

(No Model.)

J. S. LAKE.
CABLE TRAMWAY.

No. 368,291.

Patented Aug. 16, 1887.

Fig. 1.

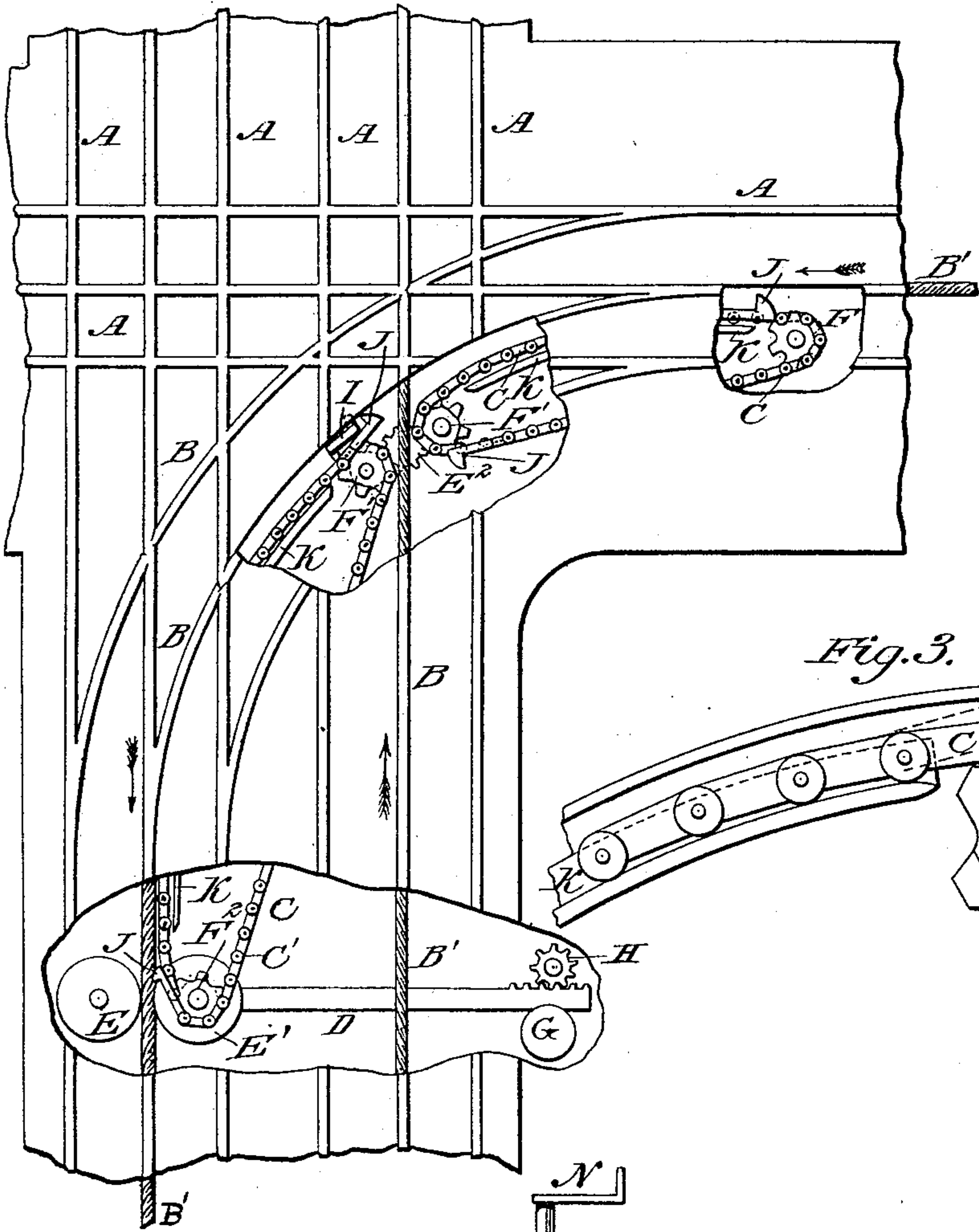


Fig. 6.



Fig. 5.

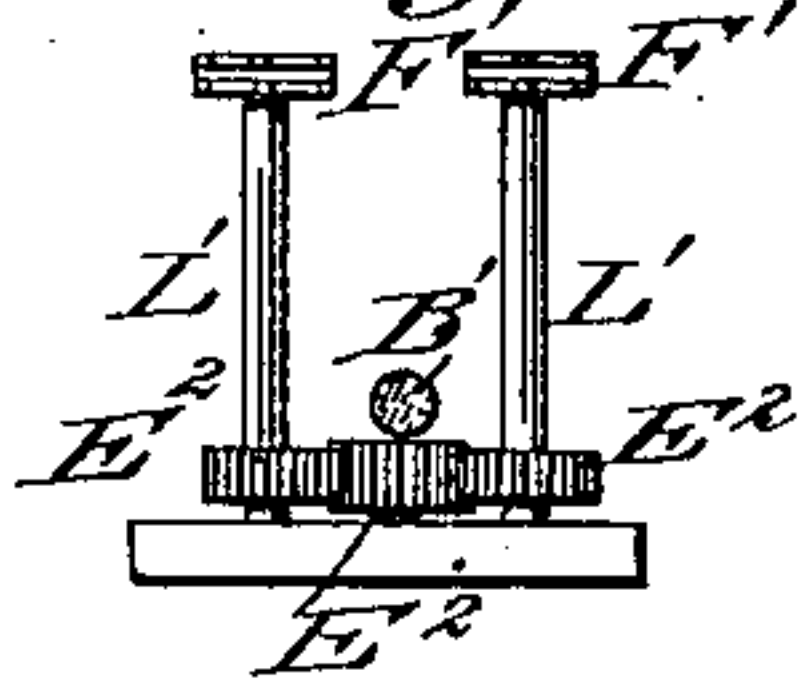


Fig. 3.

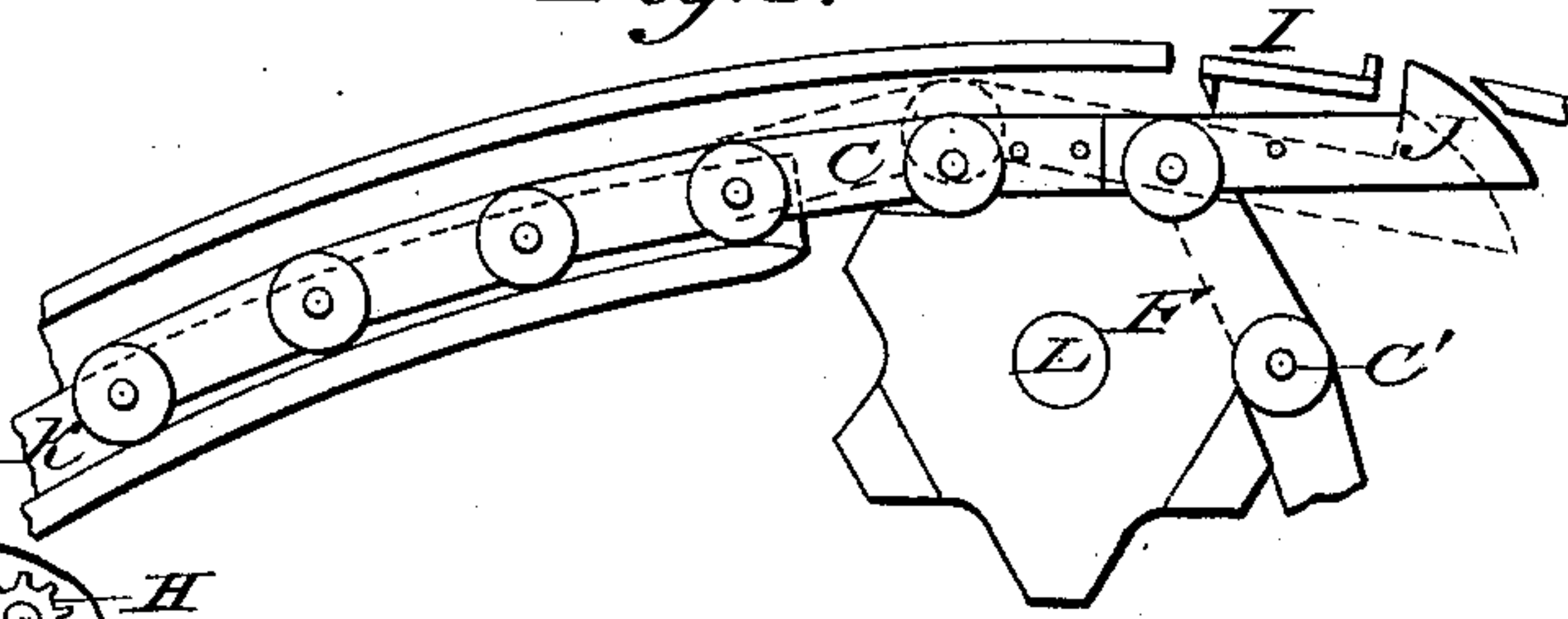


Fig. 2.

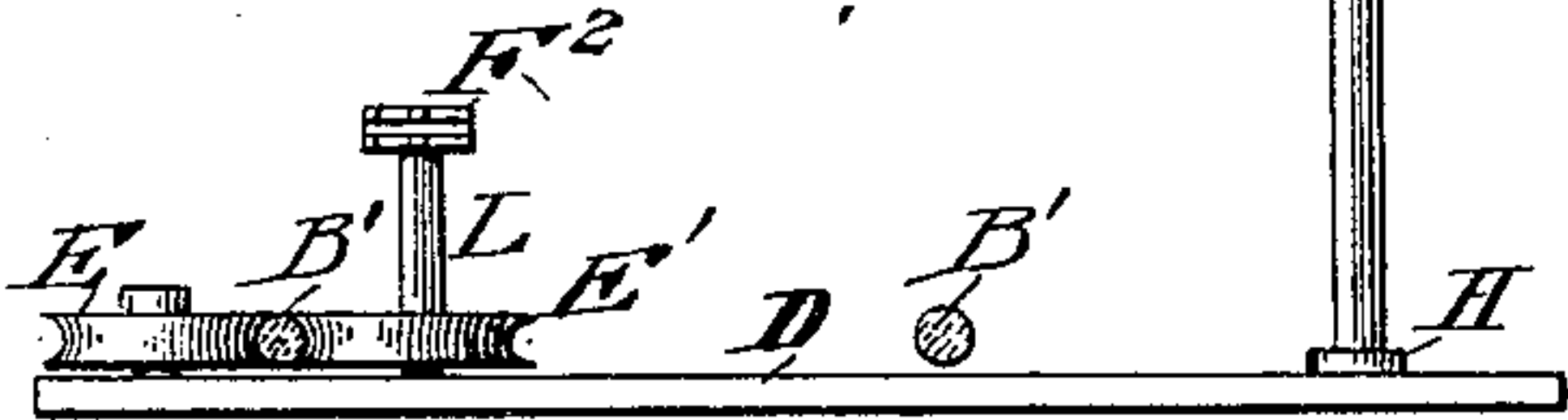
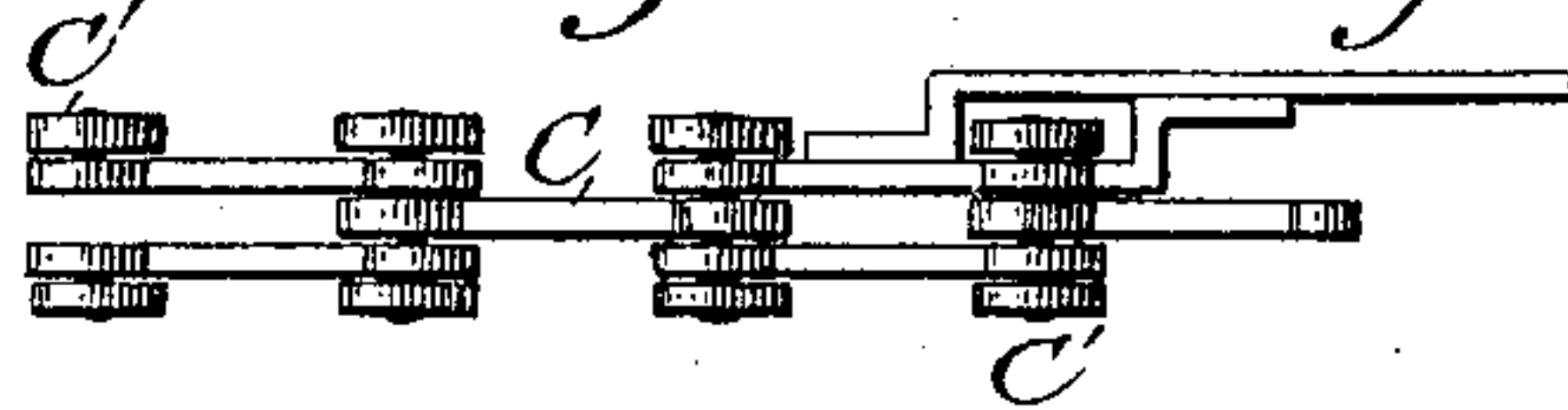


Fig. 4.



Witnesses.

Witnesses:
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Daniel A. Megruggle.

Inventor:

Jesse S. Lake.

UNITED STATES PATENT OFFICE.

JESSE S. LAKE, OF PLEASANTVILLE, NEW JERSEY.

CABLE TRAMWAY.

SPECIFICATION forming part of Letters Patent No. 368,291, dated August 16, 1887.

Application filed February 17, 1887. Serial No. 227,976. (No model.)

To all whom it may concern:

Be it known that I, JESSE S. LAKE, a citizen of the United States, residing at Pleasantville, in the county of Atlantic and State of New Jersey, have invented a new and useful Improvement in Cable Tramways, of which the following is a specification.

My invention has for its object, first, the producing of a device for pulling cable cars around corners of streets (where cross-streets have cross-cables) from one cable onto the other crossing cable; second, to provide a device for pulling cable cars past cross-cables or past any other obstacle where horses now have to be used. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view. Fig. 2 is a side elevation of the gripping and pulling device. Fig. 3 is an enlarged top view of a detached section of the endless chains. Fig. 4 is an edge view of the same. Figs. 5 and 6 are details.

Similar letters refer to similar parts throughout the several views.

The tracks are marked A. The slots for the stem of the grips to travel in are marked B. B' is the cable.

C is an endless chain extending around the corner of a street in a curve where there is no cable in the conduit, and extends as far along the straight part of the two crossing cables B' as may be required to pull the cars, to enable the cable B' to be taken into the grip of said cars. Said chains C are placed in the conduit as near up to the slot B as is convenient, and travel over a trackway, K, provided for the said chains C and their small wheels C'. (Shown in Figs. 1, 3, and 4.) Said endless chain C passes around sprocket-wheels F' F², where there is but a single track on each street; but if more than one cable is on a street, and one of the cables has to be crossed, the endless chain C will have to be cut and form two endless chains, with two sprocket-wheels for each endless chain. The sprocket-wheels F', at the cable-crossing, are connected together by cog-gearing below the cable to be crossed, which will be more fully described farther on. Said endless chain or chains C have any desired number of hooks J rigidly fast to its upper side. (Shown in Figs. 1, 3, and 4.)

The railway K is far enough in from the slot B to allow the hook J to be pressed in by the grip-stem when hitting against its inclined point from the rear, thus allowing said grip to pass said hook J. (Shown by dotted lines in Fig. 3.) It will be observed that when the hook J is pressed in a portion of the endless chain C next to the said hook J is thrown out clear of the track K to near the slot B, thereby being in position to throw the hook J out to clutch the rear of the grip I as soon as said endless chains C are put in motion, whereby said chains are caused to assume their proper position on their tracks K, which throws the hooks J out.

When the endless chains C are used for pulling cars past cross-cables where there are no curves, the hooks J are bent as shown in Fig. 6, whereby it will operate on a straight line the same as the above-described plan for a curve. Each sprocket-wheel is set in the side of the conduit on a level with the railway K in a proper position to guide the endless chains C onto their respective tracks K.

L' L' are shafts that connect the sprocket-wheels F' F' to the outside cog-wheels of a series of three cog-wheels, E², set in a line on a frame and their cogs meshing together below the crossing cable, whereby the two endless chains C are caused to move in the same direction.

M is a vertical shaft, and may be set in the out edge of the sidewalk.

H is a cog-wheel rigidly fast on the lower end of said shaft M, and meshes in the cogs of the rack-piece D. Said rack-piece D extends out and under the gripping-wheel E' and the cable B', being the cable that the car is to be pulled onto. Said wheel E' is rigidly attached to the sprocket-wheel F² by shaft L. The said rack-piece D has a grip-wheel, E, on its upper side at its outer end. (Shown in Figs. 1 and 2.) Said grip-wheels E E' may be so connected that they have to revolve together by cog-gearing in any of the known suitable forms. Motion is communicated to the endless chains by turning the crank N, thereby pulling the movable wheel E toward a stationary wheel, E', with the cable B' between them, thus binding said grip-wheels E E' to revolve by the trav-

eling motion of cable B', carrying with them the sprocket-wheel F², which in turn revolves the endless chain or chains with their sprocket-wheels F' F' F', which carry the said endless chains C, and by means of the hook J, the grip I, and the car, are successfully carried around the corner or curve or across the cross-cable, as may be required.

The hooks J, when two endless chains are used, are so arranged on the pulling endless chains that when they approach the cross-cable the hooks J on the first endless chain leaves the grip and is out of the way for one of the hooks J of the second endless chain C to take its place and keep up the motion of the car until it takes up the desired cable.

I do not claim pulling cars around corners (where there is no cable to cross) with supplemental chains provided with hooks when said chains are operated by horse-power or by separate engines set expressly for operating said chains; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a tramway, an endless chain or chains having a series of hooks which are rigidly fastened to links of said chain at proper intervals, said hooks having rear inclined points which are for the purpose of allowing a traveling grip-stem to force it in, and thus pass it when coming onto it from the rear, and thereby carrying or tipping out a portion of the said chain in front of the hook clear of its track, thus placing the chain in position to throw the hook out to engage with the rear part of the grip when the chain is pulled upon or put in motion by one of the traveling crossing cables, whereby a car can be carried from one crossing cable onto another, substantially as shown and described.

2. In a tramway, two or more sections of endless chains connected together by cog-gearing below a crossing cable, so as to form a continuous pulling device for pulling cars across crossing cables, said endless chains being op-

erated and moved by one of the crossing cables, and all combined substantially as shown and described.

3. In a tramway, a pulling device consisting of a stationary wheel, E', rigidly secured to the lower end of its shaft L, having a sprocket-wheel, F², rigidly fast to its upper end, and a movable wheel, E, and means to press said wheels together on the cable B, gripping it with sufficient force to cause the rotating of the wheel E', and sprocket-wheel F², thereby revolving the endless pulling-chain C, substantially as described, and for the purpose set forth.

4. In a tramway, the combination of the endless chains C, sprocket-wheels F' F', cog-wheels E², and shafts L', for the purpose set forth.

5. In a tramway, the combination of the track or railway K, wheels C', hooks J, and grip I, substantially as described, and for the purpose set forth.

6. In a tramway, the combination of rack-piece D, cog-wheel H, shaft M, crank or its equivalent N, and cable B', when used for the purpose set forth.

7. In a tramway, the combination of the endless chains C and hooks J, as described, whereby said hooks J of the first endless chain C leaves the grip I just before the hook J of the second chain is in position to take its place, substantially as described and shown.

8. In a tramway, the combination of the endless chains C and hooks J, as described, whereby the hook J of the second endless chain is in position to take the grip I as soon as hook J of the first chain C is out of its way, and thereby keeps up the motion of the car until it has taken up its pulling-cable, substantially as shown and described.

JESSE S. LAKE.

Witnesses:

FRANK WAUDSLEY,
CHARLES OTTO.