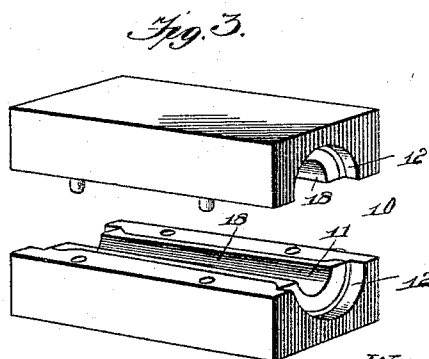
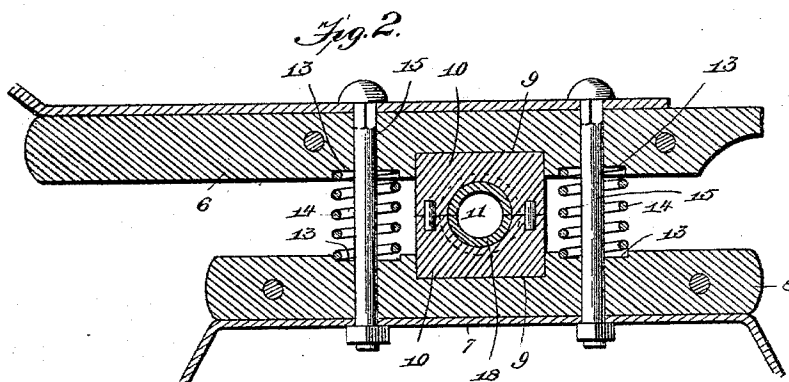
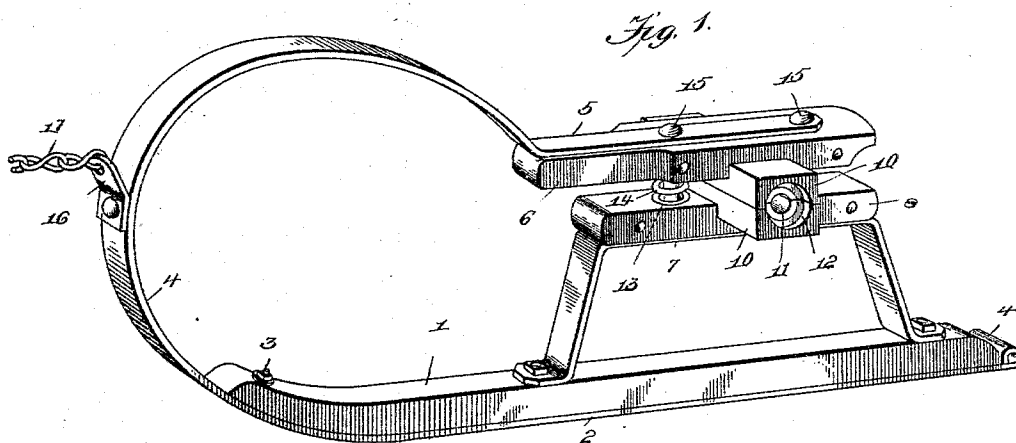


(No Model.)

W. H. MILLSPAUGH.
SLEIGH RUNNER ATTACHMENT.

No. 551,554.

Patented Dec. 17, 1895.



Witnesses

John C. Shaw.
R. M. Smith.

By *Teis* Attorneys.

William H. Millspaugh,

Chas. Snow & Co.

UNITED STATES PATENT OFFICE.

WILLIAM H. MILLSPAUGH, OF LIVINGSTON MANOR, NEW YORK.

SLEIGH-RUNNER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 551,554, dated December 17, 1895.

Application filed April 30, 1895. Serial No. 547,688. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MILLS-PAUGH, a citizen of the United States, residing at Livingston Manor, in the county of Sullivan and State of New York, have invented a new and useful Sleigh-Runner Attachment, of which the following is a specification.

This invention relates to an improvement in sleigh-runners.

The object of the present invention is to provide a simple and efficient form of sleigh-runner, constructed in such manner as to permit of its ready attachment to or removal from the spindle of vehicles of all descriptions.

To this end the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of an improved sleigh-runner attachment constructed in accordance with this invention. Fig. 2 is an enlarged vertical longitudinal section through the rave, knee-block, and hub. Fig. 3 is a detail perspective view of the horizontally-divided spindle-block.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates the runner proper, which is preferably formed from hard wood and provided with an upward curvature at its forward end in the usual manner.

2 designates the steel shoe, the base portion of which underlies the runner 1 and is secured thereto by means of a series of bolts 3, having tapering heads let into countersunk perforations in said shoe, in the manner well understood, in order to present a smooth and even surface on the bottom of said shoe. After passing beyond the forward end of the wooden runner, the shoe 2 is curved around upwardly in semicircular or loop form, as indicated at 4, and thence extended rearwardly to form a cap-plate 5, having square holes, beneath which is secured a wooden rave 6, by means of bolts or other suitable fastening devices, having square shoulders.

7 designates a knee comprising an upper

horizontal portion and downwardly-extending inclined arms or braces at either end thereof, the lower ends of said arms being bent to form feet which are perforated to take two of the bolts which secure the shoe 2 to the runner 1.

8 indicates a knee-block, which is preferably made of hard wood and secured to the upper face of the knee 7. The lower face of the rave 6 and the upper face of the block 8 are provided with oppositely-disposed recesses 9 of a size adapting them to receive a hub or block 10, which is substantially square in cross-section and provided with a central perforation 11 extending longitudinally thereof. This block or hub, by means of the perforation therein, is adapted to receive the axle-spindle of a vehicle of any description which it is desired to mount upon runners, and said block is provided at each end with an annular or cylindrical depression 12 for the reception of the collar on said spindle and also for the nut and washer on the outer end of the spindle.

The lower face of the rave and the upper face of the knee-block are each provided upon opposite sides of the spindle-block 10 with oppositely-disposed cylindrical depressions or recesses 13, which are adapted to receive the opposite ends of a pair of spiral springs 14, disposed upon opposite sides of the spindle-block and around a pair of vertically-extending bolts 15, passing through vertically-aligning perforations in the knee-block, rave and cap-plate of the shoe, also through the knee 7 in the horizontal portion thereof.

By means of the construction above described it will be apparent that by loosening the nuts on the lower ends of the bolts 15, the spiral springs will exert their tension to lift the rave slightly, which will permit the spindle-block 10 to be removed therefrom or to be adjusted longitudinally of its length for the purpose of bringing the runner attachment into the desired relation to the vehicle. When in the proper position, the spindle-block may be clamped by turning up or tightening the nuts on the lower ends of the bolts 15. The runner attachment is further provided at its forward end with a perforated plate or clip 16, riveted or otherwise secured to the forward face of the curved or looped

portion of the steel shoe 2. This perforated plate or clip is adapted to receive a suitable chain 17, the front end of which is intended to be attached to the body or other convenient part of the vehicle to which the runner attachments are applied.

In Fig. 3 I have shown the spindle-block divided horizontally into upper and lower halves or sections, within which are arranged corresponding semicircular or half sleeves or metal bushings 18. The object of this construction is to admit of a slight variation in the diameter of the axle-spindles and to clamp the same firmly in place. The attachment described is very simple and inexpensive in construction, is durable and reliable in practice and will be found efficient in operation, being capable of being applied to and removed from a vehicle in the shortest possible space of time.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a sleigh runner, the runner proper, the knee extending upwardly therefrom, and the knee block secured to the upper face thereof and provided with a recess or depression in its upper side, in combination with the rave arranged above said block and provided with a recess or depression in its lower face opposite to the corresponding recess in the knee block, and means connecting said rave and knee block for clamping the spindle block between them, substantially as described.

2. In a sleigh runner, the combination with the base of said runner and the knee and knee block secured thereto, of the rave ar-

ranged above said knee block, a spindle block interposed between the rave and knee block, connecting bolts arranged upon opposite sides of said spindle block and passing through the rave and knee block, and spiral springs disposed around said bolts and interposed between the rave and knee block, substantially as specified.

3. In a sleigh runner, the base thereof having an upwardly extending knee, and a knee block secured to the upper face of said knee and provided with a recess for the reception of the spindle block, in combination with the rave having a recess in its lower face disposed above and corresponding to the recess in the knee block, the metallic shoe connecting said base and rave, springs interposed between the rave and knee block, and connecting bolts passing through said rave and knee block and serving to clamp the spindle block firmly between them, substantially as set forth.

4. In a sleigh runner, the base thereof having the upwardly extending knee, and the knee block secured thereto and having a recess in its upper face, in combination with the rave arranged above said knee block and having a corresponding recess in its lower face, a horizontally divided spindle block, the half bushings arranged therein, and connecting bolts arranged upon opposite sides of said spindle block and passing through the rave and knee block for clamping the spindle block between the latter, substantially as specified.

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

WILLIAM H. MILLSPAUGH.

Witnesses:

L. S. PURVIS,
THOS. SHERWOOD.