

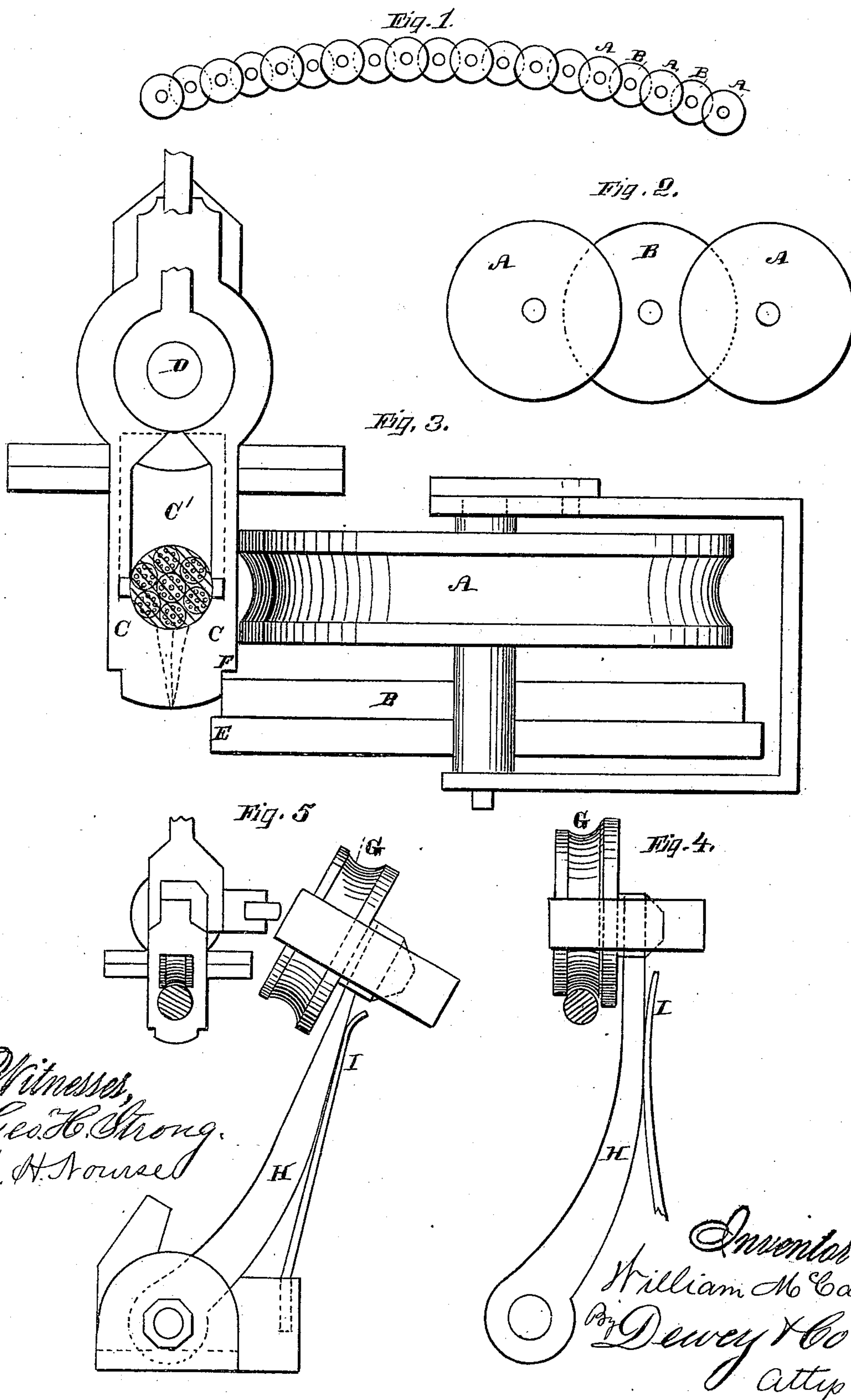
(No Model.)

2 Sheets—Sheet 1.

W. McCALL.  
CABLE RAILWAY.

No. 252,889.

Patented Jan. 31, 1882.



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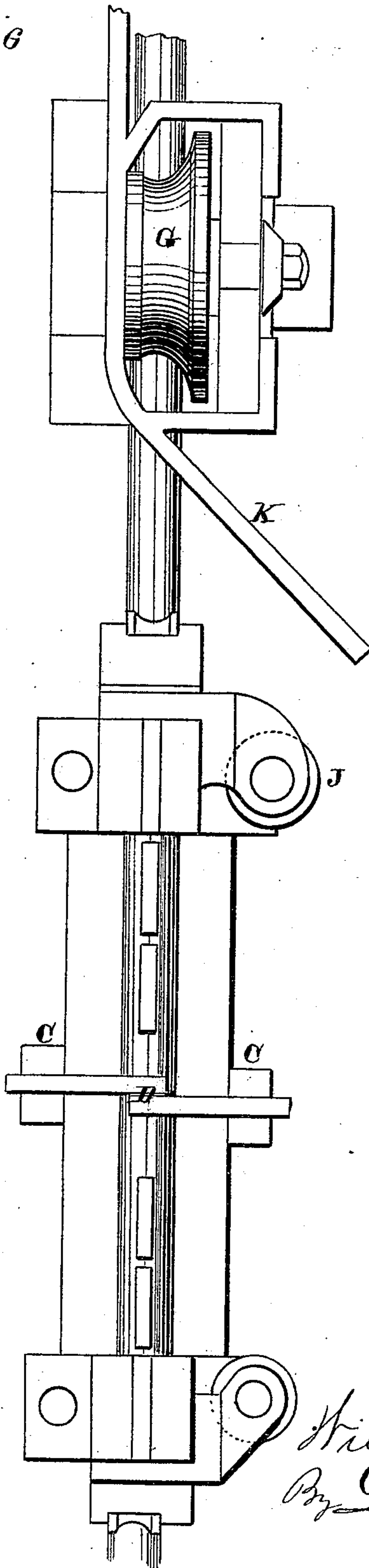
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*Fig. 6*



*Witnesses,*  
*Geo. H. Strong,*  
*S. H. Hourse*

*Inventor,*  
*William McCall*  
*By Dewey & Co.*  
*Attys.*



# UNITED STATES PATENT OFFICE.

WILLIAM MCCALL, OF SAN FRANCISCO, CALIFORNIA.

## CABLE-RAILWAY.

SPECIFICATION forming part of Letters Patent No. 252,889, dated January 31, 1882.

Application filed June 16, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM MCCALL, of the city and county of San Francisco, State of California, have invented an Improvement in Cable-Railways; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in cable-railways; and it consists in a novel combination of rollers or sheaves which are set upon the curve, so as to carry the cable around it and support it in the proper position, and at the same time allow the gripe from the car to be moved around the curve in a regular line corresponding with the line of the slot, and be supported upon two or more of the sheaves at once during its passage around the curve. The gripe is so constructed that it may be opened at any point in the curve, so as to allow the cable to move through it while the car is stopped.

My invention further relates to a means for guiding the cable while changing its grade, and for preventing its striking the upper part of the tube at such points, by means of a sheave or pulley supported upon a hinged swinging arm, which is adapted to be moved out of the way by the passing gripe, and is returned to its position after the gripe has passed.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of the sheaves forming the curve. Fig. 2 is an enlarged view. Fig. 3 is a view of two sheaves in line, and a transverse section of the cable and the gripe as it holds the cable and rests against the sheaves. Fig. 4 shows the vertical rope-guiding sheave and its spring-arm with the rope in the sheave. Fig. 5 is a view of the sheave forced aside by the gripe in passing. Fig. 6 is a plan view of the gripe upon the cable and approaching the sheave.

A and B are the rollers, which form the curve wherever needed. The upper rollers, A, carry the cable and overlap the lower ones, B, as shown, so that their peripheries approach nearly to the spindles upon which they turn, and the lower ones in the same manner project beneath the upper ones nearly to their spindles. By this arrangement the depression between the sheaves on the line of the curve will

be reduced to a minimum, and the gripe in passing will be supported upon two or more of the sheaves, so as to allow no side movement, as would be the case if the sheaves were farther apart. The distance between the upper and lower sheaves is as small as possible, so that the gripe rests easily upon both series as it passes. In the present case I have shown a gripe having jaws C, which are hinged above at D, so as to open and drop the cable entirely when desired, and, when closed, vertically-moving jaws C' are forced together by levers upon the car, which are not shown, so as to clamp the cable, and thus move the car. These jaws may be separated to allow the car to stop without entirely dropping the cable, and in order to do this upon the curve the lower sheaves are flanged and project somewhat beyond the upper ones, as shown at E. The gripe has a corresponding shoulder, F, so that if the lower jaw is moved downward it will still be supported against the lower roller. By this construction the gripe will pass around the curve with a smooth even movement, and will have no side motion in its slot, and it may be opened to allow the car to stop at any point in the curve, and it may be easily started again.

Whenever the cable passes from a level to an upgrade, or from one grade to another steeper one, it is necessary to employ a guide or direction sheave or pulley, G. In order to move this pulley out of the way as the gripe approaches to allow it to pass, I support its shaft on the upper end of an arm, H, which has its lower end hinged or journaled, so as to turn to one side. A spring, I, throws it back to its position again.

The gripe has rollers J upon the side, and the frame in which the sheave G is supported has an inclined arm, K, projecting from its side, so that as the gripe approaches it will first depress the cable free from the pulley, and then force the pulley to one side until the gripe has passed, when the spring I will throw the pulley back to its position above the line of the cable, ready to receive it when the gripe allows it to rise again.

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

1. In a cable-railway, the means for guiding

the cable and the gripe around curves, consisting of the double series of sheaves A B, placed one above the other and alternating and overlapping, substantially as herein described.

5 2. The superposed overlapping sheaves A B, the lower ones projecting beyond the upper, as shown, in combination with the gripe having vertically-moving jaws and the shoulders  
10 F, to guide the downward movement of the lower jaw when the gripe is opened, substantially as herein described.

3. The vertical guide-sheave G, journaled in the swinging arm H, and having the beveled or inclined arm K, by which the approaching gripe may move it back, substantially as and for the purpose herein described. 15

In witness whereof I have hereunto set my hand.

WILLIAM McCALL.

Witnesses:

GEO. H. STRONG,  
S. H. NOURSE.