

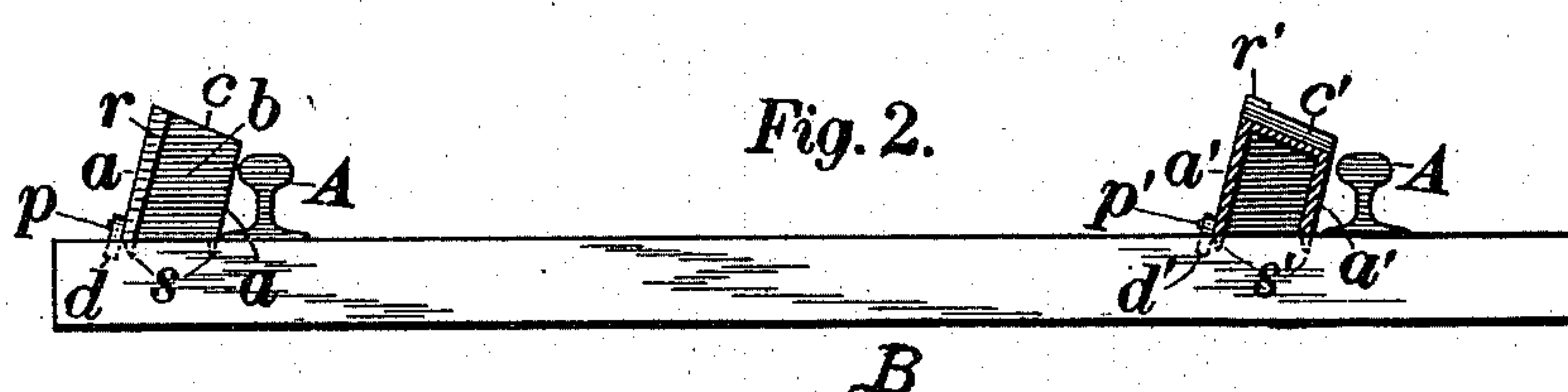
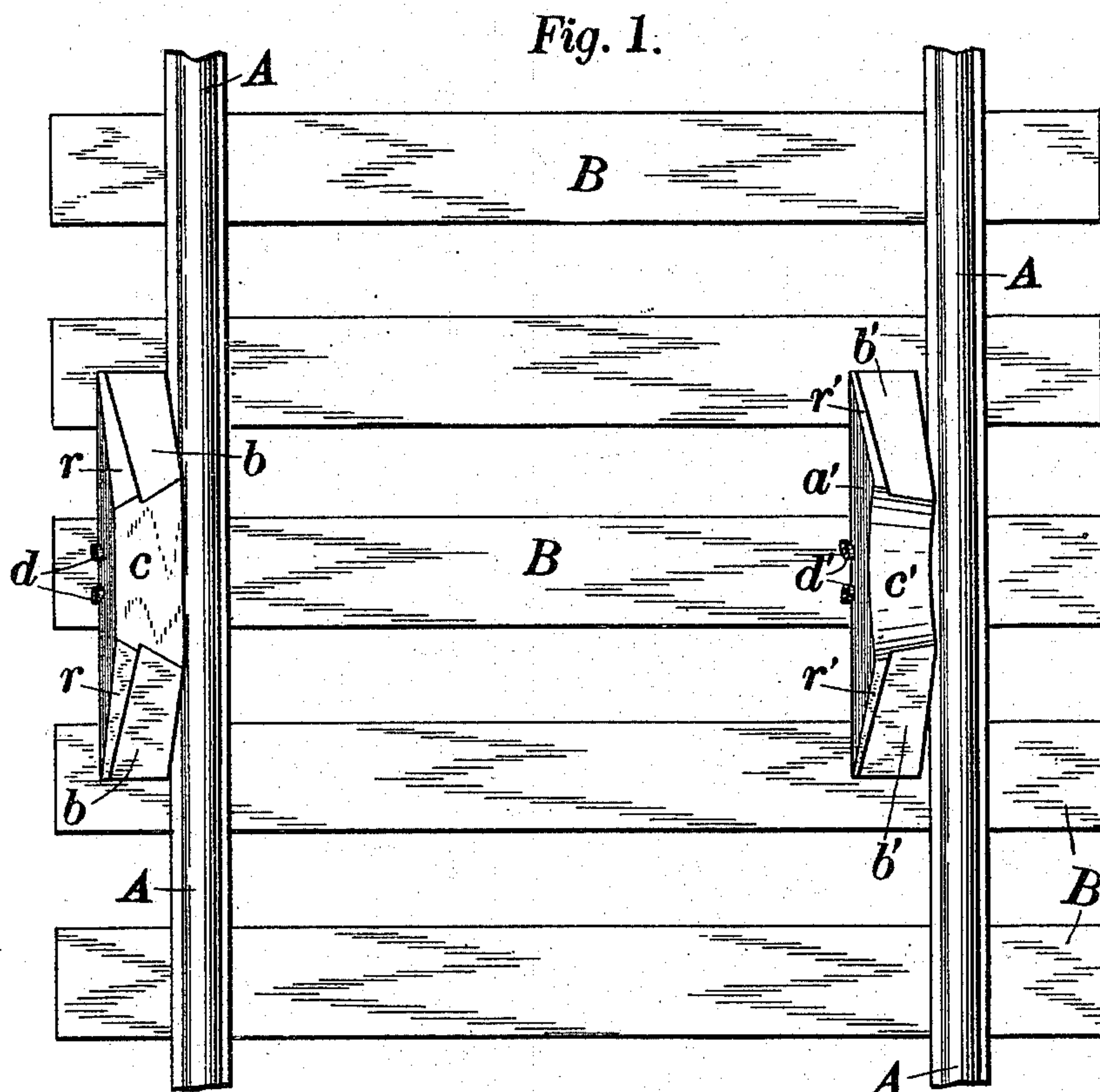
(No Model.)

2 Sheets—Sheet 1.

W. A. ADAMS.
CAR REPLACING FROG.

No. 573,380.

Patented Dec. 15, 1896.



Attest:
H. P. Miller,
H. H. F. Miller.

Inventor,
William A. Adams, per
Henry J. Miller, atty.

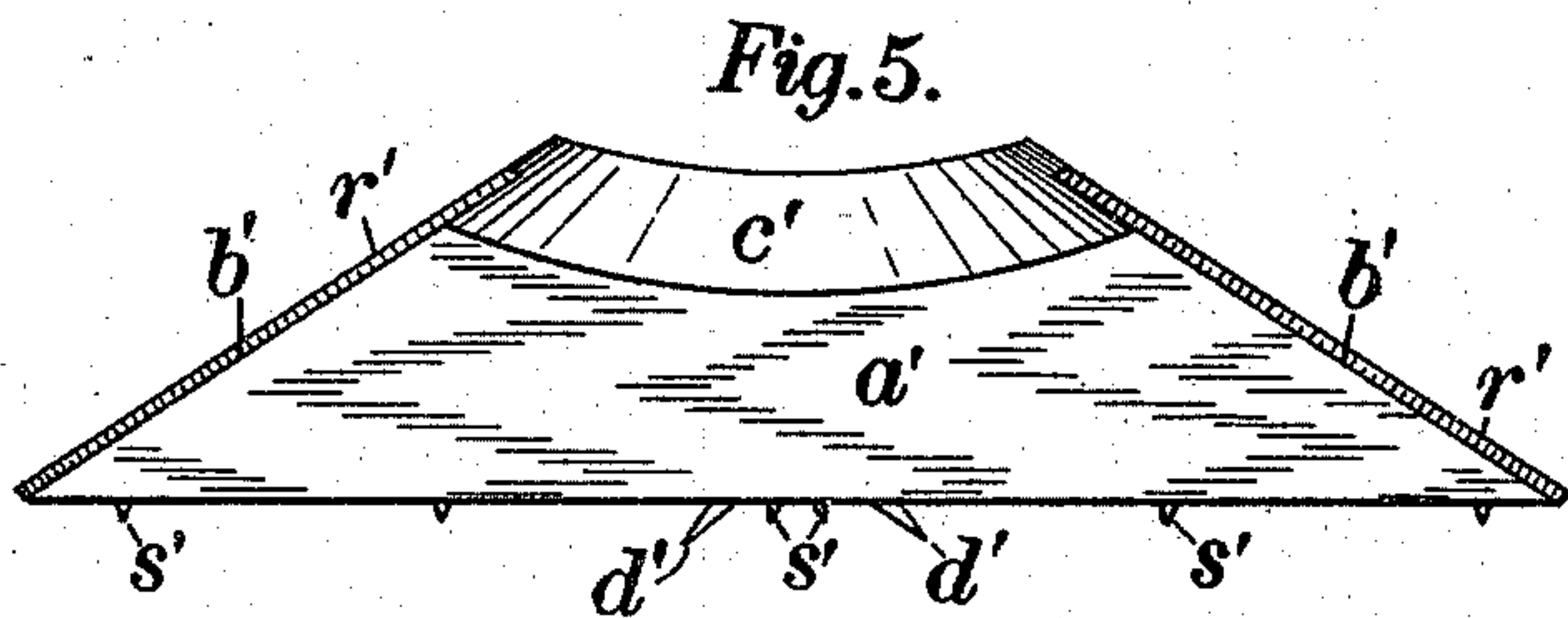
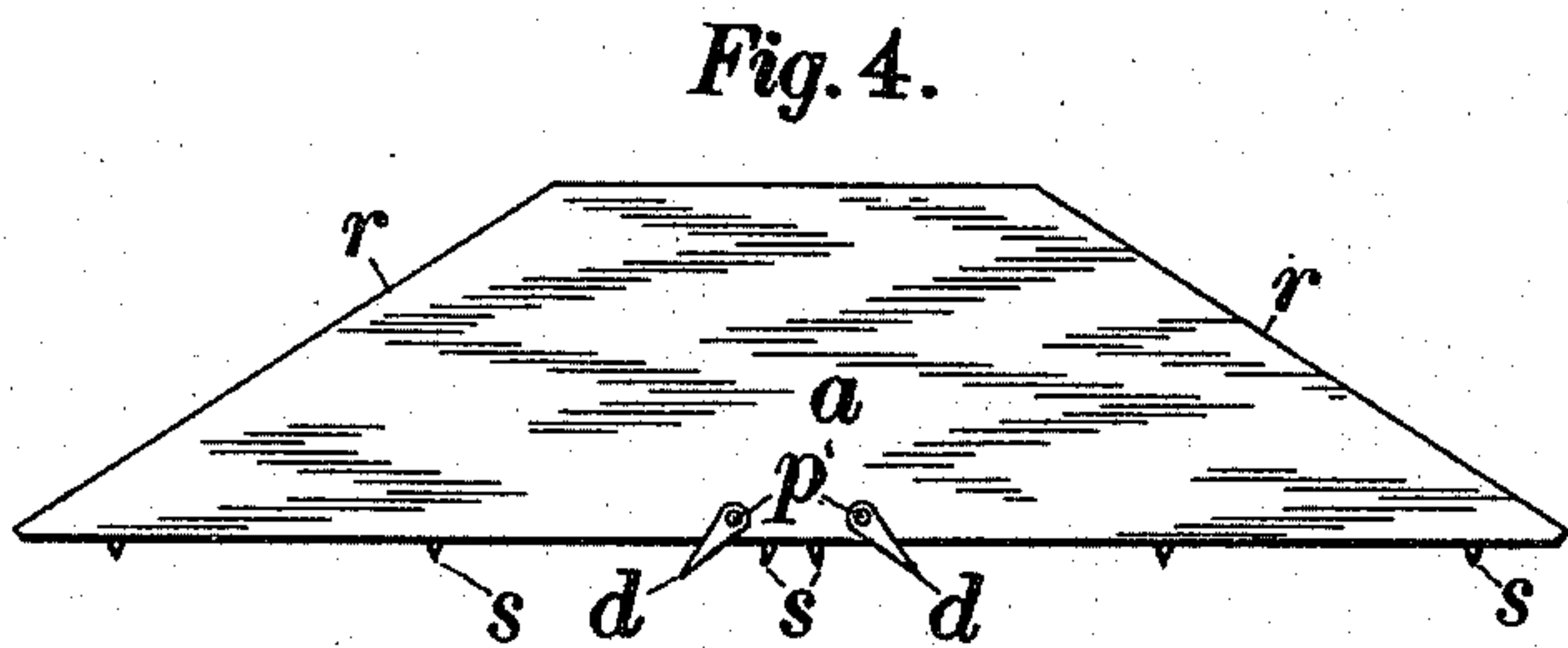
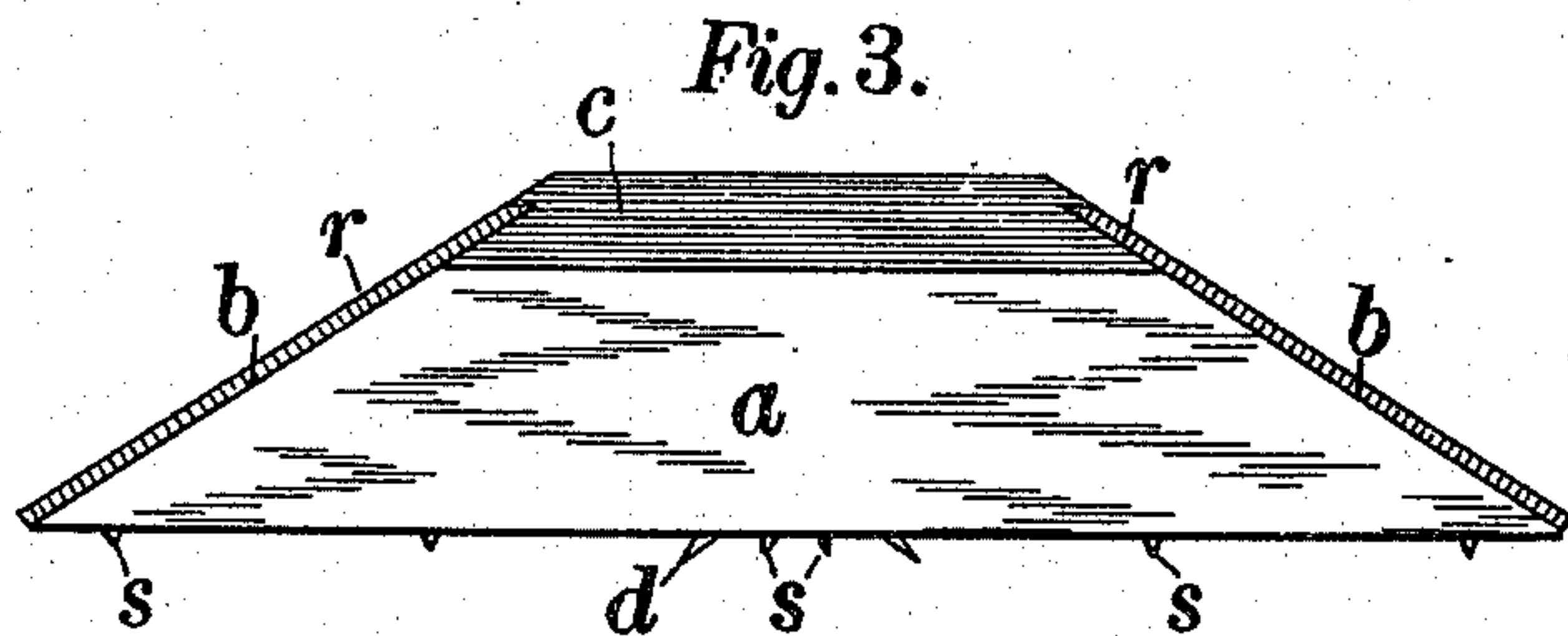
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2 Sheets—Sheet 2.

W. A. ADAMS.
CAR REPLACING FROG.

No. 573,380.

Patented Dec. 15, 1896.



H. Miller
H. L. F. Miller.

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UNITED STATES PATENT OFFICE.

WILLIAM A. ADAMS, OF ELIZABETH, NEW JERSEY.

CAR-REPLACING FROG.

SPECIFICATION forming part of Letters Patent No. 573,380, dated December 15, 1896.

Application filed September 14, 1896. Serial No. 605,687. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. ADAMS, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Car-Replacing Frogs, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to improvements in that class of car-replacing frogs which are commonly provided with one or more longitudinal inclines from the end or ends to receive and elevate the derailed car-wheels and with a laterally-inclined portion at the upper end or summit of such upward incline for sliding the wheel thus elevated laterally from the same upon the adjacent railway-track.

The object of the invention is partly to simplify the construction of such implements and partly to increase their effectiveness and positiveness of operation.

The invention consists in the particular construction and combination of parts herein shown and described.

In the annexed drawings, Figure 1 is a plan of a section of a railway-track, showing a pair of car-replacing frogs in place for returning a derailed car-truck to the track; and Fig. 2 is an end view of the same with the inner frog in transverse section at the middle of its length. Fig. 3 is an elevation showing the inner side of the outer frog, and Fig. 4 a similar elevation viewed from the outer side of the same. Fig. 5 is an elevation of the outer side of the inner frog.

By the terms "inner" and "outer" as employed herein is to be understood the relation of the object designated to the railway-track. Thus the inner frog is the one having the least height, which is commonly placed between the rails or inside the track, and the outer frog is that placed upon the outer side of the track, and which is therefore required to raise the wheel sufficiently to permit its flange to clear the adjacent rail in crossing over the latter when being returned to the track.

The rails A A are shown applied to the cross-ties or sleepers B B, to which they are spiked in the usual manner. The outer frog consists of a substantially double-wedge-

shaped hollow block formed with a rectangular base, from which rise the parallel sides *a*, leaning slightly inward toward the track, as indicated in Figs. 1 and 2. The top comprises the two convergently-inclined flat faces *b*, rising from the ends of the base and intersecting and terminating in the laterally-inclined flat face *c*, forming the summit of the frog, guiding-ribs *r* extending along the edge of each face *b*, adjoining the upper edge of the face *c*, for retaining the wheel upon such inclined face in its passage to the summit. The bottom of the outer side *a* is formed with several sharp spurs *s*, adapted to penetrate the ties upon which the frog rests for preventing its slipping when in operation, and to further guard against such displacement I provide at or near the middle of the outer side the holding-dogs *d*, of sharp wedge form, pivoted by means of pins *p* near the lower edge of the side *a* and of a length sufficient to adapt them to project into the ties when inclined downwardly in the direction of the longitudinal thrust upon the frog produced by the ascent of the car-wheel at one end. By the slight lateral inclination of the outer side *a* these holding-dogs are given a lateral inclination, so that any lateral thrust caused by the lateral motion of the car-wheel upon the frog will operate to embed such dogs still farther in the ties and thereby cause them to offer additional resistance to such lateral motion of the frog.

It will be observed that as the base of the frog is rectangular the inclined faces rising from its ends can have no lateral inclination to impel the car-wheel transversely while being raised to the required height, and that the thrust of the car-wheel against the frog being only in a direction parallel to its length there is no tendency of the car-wheel to tip the frog until it has reached the middle portion, which is the point of greatest stability.

The inner frog is constructed with a rectangular base, sides *a'*, slightly inclined to the vertical, and longitudinally-inclined faces *b'*, with guiding-ribs *r'*, and differs from the outer frog only in the character of its laterally-inclined upper face or summit *c'*, which is concaved so as to impel the wheel forward as well as outward upon its arrival at the end of the upward incline. It will be observed that this

impulse in a diagonal direction given to the inner car-wheel is transmitted through the axle to the outer wheel and induces a lateral sliding movement to the latter upon the flat surface *c*.

By providing the concaved surface *c'* upon the inner frog I am able to form the longitudinally-inclined faces extending upwardly from the ends of the blocks of practically the same extent and inclination, so as to produce uniformity of their action until both wheels are elevated above the level of the adjacent rails, when the diagonal slipping of the wheel upon the inner frog produces the necessary lateral impulse to cause the positive action of the lateral inclines at the top of both frogs.

The inner frog, like the outer, is provided with integral spurs *s'* upon the lower edge of one of its sides *a'*, which is provided in addition with holding-dogs *d'*, mounted upon the pivotal pins *p'*.

Having thus set forth the nature of the invention, what I claim herein, and desire to secure by Letters Patent, is—

1. The car-replacing frog consisting of a hollow, substantially double-wedge-shaped block with rigid spurs formed upon the lower edge of one of its upright sides to which are pivoted by means of suitable pins *p* the holding-dogs *d*, as and for the purpose set forth.

2. The combination, with a car-replacing

frog of substantially double wedge shape for elevating the outer wheel of a derailed truck preparatory to returning it to the track, of a second frog of substantially double wedge shape having its summit inclined laterally and concaved as described for impelling the inner wheel of the truck both forwardly and transversely of said frog to the adjacent railway-track, as and for the purpose set forth.

3. A car-replacing frog consisting of a hollow substantially double-wedge-shaped block having a rectangular base and longitudinally-inclined flat faces rising from the ends of the base and intersecting and terminating in a laterally-inclined concave face forming the summit, whereby a car-wheel rolling upon the same from one end is first permitted to retain its initial course to the upper extremity of the longitudinally-inclined flat face, and is then impelled by said concave upper face of said frog both longitudinally and transversely to insure its lateral dislodgment from the top of the frog, substantially as herein shown and described.

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

WILLIAM A. ADAMS.

Witnesses:

H. N. F. MILLER,
HENRY J. MILLER.