

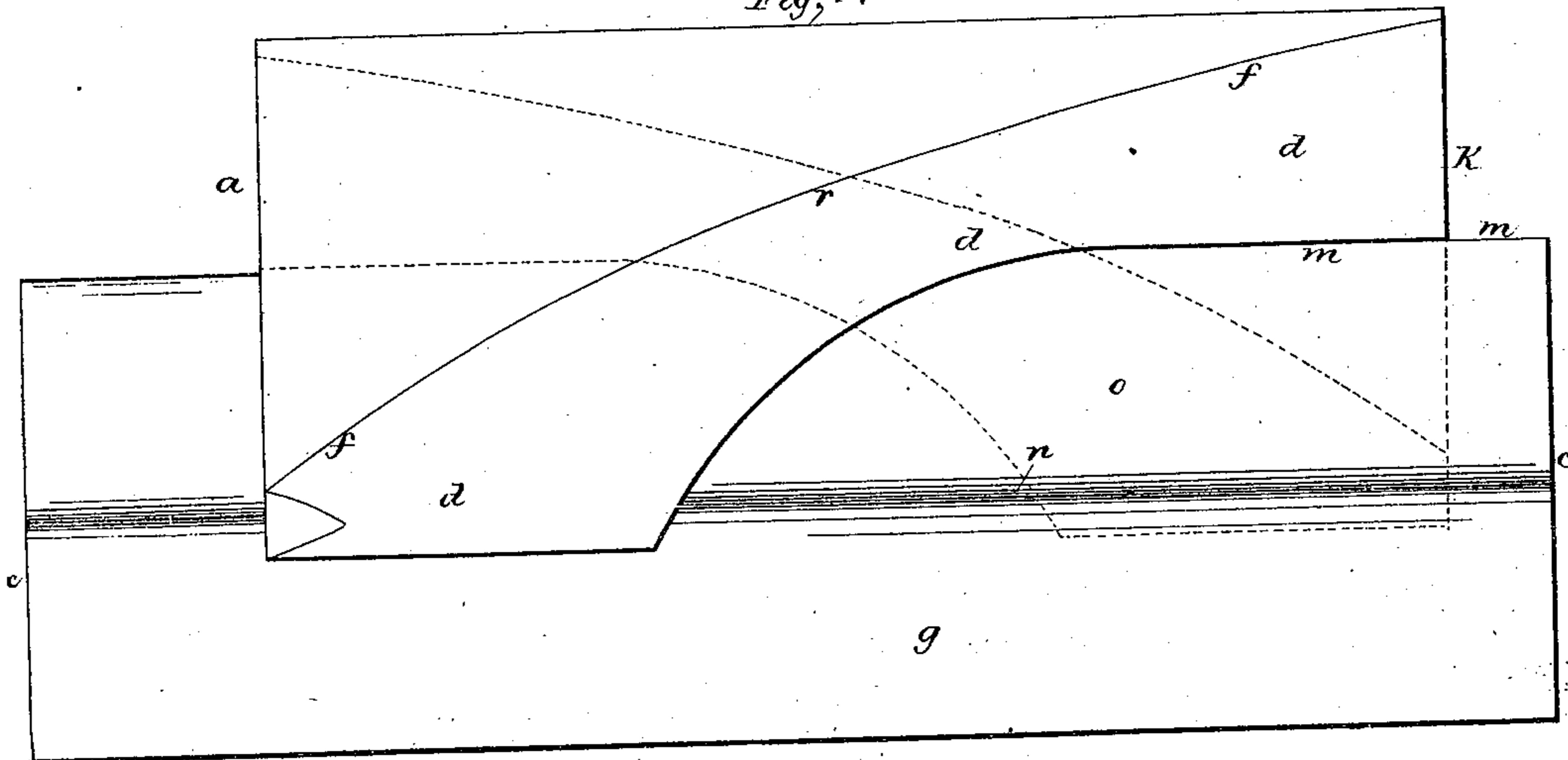
D. H. Shirley

Car-Replacer

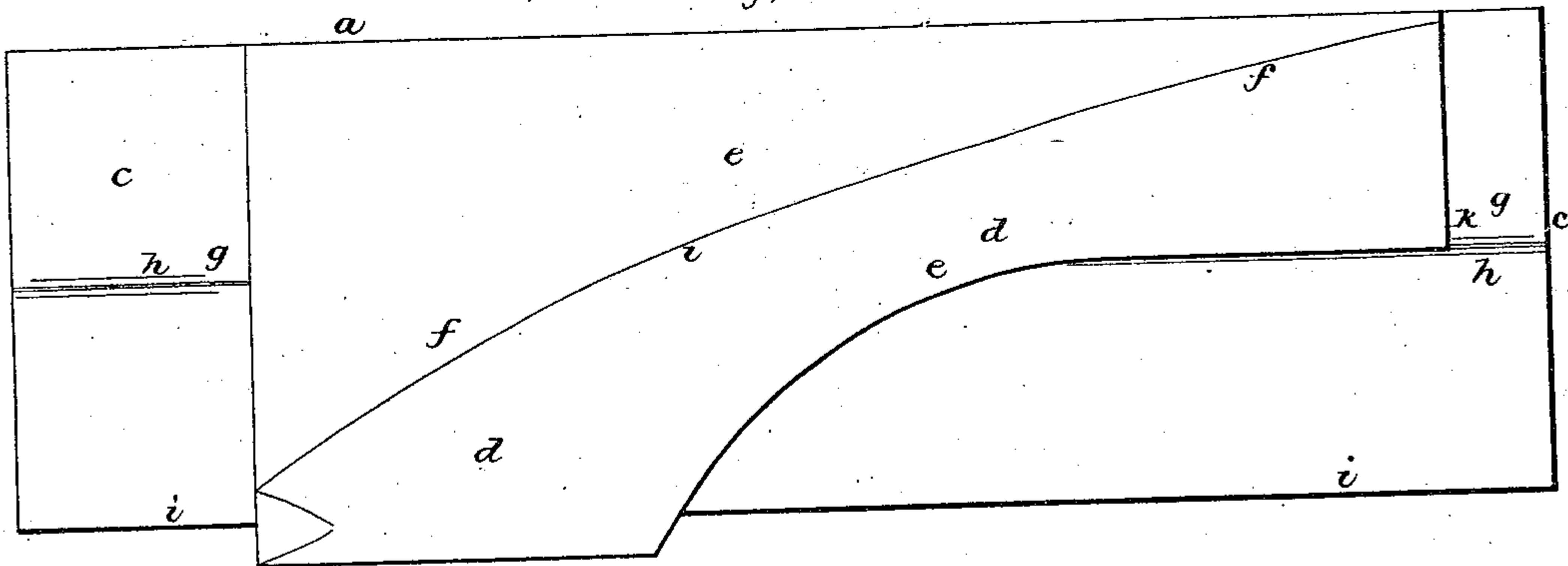
N^o 34,532.

Patented Feb. 25, 1862.

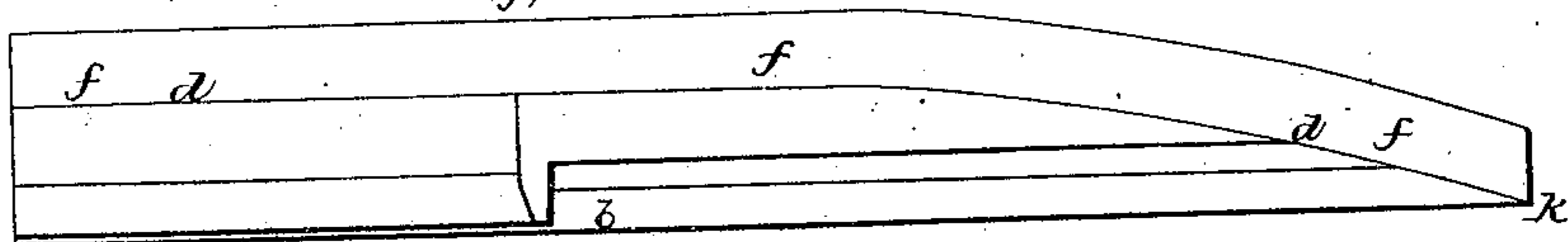
Fig; 1.



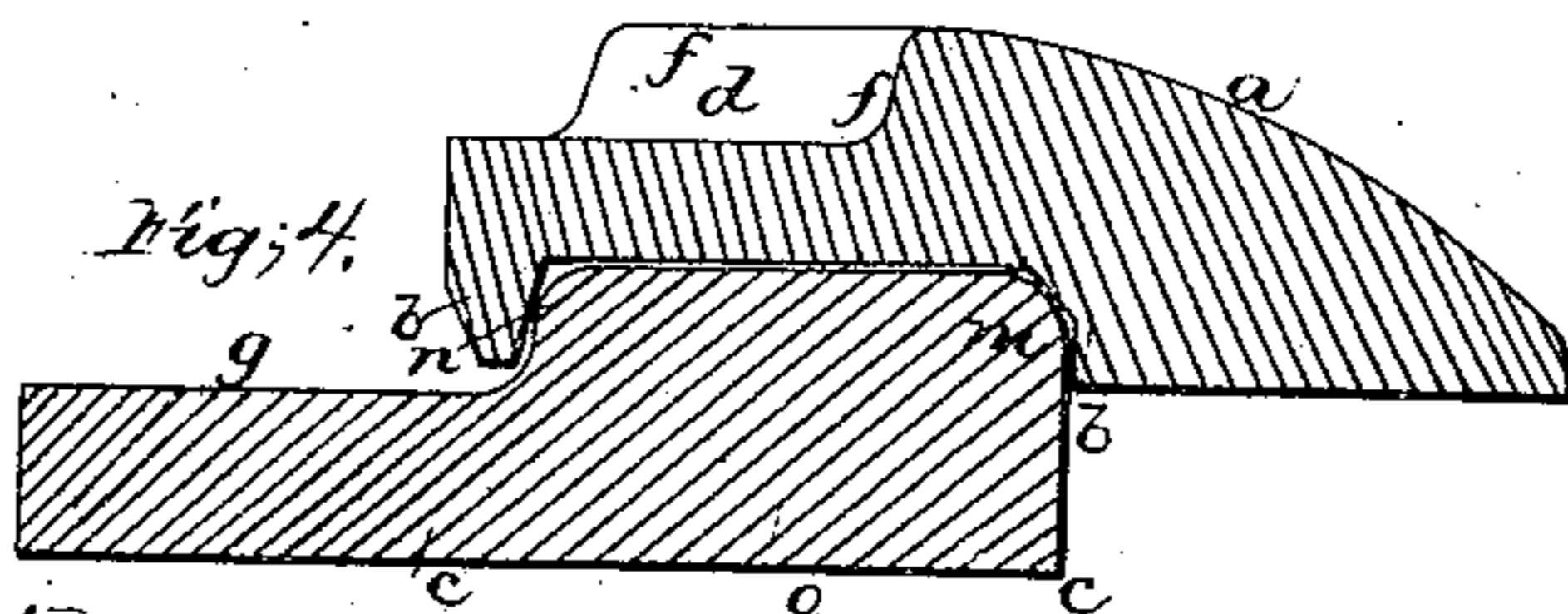
Fig; 2.



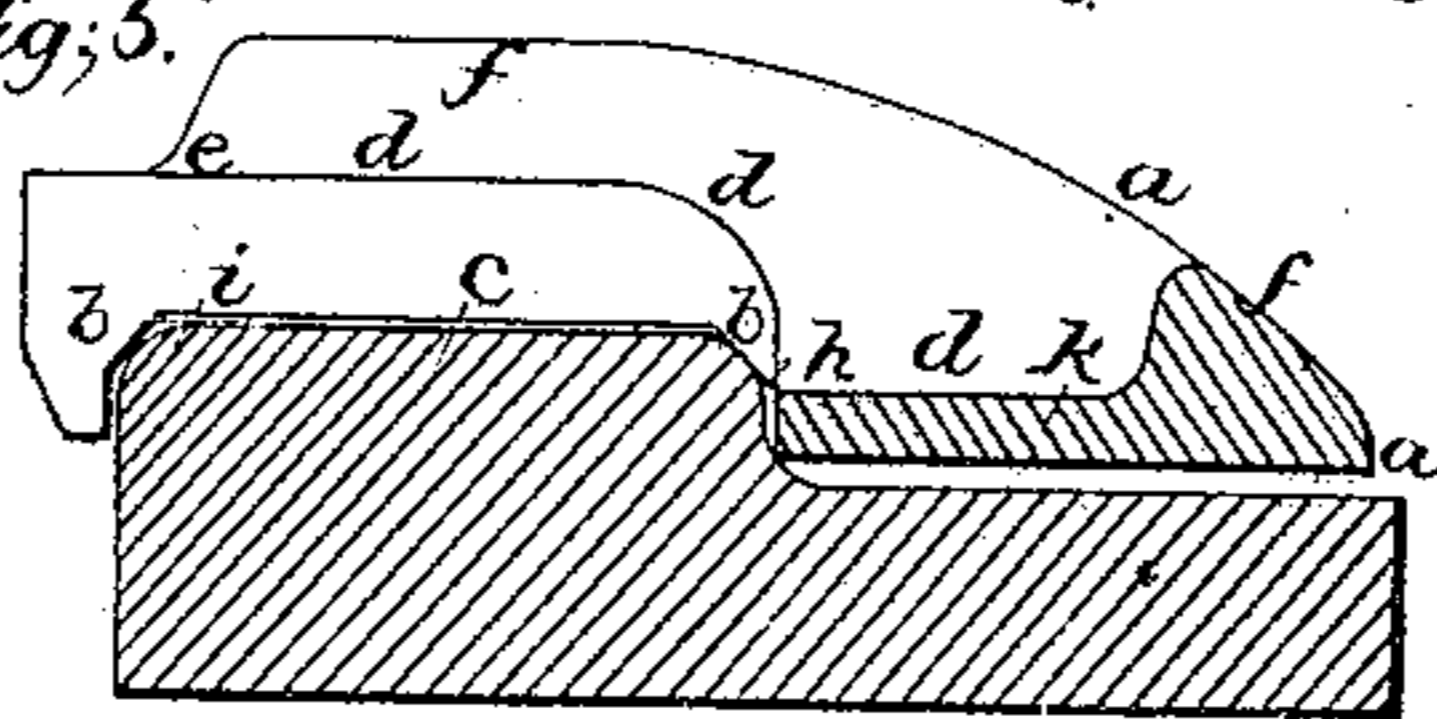
Fig; 3.



Fig; 4.



Fig; 5.



Witnesses;
Joseph Garrett
Albert W. Brown

Inventor;
D. H. Shirley

UNITED STATES PATENT OFFICE.

DANIEL H. SHIRLEY, OF BOSTON, MASSACHUSETTS.

IMPROVED RAILROAD-SWITCH.

Specification forming part of Letters Patent No. 34,532, dated February 25, 1862.

To all whom it may concern:

Be it known that I, DANIEL H. SHIRLEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new, useful, and Improved Portable Switch to be used for railways; and I do hereby declare that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

Much difficulty and delay have heretofore been experienced in the passage of horse-cars through the streets or crowded thoroughfares of cities and towns from the too frequent necessity of being obliged to turn or guide the cars off and on the rails on account of some obstruction upon the track. The usual manner of removing the cars from the track has been to place some impediment upon the rail—such as a stone, &c.—so that the tread of the car-wheel in striking it would be raised, and thus disengaging the flange of the same from the groove of the rail, leave the car-wheel free to move in a direction at an angle to the line of the rail, and after having thus removed the car from the rails it could be replaced upon the same only by causing it to be drawn over the surface of the ground until the flanges of the wheel again engaged with the grooves, but the above-described methods of removing the car from and replacing it again upon the rails are both, it is evident, attended with many serious inconveniences—as, for instance, unavoidable delay is experienced in causing the car-wheel to mount or ride over the impediment placed upon the rail, an unpleasant and violent motion is produced, a great wear and tear of the whole car is caused, and many other objections might be enumerated; but they need not be herein particularly specified.

The present invention therefore has for its object the easy and expeditious removal of cars from and the replacing of the same upon the rails at pleasure. I accomplish these results by the use of a portable metallic switch

that can be laid upon and removed from the rails at pleasure, and which is of such a form that while it will be firmly held in position by the rail when placed upon the same it will so conduct or guide the flange of the car wheel or wheels by means of a curved inclined way or groove upon its upper surface as to cause the car to be readily removed from or replaced upon the rails at pleasure.

My improved portable switch is represented in the accompanying plate of drawings, of which—

Figures 1 and 2 are plans or top views of a rail with my improved portable switch applied thereto. Fig. 3 is a side view of the switch. Figs. 4 and 5 are cross-sections of the same when placed upon a rail.

a in the accompanying drawings represents my improved portable switch, made of a plate of metal or any other suitable material, and which is constructed as follows, viz: *b* is a groove or slot in its under surface, conforming in its cross-section, or nearly so, to the cross-section of a rail *c*. Upon the upper surface *e* of the switch *a* is a curved inclined way *d* with a lip *f* for the flanges of the car-wheels to be guided by when passing over the switch, as will be presently more particularly described.

When it is deemed necessary or desirable to pass a car off or remove it from the track, my improved switch is placed upon one or the other of the two rails, according as it is desired to pass the car off either to the right or left of the track. In Fig. 2 the switch is placed upon the left rail—that is, supposing the car to be moving in the direction represented by red arrows in said figure—in such a position that the curved inclined way or groove *d* ascends from the lower surface *g* of the rail and curves from the inside edge *h* of the rail to the outside edge *i* of the same. The switch thus being placed upon the rail and in front of the car, the flanges of the car-wheels as they move over the said rail will in turn abut against the edge *k* of the switch, and moving up its inclined surface *d* will finally strike the curved lip *f* at the point *l*, by which they will then be guided until the wheels have passed over the entire length of the switch *a*, when, as is evident from an inspection of the drawings, the flanges are wholly disengaged

from the groove of the rail, thereby allowing the car to be moved in a direction at an angle to the rail.

From the above description it is evident that the car is removed from the track to the left of the same; but if, on the contrary, it is desired or deemed necessary that the car should be passed off on the opposite or right side of the track my improved portable-switch is laid upon the right rail in the same relative position as that described for the left rail, when the same movement and guiding of the car-wheels occur as have been previously described, the car in this case also being supposed to be moved in the same direction as before—that is, as represented by red arrows in Fig. 2; but if the car is moving in the opposite direction to that hereinabove described and represented by red arrows in Fig. 2, it will be only necessary in order to take the car off of the track that the switch should be laid upon that one of the two rails which is nearest the side to which it is desired to remove the car. The switch that in the first instance, or with the car passing as represented by red arrows in Fig. 1, is adapted for the right rail will be, in the second instance, or with the car passing in the opposite direction, adapted also to the right rail of the track—that is, in each case the rails being designated according to the direction in which the car is moving, and vice versa.

The various positions in which my improved switch is laid upon the rails of street-railways for the purpose of expeditiously removing cars from the same, as may be desired or deemed necessary, having thus been particularly set forth, I will now proceed to describe the reverse of the above or the replacing of the cars again upon the rails, which is also accomplished by my improvements almost instantly and without being attended with the vexatious and wearisome delay that has usually accompanied the same. In order to accomplish this result, the car is, in the first place, brought or pulled up to the track into such a position that the front car-wheel of the same, which moves upon the right rail, Fig. 1, will be near the line of the same. Then the switch is laid upon that rail just in front of the car-wheel before mentioned in the position represented in Fig. 1—that is, with its curved inclined way or groove d rising and curving from the outside edge m to the inside edge n of the raised portion o of the rail. The switch having been thus placed upon the

rail, the flange of the said car-wheel as the car is again moved will strike against the edge k , and, ascending its inclined way d until it impinges against the curved lip f at or near the point r , will then be guided by the same a sufficient distance to bring it (the flange) in proper position to engage with the groove of the rail, the same result also taking place with the car-wheel next behind the one above referred to, as is evident, and therefore needs no further description.

To replace the car upon the track when it is moved in either direction, it will be only necessary that my improved portable switch should be laid upon one of the two rails in the same relative position as that hereinabove particularly described, the mode of operation in each case being the same.

It will be observed from the above that by forming in the under surface of the switch a groove or slot the cross-section of which conforms, or nearly so, to the cross-section of a rail, the switch is thereby firmly held or gripped by the rail when placed upon the same and prevented from wobbling or moving either to the right or left when the car-wheels are passing over it, and that without some such locking or holding device the switch would be practically inoperative.

It is evident that my improvements in switches are also applicable to the rails of locomotive-railways as well as to street-railways, and with the same advantages and results as have been above particularly set forth. It is also still further evident that in order to accomplish all the objects and purposes of my invention it is necessary that two of my improved switches should be provided—that is, a right and left one—the difference between them consisting only in the direction given to the curved inclined way or groove d , as will be apparent without further description.

Having thus described my improvements, what I claim as my invention, and desire to have secured to me by Letters Patent, is—

A portable switch having as its essential elements a curved inclined way or groove, in combination with a suitable locking or clutching device for securely holding the switch firmly upon the rail, substantially as hereinabove described.

D. H. SHIRLEY.

Witnesses:

JOSEPH GAVETT,
ALBERT W. BROWN.