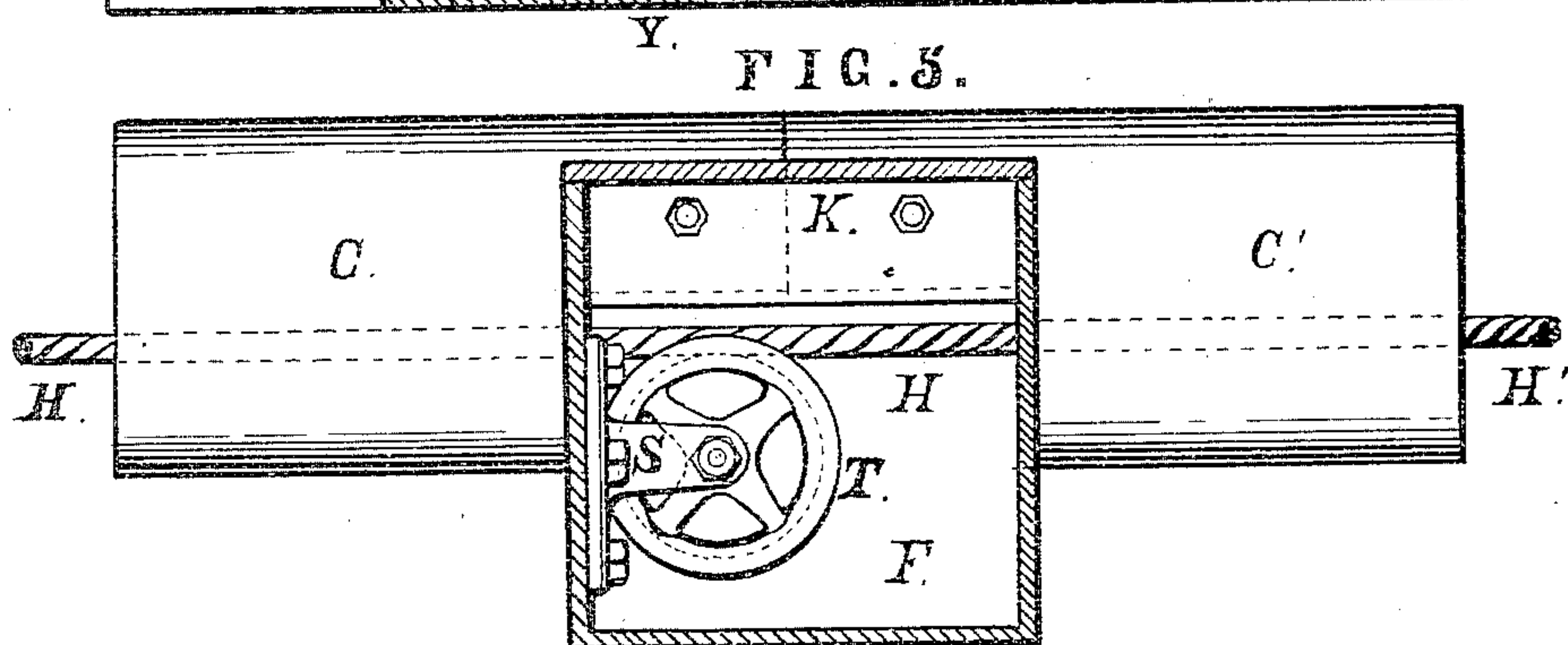
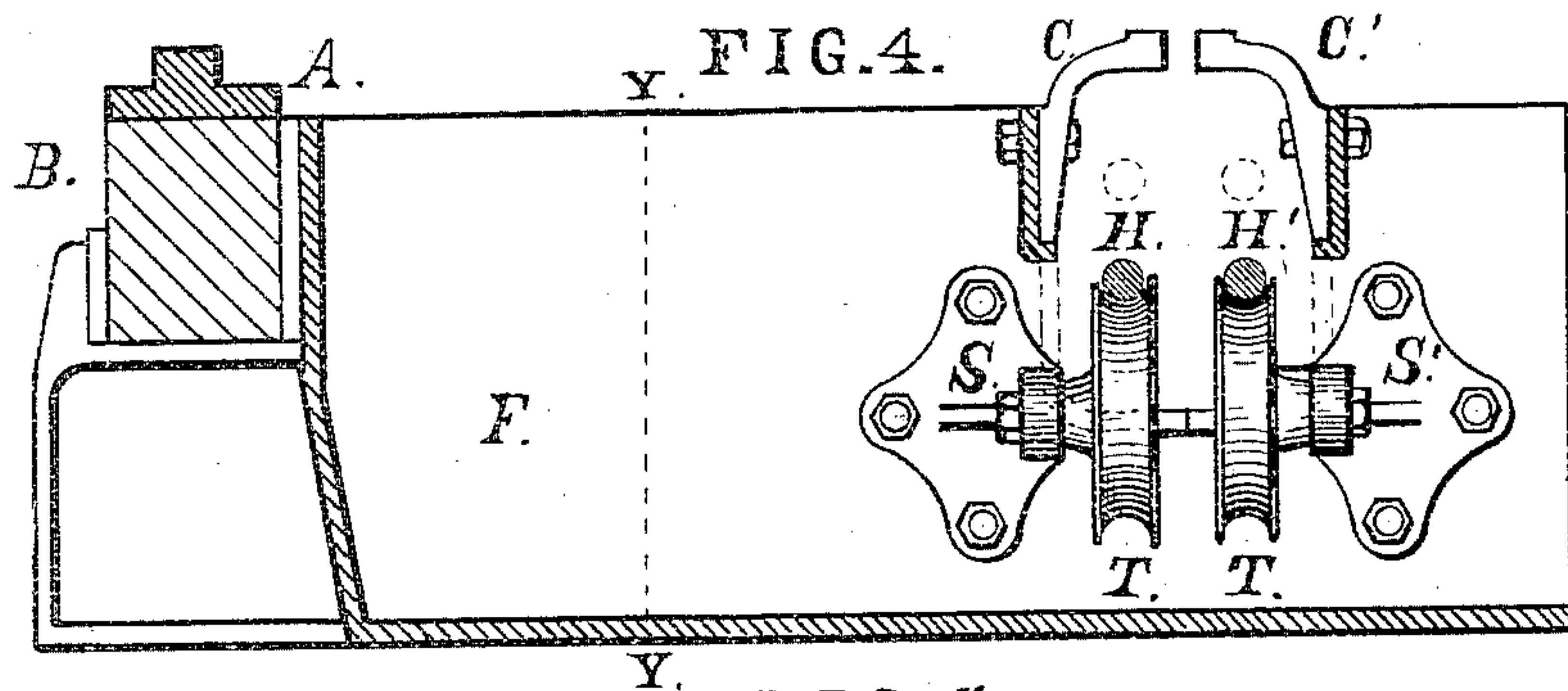
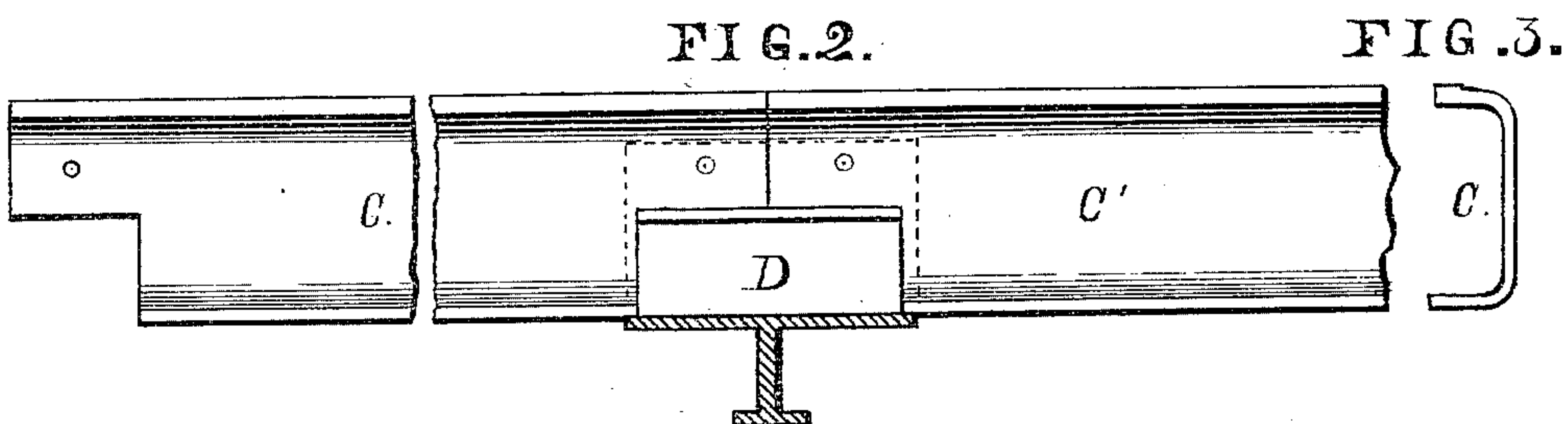
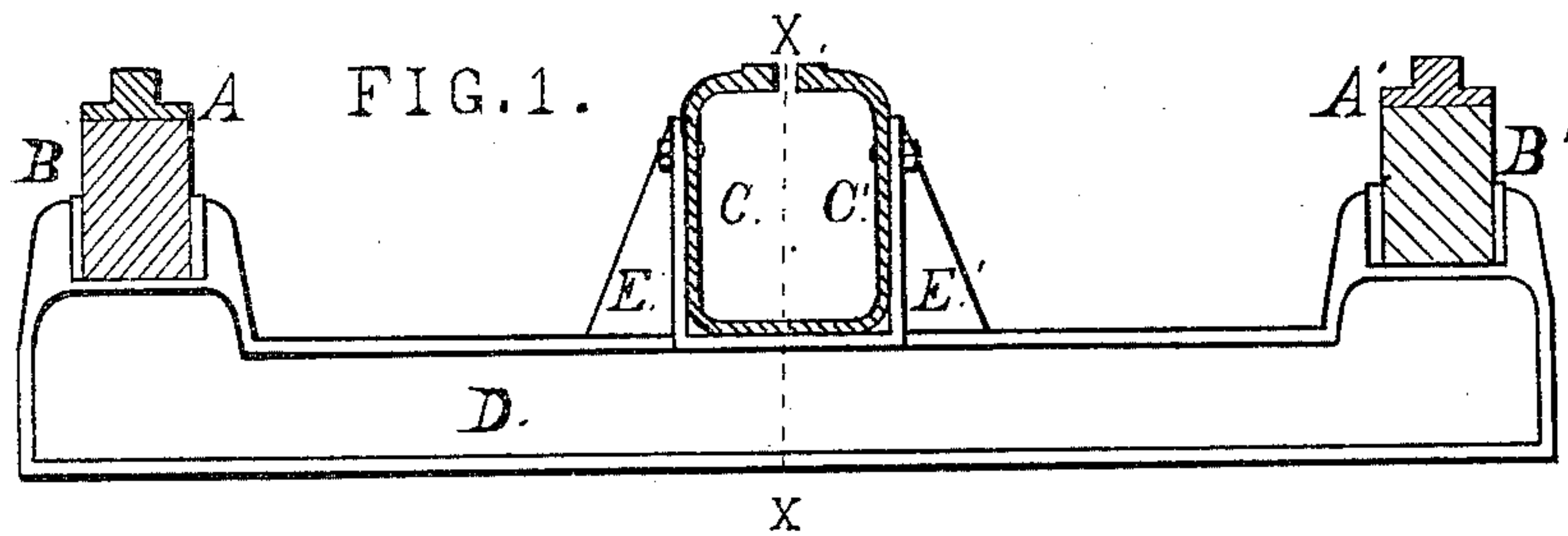


(No Model.)

W. HECKERT.
CABLE RAILROAD.

No. 318,620.

Patented May 26, 1885.



Witnesses

L. A. Heckert
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Inventor

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UNITED STATES PATENT OFFICE.

WILLIAM HECKERT, OF YONKERS, NEW YORK, ASSIGNOR TO G. HILTON SCRIBNER, OF SAME PLACE.

CABLE RAILROAD.

SPECIFICATION forming part of Letters Patent No. 318,620, dated May 26, 1885.

Application filed March 27, 1885. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HECKERT, of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Cable Railroads; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 represents a plain cross-tie and end sections of the steel rails, wooden sleepers, and wrought-iron or cast-iron tube in which the cables move. Fig. 2 represents a longitudinal transverse section on the line X X of Fig. 1. Fig. 3 represents the end or shape of the sections of which the cable-tube is constructed. Fig. 4 represents a box-tie with one side removed, showing the brackets and sheaves or pulleys on which the cable rides, and Fig. 5 represents a transverse section of Fig. 4 on the line Y Y.

My invention relates to railroads in which the engines are stationary and located at proper intervals along the line of the road in such manner as to be connected with an endless wire cable or series of sections of endless cables extending the full length and operated under the surface of the road in such manner as to admit of the cars being connected with and propelled by said cable or cables.

My invention consists in the peculiar and economical construction of the several parts, which are interchangeable or in duplicate form, so designed as to interlock and bolt together with unskilled labor, forming a continuous road and cable-tube, being in every way substantial, durable, and much less expensive than roads as now constructed, requiring less than one-fourth the depth and amount of excavation, and admitting of the road being built without cutting or interfering with sewers, gas, water, and other pipes. It is also less liable to become obstructed and filled with water or deranged by the action of frost and the pressure of the ground or curbstones against the outer walls of the cable-tube.

In Fig. 1, A A' represent the steel rails, and B B' the sleepers or longitudinal timbers hav-

ing their bearings on the ends of ties D and F, the ties D being spaced so as to receive the ends of the tube-sections C C', which are made to interlock with and bolt onto the ties, forming a continuous tube, said ties forming the bottom and a portion of the sides of said tube through the width of said ties, as seen in Figs. 2 and 5. The tube-sections C C' have their ends bolted to the brackets E E', which are formed on the ties D, thereby holding the cable-tube firmly in line with the tracks or rails A A'.

Fig. 2 is a longitudinal transverse section of Fig. 1 on the dotted line X X, showing the uniform shape of ends of the tube-sections C C' and the way they connect with the cross-ties.

Fig. 3 shows an end view of the said tube-sections, which are so formed as to fit together tightly below when two are placed with their concave sides facing each other and leave an opening between the upper edges, as shown in Fig. 1. I prefer making said tube-sections in lengths of ten feet, requiring the ties D at each section-joint, excepting when the tie F is introduced, which is made in the form of a box, to hold the pulleys on which the cables H H', Fig. 4, ride, the pulleys T T being held at any incline required by curves in the road by means of the adjustable brackets S S'. A lid or door, K, Fig. 5, forms a convenient opening to the box for oiling and repairing the brackets and pulleys or examining and repairing the wire cables. The said box-ties may also be used as receptacles for dust, dirt, snow, and water, which can be swept into them by a wire brush or broom connected to the grip of the car passing along in the tube. The matter so collected in said box-ties may be removed through the doors K, or pipes (not shown) may be made to connect with sewers or other convenient means of drainage.

Fig. 5 is a transverse section of Fig. 4 on the line Y Y, showing the brackets and pulleys T supporting the cables H H'. One or both of said cables may be in use at the same time, one running at a higher speed than the other, admitting of the cars being connected with either cable, thereby regulating the time and space between the several cars, and allowing time to be made up when lost by delays by connecting with the fast cable, the slowest cable being

the standard speed or general working cable. Either cable may, however, do all the work when the other breaks or is being repaired.

The desirable features of my improved road-way are found in the parts all being ready made before being delivered, and the small expense of such preparation, and connecting together in place ready for use, the small amount and depth of excavation, requiring but eighteen inches deep for the cross-ties, twelve inches for the cable-tube, and less than twelve inches for the sleepers and rails A and B.

The cable-tube may have either of its sections C C' removed for repairs or for examining and repairing the cables in a few minutes of time, requiring little or no labor in removing and replacing the earth or cobble-stones at the sides of said sections. Other roads now in use require excavations of six feet wide and five feet deep, which in many places interferes with sewer, gas, and water pipes, and in other places entails great expense in removing rock, requiring blasting and dangerous work, and during either building or repairing obstructs the streets. The great depth of cable-tubes now in use causes the sides to close in by the action of the frost, causing constant repairs to admit of the cable-grip which connects the cars with the cable to work freely in the slot at the top of the sections C C'.

My tubes being but one-fourth the depth and having the material shaped to give the greatest strength and presenting less surface to the action of the frost, resists the same, requiring little repairing from any cause whatever. When repairs are required, they are quickly and cheaply done with no delay of

cars or obstruction to the streets outside of railroad-tracks.

Having described my invention, what I claim as new, and wish to secure by Letters Patent, is—

1. The tie D, having formed on it the brackets E E', for supporting the ends of the tube-sections C C', and forming the bottom and part of the sides of said tube, as and for purposes specified.

2. The tie D, with its bearings, to support sleepers B B' and brackets E E', in combination with the tube-sections C C', interlocking and bolting together in ready-made interchangeable sections made as and for purposes specified.

3. The sectional tubes C C', formed by casting or rolling, and having their ends so shaped as to interchange and fit on either of the ties D or F, forming a continuous tube, as represented, and for purposes specified.

4. The box-tie F, forming a bearing for the timbers B B', and adjustable brackets S S', and provided with a lid or doors, K, and bearings for the tube-sections C C', as and for purposes specified.

5. The tie F and adjustable brackets and wheels S S' T T, arranged to carry two cables, said tie acting as a receptacle for snow, water, and dust swept from tubes, as fully specified.

Witness my hand this 26th day of June, 1884.

WM. HECKERT.

Witnesses:

JAMES S. FITCH,
L. A. HECKERT.