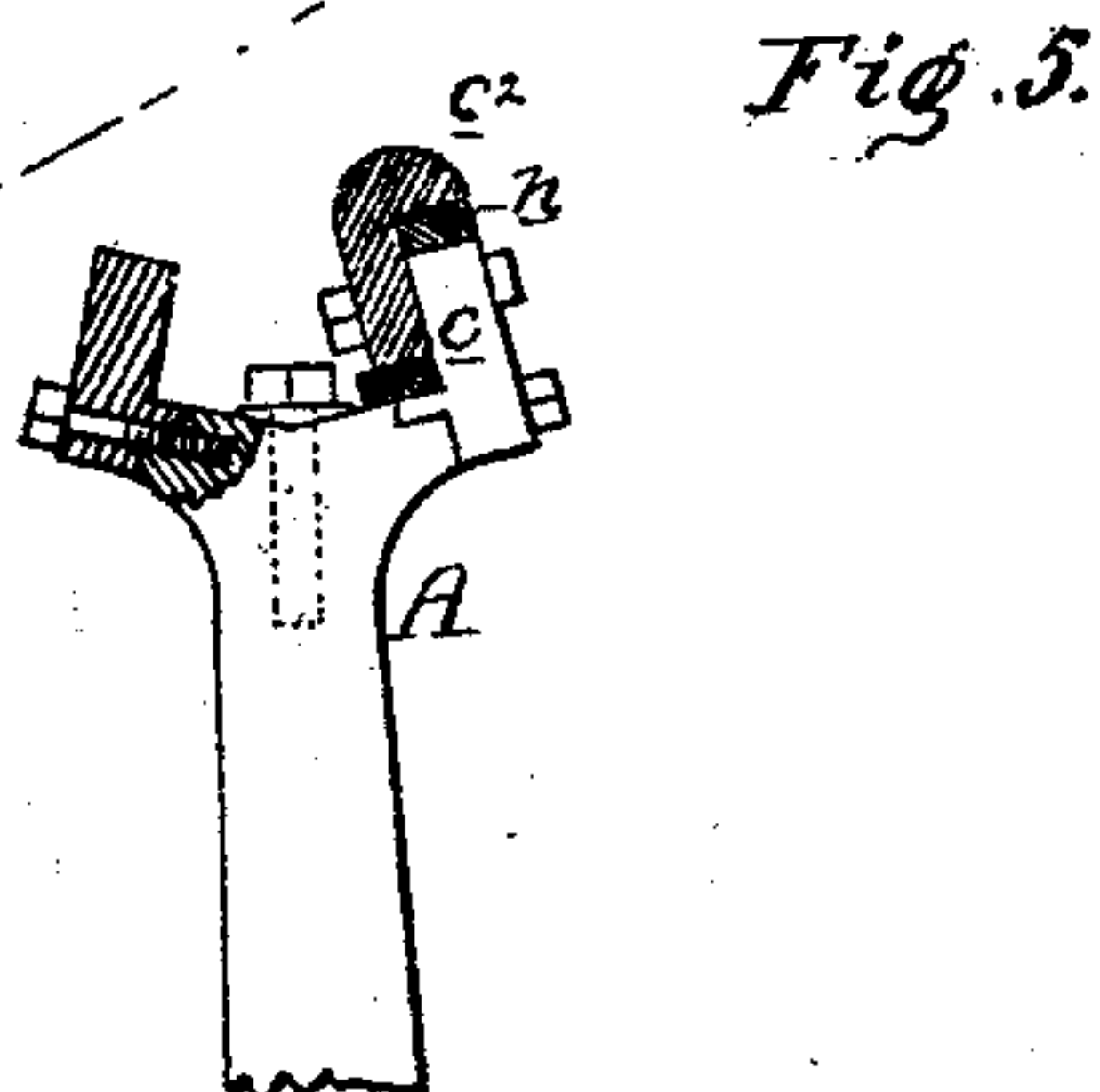
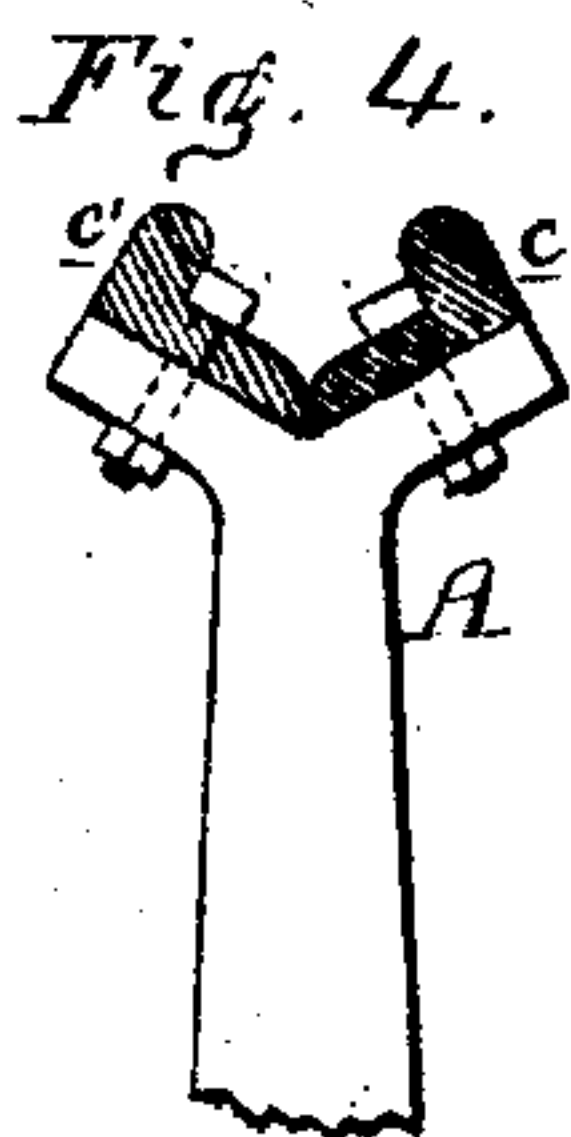
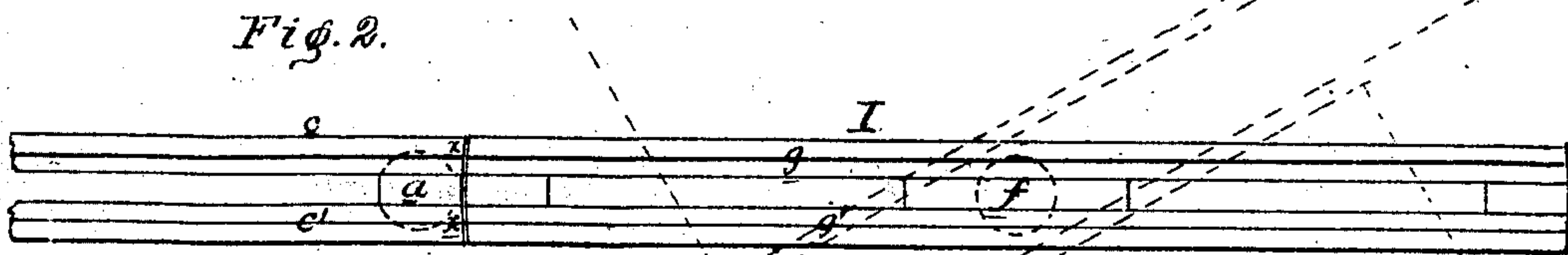
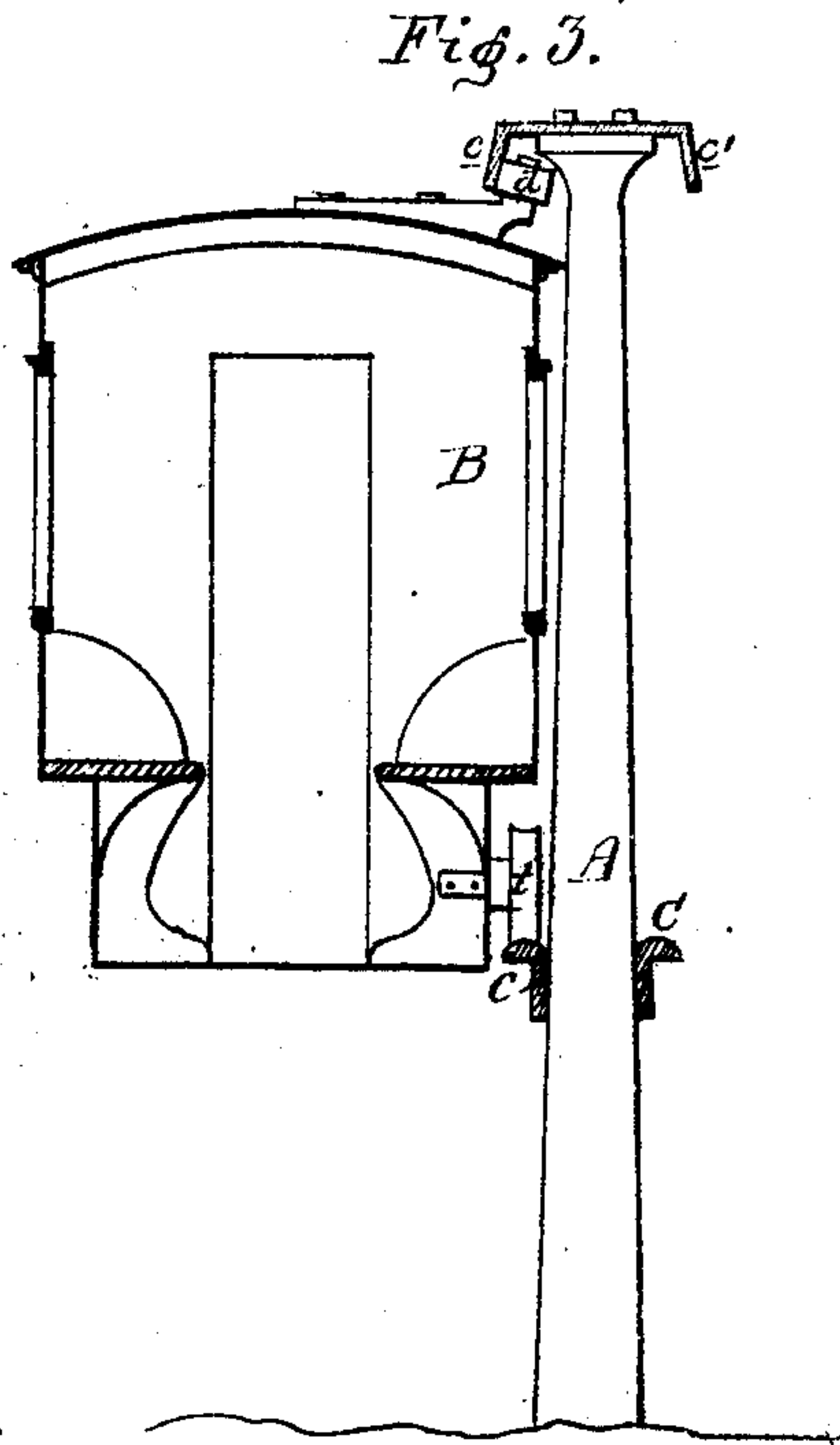
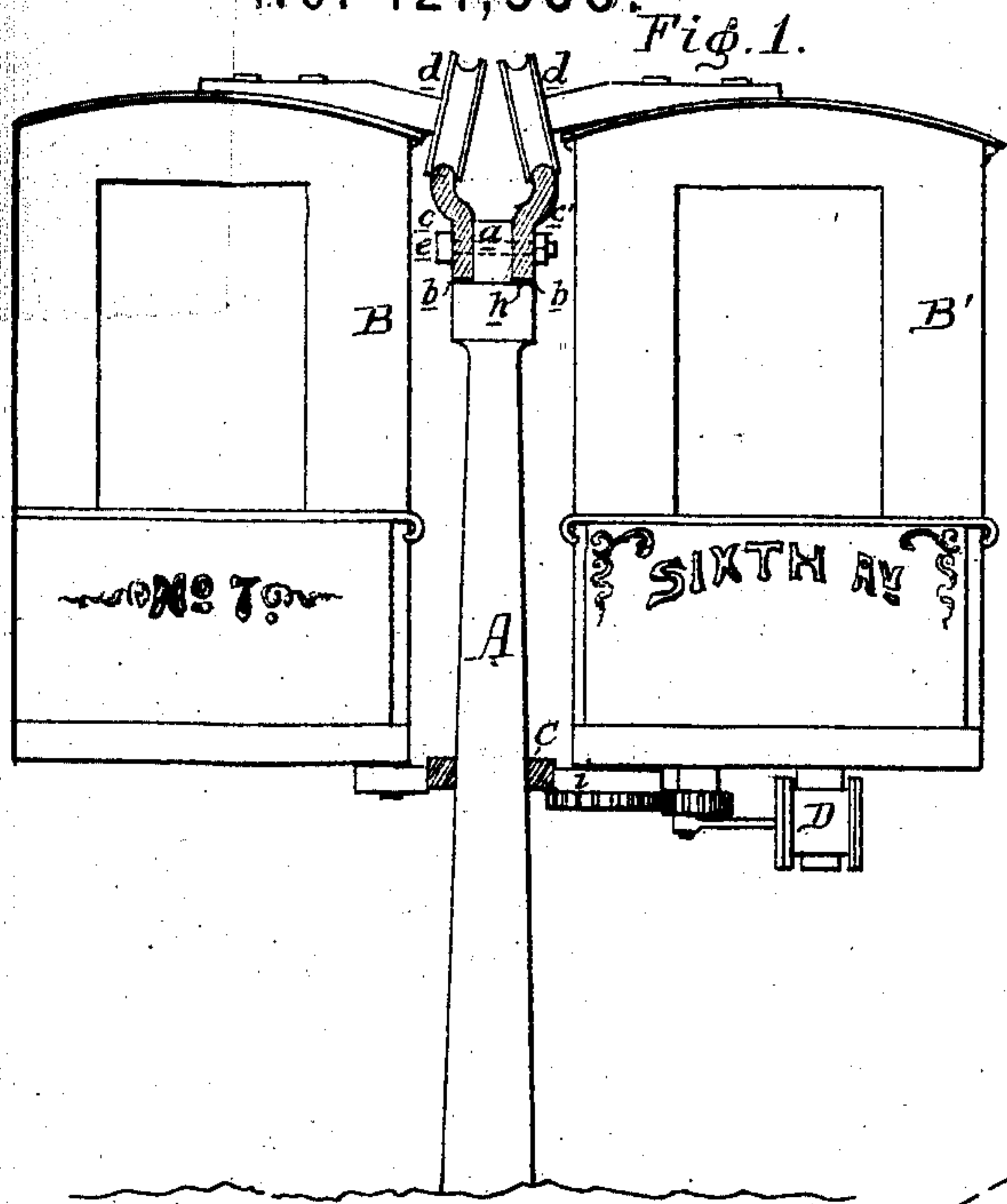


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JOHN B. NEWBROUGH.
Improvement in Elevated Railways.

No. 121,538.

Patented Dec. 5, 1871.



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Frank J. Groub

J. B. Newbrough
By his attys
Howson & Co.

UNITED STATES PATENT OFFICE.

JOHN B. NEWBROUGH, OF NEW YORK, N. Y.

IMPROVEMENT IN ELEVATED RAILWAYS.

Specification forming part of Letters Patent No. 121,538, dated December 5, 1871.

To all whom it may concern:

Be it known that I, JOHN B. NEWBROUGH, of New York, county of New York and State of New York, have invented certain Improvements in Elevated Railways, of which the following is a specification:

My invention consists of certain improvements in elevated railways, too fully described hereafter to need preliminary explanation, whereby the cost of the "plant," as well as the expense of running the cars, is greatly reduced and the whole rendered more efficient than elevated railways of the ordinary construction.

Figure 1 is a sectional elevation of my improved elevated railway, showing cars in the act of traversing the same; Fig. 2, a plan view of part of the railway and a turn-table; and Figs. 3, 4, and 5, views showing modifications.

A is one of a series of posts arranged about four feet apart along the line to be traversed by the cars. At the upper end of each post are shoulders *b b* and a projection, *a*, and resting on the said shoulders and secured to the projection *a*, and to each other by bolts *e*, are rails *c c'*, of the form shown in Fig. 1. On studs projecting from each car or truck *B B'* turn flanged or grooved wheels *d*, which may be the driving-wheels, and bear on the rails *c c'* at such an angle to the car that the weight of the latter will tend to maintain the wheels on the rail. Against the sides of bars or rails *C*, secured to the sides of the posts *A*, bear wheels or rollers *i* turning on studs near the bottom of the car or truck, and if desired these wheels, instead of the wheels *d*, may be the driving-wheels of the car, the engine *D* being arranged beneath the bottom of the car so that free passage to or from the car is not in the least interfered with. The cars traverse the rails *c* at one side of the posts in one direction and the rails *c* at the opposite side of the posts in the other direction, one series of posts thus serving as a support for both tracks, thus avoiding the duplication of stations and the extended space and consequent expense required when two rows of posts are employed, while the cost of the permanent structure is but little greater than that which would support a single rail. Various means may be adopted for transferring the cars from one track to the other. I prefer, however, to employ the device illustrated in Fig. 2. I is a strong frame or girder, which turns upon a

central pivot or bearing, *f*, so that either end may be brought opposite the ends *x x* of the tracks *c c'*, and secured to or forming a part of said girder are rails *g g'*, which, when the girder is in the position shown in Fig. 2, are in a line with the rails of the track, so that the cars may be transferred from the track-rails to the girder-rails, or vice versa. After a car has passed onto the girder-rail the girder is turned so as to bring the rail on which the car rests in a line with the track to which the car is to be transferred, when the transfer is made. If desired, two cars may be passed onto the girder at the same time and be thus simultaneously transferred to opposite tracks. It is not necessary, however, that the revolving girder should carry more than one rail. It will be seen that both rails *c c'* are secured to the projection *a* and to each other by a single bolt. If desirable, however, the rails may be secured independently to the posts, the latter being forked at the top, as shown in Fig. 4, a bolt passing through each fork and securing the rail which bears thereon. The rails must be heavy to possess the required rigidity. The replacing of the same when the faces become worn is, therefore, a matter of considerable expense, to avoid which a light supplementary rail may be bolted (as shown in Fig. 5) to the main or foundation rail, which thus becomes a continuous sleeper. Packings *h*, of India rubber, wood, or other material, may be inserted between the rails and their bearings to deaden the percussion. Instead of supporting the cars mainly on the upper rails the latter may be employed (Fig. 3) to guide the cars, which have, near the bottom, wheels bearing on the lower rails *C*. By recessing the sides of the cars, as shown in Fig. 3, spaces are formed for the reception of the wheels *t*, so that the cars may be brought close to the posts.

Without limiting myself to the construction or arrangement of parts shown and described, but without claiming here the arrangement illustrated in Fig. 3, which may form the subject of a separate application for Letters Patent,

I claim—

1. The frame or post *I* having two parallel rails, *g g'*, lower parallel rails for wheels *i* of suspended cars, and arranged to revolve, as set forth.
2. The car *B* with its inclined grooved wheels *d d* adapted to the inclined face of an upper rail,

and wheels *i* bearing upon or against a lower rail arranged at the side of a series of posts, as specified.

3. A suspended car provided with horizontal driving-wheels arranged below the bottom of the car and bearing laterally on rails secured to the sides of a series of posts, as described.

4. The combination of the posts, the rails or bars connecting said posts, and the supplementary detachable rails, all as specified.

5. The combination of a post, the two rails fitted thereto, and a bolt passing through both rails and the post, and securing all together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN B. NEWBROUGH.

Witnesses:

A. H. NORRIS,

CHARLES E. FOSTER.

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