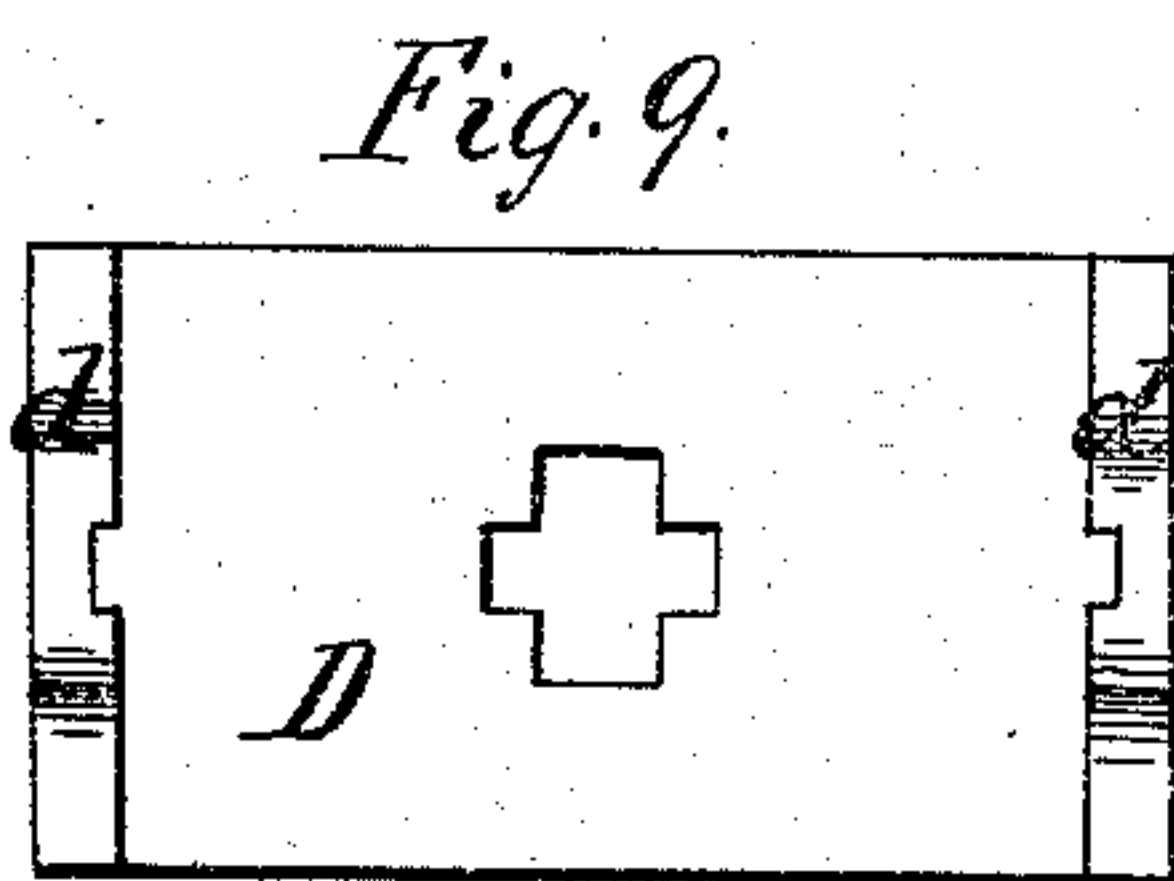
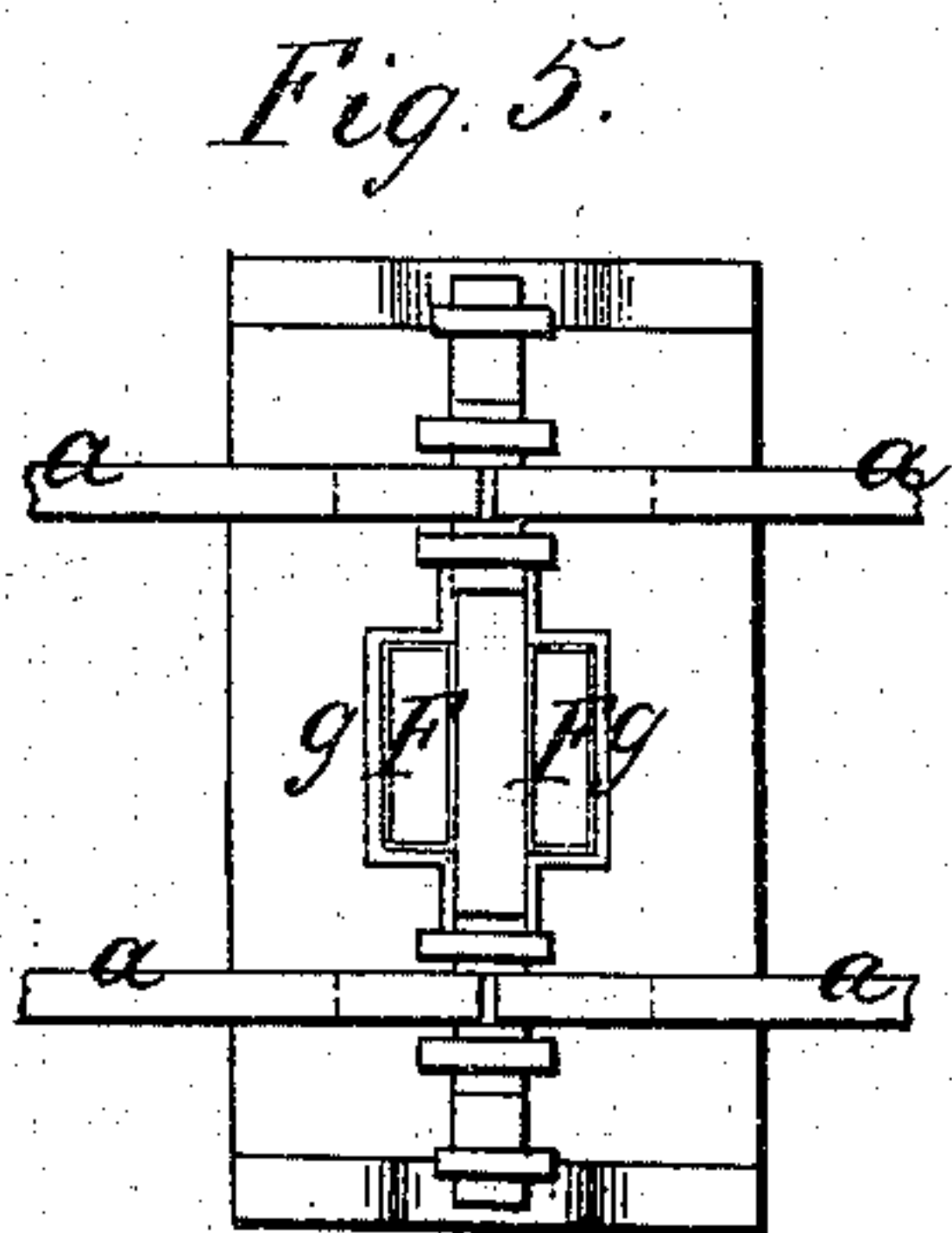
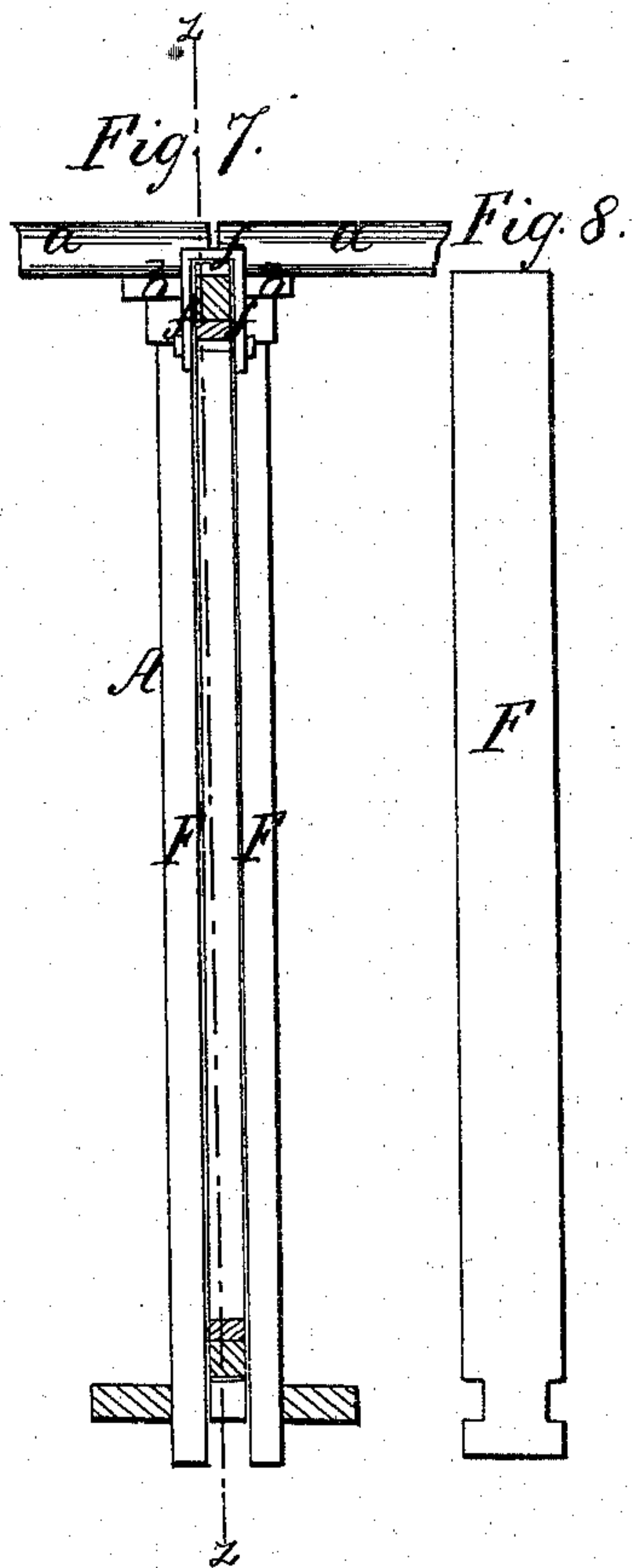
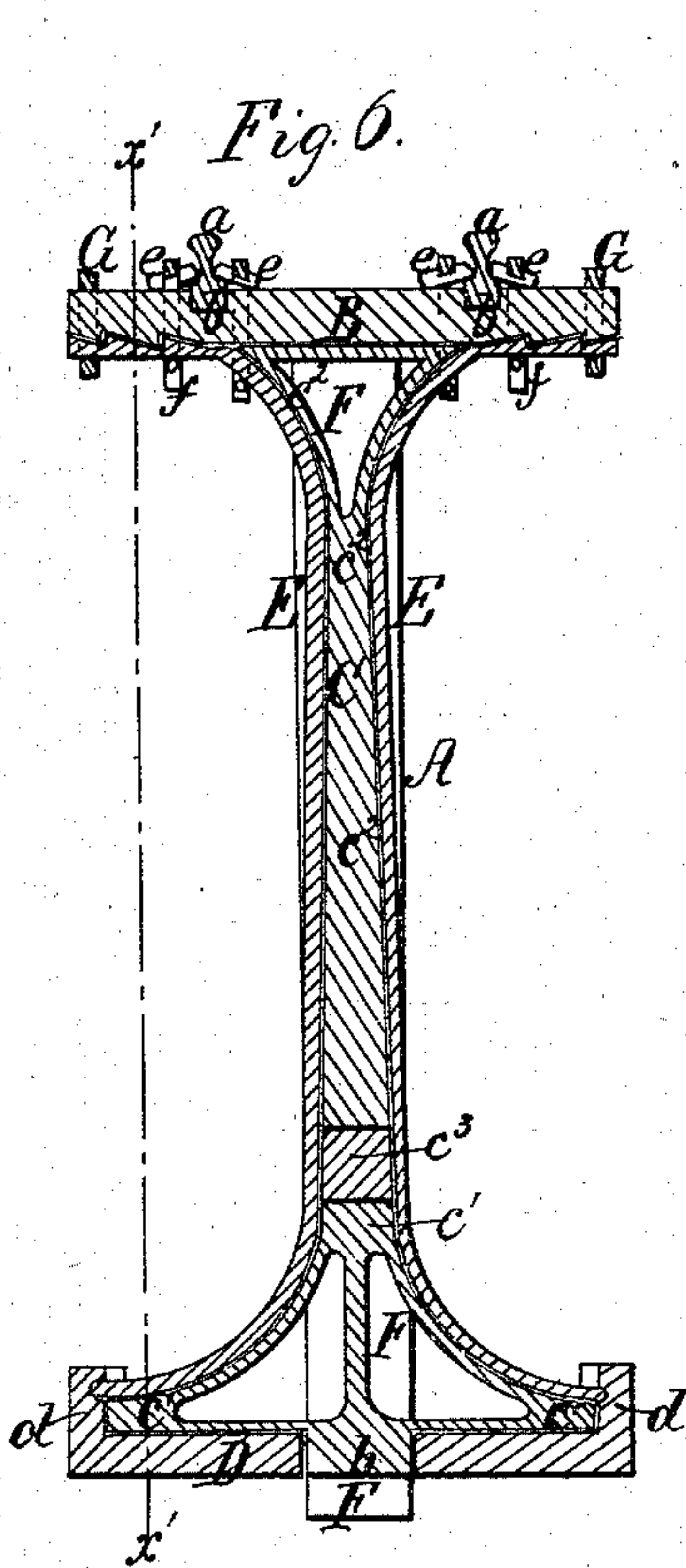


F. A. Williams.

Elevated Railway.

N^o 66,194.

Patented Jun. 25, 1867.



*Witnesses;
Theo. Tuche
Wm. Furin*

*Inventor;
F. A. Williams
Per Munn & Co.
Attorneys.*

UNITED STATES PATENT OFFICE.

F. A. WILLIAMS, OF CLOVERVILLE, NEW YORK.

IMPROVED SUPPORT FOR ELEVATED RAILWAYS.

Specification forming part of Letters Patent No. 66,197, dated June 25, 1867.

To all whom it may concern:

Be it known that I, F. A. WILLIAMS, of Cloverville, in the county of Delaware and State of New York, have invented a new and Improved Elevated Street-Railway; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and useful improvement in elevated street-railways, its object being to so arrange and construct the posts or pillars by which the rails are supported that they do not occupy larger space on the sidewalk of the street and are in no manner more inconvenient than the common lamp-posts, so that a railway constructed on my improved plan would be no inconvenience to the pedestrians on the sidewalks or to the vehicles on the street.

My invention consists, chiefly, in the construction of the aforementioned supporting-pillars, which are so made that one single post can support the whole width of the railway. This post being placed on the outer edge of the sidewalk, with its broader base built below the ground, would not occupy any considerable room on the sidewalk, which would be the case if two rows of such posts would have to be used.

In the accompanying drawings my invention is illustrated.

Figure 5 is a top view of a portion of the railway, showing how it is connected to the supporting-pillar. Fig. 6 is a vertical cross-section, on a large scale, of the supporting-pillar, the plane of section indicated by the line zz , Fig. 7. Fig. 7 is a side elevation, on a large scale, of the supporting-pillar, partly in action, the plane of section being indicated by the line $x'x'$, Fig. 6. Fig. 8 is an elevation of the side braces of the pillar, showing the T-shaped lower end of the same. Fig. 9 is a plan or top view of the base piece of the pillar, showing the peculiar-shaped mortise in the same.

Similar letters of reference indicate like parts.

The main feature of the railway is the supporting-columns A. These are constructed of different braces or supports in such a manner

that each brace receives the weight independent of the others. If even one should break, the rest will be still able to support the rails and cars. The pillars are placed at suitable distances apart. The most practicable distance from the center of one to the center of the other post would be the usual length of rails, so that the rails would be joined just above the pillar, a space of, say, three-eighths of an inch being left between the ends of the rails to allow for their expansion. (See Fig. 5.)

The ends of the rails a rest upon a sleeper, B, into which is inserted a bed-piece, b , which extends beyond either side of the sleeper and supports the ends of the rails. (See Figs. 6 and 7.)

The sleeper B rests directly upon the central supporting-post, C, which consists of three parts, c' , c^2 , and c^3 . The lower portion, c' , is supported by the base-plate D. As is shown in Fig. 6, the lower portion, c' , expands or becomes wider toward the bottom. It is held between two flanges, d , on the base-plate, which are provided with suitable vertical grooves, Fig. 5, so that the part c' may be inserted from above. The upper portion, c^2 , may be secured to the sleeper B by means of bolts and nuts, but it may also be perfectly independent from the same. The central piece or key, c^3 , is held between the upper piece, c^2 , and the lower, c' .

The central post, C, thus made of three pieces, but which may as well be made of one piece, is not more than about one or two inches thick throughout its length. Its width varies, as seen, at the bottom. Near the top it also gradually increases in width, so as to support about one-third of the length of the sleeper B. On each side of this central post is arranged a side supporting-bar, E E. The same is made of wrought square bar-iron, bent in such a shape as to conform itself to the outlines of the central post, C. The upper surface of these strips E, where it comes in contact with the sleeper B, is provided with notches and projections conforming to and fitting into corresponding projections and notches in the under side of the sleeper, as seen in Fig. 6. At the bottom the bars E are held in grooves in the flanges d . The rails a are held down by keys or plates $e e$, which are held in place by bows or staples f , as seen in Figs. 6 and 7.

The central and side supports, C and E, are

protected by side braces, FF, which are secured to the sleeper B by means of staples *g*. (See Figs. 5 and 7.) At their lower ends these braces are notched, as seen in Fig. 8, and are passed through a cross-shaped mortise in the bed-plate D. (See Fig. 9.)

A column thus constructed is set together in the following order: The bed-plate D is first laid upon the ground sufficiently below the sidewalk to allow the wider lower portion of the column to be below ground. The braces F are then dropped through the wider portion of the mortise in the bed-plate, and are then passed into the narrow recesses, which form a part of the mortise, into which they fit snugly. The lower portion, *c'*, of the central support is then dropped between the braces, a small projecting knob, *h*, at its bottom fitting into and

closing the mortise, thus locking the braces F, while itself is well held in the ground flanges *d*.

The sleeper, with the upper central piece, *c*², is now hung upon the braces F, the key *c*³ is dropped into its place, and then the side bars, E, are secured. The post is then ready to receive the rails.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The construction of the posts A, consisting of a combination of the bed-plate D, central post C, side supports, E, and braces F with the sleeper B, all made substantially as and for the purpose herein shown and described.

F. A. WILLIAMS.

Witnesses:

SAMUEL C. JONES,

• JOHN MCINTYRE.