

W. Wickersham.

Railroad Chair.

N^o 80,320.

Patented Jul. 28, 1868.

Fig. 1.

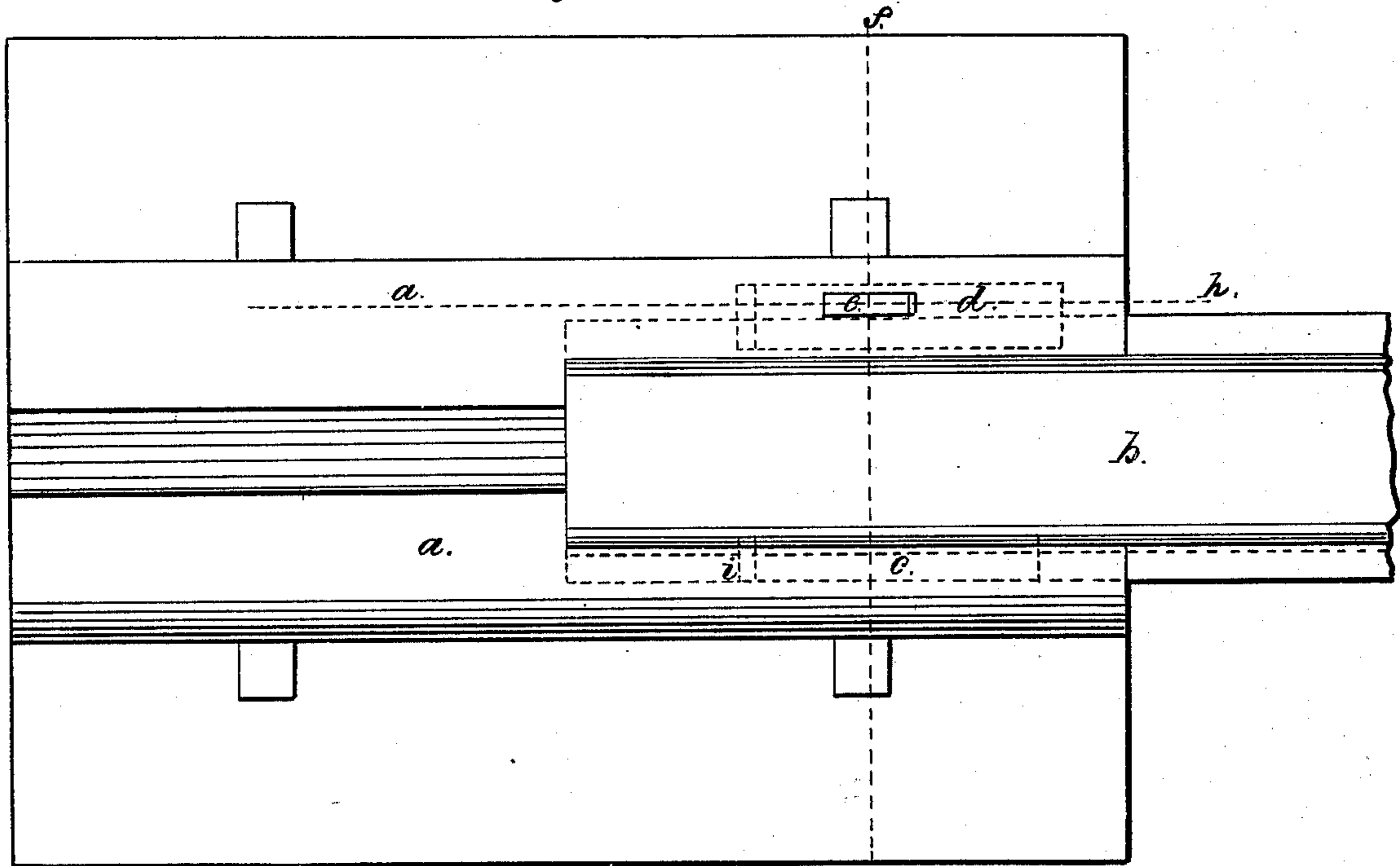


Fig. 2.

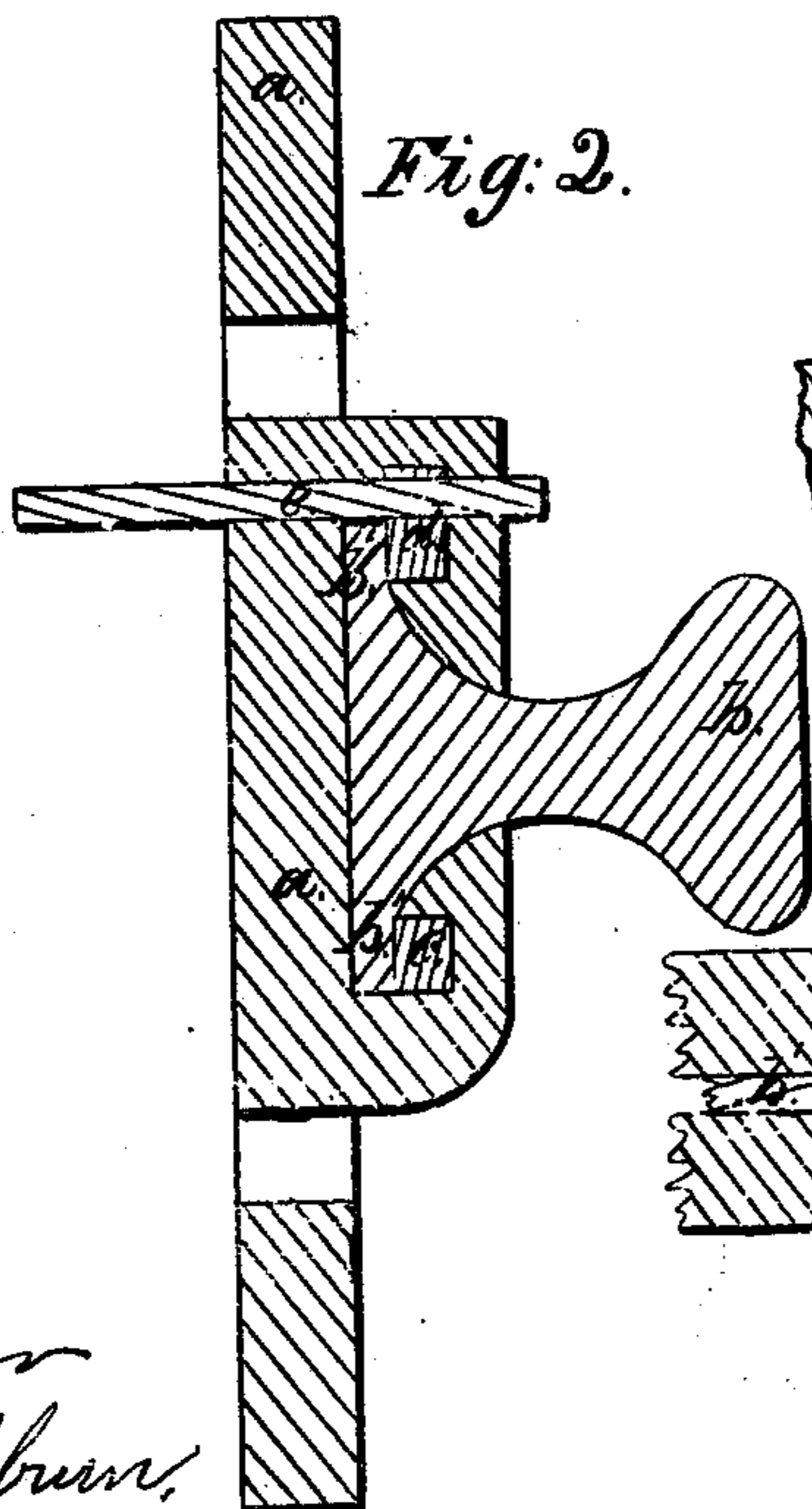


Fig. 4.

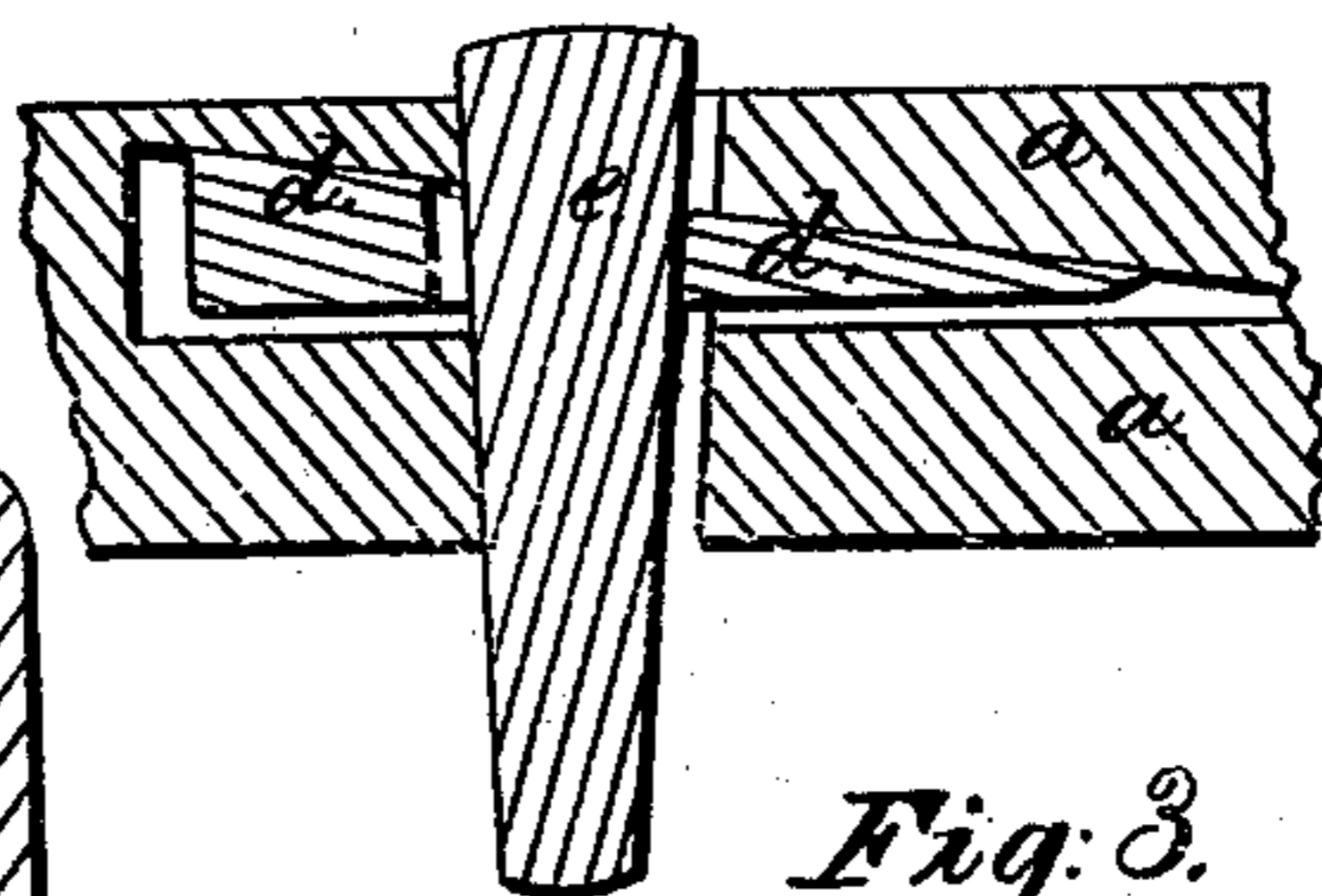
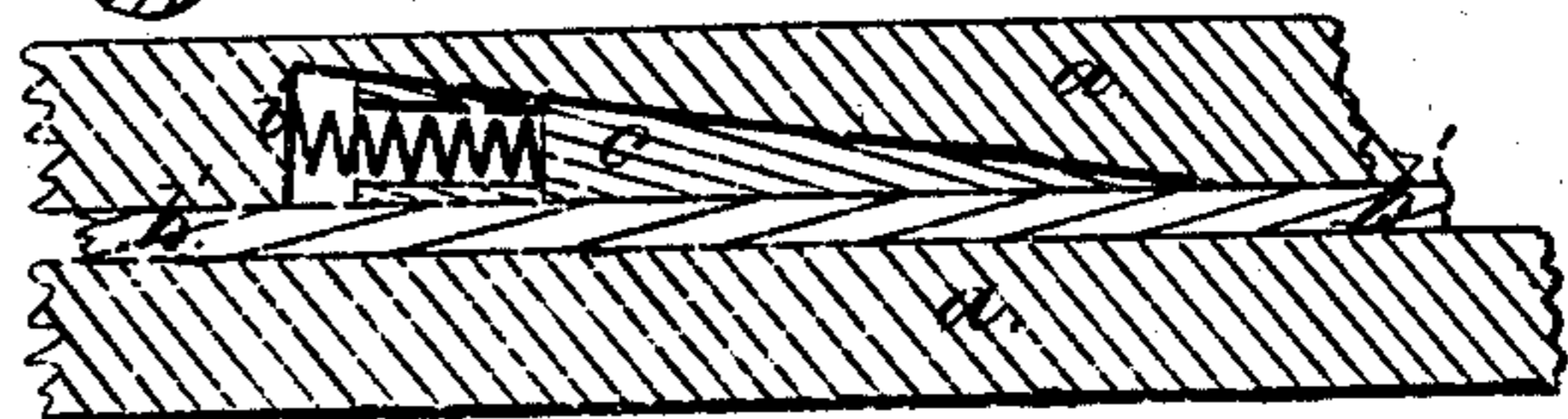


Fig. 3.



Witnesses:

A. D. Parker
B. Davis Washburn.

Inventor:

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WILLIAM WICKERSHAM, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 80,320, dated July 28, 1868.

IMPROVED RAILWAY-CHAIR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM WICKERSHAM, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Method or Device for Securing the Ends of Rails in Railway-Chairs; and I hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and the letters and figures of reference marked thereon.

The nature of my invention consists in securing the ends of rails of railways in the chairs, which support them automatically—

The first feature of which relates to the method of securing the rail by means of a spring and a wedge, and consists in constructing the chair suitably for the admission of the rails, with cavities, over or under or at the edge of the flanges of the rails, or at any part of said rails, of suitable shape for the admission of a wedge, and then the construction and placing therein a wedge, in connection with a spring, and all so arranged that the spring shall exert a constant elastic force on the wedge, impelling it from the larger portion of the said space in the chair to the smaller part, thereby forcing one side of said wedge on to the rail, securing it firmly in the place at all times, however much it may be worn by use, thus at all times compensating for the wear of the rail.

The second feature of my invention relates to the securing of the ends of rails in railway-chairs by means of two wedges, and consists in the proper construction of the chair to receive a wedge, which wedge is forced on to the rail by another wedge moved by its own weight, or otherwise, thereby securing the rail firmly in its place in the chair, by a constantly active and automatic force always compensating for the wear of the rail.

In my drawings—

Figure 1 is a plan view of my chair, showing the end of a rail secured in it.

Figure 2 is a cross and perpendicular section of my chair in the red line *f*, showing the wedge operated by a spring on one side, and the wedge operated by another wedge on the other side, showing also the position of the rail in the chair, with the wedges resting on the flanges.

Figure 3 is a longitudinal and perpendicular section in the red line *g*, through the wedge operated by a spring, showing the flange of the rail, with portions of the chair above and below it, also showing the space in the chair for the wedge, with the wedge in it, also showing the manner in which the spring is placed in the wedge, and the space back of it to drive the wedge on to the rail.

Figure 4 is the section in the red line *h*, showing the manner in which the wedge is placed in the chair, which is operated by another wedge in securing the rail.

a is the body of the chair, into which my automatic device for holding the rail is placed.

b is the rail.

c is the wedge, moved by a spring.

d is the wedge, moved by another wedge.

e is the wedge, which moves the wedge *d*, and holds it on to the flange of the rail, thereby securing it firmly.

At *i* is the spring, moving the wedge *c*.

At *d* and *e*, fig. 1, is shown, in dotted lines, a plan view of the two wedges, which rest on the flanges of the rail.

My device operates in the following manner:

The spiral spring *i* is placed in the cavity or hole in the wedge *c*, and the wedge, provided with the spring, is placed in the space in the chair over the flange *b'*, as shown in section, fig. 3.

The spring *i* works in an obvious manner, exerting a constant elastic force on the wedge *c*, driving it into a narrower space, and on to the flange *b'* of the rail, thereby securing it firmly in its place, the wearing of the rail always being compensated by the wedge moving farther into its space.

The wedge *d* has a mortise through it, through which the perpendicular wedge *e* passes, which also passes through a mortise in the chair. This mortise in the wedge *d* is just outside of the flange of the rail, allowing

the inner part of said wedge to rest on the flange of the rail, as shown in fig. 2. The wedge *d* being thus formed, is placed into the space over the flange of the rail, then the wedge *e* is dropped into its space, and is of such form and size as by its own weight will press against the end of the mortise towards the thin end of the wedge *d*, and in an obvious manner drive said wedge *d* into a narrower space over the flange of the rail, thereby securing permanently and automatically the rail, and compensating for the wearing of the said rail.

These wedges, as described, may be placed under or over the flanges, or at their edges, or in case the spring is used under the rail, or a spring of any kind or form, which may be applied to the wedge, may be used, which may exert a constant force upon the wedge in pressing it close on to the flange of the rail, as shown in fig. 4.

In my application, filed November 22, 1867, I claimed the automatic principle, and I put this principle into a practicable form by using screw-cylinders over the flanges of the rails, and in one case these cylinders were operated by springs, and in the other case by a wedge, causing the cylinders to screw down on to the flanges of the rails, thereby securing them; and although I had at that time invented the devices described in this specification, I did not put them into that application, because I thought the automatic principle sufficiently illustrated by the screw-cylinders, and the two methods of operating them. But believing the other two devices described in this specification new, practicable, and patentable, I now think best to make them the subject of a new application, and I do not limit myself to the exact form shown in my drawings, as the same principle may be varied in many ways.

I have shown a short wedge, and applied it to the end of only one rail, yet it may be made of any desirable length, and one wedge be made to secure both rails which rest in the same chair.

The wedge *e* may be made light, and an additional weight may be attached to it to give greater force to the wedge on the flange of the rail, and in many ways the form of the devices may be varied, still retaining the automatic element, which I consider the principle of my invention.

To make the ends of the rails, and indeed the whole length of the rails, permanently secure in their positions, and in such a manner that they will continue so until worn out, is a thing of great value to mankind; it adds much to the economy of the business of the roads, and a great deal to the safety of travel on them, which, considering the many disastrous accidents that have from time to time occurred, must be regarded as of the utmost consequence; and many of these fatal accidents have been shown to have taken place on account of rails getting loose, and I contend that this must ever be the case until an automatic fastening be applied to the rail.

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

1. In railway-rail chairs, the wedge *c*, in combination with the spring *i* and the chair, operating substantially in the manner and for the purpose set forth.

2. The wedge *d*, in combination with the wedge *e* and the chair, substantially in the manner and for the purpose set forth.

WILLIAM WICKERSHAM.

Witnesses:

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B. DAVIS WASHBURN.