

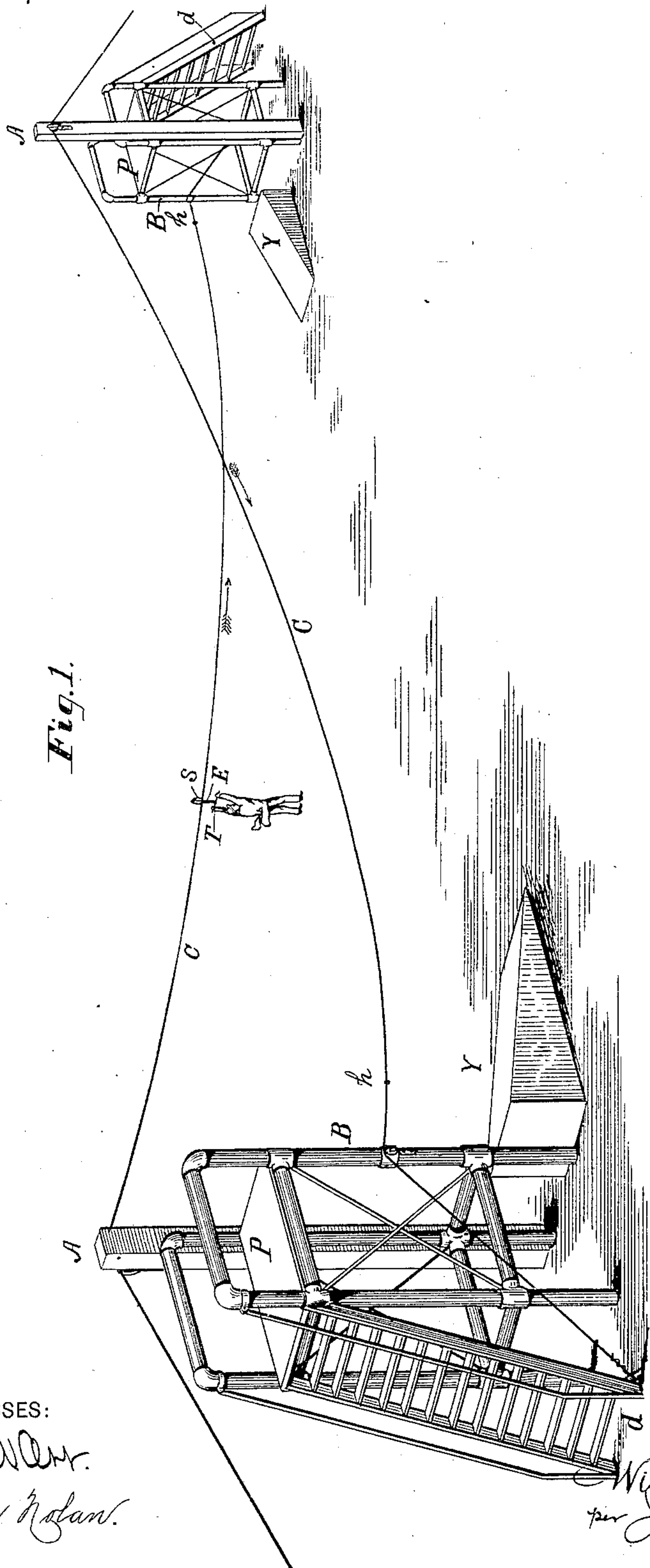
(No Model.)

2 Sheets—Sheet 1.

W. N. KELLER.  
ELEVATED CABLE GRAVITY ROAD.

No. 318,627.

Patented May 26, 1885.



WITNESSES:

*John W. Carr.*  
*John Nolan.*

INVENTOR

*William N. Keller,*  
*per Joshua Dusey, atty.*

(No Model.)

2 Sheets—Sheet 2.

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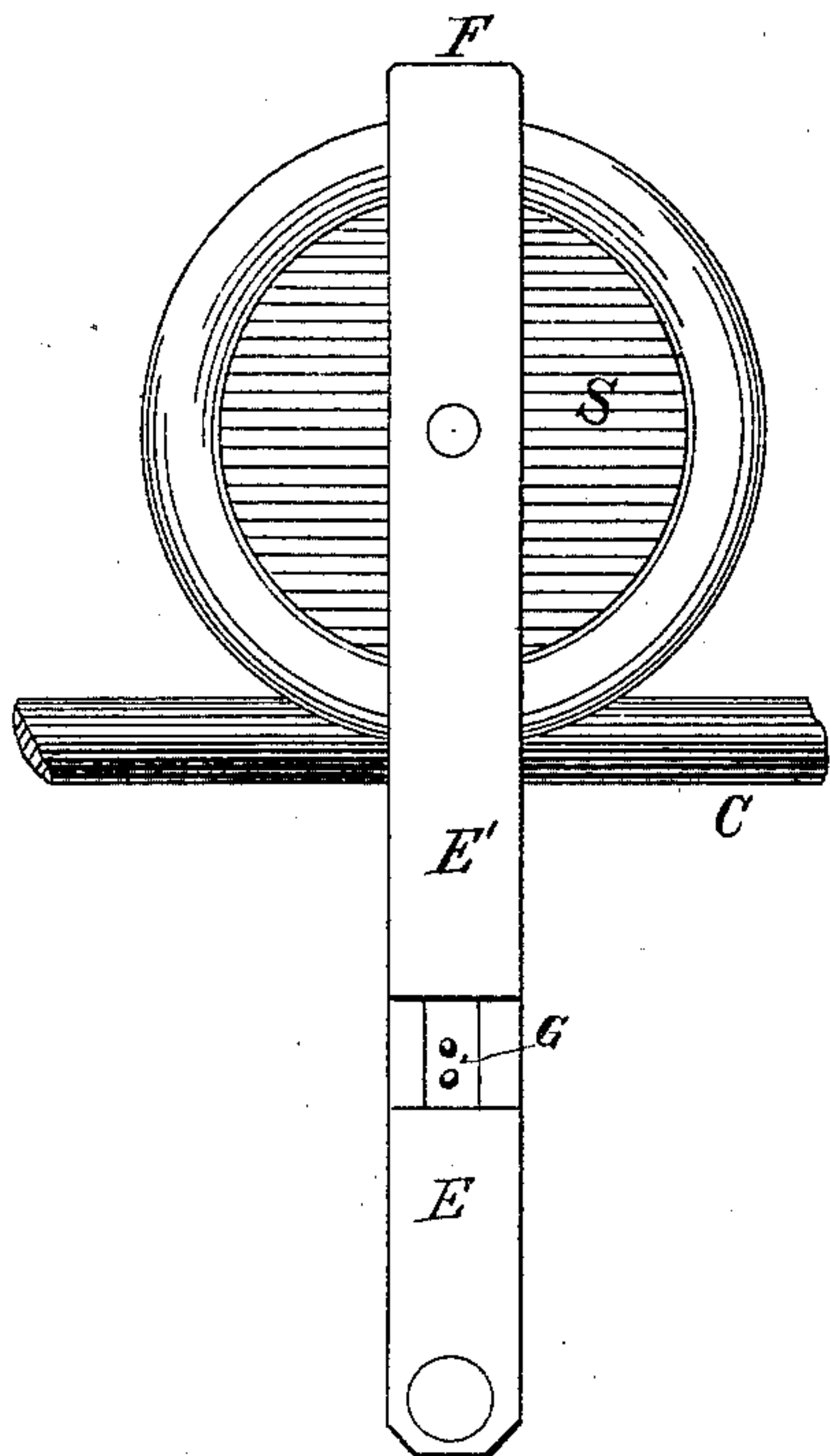


Fig. 2.

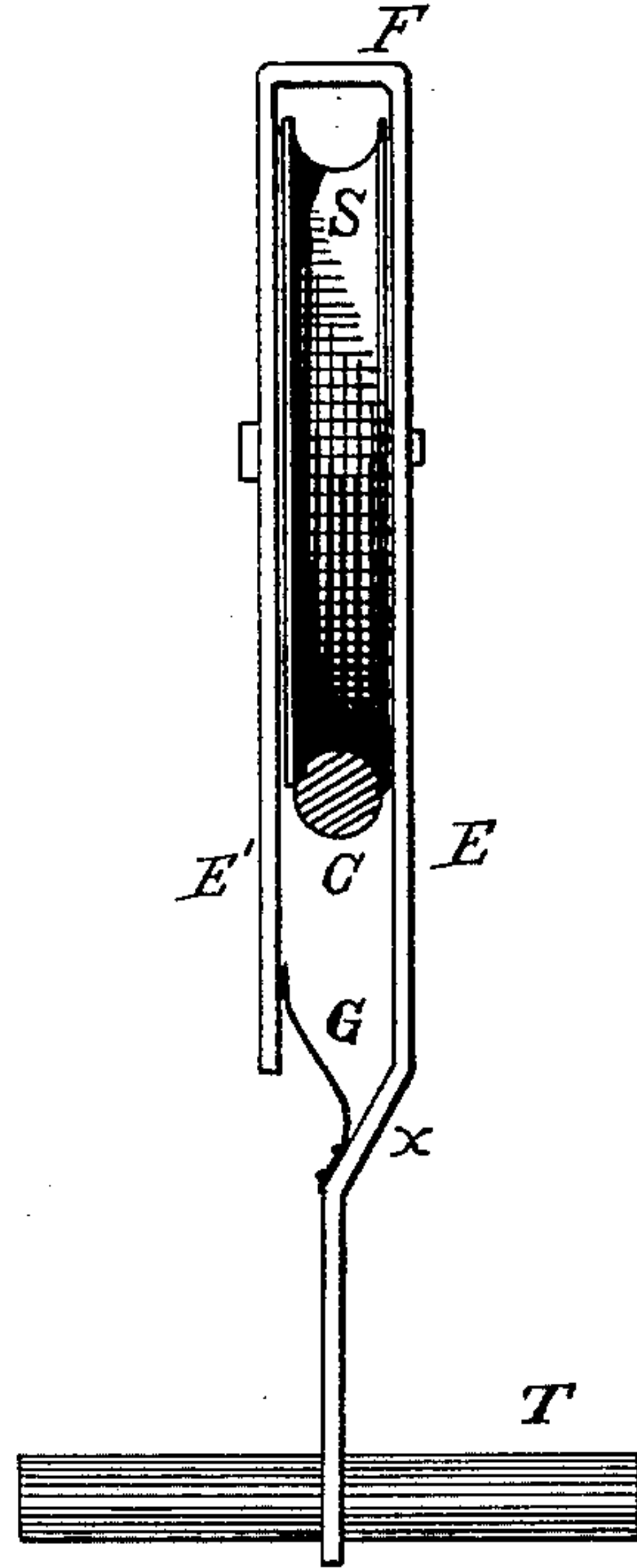


Fig. 3.

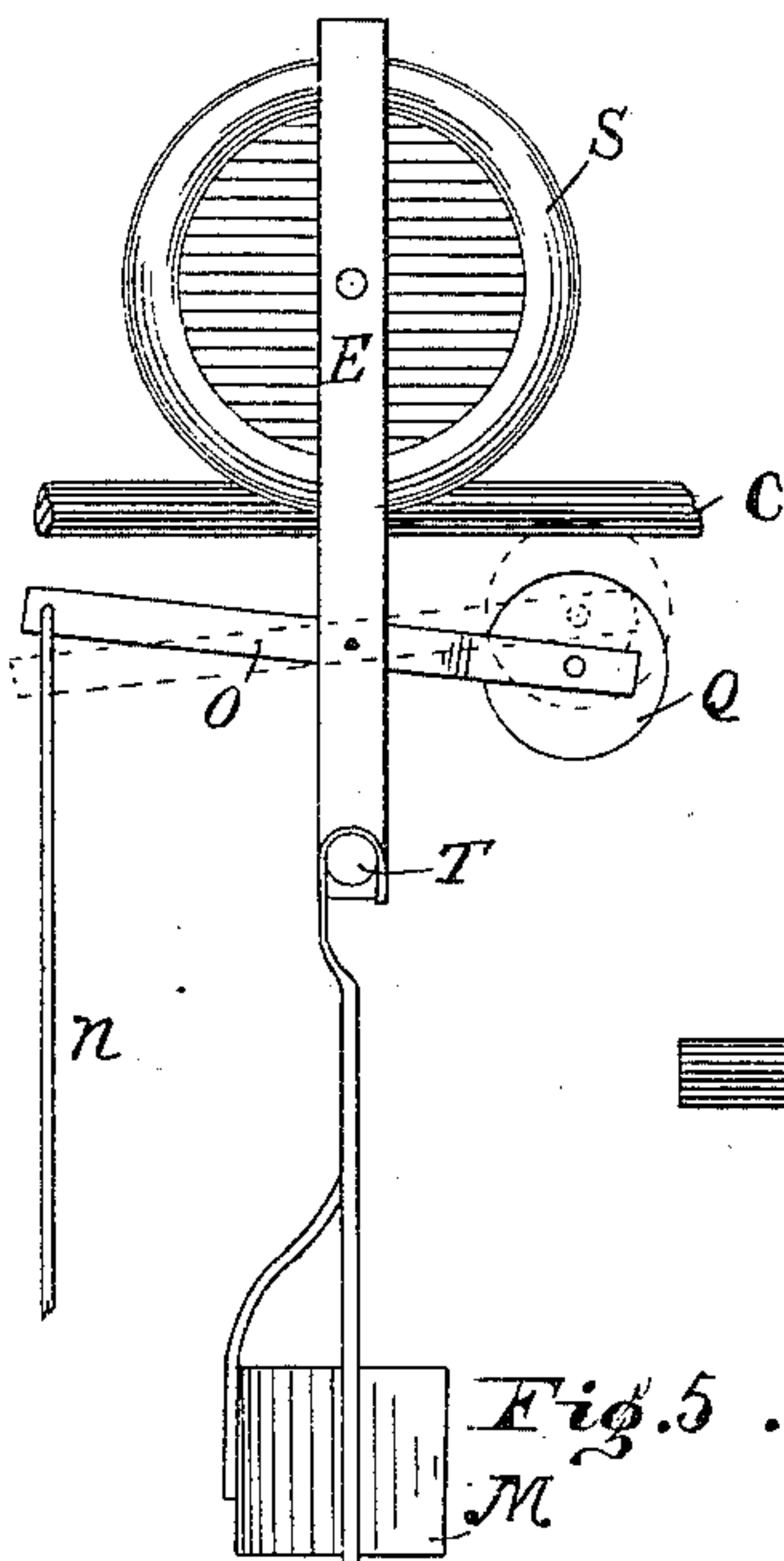


Fig. 5.

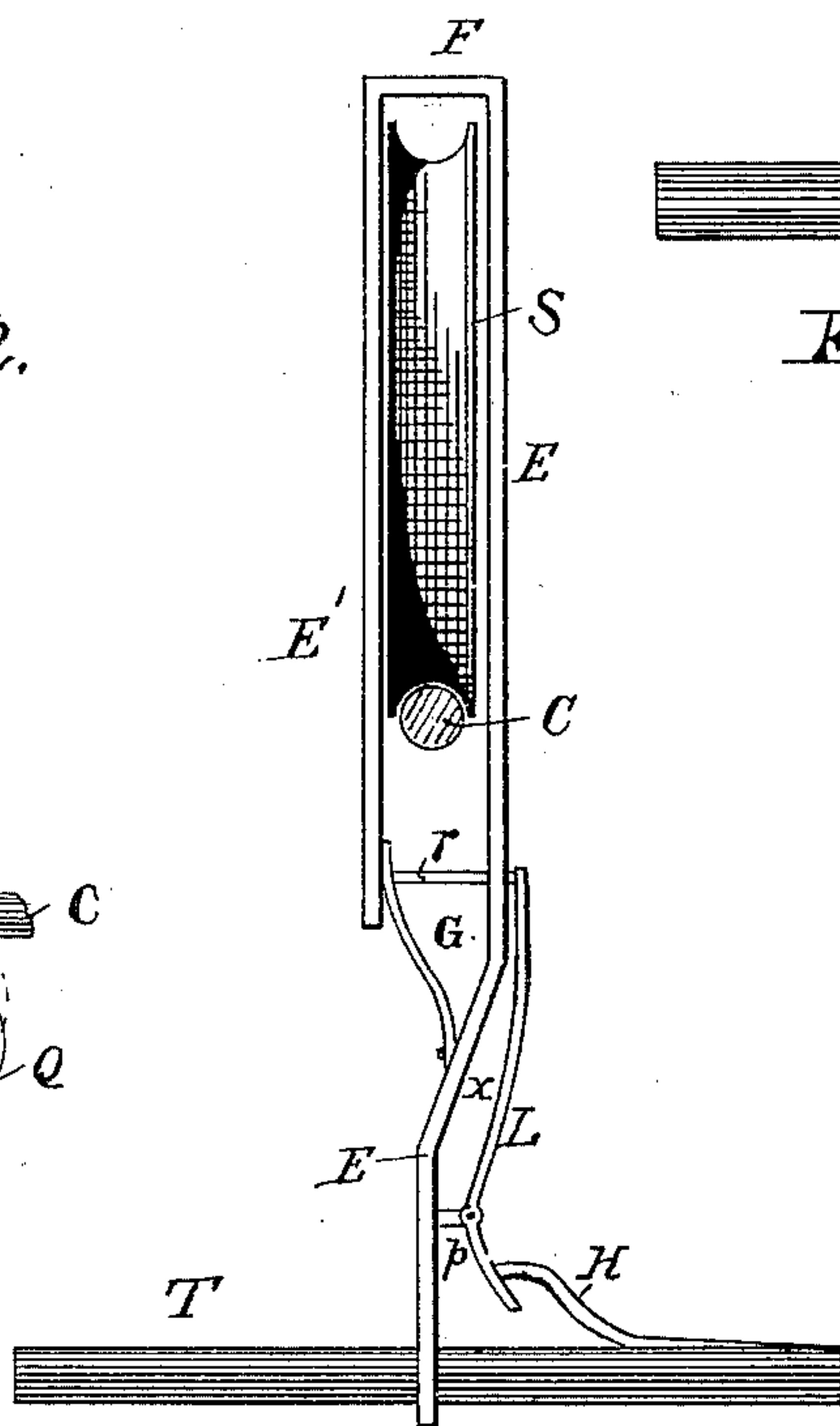


Fig. 4.

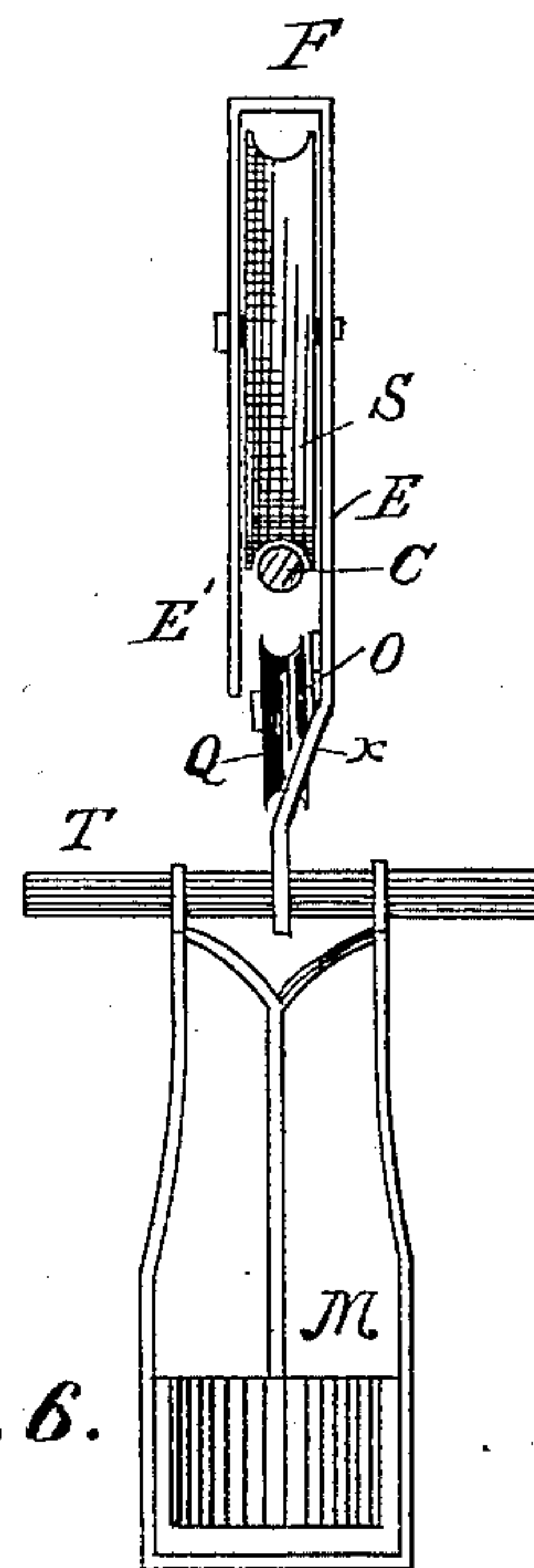


Fig. 6.

Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM N. KELLER, OF PHILADELPHIA, PA., ASSIGNOR TO HIMSELF, LORIN T. HIBBS, AND GEORGE R. CALLAHAN, ALL OF SAME PLACE.

## ELEVATED CABLE GRAVITY-ROAD.

SPECIFICATION forming part of Letters Patent No. 318,627, dated May 26, 1885.

Application filed May 13, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM N. KELLER, a citizen of the United States, residing at the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Elevated Cable Gravity-Roads, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—  
10 Figure 1 is a general perspective view. Fig. 2, Sheet 2, is a side elevation of the "carriage" mounted in position on the cable. Fig. 3 is a front or edge view thereof. Fig. 4 is a similar view of the same with the addition  
15 of mechanism for actuating the spring G. Fig. 5 is a side elevation of the carriage provided with a brake, and also showing a car or chair suspended from the frame of the carriage. Fig. 6 is a front or edge view of Fig. 5.

20 The same reference-letters where they occur in the several figures indicate the same parts.

The nature of this invention is a structure composed of two cables inclined in opposite  
25 directions and arranged with relation to each other, so that the beginning or highest elevation of the one and the end or lowest elevation of the other are transversely adjacent or opposite, together with stands or platforms at  
30 each end of the pair of cables, whereby a rider suspended from a carriage adapted to travel upon the cables, having run by gravity down one cable, is enabled to support himself in position for starting at the top or  
35 highest elevation of the other cable of the series in order to descend the same.

The main purpose of the invention is to provide a novel and entertaining amusement and exercise, although it is adapted for enabling travelers to cross over from one side to  
40 another of a ravine or stream of water.

The invention embraces the construction and arrangement of the cable-ways generally, and also certain details thereof, and of the  
45 carriages used in connection therewith, as hereinafter set forth, and pointed out in the claims.

Referring to Fig. 1 of the drawings, C C mark two adjacent cables, each suspended between two posts, A and B, and inclined in  
50 opposite directions, as shown—that is to say,

the highest point of the one is about laterally opposite and adjacent to the lowest point of the other. At or near the termini of the series or pair of cables are platforms P, supported by a  
55 suitable frame-work, and provided with steps d, leading thereto. As I have usually erected the structure the length of the cables has been, say, two hundred feet, and the upper end thereof at an elevation of about twenty-five feet,  
60 and the lowest end about seven feet above the ground.

In connection with this structure I use a "carriage," as I term it, whereby a person suspended therefrom may be carried swiftly  
65 by gravity alone from the highest to the lowest point of either of said cables, then detaching the carriage from the one cable he ascends to the platform, adjusts the device upon the other cable, and, swinging off, runs down the  
70 last-mentioned cable, and so on, making the round as often as desired. This carriage in its simplest form consists of a sheave or pulley, S, having a grooved periphery and journaled in a frame or housing, F, one side or  
75 limb, E, of which extends down some distance below the sheave and cable, and is provided with a fixed cross-bar, T, which serves as a handle or handles to be grasped by the hands of the rider, whereby he is enabled to suspend  
80 himself in the manner shown in Fig. 1, wherein he is shown *in transitu* upon one of the cables. I prefer to give the extension E a set or bend inwardly at some distance below the sheave, as at X, so that the lower extremity  
85 or point of connection of the cross-bar shall be in line vertically with the middle of the sheave in order to preserve a proper balance.

In order to prevent the liability that would otherwise exist of the sheave running off the  
90 cable, and the occurrence of accidents resulting therefrom, I extend the other side, E', of the housing down beyond the periphery of the sheave or pulley, as shown, but so as to leave a space between its free end and the op-  
95 posite side of the frame, through which the cable may pass when it is desired to remove the device from the one cable in order to adjust it upon the other.

A carriage constructed as described being  
100 also top-heavy, is liable to turn over upon and fall from the cable when accidentally or other-



wise the hold of the rider upon the cross-bar T should be released. To prevent this, I sometimes secure to the side E of the pulley-frame a spring, G, which ordinarily bears  
 5 against the inside of the other limb or projection, E', as seen in Figs. 3 and 4. This spring bars the passage-way, and thus the carriage will always be retained on the cable, but may be readily released from the latter  
 10 by simply pressing in the spring G against the side of the frame, to which it is affixed. As a ready means for operating this retaining-spring without requiring the hands to be removed from the cross-bar T, I provide the  
 15 mechanism shown in Fig. 4. This consists of a lever, L, pivoted to a projection, p, on the side of the limb E, a short distance above the hand-bar. The upper or long arm of this lever carries a horizontal rod, r, that passes  
 20 through a slot or hole in the frame, the extremity of which rod is connected to the free end of the spring G, which draws upon the latter and the lever, and thus retains the parts in the position shown in said Fig. 4.  
 25 Another spring, H, one end of which is conveniently secured to the side of the hand-bar T, bears against the outwardly-bent short arm of lever L. By simply pressing down upon the spring the lever is actuated, and the  
 30 spring G, which, as stated, is connected to the long arm of the lever by the rod r, is drawn inwardly and the passage-way for the cable opened, whereupon the carriage may be removed from the latter.

35 Other equivalent means for temporarily barring and closing said passage-way may be readily applied by any intelligent mechanic.

A car or chair, M, for the reception of one or more passengers may be suspended from  
 40 the pulley-frame or the cross-bar T, as seen in Figs. 5 and 6.

When the length of the cables is considerable and the momentum acquired by the riders may be too great for safety in coming to  
 45 a stop at the end of the transit, I provide a convenient brake for checking or stopping the motion, such as illustrated in Figs. 5 and 6 of the drawings. It consists of a lever, O, pivoted on the side of the pulley-frame, be-  
 50 low the cable, at one end of which lever is journaled a small sheave, Q, that is brought in line with and directly beneath and near to the cable. To the other end of the lever is secured a rod or cord, n, which depends within  
 55 easy reach of the traveler. Normally the weight of the sheave Q causes it to drop down out of contact with the cable; but by drawing down upon the cord it is elevated and is brought with more or less frictional contact

against the under side of the cable, according  
 60 to the force that may be applied to the cord.

From the foregoing description, the operation and mode of using my invention will be obvious. The person having ascended to one  
 65 of the platforms P, places the sheave S of the carriage upon the high end of the cable, which is within easy reach of the platform. He then grasps the cross-bar, swings off from the plat-  
 70 form, and travels down the cable at a rate of speed depending upon its length and degree of inclination, until his feet are brought into  
 75 contact with the ground, or a device, which is also a part of my invention, consisting of an inclined platform or block, Y, placed on the ground below the lower end of the cable,  
 80 as seen in Fig. 1, and inclined in a direction opposite that of the cable. This block is so placed that when the rider reaches it he rests his feet upon the same, and, running up,  
 85 gradually comes to a stop, which, without this incline, would sometimes be too abrupt for comfort and safety. As a further check, I sometimes secure in any convenient manner,  
 near the lower end of the cable, a stop or but-  
 90 ton, h, (which may also be made adjustable upon this cable,) against which the sheave strikes.

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

1. In combination with the two adjacent  
 90 oppositely-inclined cables, the platform Y, located near the lower end of the cables, respectively, and beneath the same, and inclined in a direction opposite to that of the inclination of the cable, substantially as and  
 95 for the purpose specified.

2. In combination with the inclined cables, the revoluble sheave or pulley, adapted to run  
 100 upon a cable, its frame consisting of two lateral limbs, both extending below the sheave and unconnected, so as to form a passage-way for the cable, together with the rigid hand-bar, substantially as described.

3. The combination of the revoluble sheave, its frame, and the rigid hand-bar, substan-  
 105 tially as and for the purpose specified.

4. The combination, with the sheave and its frame composed of the two limbs unconnected, as shown, of the spring H, pivoted  
 110 lever L, connecting-rod r, and spring G, substantially as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature this 8th day of May, A. D. 1884.

WILLIAM N. KELLER.

Witnesses:

JOHN NOLAN,  
 FRANCIS S. BROWN.