

No. 688,067.

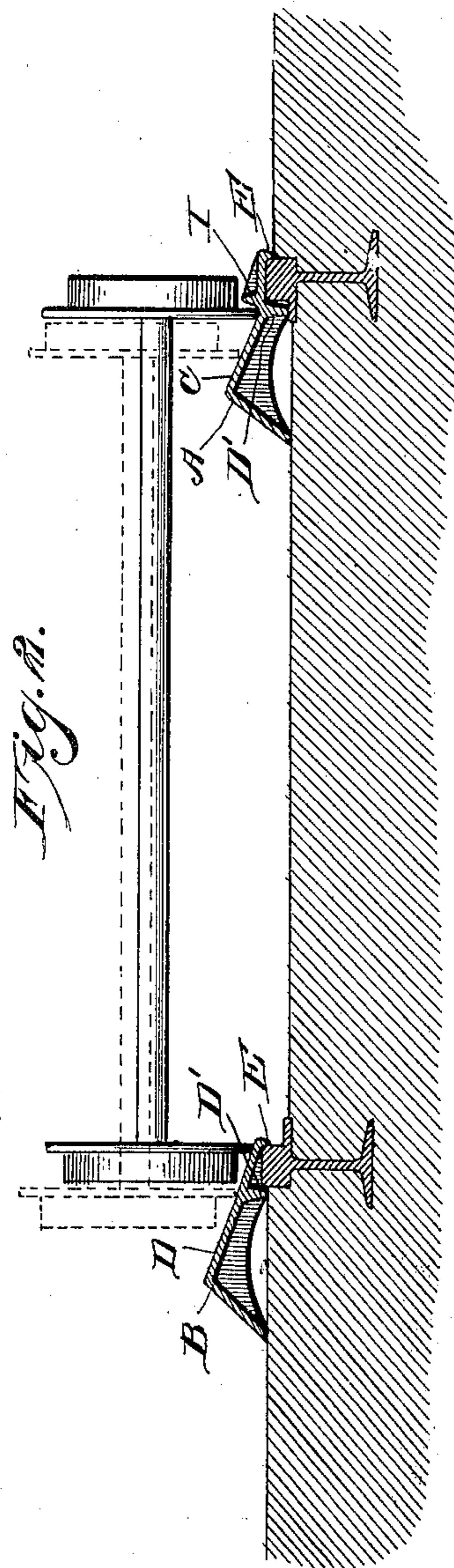
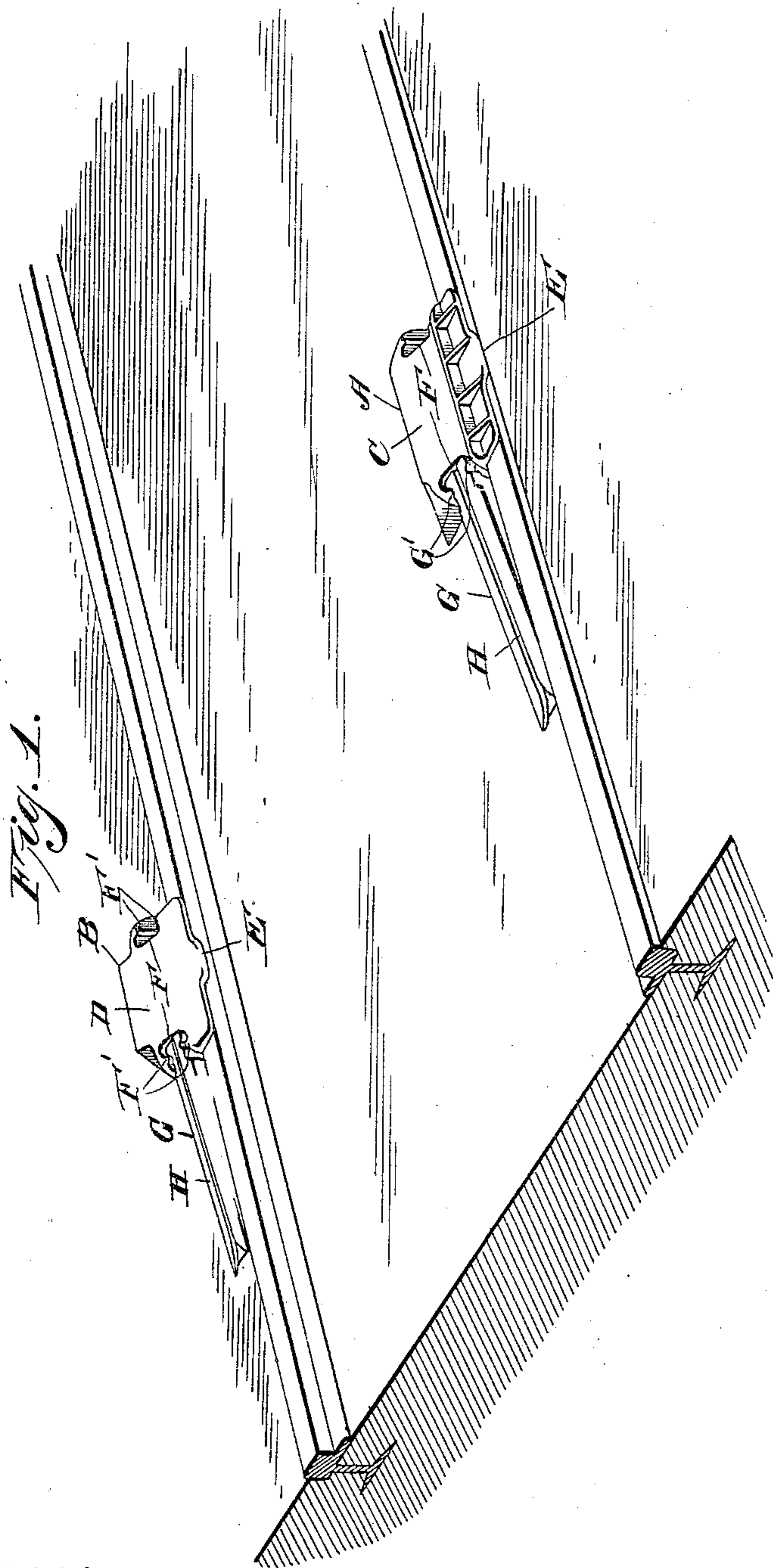
Patented Dec. 3, 1901.

T. CRAWFORD.  
CAR REPLACER.

(Application filed Oct. 3, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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L. H. Morrison

Inventor  
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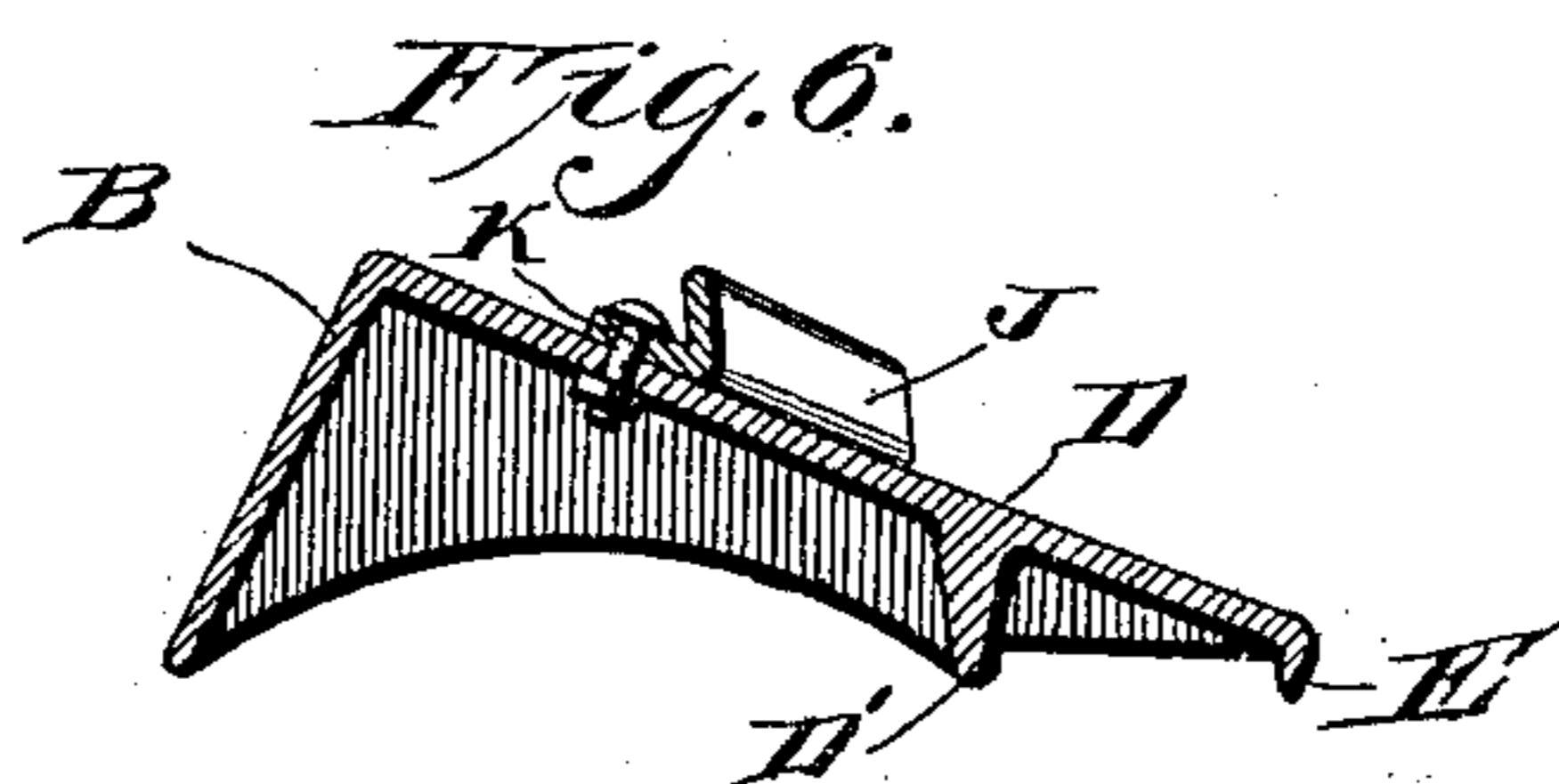
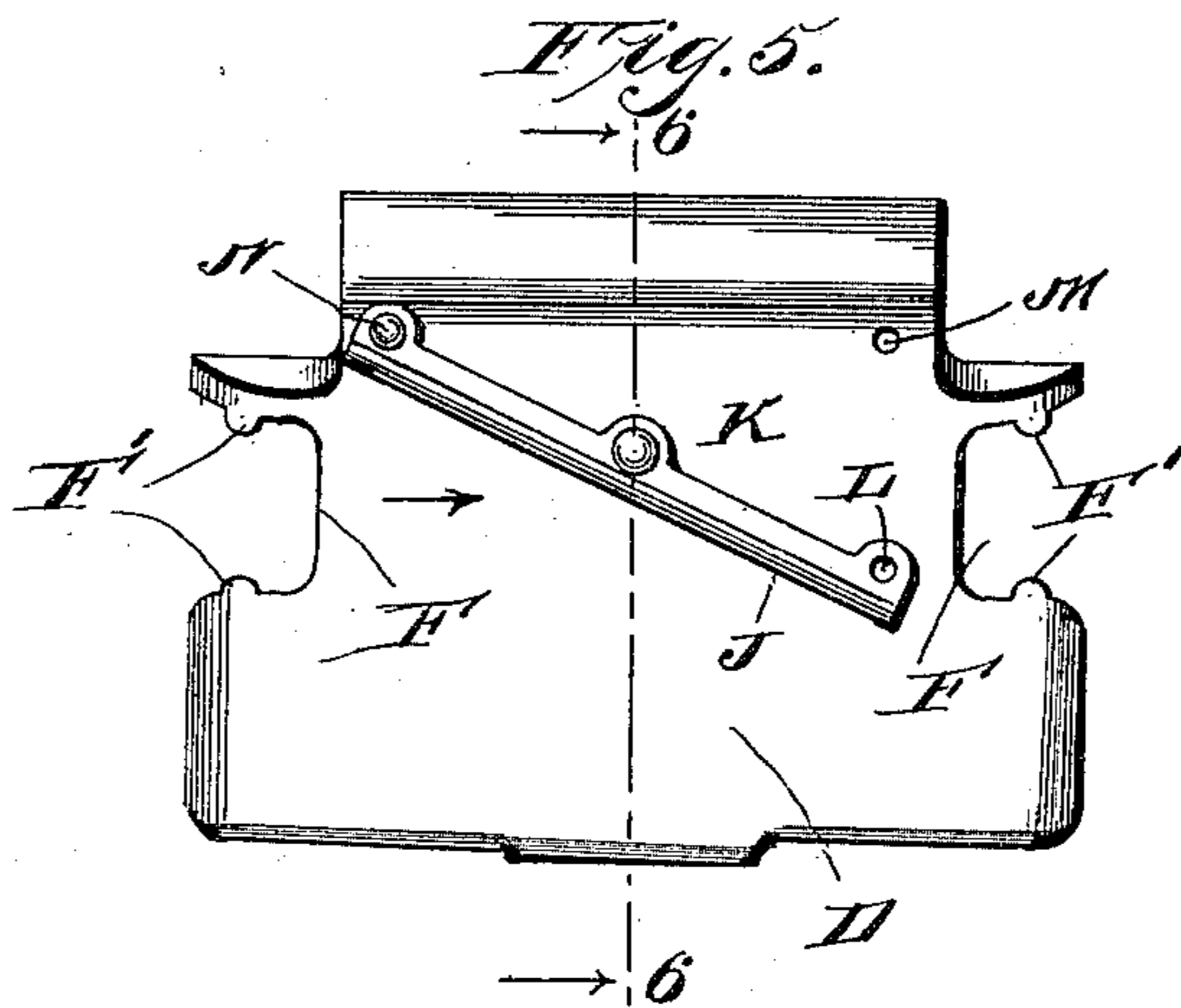
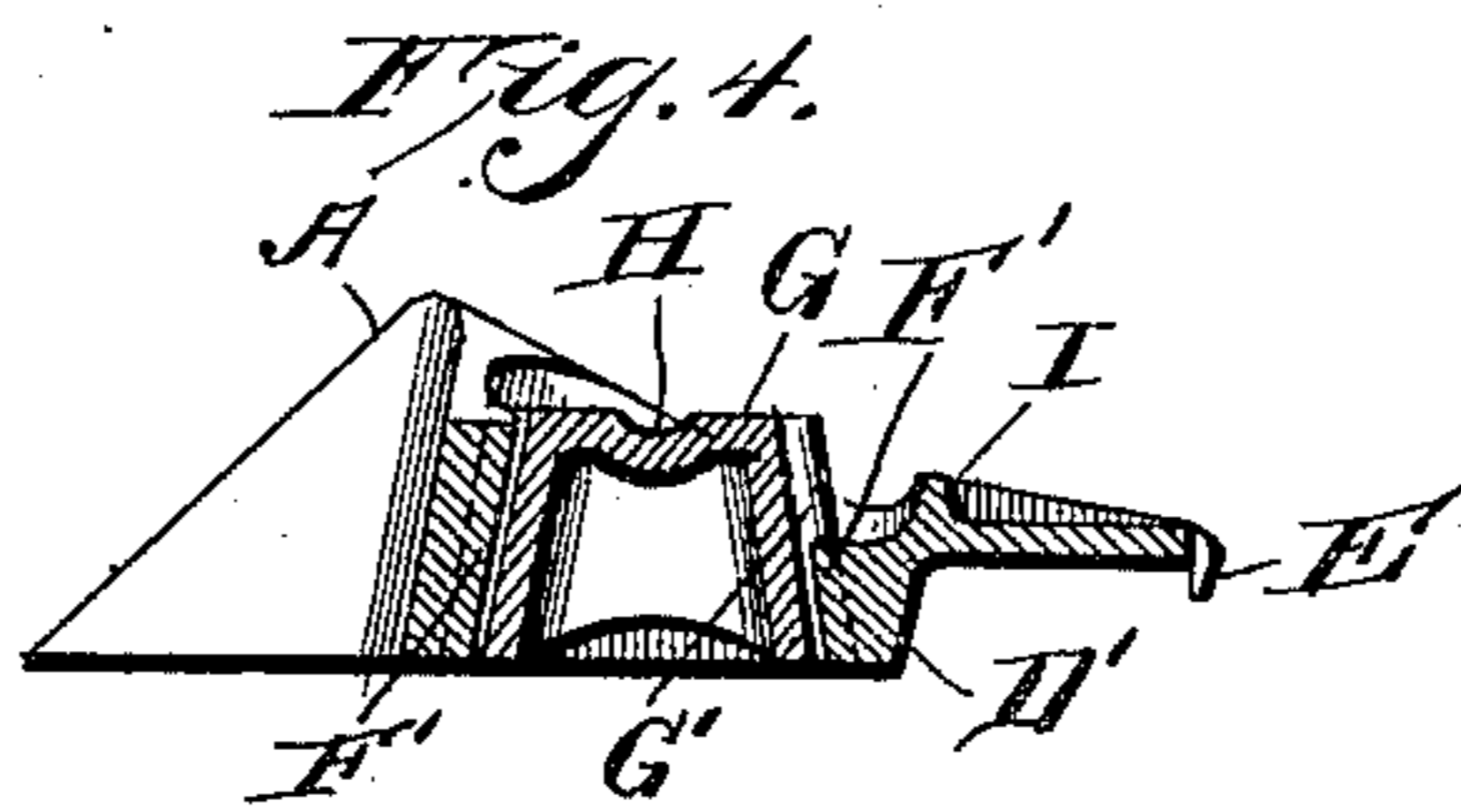
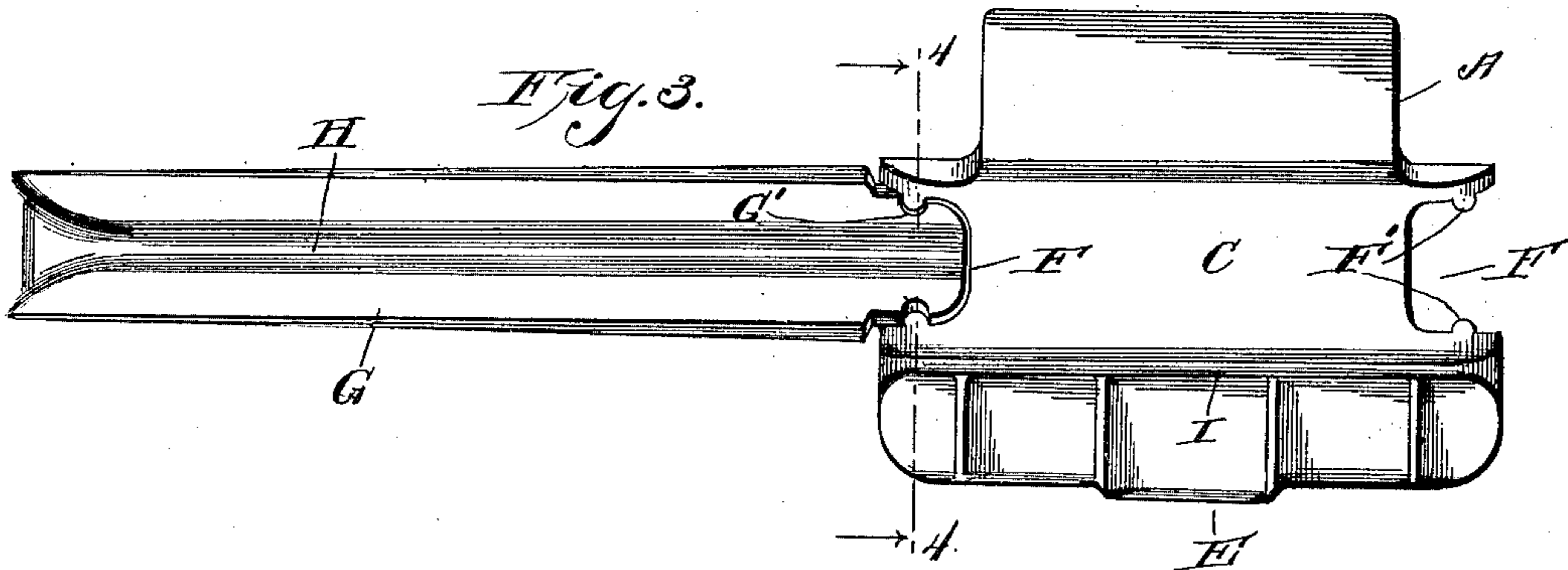
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2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

THOMAS CRAWFORD, OF PHILADELPHIA, PENNSYLVANIA.

## CAR-REPLACER.

SPECIFICATION forming part of Letters Patent No. 688,067, dated December 3, 1901.

Application filed October 3, 1901. Serial No. 77,386. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS CRAWFORD, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Car-Replacers, of which the following is a specification.

My invention relates to a new and useful improvement in that class of railway appliances known as "car-replacers" or "wrecking-frogs," and has for its object to provide appliances of this description which will be arranged in pairs, one upon the inside and one upon the outside of the rails, by which a derailed car can be positively elevated and guided back upon the rails in a quick and effective manner; and a further object of my invention is to so construct the appliances that each will only consist of two parts, and thereby will be convenient to handle and manipulate and be very durable.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of two rails, showing my invention applied thereto; Fig. 2, a cross-section of a road-bed, showing the manner of applying the replacers to the rails; Fig. 3, a plan view of the replacer used upon the inside of the rail; Fig. 4, a section on the line 4 4 of Fig. 3; Fig. 5, a plan view of the replacer used upon the outside of the rail; Fig. 6, a cross-section on the line 6 6 of Fig. 5.

My invention is intended for an improvement upon patent Serial No. 47,967 for car-replacers, allowed me March 28, 1901. In this former invention I utilized an inclined sliding platform for conveying the derailed car to the rail. The two replacers used upon each side of the rails were counterpart of one another, and said replacers were independent of the rails and not supported thereby. I have found by experiment that the sliding platform may be dispensed with, and by giv-

ing the body portion a little greater incline the wheels of the car will slide down the incline without the use of any movable part. I also found that it is more advantageous to have the replacers supported by the rail, so that they will not be liable to move out of position as the car is being elevated thereon. I have also found by experiment that the car would be liable to overshoot the rail and pass to the other side of the same if nothing were provided for stopping the same at the proper point. Therefore in this application I have made provision to overcome all the disadvantages found by experimenting.

In the drawings, A represents the inclined body portion of the car-replacer which will be used upon the inside of the rail, and B represents the inclined body portion which will be used upon the outside of the rail. In street-railways the road-bed is lower between the rails generally than it is upon the outside of the same. Therefore the two body portions will necessarily have to be made to correspond to these different levels; but of course this does not make any material difference in the construction of the body portions except that they may be made higher or lower. In steam-railways or street-railways where T-rails are used and where rails are raised above the road-bed or ties the body portions will necessarily have to be considerably higher to correspond. Both body portions A and B consist of the laterally-inclined surfaces C and D, and at the rear of both body portions they also incline outward for the purpose of giving more stability to the bodies. At the forward end of the body portions they are each provided with a rib D' underneath, which is adapted to abut against the rail, and the extreme forward end of each of the bodies is provided with a slight lip E to extend over the tread of the rail, and thus confine the rail between the rib D' and the lip E. This is for the purpose of holding the replacers in place relative to the rails. Upon each end of the body portions are formed tapering sockets F, in which are adapted to fit one end of the longitudinally-inclined runways G. These runways are for the purpose of guiding the wheels of a derailed car from the ground upward upon the laterally-inclined surfaces C and D of the body, and

these runways have formed in their upper surfaces the grooves H, in which will run the flanges of the car-wheels, these grooves being wider at the lower end for the purpose of facilitating the guiding of the flanges within the grooves. The sockets F are provided upon each side with the ribs F', and the ends of the runways are provided in the side with the vertical grooves G', in which fit the ribs F' when the runways are placed in position. This will prevent the runways from being displaced longitudinally. The sockets F are arranged upon each end of the body, so that the car may be run upon the bodies from either direction.

The inclined surface D of the body B is a plain incline from the rear to the forward end of the body; but upon the body portion A is formed a raised rib I, running longitudinally of the body, against which the flange of the car-wheel will abut and be stopped as it slides down the incline C, and when the car-wheel strikes this rib I it will be in a position directly over the rail, so that when the car is pulled from off the body the wheels will drop upon the rails in their proper position, and by reason of the wheels being connected together by the axle the wheel that is on the body portion B will also be stopped in the proper position directly above its rail. Therefore in operation it is simply necessary to place the replacer upon the rail, and if the car is derailed five or six inches from the rail there is sufficient room between the rib D' and the lip E to allow the replacers to be slanted sufficiently to bring the lower end of the runways G underneath the wheels. Then by pulling the car forward the wheels will be caused to ride upward upon the runways and upon the laterally-inclined surfaces C and D, when they will naturally slide downward until the flange of the car-wheel strikes the rib I, and then as the car continues to move forward it will roll off the body portions directly upon the rails. If the car is derailed a considerable distance from the rails, it will necessitate one or two operations to bring the wheels within the proper distance of the rails to place the same thereon.

While I have found by experiment that the plain inclines C and D are all that are necessary to cause the wheel to slide laterally, it may be in some cases advantageous to use something which will positively cause the wheels to slide downward upon the incline, in which case I prefer to use a construction such as shown in Figs. 5 and 6, in which the guide-bar J is used, which is pivoted at its center at the point K to the inclined surface of the body portion. In each end of the guide-bar J are formed holes L, and in the rear portion of the body are formed holes M. The guide-bar when inclined in one direction, as shown in Fig. 5, will bring the hole L in one end of the same in register with one of the holes M in the body, when the bolt N may be inserted through both holes and hold the guide-

bar in position. Then if the wheels of the car are coming upon the body portion in the direction of the arrow they will strike this inclined guide-bar J and be forced down the incline of the body. If the car were coming from the opposite direction, the guide-bar would be swung so that the incline would be in the opposite direction, and the hole L in the other end of the guide-bar would be brought into register with the other hole M of the body, and the bolt N would then be inserted through these two holes to hold the guide-bar in position.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a car-replacing appliance, two body portions, one adapted to be arranged upon the inside of one rail and the other upon the outside of the other rail, laterally-inclined surfaces upon both body portions inclining toward the rails, recesses upon the under side of said body portion adapted to fit over the tread of the rail, sockets formed in each end of the body portions, longitudinally-inclined runways adapted to be fitted within said sockets for the purpose of guiding the flange of the car-wheels from the ground upward and upon the laterally-inclined surfaces, a rib raised above the body portion arranged upon the inside of the rail, said rib so placed as to stop the car-wheel directly over the rail, substantially as and for the purpose specified.

2. A car-replacing appliance consisting of two body portions, one adapted to be placed upon the inside of one rail and the other upon the outside of the other rail, laterally-inclined surfaces formed upon said body portions, inclining toward the rails, a rib formed upon the under side of the body portions adapted to abut against one side of the rail, a lip depending from the forward side of the body portions and adapted to fit over the other side of the rail so that the tread of the rail will be embraced between the lip and the rib, tapering sockets formed in each end of the body portions, longitudinally-inclined runways, the higher ends of which are adapted to be removably secured in one of the sockets, a ridge or rib raised above the surface of the body portion placed upon the inside of the rail at the lower end of the laterally-inclined surface, and to be in such a position that the flange of the car-wheel will be stopped against the same when said car-wheel is directly over the rail, substantially as and for the purpose set forth.

3. In a car-replacing appliance, two body portions, one adapted to be placed upon the inside of one of the rails, and the other upon the outside of the other rail, laterally-inclined surfaces formed upon each body portion inclining toward the rails, the rear ends of the body portions being inclined outward and

resting upon the ground or ties, a recess  
formed in the forward end of the body por-  
tion adapted to embrace the tread of the rails  
and be supported thereon, a tapering socket  
5 formed in each end of the body portion, ver-  
tical ribs formed in each side of the socket,  
longitudinally-inclined runways, the higher  
ends of which are adapted to fit within the  
socket, vertical grooves formed in the side of  
10 the higher ends of the runways, said grooves  
adapted to register with the ribs formed in  
the sockets so that said ribs will enter therein,  
a groove formed in the upper surfaces of the  
longitudinally-inclined runways, said grooves  
15 being wider at the lower end for the purpose  
of guiding the flanges of the car-wheels from  
the ground or ties upward upon the laterally-  
inclined surfaces of the body, a raised rib or  
ridge formed upon the body portion arranged  
20 upon the inside of the rail, said rib or ridge  
being in such a position at the lower end of  
the laterally-inclined surface that when the

flange of the car-wheel abuts against the same  
said car-wheel will be directly over the rail,  
substantially as and for the purpose set forth. 25

4. In combination with a car-replacing ap-  
pliance of the character described, a guide-  
bar J pivoted to the inclined surface of the  
body portion at the center of said bar, holes  
L formed in each end of the bar, holes M 30  
formed in the rear portion of the body, a bolt  
N adapted to pass through the hole L in one  
end of the guide-bar and through one of the  
holes M for the purpose of holding the guide-  
bar in the proper position, substantially as 35  
and for the purpose specified.

In testimony whereof I have hereunto af-  
fixed my signature in the presence of two sub-  
scribing witnesses.

THOMAS CRAWFORD.

Witnesses:

L. W. MORRISON,  
H. B. HALLOCK.