

(No Model.)

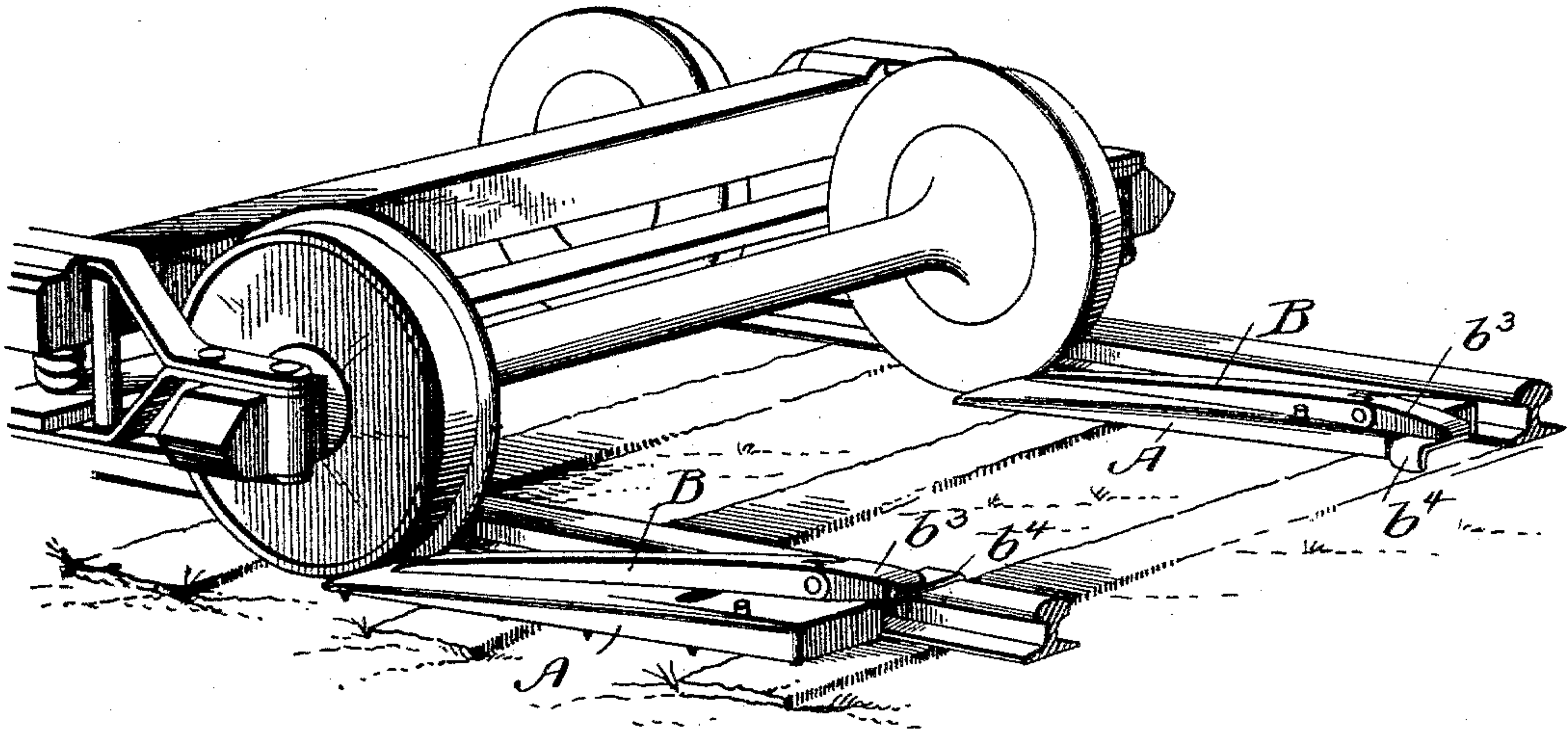
2 Sheets—Sheet 1.

G. A. BULL.  
CAR AND LOCOMOTIVE REPLACER.

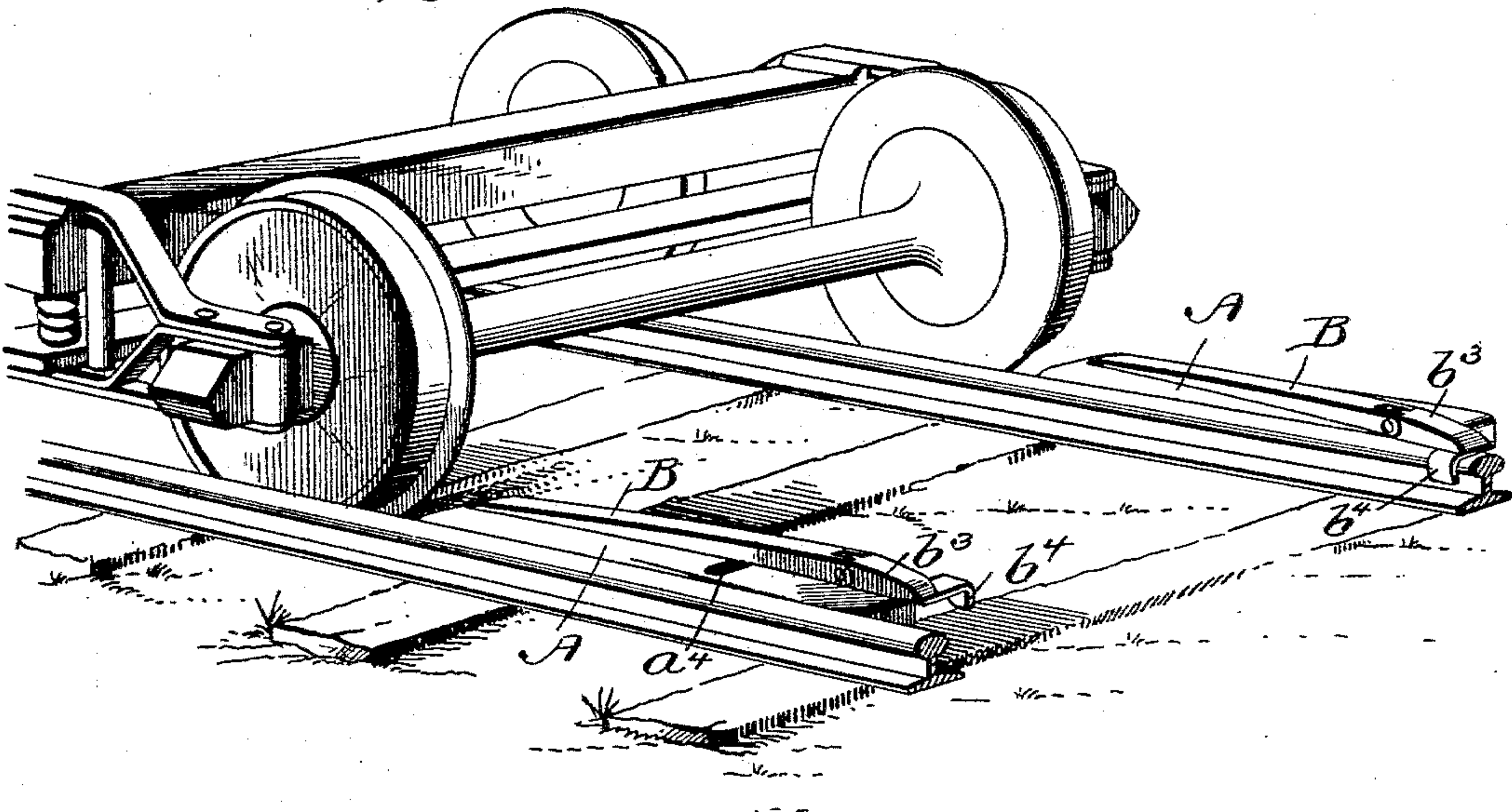
No. 597,951.

Patented Jan. 25, 1898.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
*Wm. H. Shindler.*  
*Wm. H. Shindler.*

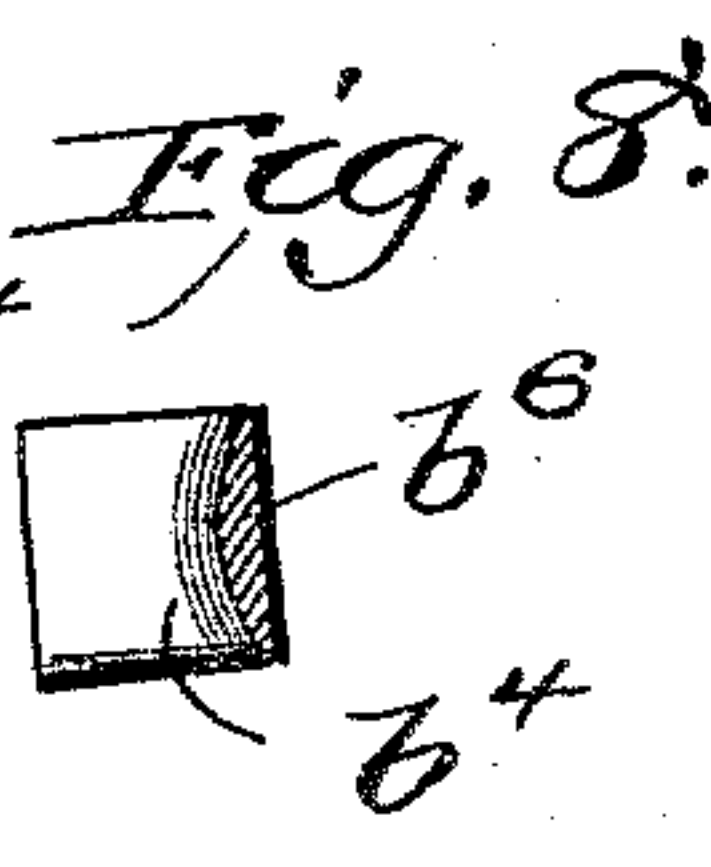
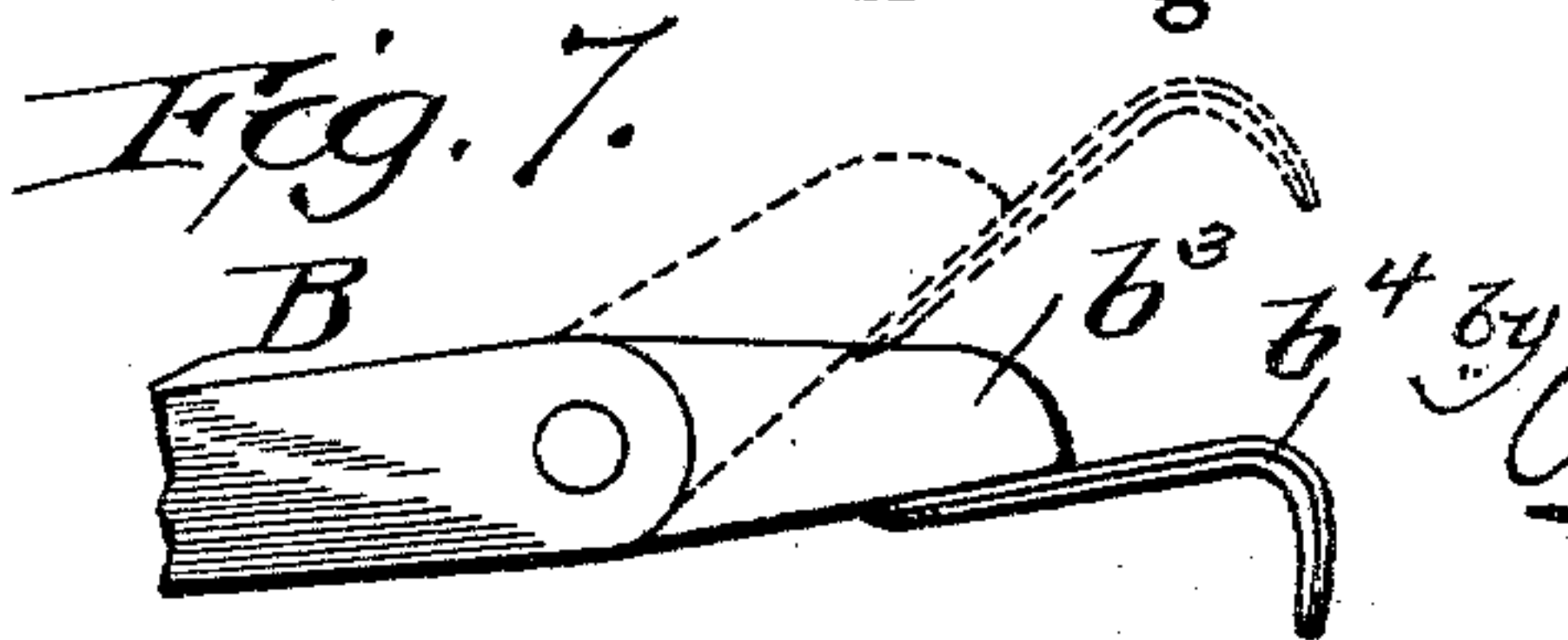
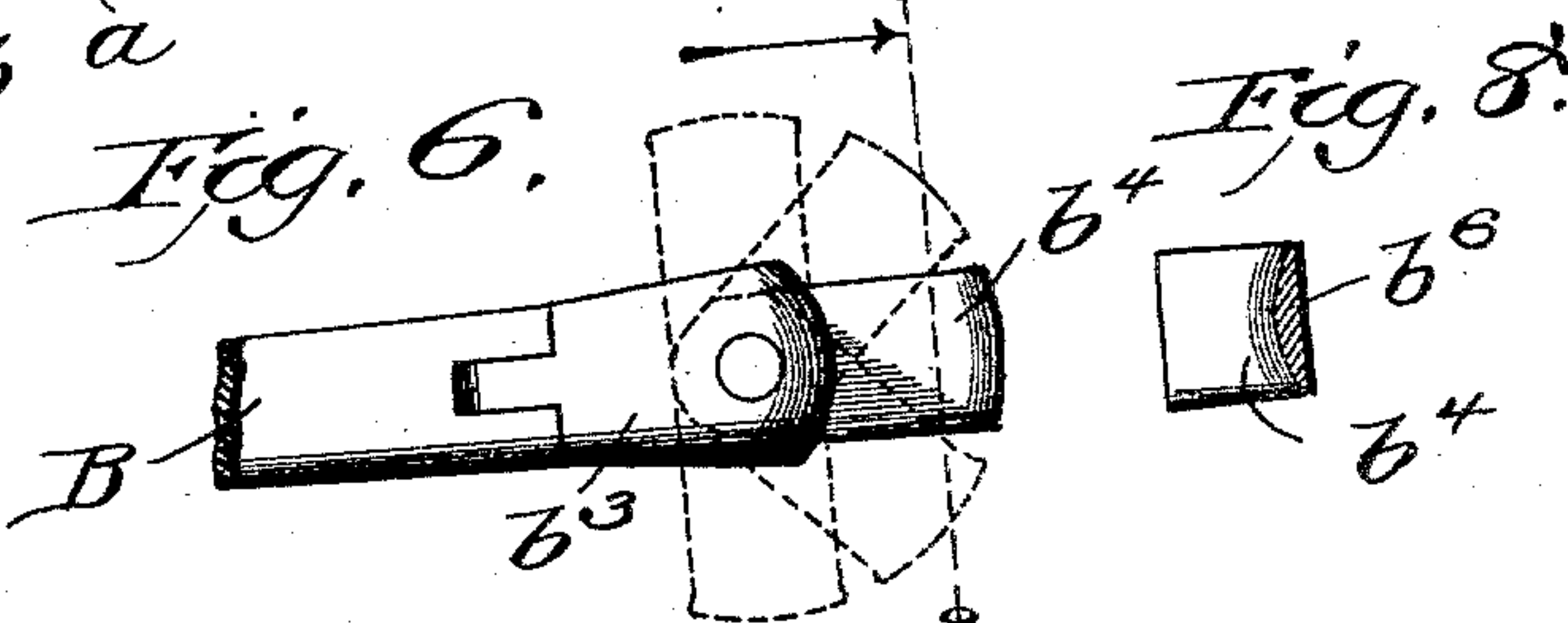
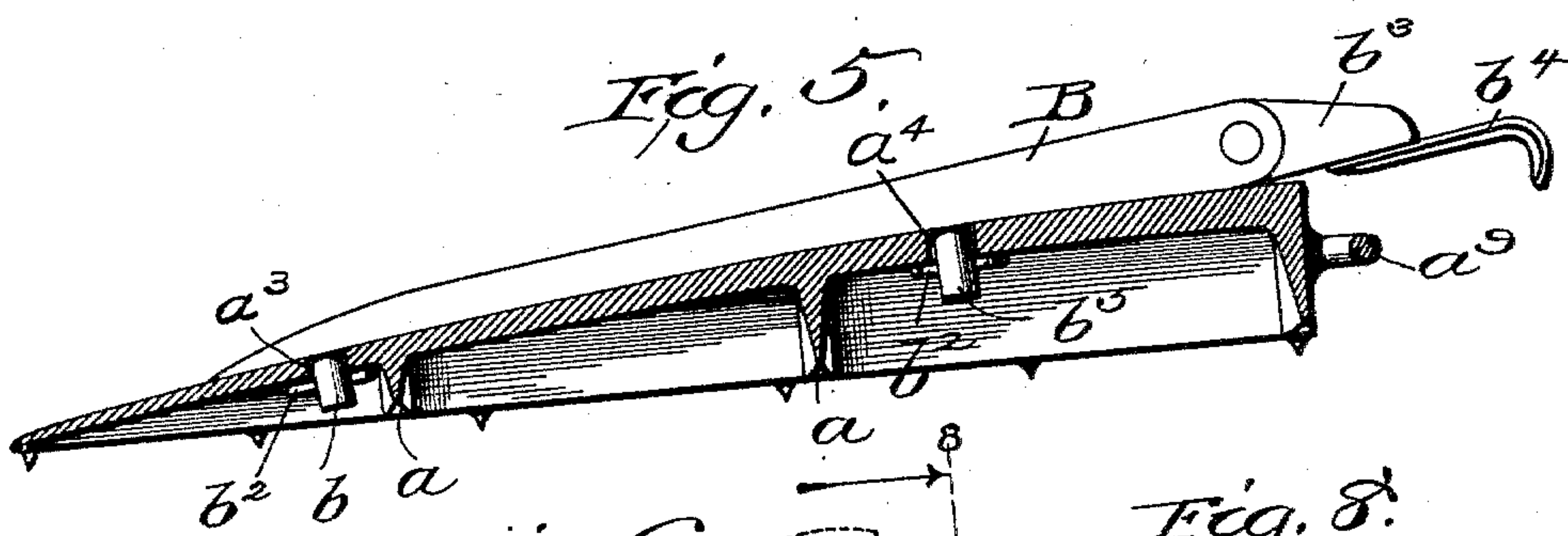
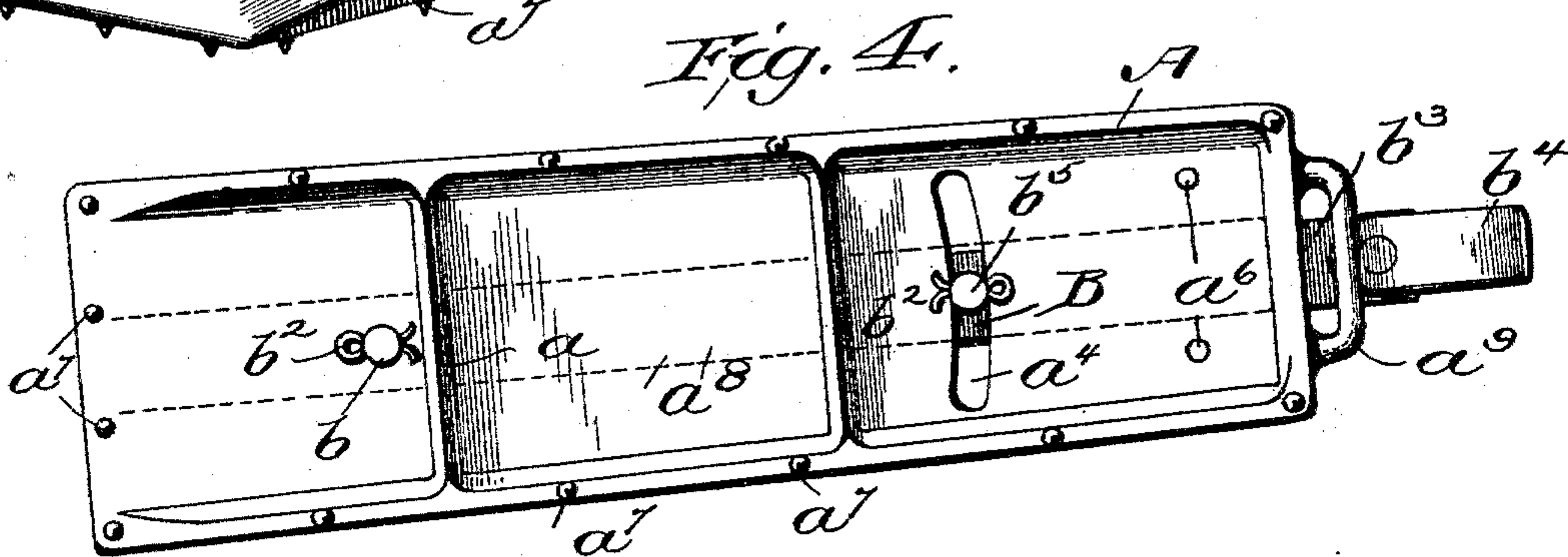
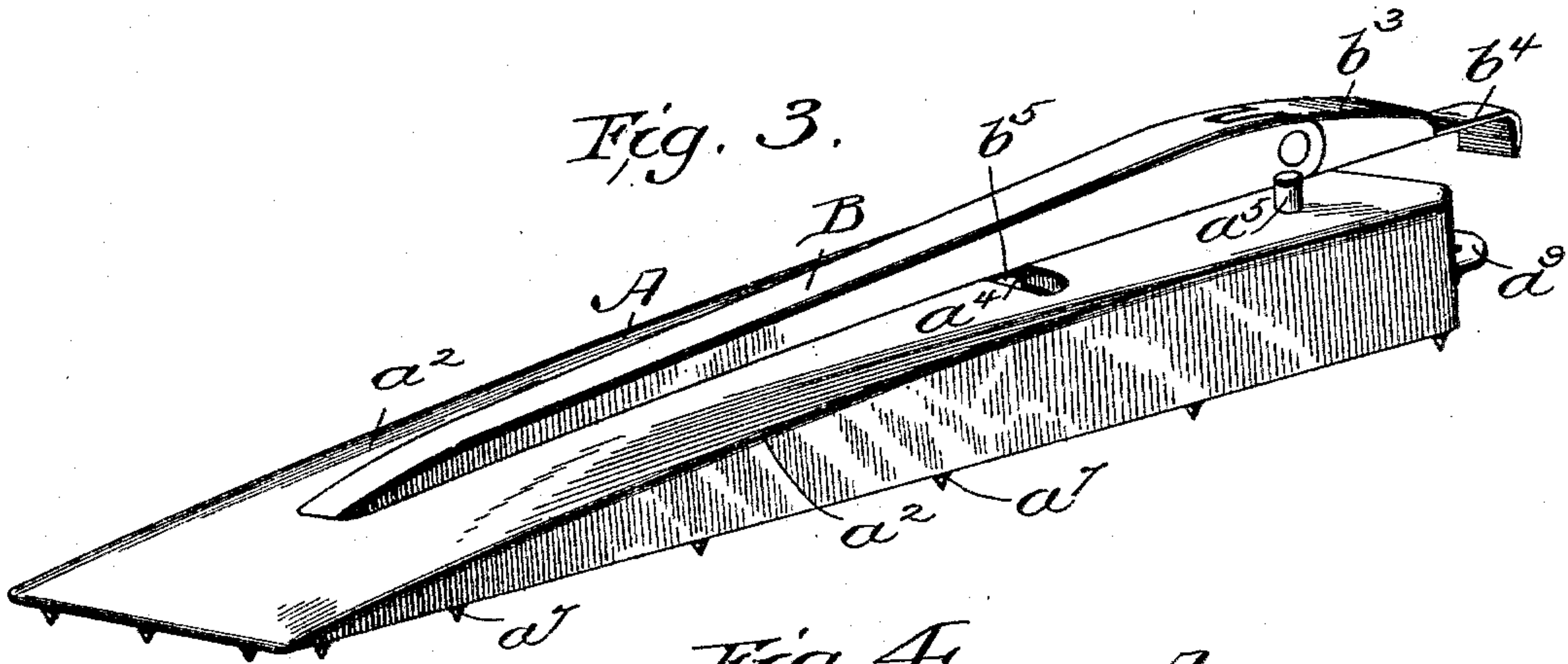
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by *R. S. Dyer*,  
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(No Model.)

G. A. BULL.  
CAR AND LOCOMOTIVE REPLACER.

Patented Jan. 25, 1898.

No. 597,951.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

GEORGE A. BULL, OF MARION, OHIO.

## CAR AND LOCOMOTIVE REPLACER.

SPECIFICATION forming part of Letters Patent No. 597,951, dated January 25, 1898.

Application filed May 22, 1897. Serial No. 637,740. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. BULL, a citizen of the United States, residing at Marion, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Car and Locomotive Replacers; and I do hereby 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.

This invention relates to car and locomotive replacers.

The object is to provide a car-replacer which will be certain in operation to replace a car or locomotive that has left the track without injury either to the rail or to the car-truck. Furthermore, to provide a car-replacer which will be adapted for use on either rail—that is to say, in which it will not be necessary to remove the replacer from one rail to the other, according as the car may be derailed from one or the other rail, but which may be used when the car-wheels are on either side of a rail simply by moving the replacer from one side of a rail to the other side of the same rail. Furthermore, to provide a car-replacer in which all jar or impact between the rail and the car-wheels when the wheels leave the replacer will be obviated, and, finally, to provide a car-replacer which will be simple of construction, efficient and durable in use, which will not be liable to get out of repair from long-continued use, and which may be constructed at a low figure.

In a car-replacer characterized by my invention I employ a skid or base, the same being approximately wedge shape in plan and in elevation. This skid is by preference made hollow on its under side for the purpose of lightness, and in order to strengthen and thereby to present a more stable structure it is reinforced by means of bridges cast integral with the skid. The upper surface of this skid is rounded from toward its center outward and downward on each side, in order to remove unnecessary strain from the tread-bar and also to cause the truck-wheels to take the track in an easy manner and without jar. The tread-bar is pivoted at one end to the skid, preferably by means of a pin, the inner or under end of which is held in place

from disengagement with the skid by means of an ordinary cotter-pin. This bar has a limited range of motion, the same being controlled by means of a slot in the skid, which is engaged by a pin passing through the bar, so that when the bar has reached the limit of movement on either side of the skid it will be effectively held in place against further lateral motion. If desired, pins or stops may be employed for the purpose of locking the bar rigidly in position at its limit of lateral adjustment on either side, so that when the skid is positioned adjacent to a rail the bar cannot move by the strain applied to it by the truck-wheels. In order to adapt the tread-bar for connection with rails of different heights, so as to obviate shoring or bolstering of the skid, as is customary, I provide the free end of the tread-bar with a pivoted knuckle-joint, carrying a swinging hook adapted to engage with the tread of the rail, this hook by preference being semicircular in cross-section, so that when seated upon the rail it will present a firm bearing and thereby remove danger of strain both from the hook and from the knuckle-joint, and at the same time minimize jar to the truck-wheels when the same leave this hook.

As before stated, this replacer is adapted to be used on either side of the same rail, and in order to effect this result the tread-bar is pivoted centrally of the width of the skid, so that by swinging it to its extreme limit either to the right or the left it will be adapted to cause either the flange of the wheel to ride over the rail or the tread of the wheel to take the rail gently and without jar, or the flange of the wheel to ride upon and obliquely across the tread of the rail and to seat itself without jar. By this arrangement the truck will be caused to regain the rail with but slight, if any, jar and without any lateral slide, such as would tend to strain the rail or break the flange of the wheel, whereby damage to the parts mentioned will be obviated.

Further and more specific details of construction will be hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference indicate corresponding parts, I have illustrated a form of embodi-



ment of my invention, although it is to be understood that other forms of embodiment thereof may be employed without departing from the spirit of the same, and in these drawings Figure 1 is a view in perspective displaying a section of track with a truck derailed therefrom, showing my improved replacer in one position for reseating the truck upon the rails. Fig. 2 is a similar view showing the truck on the rail on an opposite side of the track, showing also the position occupied by my improved replacer. Fig. 3 is a perspective view of the replacer. Fig. 4 is a bottom plan view of the replacer, showing the peculiar construction of the under side of the skid. Fig. 5 is a longitudinal sectional view of the device. Fig. 6 is a detached detail view of the end of the tread-bar, showing the different lateral adjustments which may be assumed by the hook on the knuckle-joint that engages the rail. Fig. 7 is a view in side elevation showing the different vertical adjustments that may be assumed by the hook on the knuckle-joint that engages the rail; and Fig. 8 is a transverse sectional view taken on the line 8-8, Fig. 6, showing in cross-section the shape of the rail engaging the hook on the knuckle-joint.

Referring to the drawings, A designates the skid, which, for purposes of strength, lightness, and durability, is constructed in this instance of cast-steel, although any other suitable material combining these qualities may be employed. The under side of the skid is cast hollow and is reinforced by transversely-disposed bridges or braces  $a$ , of which there may be any number, two being shown in this instance. In plan and in elevation the skid is approximately wedge shape, and from the tail or thin edge of the wedge the corners are rounded or beveled, as shown at  $a^2$ , for a purpose which will presently appear.

B designates the tread-bar, which may be constructed of any suitable material, preferably of steel, and in longitudinal section preferably wedge shape, in order that the truck-wheels will be presented to a gradual incline, so as to obviate unnecessary strain as the trucks are being moved over these bars. The rear end of this tread-bar is pivoted to the skid by means of a pin  $b$ , which, by preference, is cast integral with the bar and extends through an opening  $a^3$  in the skid and is held from accidental separation therefrom by means of an ordinary cotter or split pin  $b^2$ , passing transversely through the pin  $b$ . The free end of the tread-bar carries a knuckle-joint  $b^3$ , which is pivotally connected with the tread-bar in this instance by an ordinary rule-joint, and secured to this knuckle-joint is a hook  $b^4$ , which is of a shape to engage the tread of a rail and thereby hold the bar from lateral displacement when the truck is being seated. The knuckle-joint is by preference wedge shape in plan to present under all conditions a broad bearing-surface to the rail. In order to limit the lateral movement or

range of the tread-bar, the skid is provided with a curved slot  $a^4$ , in which works a pin  $b^5$ , carried by the tread-bar, the walls of the extremities of this slot serving to lock the bar in place when it has been moved to its limit on each side. In addition to the slot  $a^4$  and pin  $b^5$  stop-pins  $a^5$  may be employed, which may be inserted in openings  $a^6$  in the skid. By means of the knuckle-joint  $b^3$  the hook  $b^4$  may be adjusted to fit rails of different heights, and by means of a pivotal connection between the hook and the knuckle-joint the hook may be moved, as shown in Fig. 6, to any angle to bring it into locked relation with a rail. By this arrangement the skid may be moved to or from the rail, according as the truck-wheels are close to or removed from the rail, so that the truck may be seated with readiness and ease under all conditions.

As will be seen by reference to Fig. 8, the hook  $b^4$  is approximately semicircular in cross-section, as shown at  $b^6$ , so that when seated upon a rail it will present a firm bearing and thereby remove danger of strain both from the hook and from the knuckle-joint and at the same time minimize jar to the truck-wheels when the same leave this hook.

In order to prevent the skid from slipping, the same is provided with a series of pins or spurs  $a^7$ , which are by preference cast integral with the skid, although, if preferred, they may be detachably connected therewith, and these spurs will sink into the ties as soon as pressure is brought to bear upon the skid and thereby hold the latter securely in place.

In some instances, as where the ties are arranged at a distance apart greater than the length of the skid, it will be desirable to provide means whereby the skid will be prevented from sinking into the ground when pressure is brought to bear upon it and which would result from the hollow construction of the under side of the skid. In order to obviate this, I may cast a bar or strip  $a^8$  the length of the skid or only a portion of the length thereof, as may be preferred. This will present a broad bearing-surface to contact with the ground, as will be readily understood.

The outer or enlarged end of the skid will be provided with a handhold  $a^9$  in the nature of a half-link, by which the skid may be moved about with readiness and ease.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A car-replacer comprising a skid or base, a pivoted tread-bar, and a knuckle-joint on the bar, carrying a hook, substantially as described.

2. A car-replacer comprising a skid or base, a pivoted tread-bar, a knuckle-joint on the bar, and a pivoted hook carried by the knuckle-joint, substantially as described.

3. A car-replacer comprising a skid or base, a pivoted tread-bar, a knuckle-joint carried by the bar, and a pivoted hook carried by the



knuckle-joint, the said hook being approximately semicircular in cross-section, substantially as described.

4. A car-replacer comprising a skid or base, 5 a pivoted tread-bar, a knuckle-joint carried by the bar, the joint being wedge-shaped in plan, and a pivoted hook carried by the knuckle-joint, substantially as described.

5. A car-replacer comprising a skid or base, 10 a pivoted tread-bar, a knuckle-joint carried by the bar and adapted for vertical adjustment, and a hook pivoted to the knuckle-joint and adapted for lateral adjustment, substantially as described.

15 6. A car-replacer comprising a skid or base approximately wedge shape in plan and in elevation, the said skid having its sides rounded from toward the center outward and downward, a tread-bar pivotally connected at one 20 end to the skid, a knuckle-joint carried by the free end of the bar, and a hook pivotally connected with the knuckle-joint, substantially as described.

7. A car-replacer comprising a skid or base 25 approximately wedge shape in plan and in elevation, the said skid having its sides rounded from toward the center outward and downward, a tread-bar pivotally connected at one end to the skid, a knuckle-joint carried by 30 the free end of the bar, a hook pivotally connected with the knuckle-joint, and means for limiting the lateral movement of the tread-bar, substantially as described.

8. A car-replacer comprising a skid or base 35 approximately wedge shape in plan and in elevation, the said skid having its sides rounded from toward the center outward and downward, and provided with a slot, a tread-bar pivotally connected at one end to the skid, a 40 knuckle-joint carried by the free end of the bar, a hook pivotally connected with the

knuckle-joint, and means for limiting the lateral movement of the tread-bar, comprising a pin carried by the tread-bar and working 45 in the said slot, substantially as described.

9. A car-replacer comprising a skid or base approximately wedge shape in plan and in elevation, the said skid having its sides rounded from toward the center outward and downward, and provided with a slot, the skid be- 50 ing cast hollow and reinforced by bridges or braces, and being provided along its lower edges with spurs or spikes, a tread-bar pivotally connected at one end to the skid, a knuckle-joint carried by the free end of the 55 bar, a hook pivotally connected with the knuckle-joint, and means for limiting the lateral movement of the tread-bar, comprising a pin carried by the tread-bar and working in the said slot, substantially as described. 60

10. A car-replacer comprising a skid or base approximately wedge shape in plan and in elevation, the said skid having its sides rounded from toward the center outward and downward, and provided with a slot, the skid be- 65 ing cast hollow and reinforced by bridges or braces, and being provided along its lower edges with spurs or spikes, a tread-bar pivotally connected at one end to the skid, a knuckle-joint carried by the free end of the 70 bar, a hook pivotally connected with the knuckle-joint, means for limiting the lateral movement of the tread-bar, comprising a pin carried by the tread-bar and working in the said slot, and a handhold on the skid, sub- 75 stantially as described.

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

GEORGE A. BULL.

Witnesses:

R. G. DYRENFORTH,  
R. M. ELLIOTT.