(No Model.) 2 Sheets—Sheet 1.

A. H. TODT.

SLEIGH RUNNER.

No. 346,874. Patented Aug. 3, 1886.

Fig. 1.

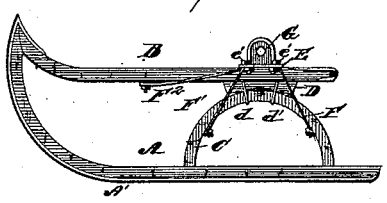


Fig. 2.

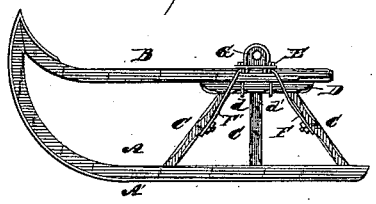


Fig. 3.

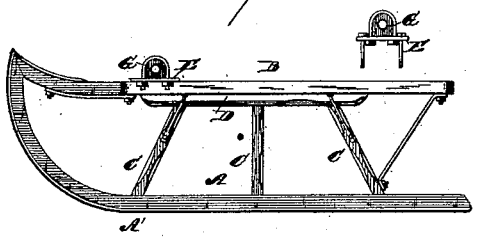


Fig. 4.

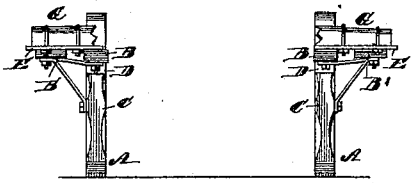
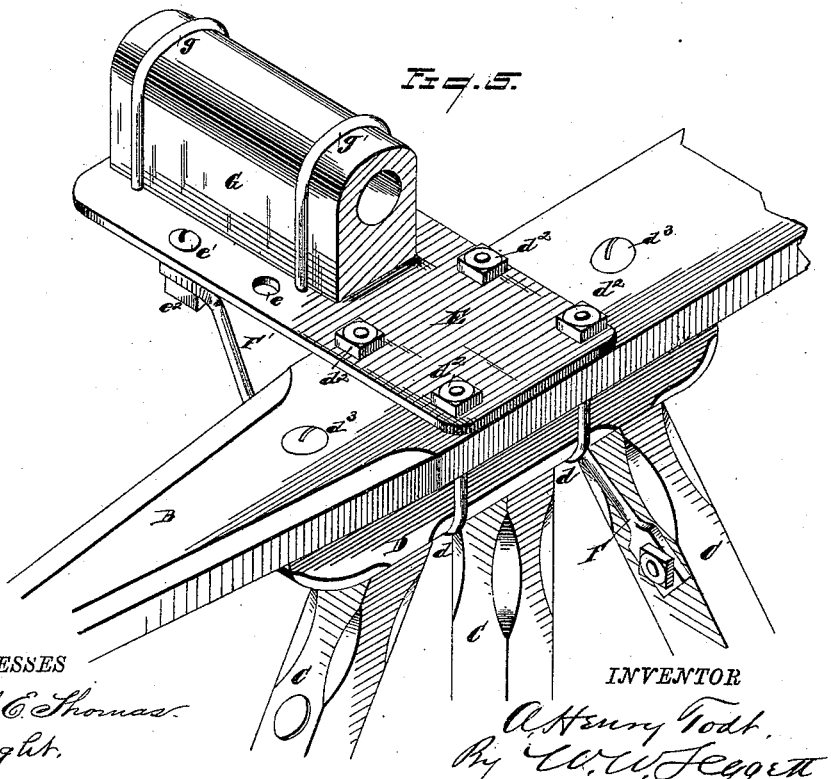


Fig. 5.



WITNESSES

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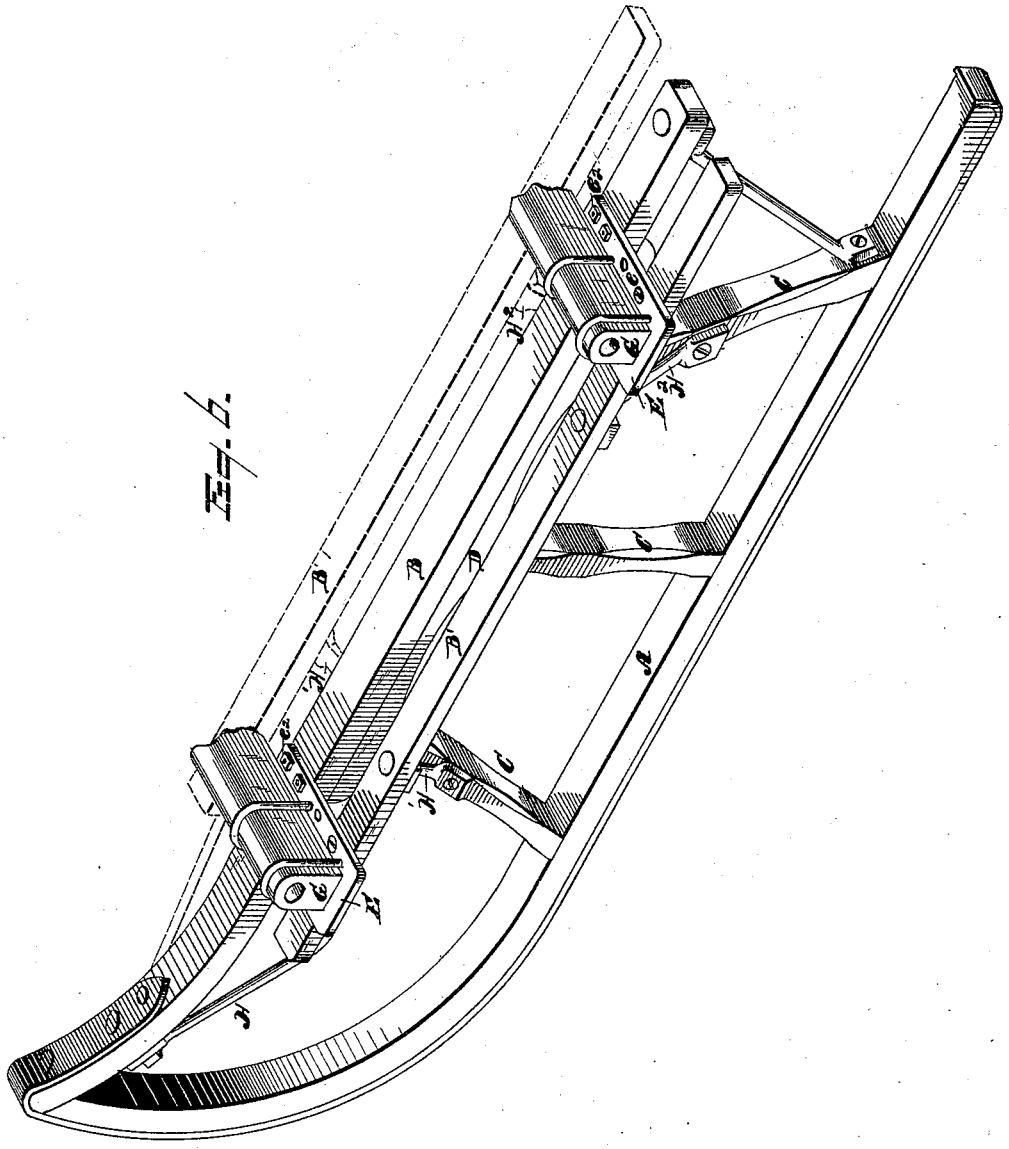

Fig. 1.

WITNESSES

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UNITED STATES PATENT OFFICE.

A. HENRY TODT, OF LAPEER, MICHIGAN.

SLEIGH-RUNNER.

SPECIFICATION forming part of Letters Patent No. 346,874, dated August 3, 1886.

Application filed February 19, 1886. Serial No. 192,561. (No model.)

To all whom it may concern:

Be it known that I, A. HENRY TODT, of Lapeer, county of Lapeer, State of Michigan, have invented a new and useful Improvement in Sleigh-Runners; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object certain new and useful improvements in sleigh-runners, and relates more particularly to that class known as "attachable sleigh-runners," designed to be applied to vehicle-axles, and has for its purpose, essentially, first, to construct a runner of this description which may readily be adjusted for use in wide or narrow tracks, as may be desired; second, to construct such a runner with adjustable braces; third, to provide an improved engagement of the knees with the rave; fourth, to provide an adjustable plate having a hub engaged therewith; fifth, to provide a "bob" runner with said adjustable plate and adjustable brace-rods; sixth, to provide, also, a full-length runner with said adjustable plates for engagement with the front and rear axles; seventh, to provide a runner constructed with double raves, or a stave and fender with one or more adjustable plates, said fender being also made adjustable and the brace-rods connected therewith; eighth, my invention contemplates the general construction and arrangement of the various devices and appliances, together with their combinations, as more particularly specified, and pointed out in the claims.

It is found very desirable in runners of this class that they be made adjustable for either wide or narrow tracks, as wide runners may be used in cities, but usually narrow ones are desired in the country, and runners so made will consequently meet a much wider demand in the market, while also they may be readily adjusted to satisfy either purpose desired. Moreover, the same set of runners may be readily adjusted, whenever desired, to serve in wide or narrow roads.

My invention is designed to meet these various objects, and is carried out as follows:

In the drawings, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a modification. Fig. 3 illustrates my invention as applied to a full-length runner. Fig. 4 is a vertical section, partly in elevation, showing the adjustable fender; Fig. 5, a cross-section of Fig. 3, showing parts in elevation; and Fig. 6 is a detail perspective view illustrating one of the adjustable fenders.

A represents a runner, preferably constructed of a single piece of iron or bent timber, which may be provided with an ordinary metal shoe, A'.

B represents an ordinary rave engaged at its forward end in the usual manner.

B' is a fender.

C represents one or more knees. I do not confine myself to any one form of knees. As shown in Fig. 1, a single knee of curved timber may be employed, having its extremities engaged with the runner, or, as shown in Fig. 2, two or more knees may be employed having their lower extremities engaged with the runner. Whichever form of knees is employed, I prefer to engage the knees in my improved runners with the raves by an intermediate block, D, secured upon the rave by clips *d d'*. In case a bent timber or iron is used, as shown in Fig. 1, the clips will serve to engage the intermediate block, D, between the knee and the rave. Should, however, two or more knees be used, as shown in Fig. 2, their upper extremities will be engaged with said block, the block being secured to the rave by the clips. It is evident that by the use of the intermediate block, especially where two or more knees are to be engaged with the rave, a much firmer union may be secured, as the knees are first engaged in the block and the block clipped upon the rave, as described, thereby overcoming a liability, heretofore common, of weakening the rave at the point of the intersection of the knees, as would be the result were the knees directly engaged with the rave in the ordinary manner.

E represents my improved adjustable plate, constructed with a series of orifices, *e*, for engagement upon the rave and the brace-rods F F' F². The clips *d d'* may be extended upward through the rave and passed through the plate, and engaged therewith by means of nuts d^2, the clips serving thus the double purpose of engaging the block D and the plate to the

rave. The brace-rods F F' are removably engaged at their lower ends to the knee or knees, as the case may be, and bent at their upper extremities, and perforated to be engaged upon the plate by means of bolts e' and their nuts e^2. The brace F^2 is engaged at its forward end to the rave B, and at its opposite extremity with the plate. G is a hub, preferably constructed of a block of wood, engaged upon said plate by means of clips $g\ g'$. As it is common for carriage-axles to run under or be bent downward at their extremities, I prefer that these hubs should be constructed so as to incline toward the inside to take up the pitch of the axle. By constructing the hub in this manner, or simply clipping it upon the plate, the ordinary bands may be dispensed with, cheapening the construction, while at the same time it is left strong, the slant of the hub enabling the runner to stand straight or out. By constructing the hubs in this manner, moreover, the blocks of which they are made may be left long when the runners are put upon the market, so as to be fitted to any desired length of axle or skein, and afterward cut to conform thereto. It will now be evident that by removing the nuts by which the plate is engaged upon the rave and braces the plate may be shifted, the clips $d\ d'$ engaging in the opposite end of the plate, and then secured by the application of the nuts thereto, while the brace-rods, being also removable at their lower ends, may be re-engaged with the plate at its opposite ends. The brace-rods, however, are ordinarily made rights and lefts, and consequently when the plate is adjusted to or fro said rods may exchange positions in their engagement with the knees, whereby their upper ends may be readily engaged with said plate, whether it be secured to the rave on the one end or the other. In one case the brace-rods would be located upon the inside of the runner, and in the other case upon the outside thereof.

B' represents a fender removably engaged with the rave at its forward end in any suitable manner—as, for instance, by means of a brace, H, bolted to the fender at one end and to the rave at the other end. Where the fender is used, I provide braces $H'\ H^2$, removably engaged with the knees of the runner, in such a manner that by detaching them from the knees and the brace H from the rave the fender may be adjusted upon the opposite side of the rave, when the plate E is disengaged from the rave and readily readjusted into position upon the other side, as shown in dotted lines, Fig. 7.

It will be seen that by loosening the connection of the brace H with the fender the said brace may be swung over to the required angle upon the other side, so as to be re-engaged with the rave. So, also, the braces $H'\ H^2$ may be loosened at the top and turned so as to be re-engaged with the opposite side of the knees, thereby adapting the runner for narrow or broad tracks, as may be desired.

In case the full-length runner is used, as shown in Fig. 3, I prefer that the rear plate with its hub be disengaged when the runner is put upon the market, for the reason that the runner may then be readily fitted to different distances of the axles apart from each other. The plate may be readily engaged in desired position simply by boring four holes in the fender to receive the engaging-bolts. This forms a strong runner, and one which may be readily shifted for the purpose desired. The intermediate blocks may be also provided with one or more bolts, d^3, engaging them with the rave, if desired.

I do not confine myself to the union of the blocks D of the rave by the clips alone, as they may be applied upon the market in any other manner, and this will be preferable in case of the full-length runner, where the adjustable bolts are engaged upon fenders. Fig. 4 shows the adjustable fender in two positions which it might occupy.

What I claim is—

1. The combination, with a sleigh-runner, of a plate carrying a hub and extending transversely across the rave, said plate engaged upon said rave and made adjustable lengthwise thereupon, for adjusting the runner to wide or narrow tracks, substantially as described.

2. The combination, with a sleigh-runner, of a perforated plate engaged upon the rave, and made adjustable transversely across said rave, and a hub located upon said plate, the bore of the hub extended at right angles to the runner, for adjusting the runner to a wide or narrow track, substantially as described.

3. The combination, with a sleigh-runner, of a perforated plate engaged upon the rave, and made adjustable transversely across said rave, a hub arranged on said plate, with its bore extended transversely across the rave, and clips securing the hub to the plate, the construction being such that the plate may be adjusted to wide and narrow tracks, substantially as described.

4. The combination, with a sleigh-runner, of a plate adjustable transversely across the rave and engaged thereupon, a hub engaged upon said plate, clips securing the hub in place, and removable braces connecting the plate with the runner, whereby the runner may be adjusted to wide and narrow tracks, said braces constructed to be adjusted upon either side of the runner, substantially as described.

5. The combination, with a sleigh-runner and its rave, of a plate secured upon the rave and made adjustable transversely across said rave, substantially as described.

6. The combination, with a sleigh-runner and its rave, of a device to engage and support an axle, said device secured upon the rave and made adjustable transversely across the rave, for adjusting the runner to wide or narrow tracks, substantially as described.

7. The combination, with a runner and its rave, of knees engaged with the runner and

with an intermediate block, a plate supporting a hub, and clips engaging said intermediate block and plate with the rave, substantially as described.

8. The combination, with a runner and its rave, of knees engaged with the runner and with an intermediate block, a removable plate supporting a hub, clips engaging said intermediate block and plate upon the rave, and adjustable brace-rods engaging said knees and plate, substantially as described.

9. The combination, with a runner and its rave, of an adjustable fender, substantially as described.

10. The combination, with a runner and its rave, of an adjustable fender supporting a hub, substantially as described.

11. The combination, with a runner and its rave, of an adjustable fender and a plate supporting a hub engaged with said fender, said fender provided with adjustable brace-rods, substantially as described.

12. As an article of manufacture, a runner provided with a rave, an adjustable fender, and adjustable brace-rods, and plates supporting a hub, one of said plates disengaged with the fender and rave, substantially as and for the purpose described.

13. The combination, with an adjustable plate, of a hub engaged therewith, said hub inclined to take up the pitch of a vehicle-connection, substantially as described.

14. The combination, with a runner and its rave, of an arched bow engaged at its extremities with the runner, an intermediate block located midway the extremities of said bow, between it and the rave, and united with the bow and rave, said rave provided with an additional device for supporting an axle, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

A. HENRY TODT.

Witnesses:
FRANK MILLIS,
JACOB H. PROCTOR.