

No. 654,637.

Patented July 31, 1900.

J. E. HOBBS.
ATTACHABLE SLEIGH RUNNER.

(Application filed Jan. 16, 1897.)

(No Model.)

3 Sheets—Sheet 1.

FIG. 1.

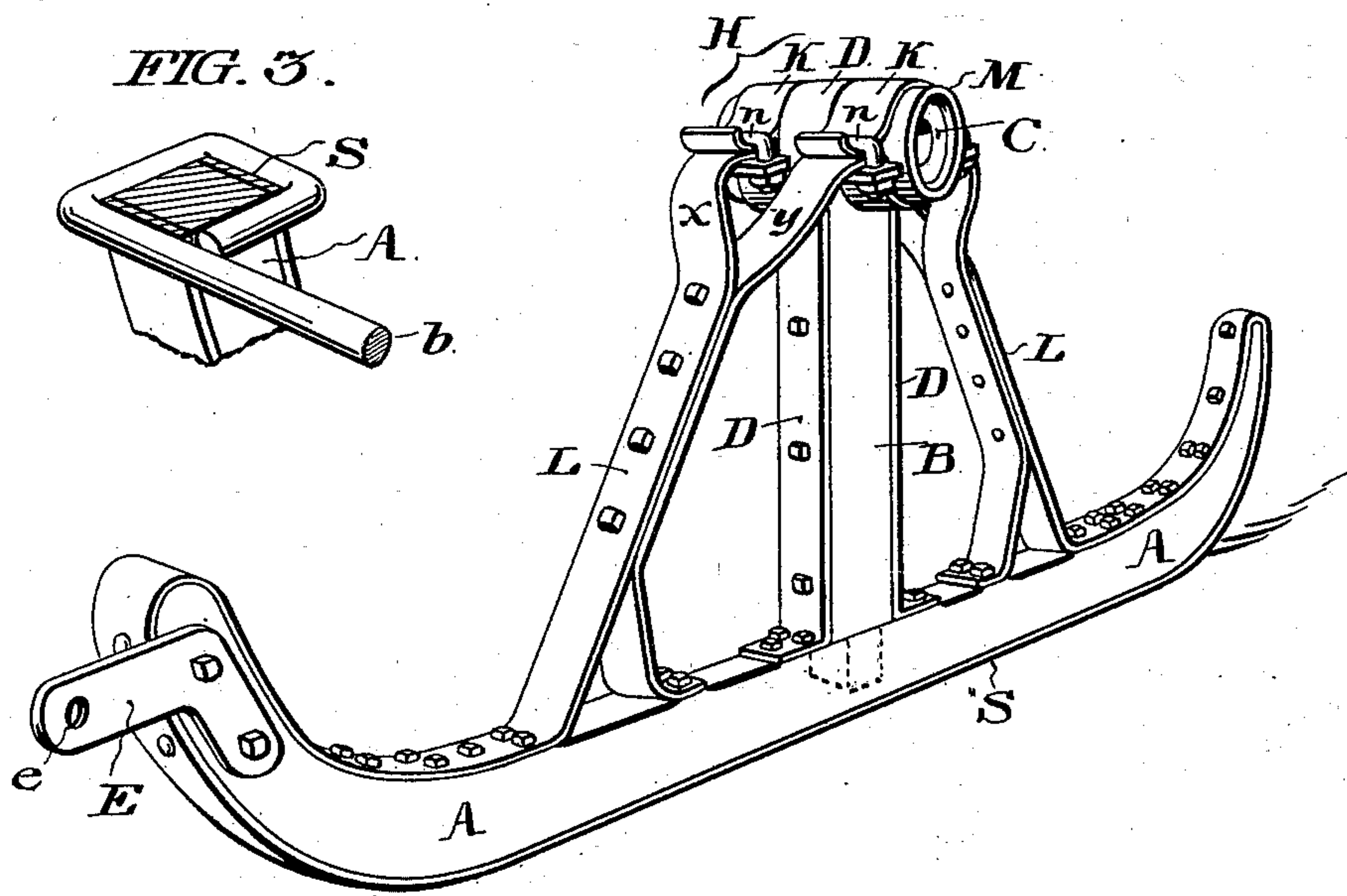


FIG. 3.

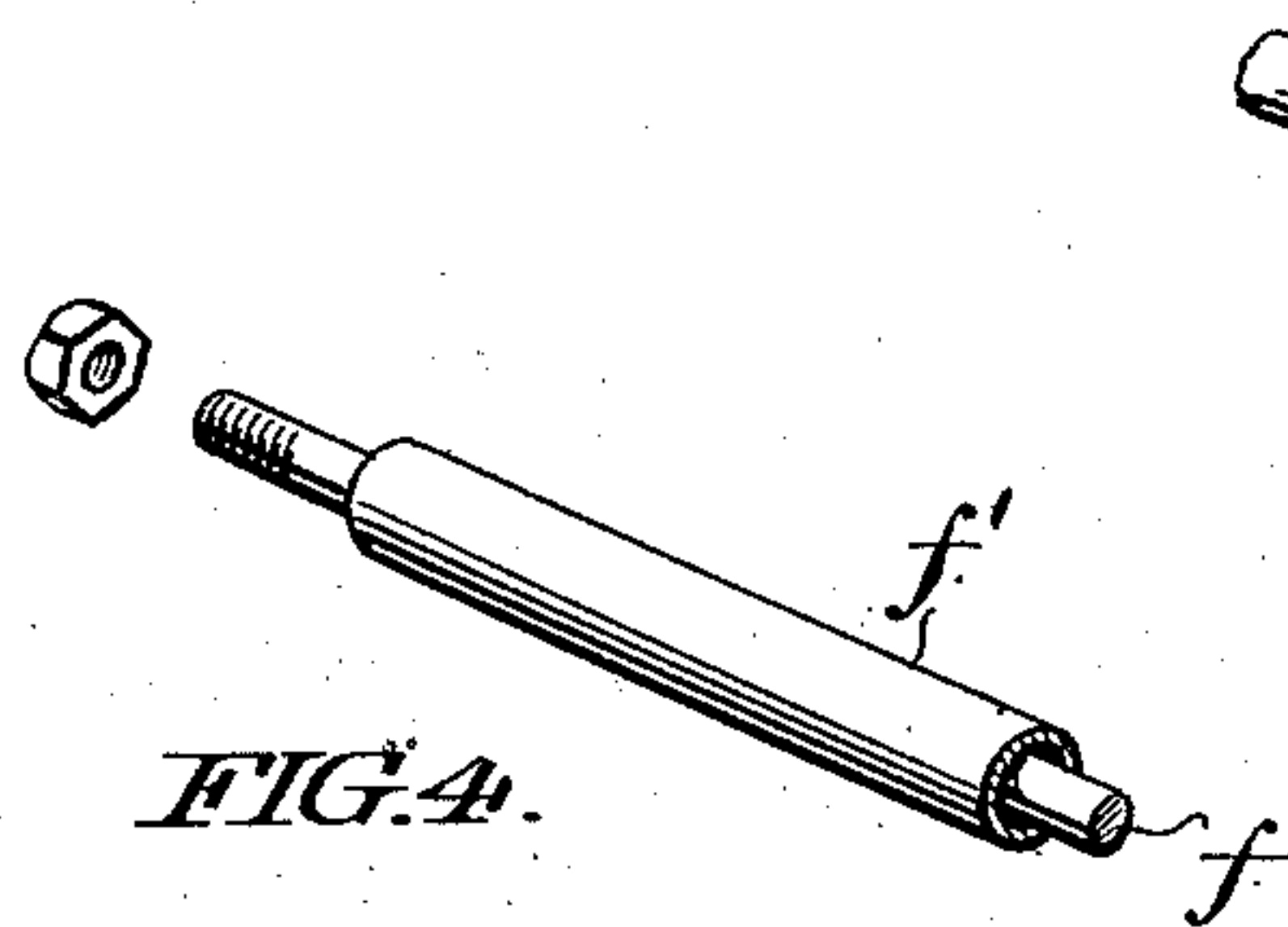
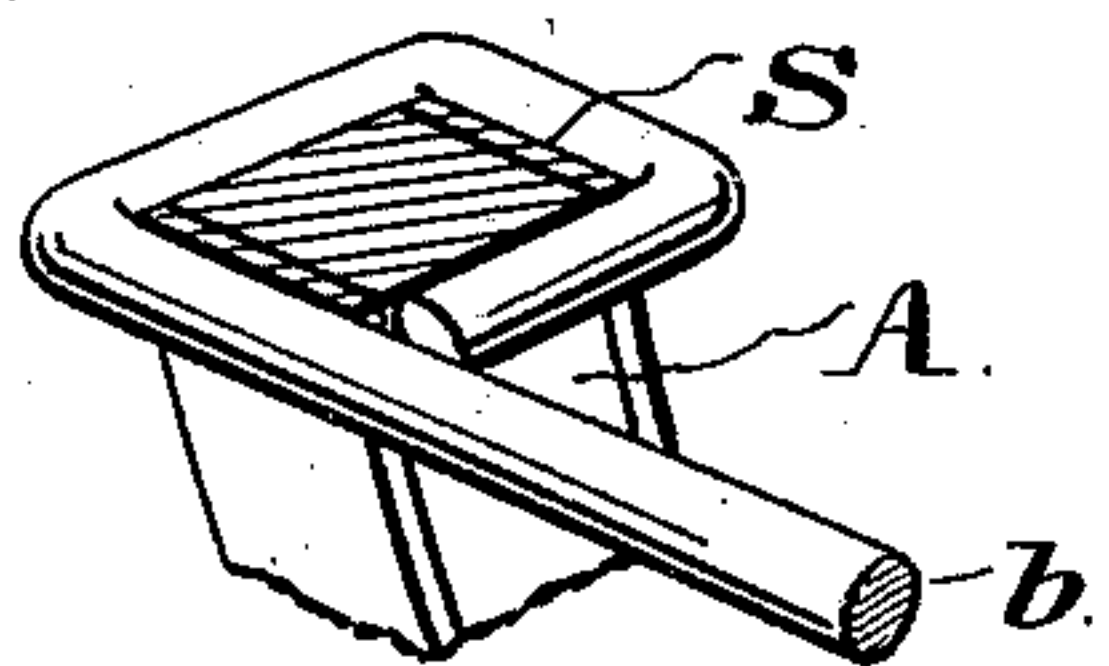


FIG. 4.

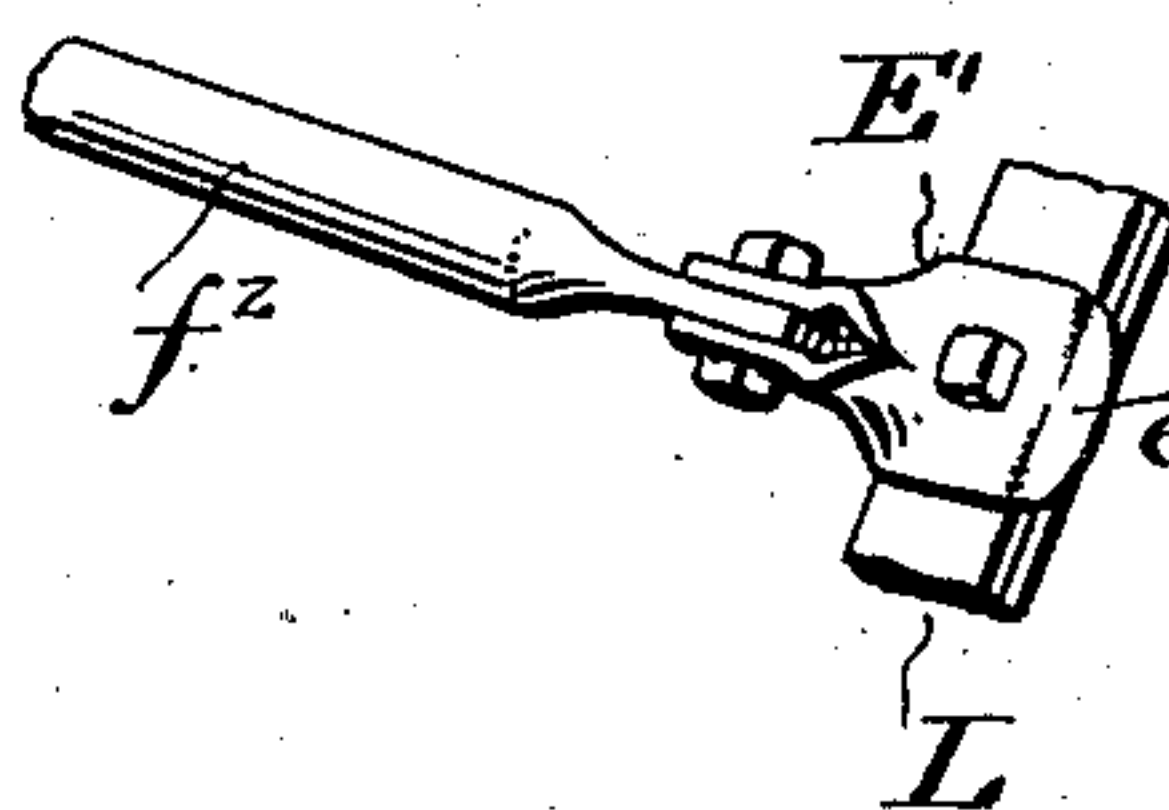


FIG. 5.

WITNESSES:

Edw. J. Dupire
Edward D. Wadsworth

INVENTOR:

John E. Hobbs
by Harold Goodwin
Attorney.

No. 654,637.

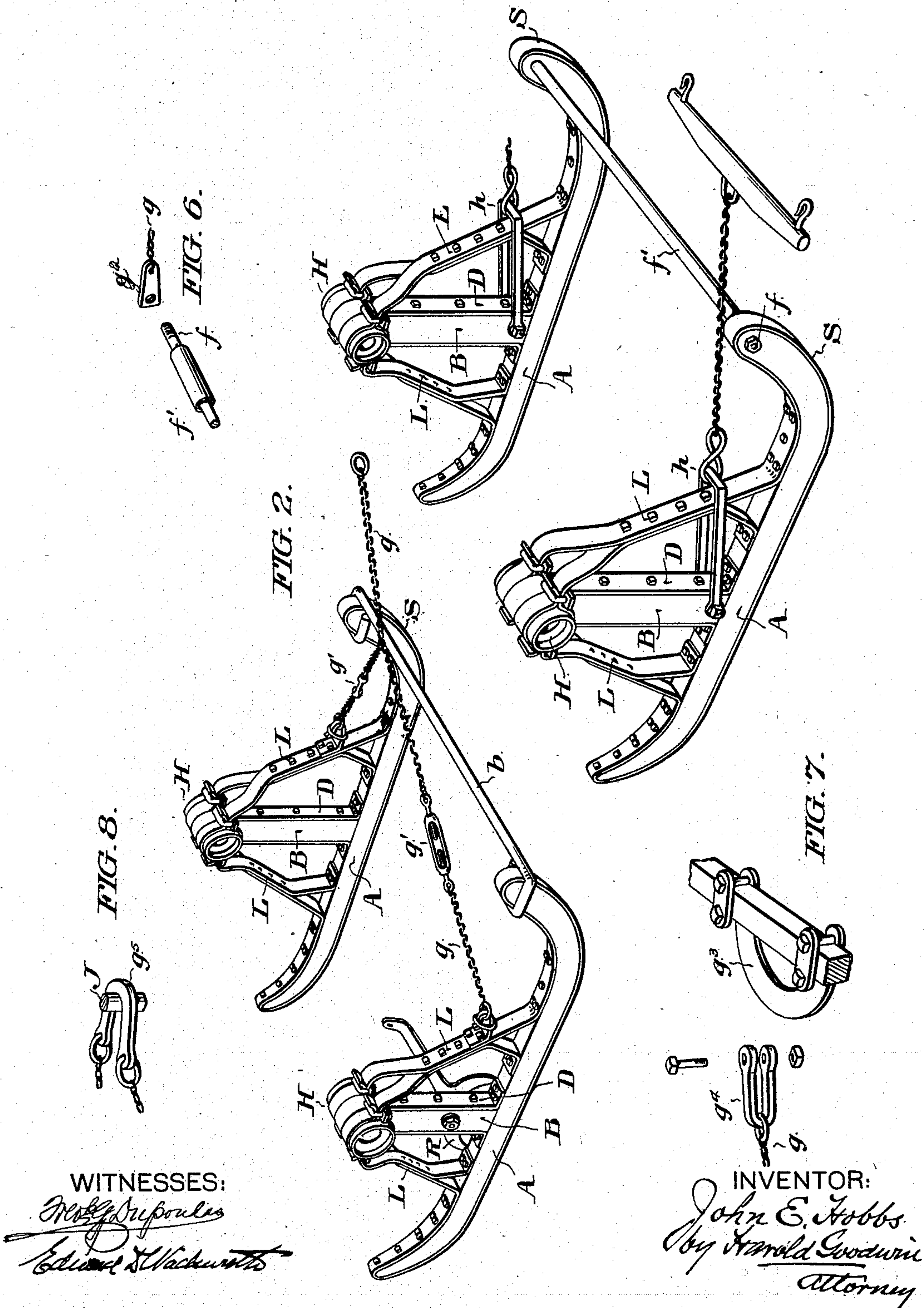
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3 Sheets—Sheet 2.



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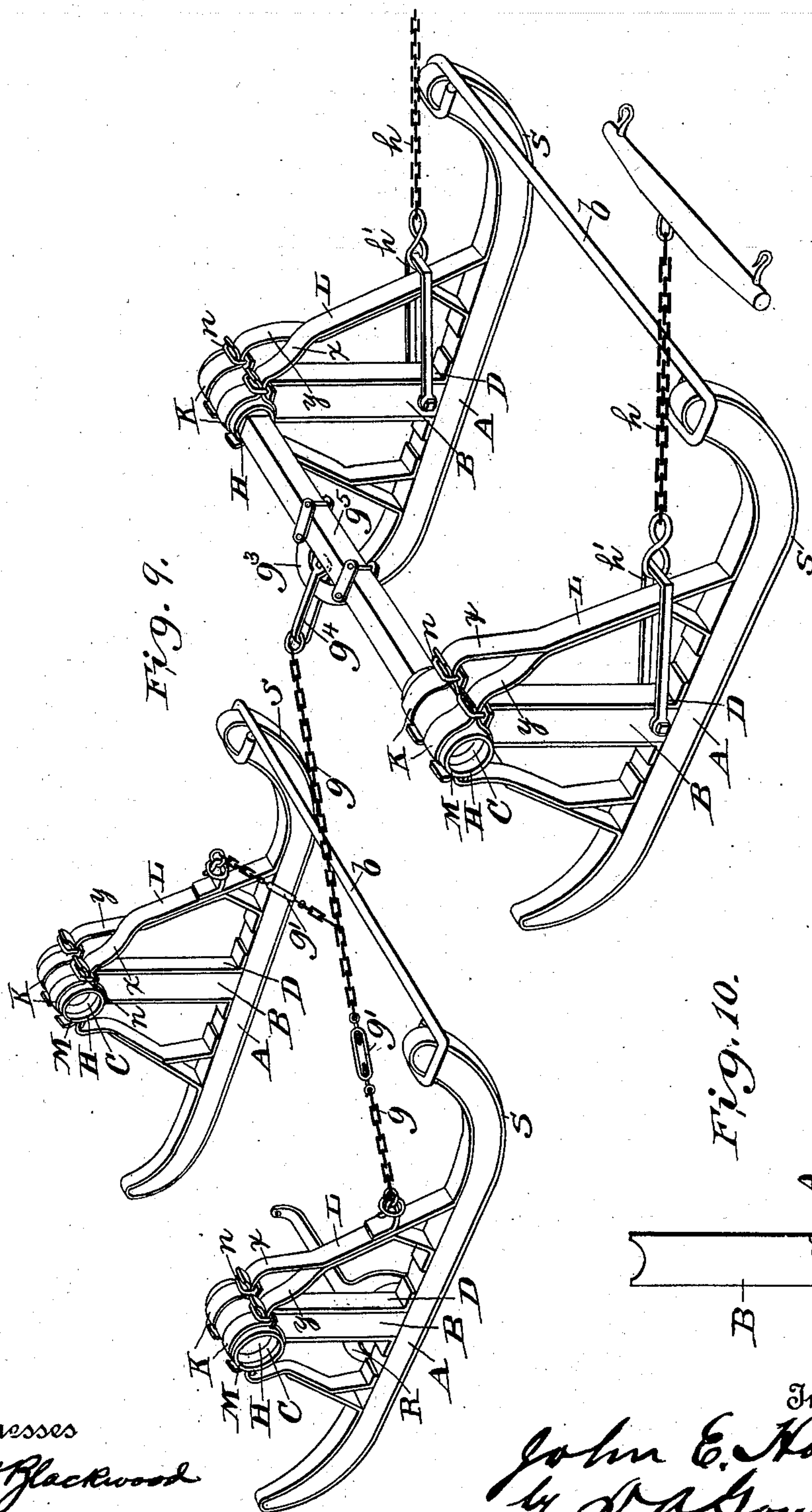
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(No Model.)

3 Sheets—Sheet 3.



Witnesses
Joseph Blackwood
Hartwell P. Heath

Inventor
John E. Hobbs
by D. A. Gornick
Attorney

UNITED STATES PATENT OFFICE.

JOHN EDWARD HOBBS, OF NORTH BERWICK, MAINE.

ATTACHABLE SLEIGH-RUNNER.

SPECIFICATION forming part of Letters Patent No. 654,637, dated July 31, 1900.

Application filed January 16, 1897. Serial No. 619,438. (No model.)

To all whom it may concern:

Be it known that I, JOHN EDWARD HOBBS, a citizen of the United States, residing at North Berwick, York county, State of Maine, have invented a new and useful style of Attachable Sleigh-Runner, of which the following is a specification.

The object of my invention is to construct attachable sleigh-runners of sufficient size and strength to be substituted for the wheels on all fire apparatus or on road-machines when used for repairing roads in winter, and on any other heavy vehicles. It is well known that fire-engines, hook-and-ladder trucks, and hose-carriages of large size are generally used on wheels when the ground is covered with snow, because no satisfactory runners to be substituted for their wheels have ever been constructed, although many attempts have been made to do so. To construct runners with right proportions of length to height and of strength proportioned to the load which they are intended to carry and that shall be adapted to such engines, machines, or vehicles, and to provide for connecting such runners by a loose-jointed rod, either before the axle or behind it, or both, as the case may require, in such way as to keep the runners in line and prevent the bending of the axles or the runners, and at the same time supply a substantial brace for resisting the lateral motion of the machine or load when turning corners, and to provide means for connecting the front and rear runners which shall yet allow the independent movement of each pair and of each runner in each pair, are the objects I seek to accomplish. The connecting-rods for opposite runners described in my former applications lack applicability to runners constructed under this specification. I attain these objects by the mechanism and construction illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective of one of my runners with the hub mounted thereon. Fig. 2 is a view in perspective of two pairs of the runners in position to have a fire-engine placed on them. Fig. 3 is an end of connecting-rod set on nose of runner. Fig. 4 is a detail illustration of connecting-rod ff' shown in position on the forward pair of runners in Fig. 2. Fig. 5 is a detailed view of

coupling and connecting rod to be used on rear legs of trusses LL of the forward runners, Fig. 2. Fig. 6 is a detail of connecting-rod ff' , showing chain-plate to be put over f and held between f' and the nose of the runner, with check or draw chain g . Fig. 7 is a view in perspective of horseshoe-shaped flat bar g^3 , clipped under the middle of the axle of the engine, and removable shackle g^4 , with bolt and check or draw chain g . Fig. 8 is a view in perspective of horseshoe or U shaped bar g^5 , with links in each end attached to the check or draw chains g and set astride of transient bolt J . Fig. 9 is a perspective of four runners with attachments; and Fig. 10, a detail view, partly in section, of one of the standards.

Similar letters refer to similar parts throughout the several views.

H denotes the hub, and M the metal cylinder or sheath thereof; C , the wooden core. This is the same combination patented to me March 17, 1891, No. 448,430, but without the axle-rest there described. A is the base-bar of the runner, bent up alike at both ends, and S is its steel shoe. B is an upright standard, of wood, having its upper end concave to receive hub H and a tenon on its lower end, which is inserted in a mortise in base-bar A . D is a brace shaped like an inverted letter U , having the ends of its two legs bent outward at right angles to form feet. The hub is held fast on B by the brace D , which embraces it and is drawn tight on it by bolts going through both its feet and the base-bar and others going through its side and the standard B . L is an improved form of duplex truss, the bars x and y composing which are riveted or bolted together, the improvement consisting in separating the bars x and y which compose it laterally near the crown of the truss far enough to receive standard B and brace D between them on the hub, the crowns of the bars x and y being looped or concave for a seat for the hub. The truss-bars x and y are held fast to the hub by the looped yokes K K , which have lips turned up on their ends to prevent the clips $nnnn$, which secure them to the truss-bars x and y , from slipping off. This combination of the several parts is believed to be strong enough to resist the lateral swing of the machine or load when

going rapidly around a corner and to sustain any load that will ever be required of it. This method of construction is also applicable to the building of a sled by fitting the crowns of truss-bars x and y to the square cross-bar of the same.

In Fig. 1, E denotes the bar used in one form of extending the nose of the runners to carry a connecting-rod for opposite runners far enough forward to clear all parts of the machine when in use, if it is not desirable to make the runner long enough for this purpose. When it is found necessary to extend the runners in this way, I use the combination connecting-rod hereinafter described.

In Fig. 2, b denotes a connecting-rod made of a round bar of steel one and one-eighth inches in diameter, having loops formed on each end to fit on the turned-up ends of the runners both before and behind. I prefer this connecting-rod to any other where it can be used, because it requires but a few seconds to apply it to the runners and makes the strongest possible loose connection with the runners.

In Figs. 2, 4, and 6, f denotes a connecting-rod which I use with the extension-bar E or without it on the rear runners for engines. It is made of a round iron rod threaded for nuts on each end and a sheath of gas-pipe, which pipe f' is interposed between the runners, and the rod goes through both the pipe and the runners. Then the nuts are screwed on, which press the runners against the ends of the gas-pipe, thus holding them in line, but allowing them a sufficient independent motion, the hole through the runners being larger than the rod f . If preferred, the rod can be headed on one of its ends.

On some hook-and-ladder trucks it is desirable to carry the nose of the rear runner under the side or foot board of the truck, and on some trucks the nose cannot be more than eight inches high and clear the bottom of the footboard when going over an uneven road. In such cases this combination-rod cannot be used, because it would be too near the ground, and I use a piece of gas-pipe f^2 , Fig. 5, of suitable length, either with the ends flattened to be perforated for bolts to go through or having pieces of iron welded in the ends for the same purpose or a flat bar of steel of suitable size. These rods (I use two) are connected to the duplex truss L about one foot above the ground on both limbs of the trusses in couplings E' , provided for the purpose, which are attached to one of the bolts that go through the truss-bars x and y , binding them together. These couplings (see Fig. 5) are preferably made of flat bars of metal, having their lips e' turned up on one end to engage the outer edge of the truss and having their inner ends twisted so that when bolted to the truss they shall stand edgewise, and both ends are perforated for a bolt to go through, there being an opening between the two to receive the connecting-rod, which is prevented

from rattling by screwing up the nut on the bolt going through both the rod and the coupling, there being spring enough in the coupling to permit this, but is allowed to work on the joint thus made. (See Fig. 5.)

In Fig. 2, g g denote check or draw chains which are provided with screw-buckles g' for straining them tight and which connect the hind runners to the forward axle or transient bolt, as may be most desirable. These screw-buckles are unnecessary when removable shackles described below are used. Hooks for the chains may be bolted to any part of base-bar A of the hind runners, which may be found most convenient, forward of standard B , or a shackle may be used with the bolt going through the standard, or they may be fastened to the connecting-rod, as shown in Fig. 2. The latter connection is made by passing iron rod f through pieces of metal g^2 , which are linked to the chains g at one end and perforated at the other end for the rod to go through. (See Fig. 6.) These chain-plates may be placed either inside or outside of the nose of the runner. If placed on the inside, they serve as washers for the ends of gas-pipe f' to bear on. As an attachment for these chains to the forward axle I prefer a horseshoe-shaped flat bar g^3 of round-edged steel clipped to the under part of the middle of the axle, as shown on the axle, Fig. 7. This bar should form a half-circle behind the axle, the inside of it being about two and a half inches from the axle. The chains are to be fastened to the half-round bar with removable shackles g g^4 (shown detached in Fig. 7) after being drawn as taut as can be done with the hands. When the forward axle is turned around, the shackles g^4 slip around on the half-circle g^3 , and the chains g retain their tension. Another device for connecting chains to the forward axle is shown in Fig. 8. This consists of a horseshoe-shaped iron bar g^5 , having links in each end to which the chains are to be shackled after hooking the bar on the transient bolt J at any convenient point. When the axle is turned around, the bolt J turns in connection, and the chains g retain the same tension in all positions of the axle. Neither of these plans will work, however, when the transient or king bolt J is forward of the axle.

In Fig. 2, h h denote an oscillating attachment of the whiffletree to the runners, consisting of a long shackle or U -bolt, a link or links, and a hook for the whiffletree. The U -bolt is placed astride of the forward limb of truss L and is fastened near the foot of standard B or a little forward of it by a bolt going through the eyes of the U -bolt and the standard or the base-bar A , forming a loose joint. This arrangement places the draft as low down as it can be, and therefore makes the draft as easy as possible. It permits a lateral motion of the whiffletree and allows it to rise and fall, making it easier for the horses to draw the machine and also making the

hanging of the harnesses of the horses in the engine-house more convenient, as the whiffletrees can be elevated for that purpose.

R denotes a brake or dog for holding the machine when going down a hill. It is crescent-shaped, working on a bolt which goes through the middle of it and standard B and is to be operated by the same appliance that works the brake on the wheel for which the runner is substituted. The brake should be made in the form of an ellipse or crescent from round-edge tire-steel three by three-quarters of an inch, about sixteen inches long, having both its ends swaged to form hooks about two inches wide, which should be thin on the point, so as to dig into the roadway when in use. Its forward end is coupled in any suitable way, with or without the bar extending upwardly and forwardly from the middle of the brake, as shown in Fig. 2, to the lever-rods, which operate the brakes on the wheels for which the runners are substituted. As these differ on different makes of machines, the manner of connecting the brake-rods with them would vary.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A truss formed of two metallic bars bent in their middle in a pyramidal form, and riveted together for a space about midway between their apex and free ends, which are bent in opposite directions to form feet, and their upper segments drawn apart, laterally, and curved downwardly, to form a rest for a spindle-support near each of the ends thereof, yokes passing over said spindle-support, secured by clips near each of their ends to the truss-bars, substantially as described.

2. In combination with attachable sleigh-runners, a connecting-rod consisting of a round bar of steel of suitable size, having its ends formed into loops adapted to fit over the noses of the opposite runners in each pair of runners, substantially as shown and described.

3. An attachable sleigh-runner having a hub mounted thereon, said hub supported by a standard rising vertically from the base-bar of said runner and having its lower end secured in said bar, the upper end of said standard cut away to receive said hub, a brace passing over said hub and down along the said standard and having its ends turned outward at an angle and secured to said base-bar, said brace being also rigidly secured to said standard, and braces from said base-bar to said standard from front and rear, substantially as shown and described.

4. An attachable sleigh-runner having a hub supported on a central vertical standard secured at its lower end in the base-bar of the runner, its upper end cut away to a depth to receive a hub, a U-shaped brace passing over said hub and secured to the sides of said standard and its lower ends turned out at an angle and secured to said base-bar, a

duplex truss formed with supporting-feet secured to said base-bar at a distance on each side of said central standard and forked laterally at a point below and on each side of said hub and each arm formed thereby curved downwardly to provide a rest for said hub, yokes passing over said hub and secured at each of their ends to said arms at a point near said hub, substantially as shown and described.

5. In attachable front and rear sleigh-runners having spindle-supports mounted thereon, the combination with said runners, of connecting-rods to hold said runners at a fixed distance from each other, each of the rear pair of said runners provided with chains secured to the front leg of the duplex truss having the spindle-support mounted thereon, said chains provided with screw-buckles and joined to a single chain provided with means of attachment to the axle supported by the forward runners, each of the front pair of runners having secured to the central part of the spindle-support thereon, by means of loops, a chain provided at its forward end with means for attachment to a whiffletree, substantially as shown and described.

6. The combination in attachable sleigh-runners, of a chain secured to the front leg of the duplex truss forming a part of the hub-support of each of a pair of rear runners, said chains provided with screw-buckles and joined at their forward ends to a single draw-chain and said draw-chain movably secured to a horseshoe-shaped loop provided with means for attachment to the axle of a vehicle, substantially as shown and described.

7. In an attachable sleigh-runner a base-bar, a standard rising therefrom, a U-shaped brace embracing said standard and provided with a spindle-support, in combination with a duplex truss, substantially as shown and described.

8. The combination in an attachable sleigh-runner of base-bar, mortised for tenon of B, standard B, with tenon, brace D, duplex truss, check or draw chains, oscillating attachment, and brake or dog, R, substantially as described.

9. The combination in an attachable sleigh-runner of a hub, standard B, brace D, duplex truss, yokes, K, K, clips, check or draw chain, g, g, U-bolt and hook, connecting-rods, and brake, R, substantially as set forth.

10. In combination with an attachable sleigh-runner, a long U-shaped shackle adapted to be secured by a bolt through its open ends to the base-bar of said runner, a link, or links secured to the closed end of said shackle and means for attaching said links to the whiffletree, substantially as shown and described.

11. In combination with an attachable sleigh-runner, a long U-shaped shackle adapted to be secured by a bolt through its open ends to the central standard of said runner, a link, or links secured to the closed end of said

shackle and means for attaching said links to the whiffletree, substantially as shown and described.

12. In combination with an attachable
5 sleigh-runner, a long U-shaped shackle adapted to be secured by a bolt through its open ends to the forward limb of the truss of said runner, a link, or links secured to the closed

end of said shackle and means for attaching said links to the whiffletree, substantially as shown and described.

JOHN EDWARD HOBBS.

Witnesses:

JOHN HUMPHREY,
WARREN E. GOODALE.