

W. F. BROTHERS.
TRAVELING CRANE.

APPLICATION FILED DEC. 1, 1909.

Patented Aug. 15, 1911.

2 SHEETS—SHEET 1.

1,000,773.

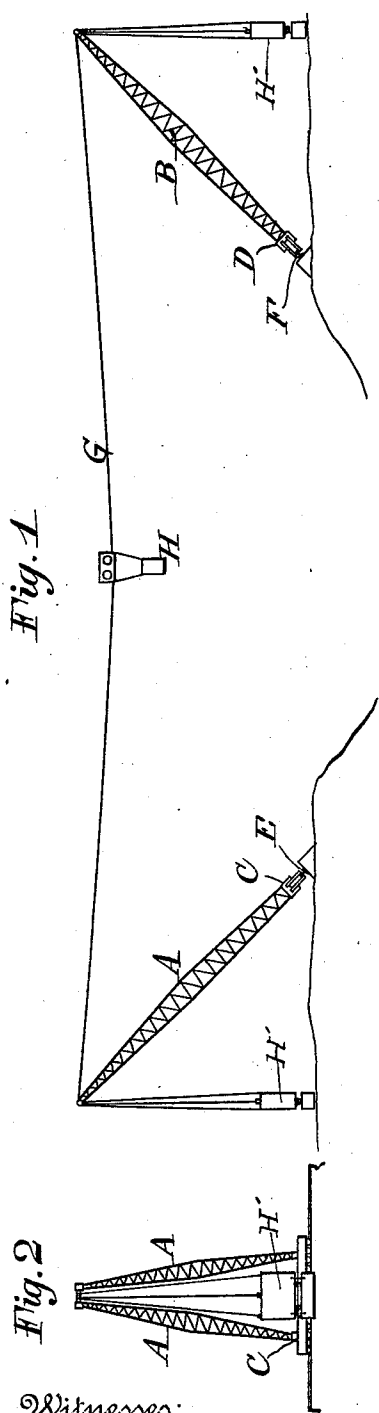


Fig. 2

Fig. 1

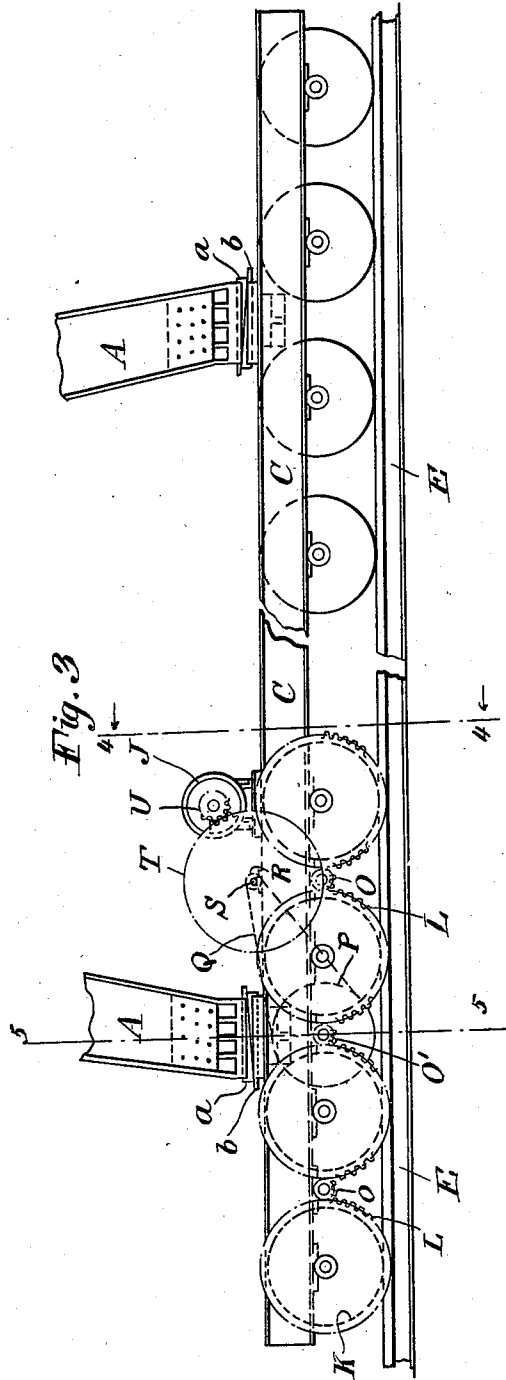


Fig. 3

Witnesses:
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A. Perham

William F. Brothers Inventor
By his Attorneys
Crimm, Throckmold & Seligson

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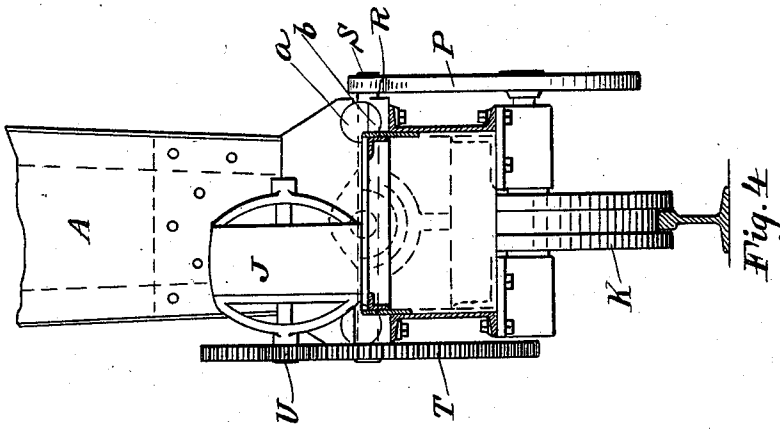


Fig. 4

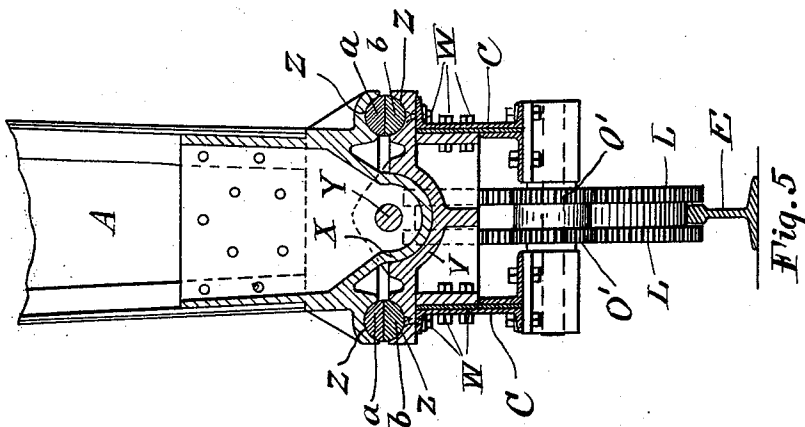


Fig. 5

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William F. Brothers Inventor

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UNITED STATES PATENT OFFICE.

WILLIAM F. BROTHERS, OF NEW YORK, N. Y.

TRAVELING CRANE.

1,000,773.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed December 1, 1909. Serial No. 530,757.

To all whom it may concern:

Be it known that I, WILLIAM F. BROTHERS, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Traveling Cranes, of which the following is a specification accompanied by drawings.

This invention relates to improvements in traveling cranes, but more particularly to the towers used in connection with cableways, although the invention may be used in any connection in which it is found applicable.

The object of the invention is to provide means for overcoming flange friction between the flanges of the driving and supporting wheels of the towers and the rail or rails upon which the wheels rest.

Another object of the invention is to enable power to be applied mechanically for moving the cranes without twist or undue strain upon the towers while being moved.

To these ends the invention in its preferred form is described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a flexible bridge crane; Fig. 2 is an end elevation of Fig. 1; Fig. 3 is an enlarged detail side elevation partly broken away of one of the tower carriages; Fig. 4 is a transverse sectional elevation on the line 4—4 of Fig. 3, looking in the direction of the arrows; Fig. 5 is a transverse sectional elevation on the line 5—5 of Fig. 3.

Referring to the drawings, A and B represent the main supports or legs of the traveling towers supported on the carriages C and D traveling on the rails E and F.

As shown in the drawings, the invention is applied to a balanced cable crane of which G is the bridge and H is the shifting load. Gravity anchors or counter-weights H' are hung from the upper ends of the towers on the opposite side to the cable or bridge G. The rails E and F as shown are supported at an incline to the vertical to accommodate the thrust of the towers.

In accordance with this invention the carriages C and D are mechanically driven as by means of suitable motors J connected to drive one set of wheels on each carriage. Preferably the driving wheels K are provided with toothed flanges L meshing with

idler pinions O and driving pinion O'. On the shaft of the driving pinion O' is a sprocket wheel P connected by chain drive Q with the sprocket pinion R on counter shaft S, on the opposite end of which shaft is a spur wheel T meshing with spur pinion U on the shaft of the motor J. By this chain of mechanism all the driving wheels are driven in the same direction and by reversing the motor the movement of the carriage may be reversed.

In accordance with the invention means are provided for adjusting the angle of the carriage on the rails relatively to the vertical without changing the angle of the tower relative to the vertical. Assuming that the mean position of the tower legs is at an angle of substantially 45°, I provide means for adjusting the angle of the carriage at a greater or less number of degrees relative to the vertical, thereby adjusting the carriage and wheel flanges to the rails and compensating for the thrust of the tower legs to avoid binding between the wheel flanges and the edges of the rail heads. This adjustment is required in case the angle of the rail varies for any reason as by settling of the foundations thereunder or by reason of a changing angle of the tower legs due to a stretching of the bridge G. I am enabled to maintain the wheels on the rails at any angle within certain limits regardless of the angle at which the tower legs may stand.

Referring more particularly to Figs. 4 and 5 the carriage is provided with saddles or step sockets V suitably secured to the frame as by means of the bolts W and the legs are provided with male sections or steps X adapted to be seated in the step sockets and cotter pin Y or other suitable connection holds the parts together. The outer portions of the step socket and step as shown are provided with key-ways Z in which are seated the split reversely tapered keys *a, b*. By suitably adjusting the split keys *a, b* it will be seen that a change in the angle between the legs A and the carriage thereunder may be readily effected. By this means the angle of the carriage may be maintained so adjusted that binding between the flanges of the wheels on one side or the other against the rail head may be obviated.

I claim and desire to obtain by Letters Patent the following:

1. A flexible bridge traveling crane, com-

prising a carriage and shear legs, and means for changing the angle of the carriage with the vertical, without varying the angle of the legs with the vertical.

5 2. A flexible bridge traveling crane, comprising a carriage and shear legs, and means for changing the angle of the shear legs with the vertical without varying the angle of the carriage with the vertical.

10 3. A flexible bridge traveling crane, comprising a carriage and shear legs, and means for varying the angle of one relatively to the other.

15 4. A flexible bridge traveling crane, comprising shear legs, a supporting carriage adapted to travel on a single rail, and means for adjusting the angle of said carriage on

said rail, without varying the angle of the shear legs with the vertical.

5. A flexible bridge traveling crane, comprising shear legs, a supporting carriage ad- 20 justably connected thereto, wheels for said carriage adapted to travel on a single rail and means for varying the angle of the carriage on said rail without varying the angle 25 of the shear legs with the vertical.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM F. BROTHERS.

Witnesses:

K. G. LEARD,
E. P. LA GAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."