No model.)

To all whom it may concern:

Be it known that I, HARRY B. ELLSWORTH, a citizen of the United States, residing at Excelsior, in the county of Richland and State of Wisconsin, have invented certain new and useful Improvements in Sleighs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has reference to improvements in sleighs, and more especially pertains to certain devices for the permitting of both a longitudinal and lateral oscillation to the sleigh body, to obviate the unpleasant effects of the jar of opposing inequalities or obstacles, on the ground. The longitudinal oscillation is attained by supporting the rear of the sleigh body upon one vertical support on each runner, and pivoting the base of said supports to the top of the runner, and at the same time supporting the front of said sleigh body centrally upon a transverse bar, which latter is loosely hung at each extremity to the reversed ends of the runners, and immediately on a swivel bearing hereinafter described. The lateral oscillation is accomplished by the central supports of the forward end of the body aforesaid on said transverse bar, and a sleeved connection of the body to the runners at each side of the sleigh near its forward end, aided in a measure by the rear flexible connection before mentioned.

I attain the aforesaid results by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of a sleigh, embodying my invention, viewed obliquely from the side. Fig. 2 is a partial perspective of the same, viewed from the front.

Similar letters refer to similar parts in each view.

As my invention is applicable to any form of sleigh, and with certain obvious changes, to wheeled conveyances as well, I do not deem it necessary to particularly describe the vehicle further than will render intelligible the construction, application, and mode of operation of my invention.

A is the body of the sleigh, which can be constructed of any of the usual types.

B—B are the runners, which at their front ends are bowed upward and somewhat backward in the ordinary form.

C—C are vertical standards, one upon each runner B, hinged at their lower ends, respectively, upon said runners B—B, in position to oscillate or rock longitudinally of said runners, and rigidly attached at their upper ends by bolts to the bottom of the body A, under the seat portion of the latter. On the outer side of the supports C there is externally formed near its upper end a sleeve D, the opening therein being lengthwise of the vehicle.

A duplex brace E is attached at its rear end on the runner B, near the rear end of the latter, and passed upward through the sleeve D, and attached at its opposite end to the runner B near the forward portion of the latter, and has a flattened central portion F at its apex, adapted to permit the sleeve D to play forward and back thereon, in the longitudinal oscillation of the body A.

I am aware that sleigh knees and bents have heretofore had a flexible connection, at their upper ends, with the supported body or box, but the effect of such connection at the lower end of said bent, as I have described it, is not only preferable, but entirely different in mode of operation; as, in the connection first named, the body simply rocks on the top of said vertical support, while in my construction, in the longitudinal oscillations of said support, the body is carried in the arc of a circle.

G—G are dependent rods, flexibly connected respectively, at their upper ends to the rear ends B' of the bowed portion of the runners B.

A transverse bar H is attached at each end to the lower ends of rods G, and supported thereby horizontally under the forward end of the body A.

A substantially horizontal spring plate L is attached at its front end to the center of the bar H, and projected backward under and is suitably attached, at its rear end, to the bottom of the body A. The upward curve of the bottom of said body, from the point of the attachment thereto of the spring L, forward

and over the bar H, affords space and opportunity for the vertical oscillation of the front end of said spring, thereby imparting a degree of elasticity to the forward end of said body.

5 M—M are vertical supports seated, respectively, at their bases loosely upon the runners B by means of bolts ℓ passed vertically through the latter and an eye formed in lower end of support M, forward of the front attachment
10 to said runners of the brace E, and extended upward slightly through the bottom, or inclined side of the body A. The bottoms of supports M, are rounded, to permit them to rock.

15 N—N are diagonal braces pivotally attached to the bottom of the body A at their inner ends, and having their outer ends extended diagonally downward and sleeved, respectively, on the supports M, near the bottom of
20 the latter.

P—P are similar braces, of shorter character, pivotally attached at their upper ends to the bottom of the body A, and extending diagonally downward, and sleeved at their op-
25 posite ends on the supports M a short distance above the aforesaid sleeve connection of the braces N.

R—R are metallic eyes fastened to the side or bottom of the body A, having a central ver-
30 tical hole to receive and permit the free movement therein of the upper end of the supports M. By the three connections aforesaid of the eye R, and braces N, and P, the supports M are sufficiently connected to the body A, while
35 at the same time the latter is free to oscillate vertically on said supports to accord with the vertical vibration of the spring L, and to permit the lateral rocking of said body.

40 What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of the runners B, the standards C—C flexibly supported at their lower extremities, on said runners, the stand-
45 ards M—M loosely seated at their lower ex- tremities, the box A rigidly seated near its rear end on standards C, the supporting rods G flexibly attached at their upper ends, trans-verse bar H supported from the lower ends of
50 said rods, spring L attached centrally at its front end to bar H and at its rear end to the bottom of the body A, braces N and O pivotally connected at their inner ends to the body A and sleeved at their outer ends upon the standard M; substantially as shown and
55 for the purpose described.

2. The combination of runners B, standards C, hinged thereto at their lower ends, and provided with sleeve D, duplex brace E, provided with apex F, projected through said sleeve,
60 body A rigidly seated, near its rear end, on the upper ends of standards C, and suitably supported flexibly, at its forward end, on said runners, substantially as shown and for the
65 purpose specified.

3. The combination of the runners B, stand- ards C, hinged thereto at their lower ends, body A rigidly seated on the upper ends of
70 standards C, cross-bar H flexibly supported from the upper ends of runners B, spring L centrally attached at its forward end to bar H and at its rear end to the body A, and a flexible connection of the body A to runners B between the aforesaid points of support of
75 said body; substantially as shown, and for the purpose described.

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

HARRY B. ELLSWORTH.

Witnesses:

JOHN G. MANAHAN,
BELLE MANAHAN.