

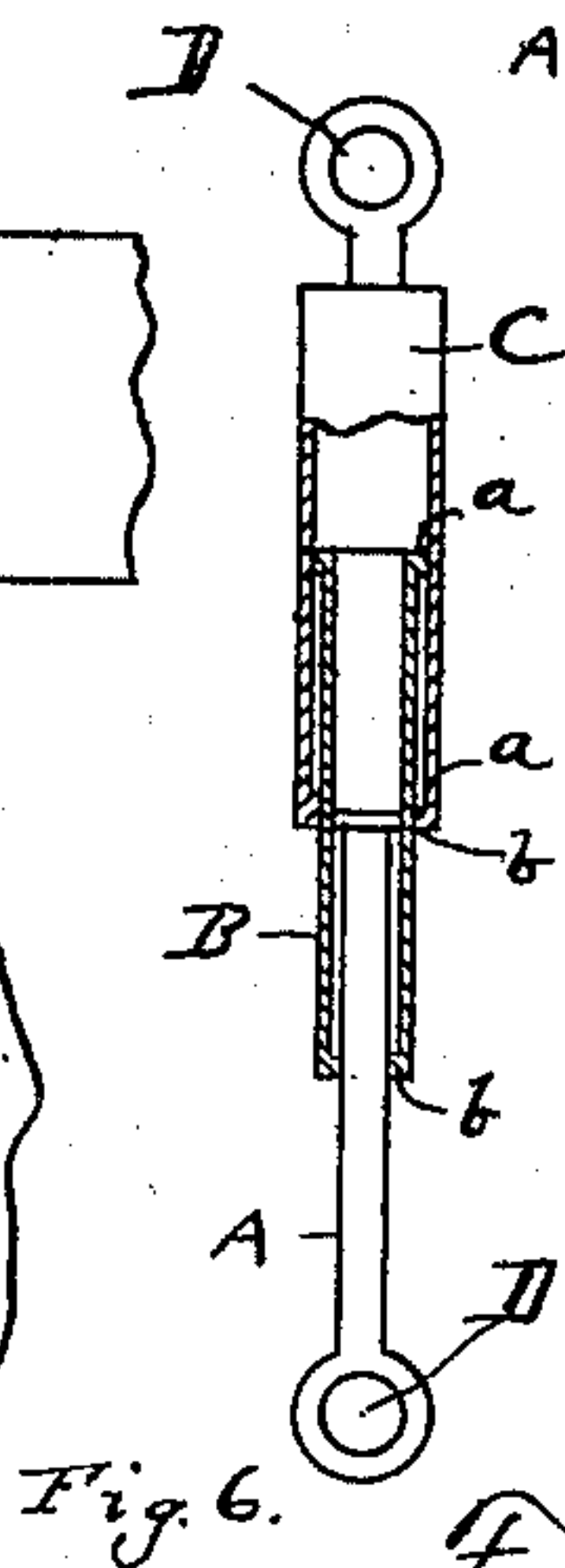
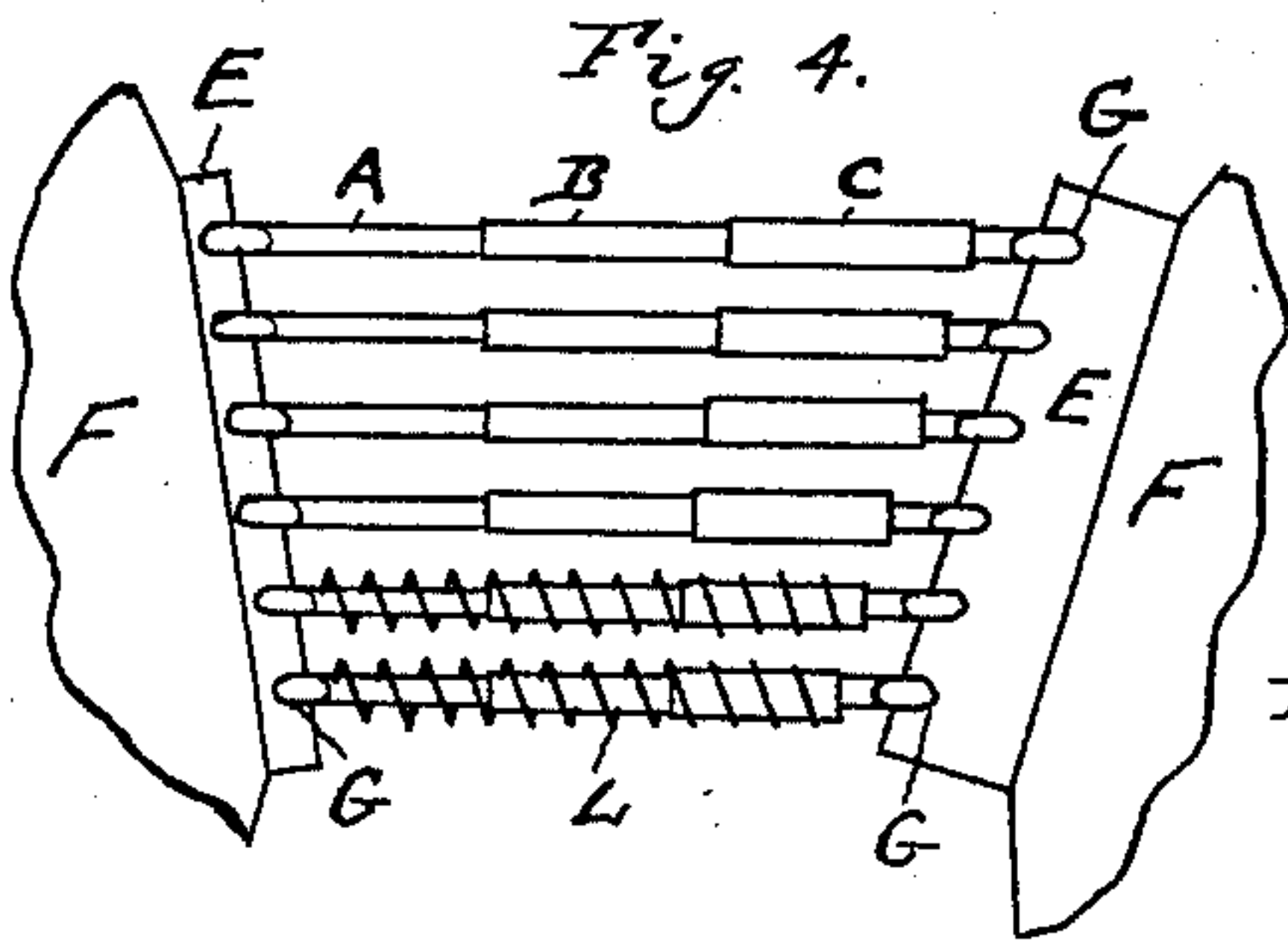
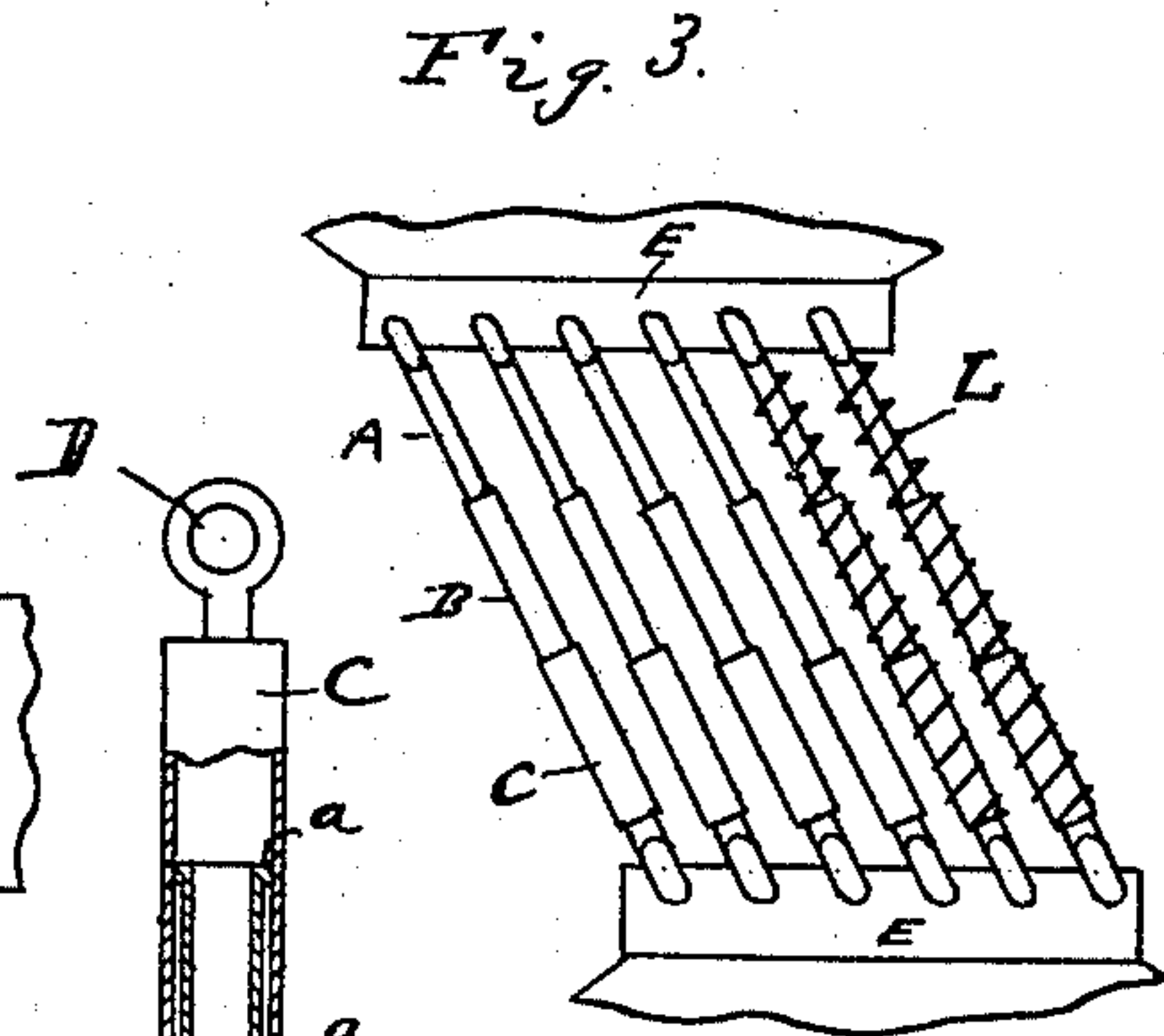
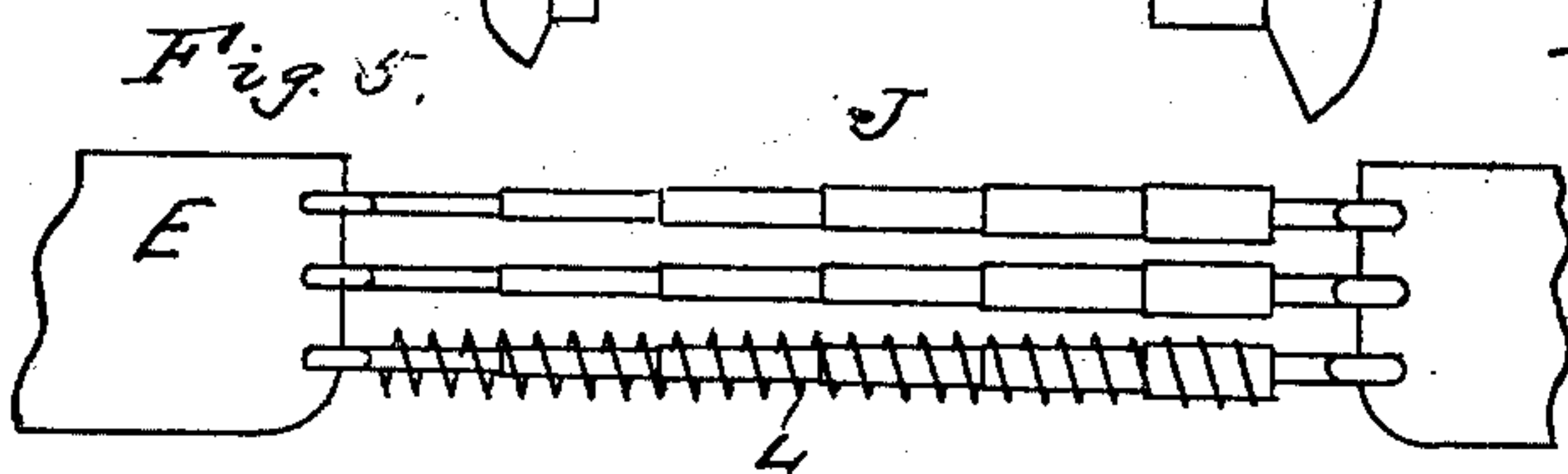
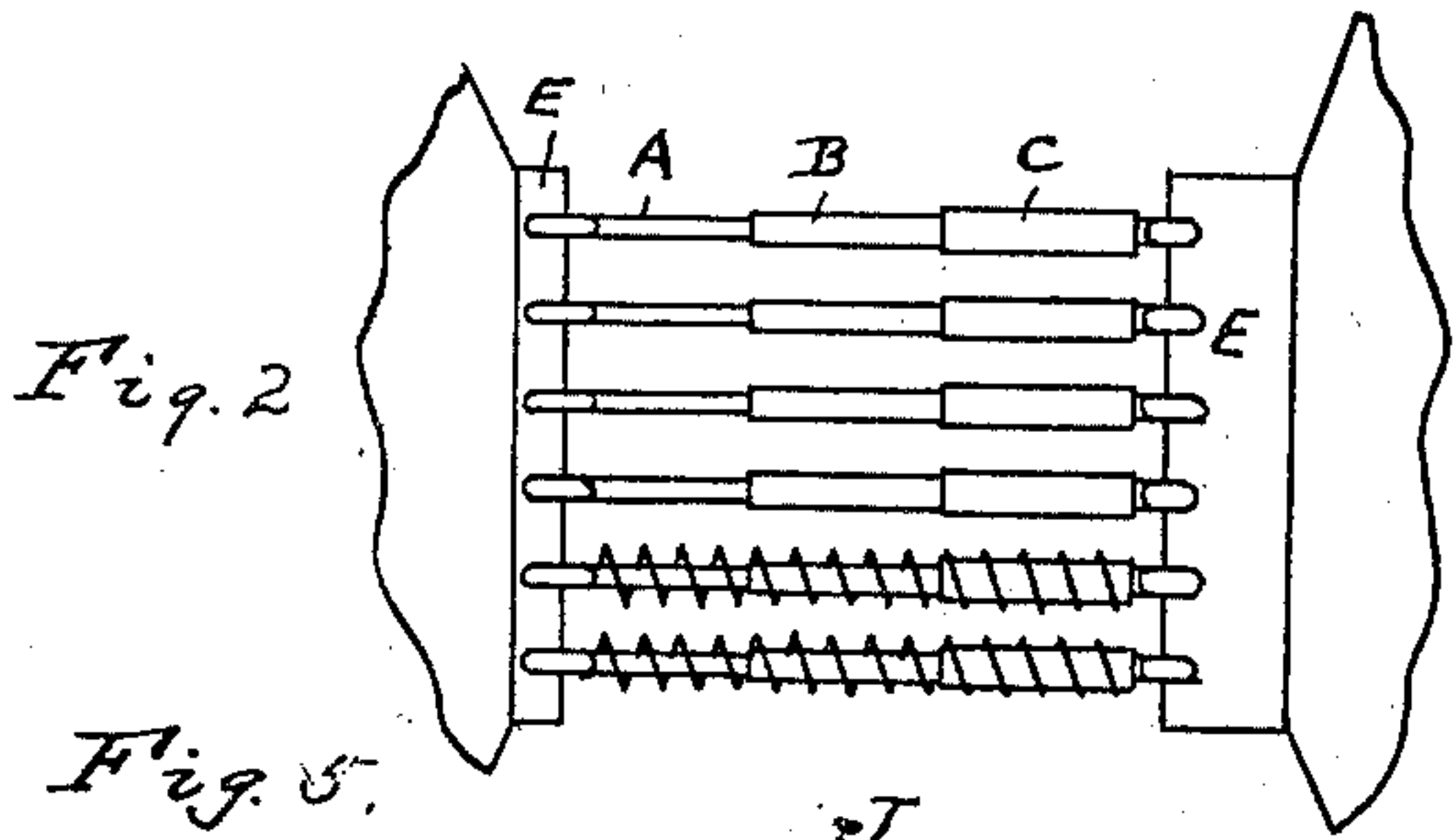
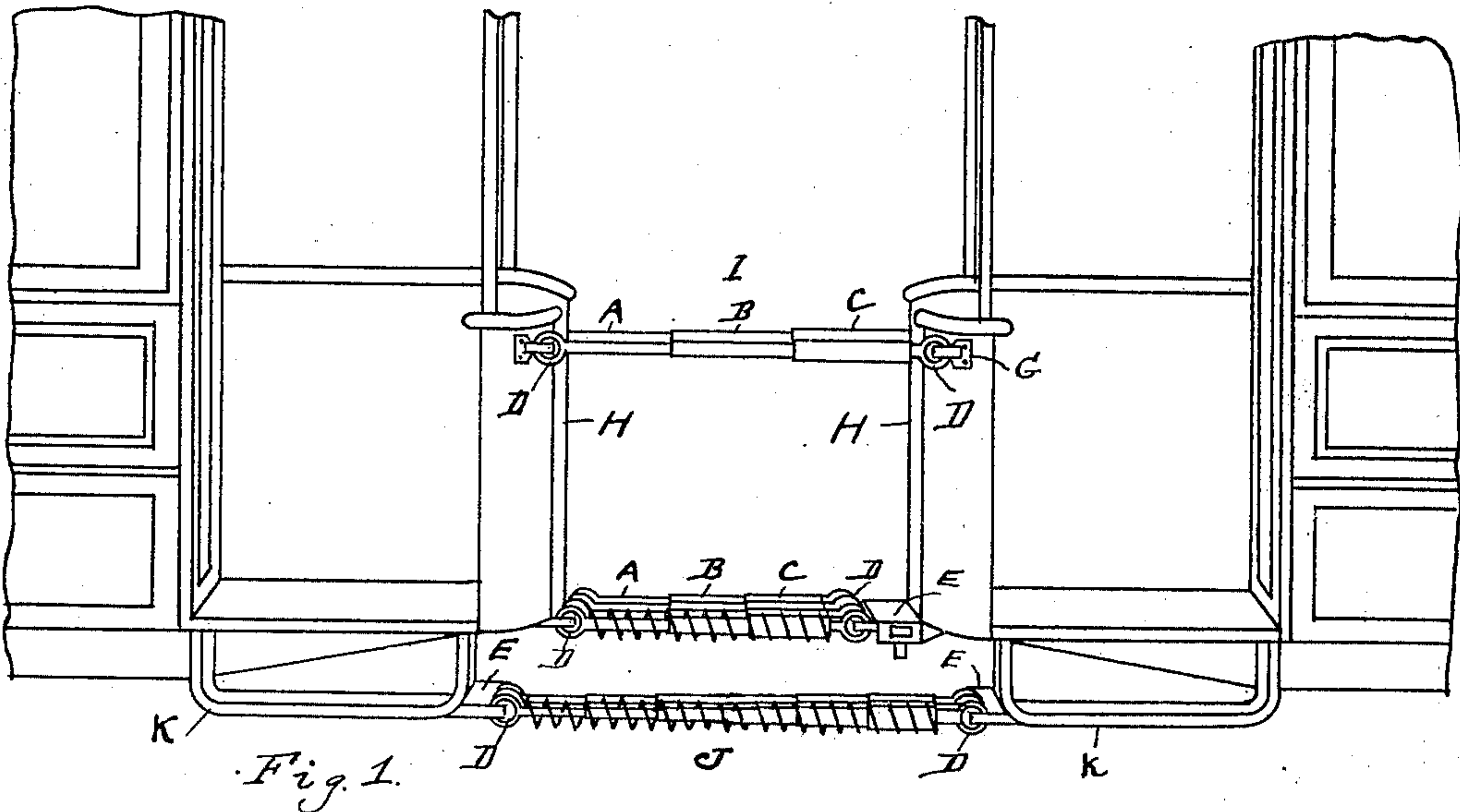
No. 686,797.

Patented Nov. 19, 1901.

F. B. ANDERSON.  
TRAMWAY FOR STREET CARS.

(Application filed May 20, 1901.)

(No Model.)



WITNESSES.  
cm Theobald.  
Matthew L. L. L.

F. B. Anderson.  
INVENTOR.  
By R. J. M. Garty.  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

FRANK B. ANDERSON, OF DAYTON, OHIO.

## TRAMWAY FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 686,797, dated November 19, 1901.

Application filed May 20, 1901. Serial No. 60,998. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK B. ANDERSON, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Tramways for Street-Cars; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to gangways for street-cars by means of which persons may pass from one car to another without endangering their lives.

The invention is especially adapted for use where two cars are coupled together and affords means that enables the conductor to pass from one car to the other with safety.

Preceding a detail description of my invention, reference is made to the accompanying drawings, of which—

Figure 1 is an elevation of the ends of two cars coupled together, showing my invention applied thereto. Fig. 2 is a plan view showing my invention applied between the adjacent ends of two cars, parts being broken away. Fig. 3 is a similar view showing the extent of vertical movement of the cars permitted. Fig. 4 is a similar view showing the extent of side movement between the two cars. Fig. 5 is a plan view showing my invention applied to the side foot-boards. Fig. 6 is a detail view of the telescopic connecting-tubes forming the tramway.

Throughout the specification similar reference-letters indicate corresponding parts.

In carrying out my invention I employ a series of telescopic tubes A B C, the inner and outermost ones of which are provided with eyes D. Connection is made by means of these eyes with bars E, which are attached to the ends of the platforms F of the cars. These bars E are provided with a suitable number of vertical openings G, by means of which the eyes D are connected thereto. Owing to this manner of connecting the telescopic tubes with the adjacent ends of the cars the said telescopic tubes will readily re-

spond to any movement or vibration of one or both of the cars, as shown in Figs. 3 and 4, no matter in what direction the car is moved, the tubes extending and contracting freely. In other words, the tubes A, B, and C will readily telescope or extend according to the various positions assumed by the cars as said cars approach and pass over elevations or as they approach and pass around curves. This is enabled by the manner of connecting said tubes to the bars E. The tubes are prevented from being entirely withdrawn from each other by means of flanges *a* on the inclosed end of each of the smaller tubes. These flanges *a* when the tubes are withdrawn from each other will come in contact with annular shoulders *b* on the inclosing tubes, as shown in Fig. 6. It is thought, however, that no movement which the cars can ordinarily have will be sufficient to withdraw the tubes to their outer limit, owing to the usual coupling between the cars.

As shown in Fig. 1, H designates doors or openings in the dashboards surrounding the end platforms of the car. Located between these dashboards on either side and above the passage-way are hand-rails I, which are constructed of telescopic tubes A, B, and C, similar to those employed in Fig. 2. These hand-rails I have similar connections to the dashboards by means of the eyes D, which fit in vertical eyes G, which are secured to the dashboards.

Referring to Figs. 1 and 5, a gangway J is provided between the car-steps K on each side of the cars. The distance between the car-steps being greater than that between the dashboards of the cars, a greater number of telescopic tubes is employed, as shown in Fig. 5. These telescopic tubes are connected adjacent to the steps by means of the eyes D, which are connected with openings in the bars E in a manner similar to the connections of said tubes, as hereinbefore specified. These telescopic tubes are arranged close together in order that a person may step thereon without the possibility of the foot passing between the tubes. Each set of telescopic tubes is inclosed by a coil-spring L, one end of which is attached to the outermost or larger tube and the other end of which is attached to the inner tube. These springs perform two func-

tions—namely, they provide a suitable exterior surface around the tubes, which enables the foot to have a suitable surface in stepping onto the gangway, and they further prevent the tubes from becoming disengaged when they are detached from the car at one end or at both ends.

Having described my invention, I claim—

1. A gangway for street-cars, comprising a series of telescopic tubes connected by means of eyes which engage with vertical openings G arranged in a horizontal plane, so that the said telescopic tubes will have a swivel connection, and coil-springs inclosing said telescopic tubes, the said springs having their ends connected to the tubes, substantially as specified.

2. In a gangway for street-cars, the combination of bars E having a series of vertical openings therein, a series of telescopic tubes, the end tubes of each set of such tubes having an eye by means of which said tubes are connected in the openings in the bars E, the positions of the eyes in said tubes, when connected, being vertical, and a coil-spring inclosing each set of telescopic tubes, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK B. ANDERSON.

Witnesses:

R. J. MCCARTY,  
C. M. THEOBALD.