

(No Model.)

H. H. HAHN.
DETACHABLE SLEIGH SHOE.

No. 546,398.

Patented Sept. 17, 1895.

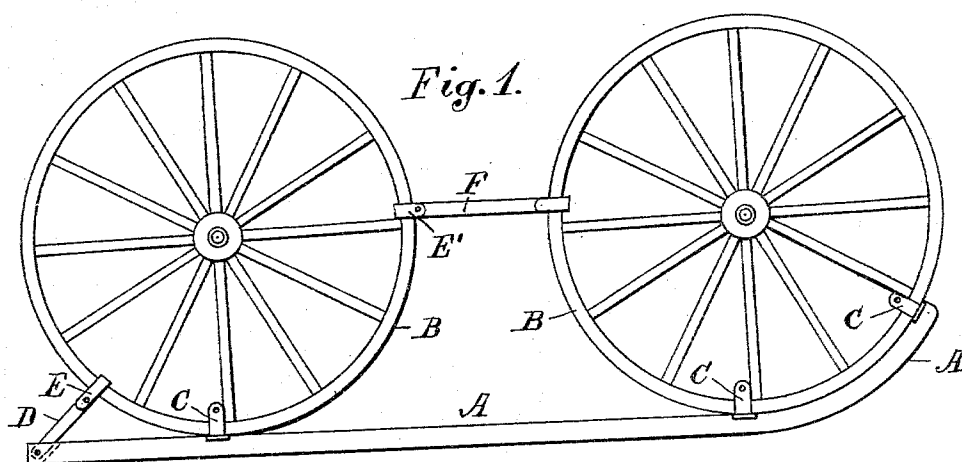


Fig. 1.

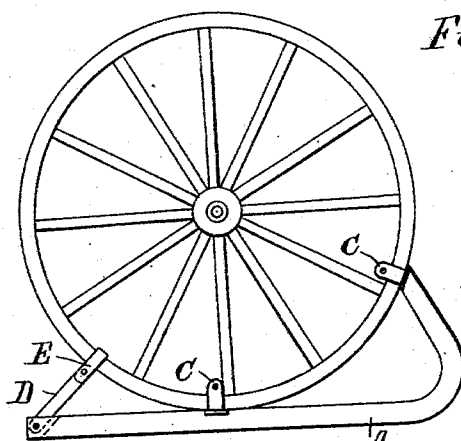


Fig. 2.

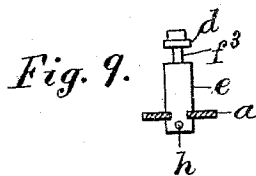


Fig. 9.



Fig. 10.

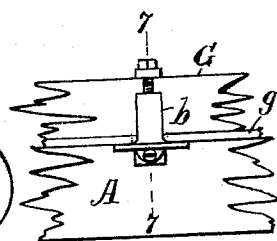


Fig. 6.

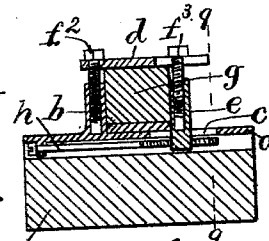


Fig. 7.

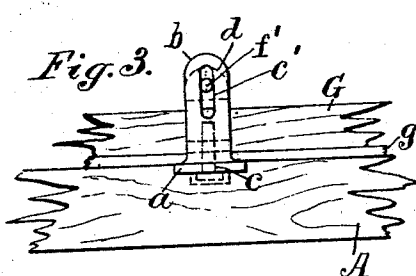


Fig. 3.

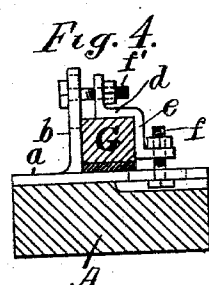


Fig. 4.

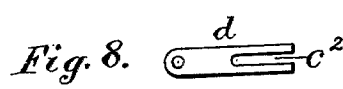


Fig. 8.

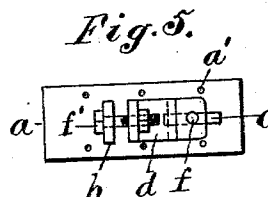


Fig. 5.

Attest:
L. Lee.
Edw. F. Hinsey.

Inventor.
Henry H. Hahn, per
Thomas S. Crane, atty.

UNITED STATES PATENT OFFICE.

HENRY H. HAHN, OF EAST ORANGE, NEW JERSEY.

DETACHABLE SLEIGH-SHOE.

SPECIFICATION forming part of Letters Patent No. 546,398, dated September 17, 1895.

Application filed March 20, 1895. Serial No. 542,450. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. HAHN, a citizen of the United States, residing at East Orange, Essex county, New Jersey, have invented certain new and useful Improvements in Detachable Sleigh-Shoes, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to furnish a detachable shoe and a convenient means for applying the same temporarily to wheel-rims and sleigh-runners of different widths and thicknesses. Such shoe is made exclusively of wood, as such material, it is well known, slides over bare ground or over ground partly covered with snow more readily than an iron-shod runner, and the wooden shoe may thus be applied with great advantage to an iron-shod sleigh-runner when the sleighing is in such a condition.

Heretofore it has been common to secure a shoe beneath the rims of carriage and wagon wheels to use the same for sleighing; but the devices used for such purpose are different in construction from that which is shown herein. In the present construction I prefer to make the wooden shoe materially wider than the wheel-rim or sleigh-runner to which it is attached, so as to furnish a large bearing-surface to slip easily over the ground or snow, and such extended width for the shoe enables me to attach the clamp exclusively to the upper side, which is made broad enough to receive a flat foot-plate which forms part of the clamp.

To fit the clamp for application to the top of a shoe, the clamp is formed with a foot-plate to fit the upper surface of the shoe, and to adapt the clamp to runners or wheel-rims of different widths the foot-plate is formed with a bracket, projected upwardly therefrom, and means for pressing the runner or wheel-rim toward the plate and the bracket.

The nature of the clamp will be understood by reference to the annexed drawings, in which—

Figure 1 is a side elevation of two vehicle-wheels with the shoe secured thereto. Fig. 2 is a side elevation of one vehicle-wheel with a shoe applied thereto. Fig. 3 is a side elevation of a portion of a sleigh-runner and of

the shoe, with an adjustable clamp having the cap and cheek-piece united. Fig. 4 is a cross-section of the same on line 4 4 in Fig. 3. Fig. 5 is a plan of the clamp. Fig. 6 is a side elevation of a portion of a sleigh-runner and shoe with a clamp having separate cap, and Fig. 7 a cross-section on line 7 7 in Fig. 6. Fig. 8 is a plan of the cap employed in such clamp. Fig. 9 is a cross-section of the clamp on line 9 9 in Fig. 7; and Fig. 10 shows the under side of the foot-plate of the clamp drawn in Fig. 7.

The adjustable clamp is shown herein applied both to sleigh-runners and wheel-rims.

A is the shoe, B the vehicle-wheels in Fig. 1, and C the detachable clamps. The front end of the shoe is bent up to the curve of the wheel-rim, and the rear end is projected behind the center of the wheel and furnished with a brace D, which is butted against the wheel-rim and secured thereto by a clip E.

F is a wooden tie cut to fit between the rims of the wheels B and secured detachably thereto by clips E'. Such arrangement is suited for a buggy or light vehicle; but where the wheels require individual runners, as with a heavy wagon, the shoe may be made, as shown in Fig. 2, with its ends extended forward and backward from the same wheel-center and the front end reflexed into contact with the wheel-rim, to which it is shown secured by a detachable clamp C.

A portion of the shoe A is shown in Figs. 3 and 4 connected to a portion of a straight sleigh-runner G, shod with iron facing *g*. The shoe is shown considerably broader than the runner to give a large bearing upon the snow, and the clamp is shown with transverse foot-piece *a* let into the top of the shoe, where it may be secured by wood-screws inserted through the holes *a'* in Fig. 5. A bracket-piece *b* is projected upward from the foot-piece, and bolt-slots *c* and *c'* are formed in the foot-piece and bracket.

A cap *d* is provided to press upon the top of the runner and a cheek-piece *e* to press upon the side of the same, the two parts being united at a right angle and furnished with bolting-lugs for bolts *f* *f'*. The bolt *f* is passed through the slot *c* with its head beneath the foot-plate, and the bolt *f'* is passed through the slot *c'* in the bracket-piece, the former bolt, when

its nut is tightened, thus drawing the cap down upon the top of the runner, while the latter bolt presses the cheek-piece upon the side of the runner and draws it toward the bracket-piece *b*.

The entire clamp may be made of two simple castings, while it is adjustable vertically and laterally, and is thus adapted to secure the shoe to runners of widely-divergent sizes.

A clamp having the same capacity is shown in Figs. 6 to 10, the bracket *b* having a screw-hole in the top and the cheek *e* being made, similar to the bracket, with a screw-hole in the top, and formed at the lower end with a T-shaped head inserted in the slot *c*. The cap *d* is formed of a flat plate with a hole in one end for bolt *f*², which is screwed in the top of the bracket, and at the other end with a slot *c*², through which a bolt *f*³ is fitted into the top of the cheek. The cap may thus be pressed downward upon a runner or wheel-rim of any thickness. A screw *h* is fitted to a lug *i* upon the under side of the bed-plate and extended through a screw-hole in the foot of the cheek, and serves to clamp the same tightly against the side of the runner or wheel-rim to which the clamp may be applied.

Either of the clamps is adapted for attachment to the upper side of a wooden shoe and for securing the same detachably to a sleigh-runner or wheel-rim, and the shoe, with such clamps, therefore constitutes a new article, which may be manufactured with the cap and cheek-piece adjustable to a given variation, and may therefore be applied to any runner or wheel-rim within the prescribed range of size.

In practice the shoe may be furnished in two sizes—the lighter, about two and a half inches wide and of suitable length, for light sleighs or carriages, and the heavier, about four inches wide and of suitable length, for application, as shown in Fig. 2, to one wheel on heavy wagons and to bob-sleds.

The foot-plate of the clamp is shown in the drawings notched into the upper surface of the shoe, and such notch is necessary where the screw *h* is employed beneath the foot-

plate; but where the screw *h* is not employed the clamp may be attached to the upper side of the shoe without notching the latter. The relative width of the sleigh-runner and the shoe, which may be applied thereto, is clearly shown in Figs. 4 and 7 of the drawings, and the manner in which the sleigh-runner is inserted in the angle between the foot-plate *a* and the bracket *b*.

I am aware that clamps have been devised for securing runners upon wheel-rims; but I am not aware that any wooden shoe has ever been provided with detachable clamps and combined with an iron-shod sleigh-runner for the purpose herein set forth. I have therefore made a specific claim to such combination.

I hereby disclaim the mere use of a clamp in connection with a shoe, as I am well aware that such clamps are old and have been used in connection with wheel-rims.

Having thus set forth the nature of the invention, what I claim herein is—

1. The combination, with a wooden shoe adapted for application to a wheel rim or sleigh runner, of the flat foot-plate *a* fitted to the top of said shoe and provided with the bracket *b*, and the cap *d* and cheek piece *e* with screws for pressing them respectively toward the foot plate and bracket.

2. The combination, with a sleigh runner, of a sleigh shoe of greater width than the runner and two or more clamps secured upon the upper side of the shoe by flat foot plate *a* provided with bracket *b*, cap *d*, and cheek piece *e*, the sleigh runner being inserted in the angle of the bracket and foot plate, and the latter being provided with screws for pressing the cap and cheek piece upon the top and side of the runner, substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY H. HAHN.

Witnesses:

THOMAS S. CRANE,
M. K. CRANE.