

(No Model.)

2 Sheets—Sheet 1.

W. H. MORGAN.  
OVERHEAD TRAVELING CRANE.

No. 560,736.

Patented May 26, 1896.

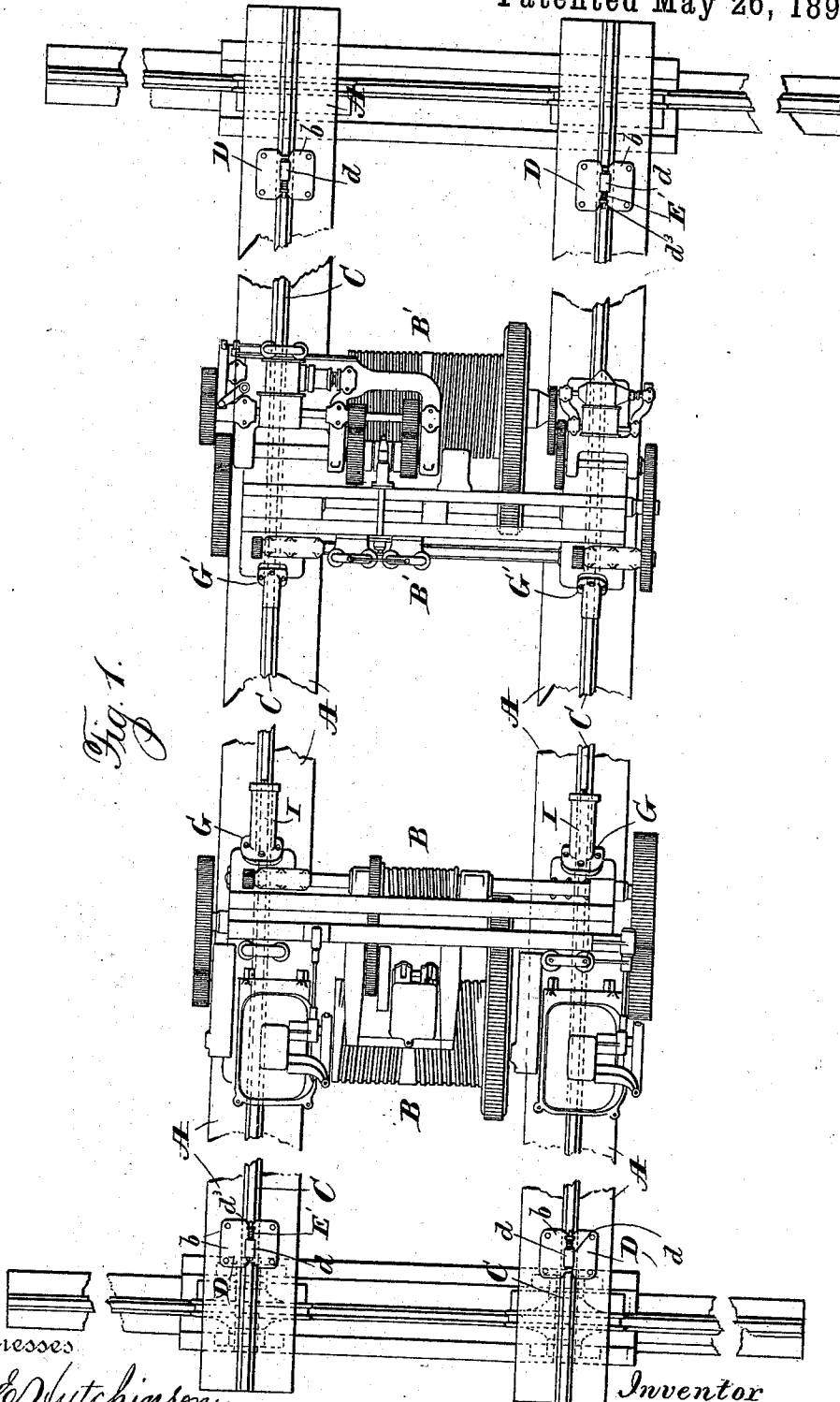


Fig. 1.

Witnesses

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Inventor

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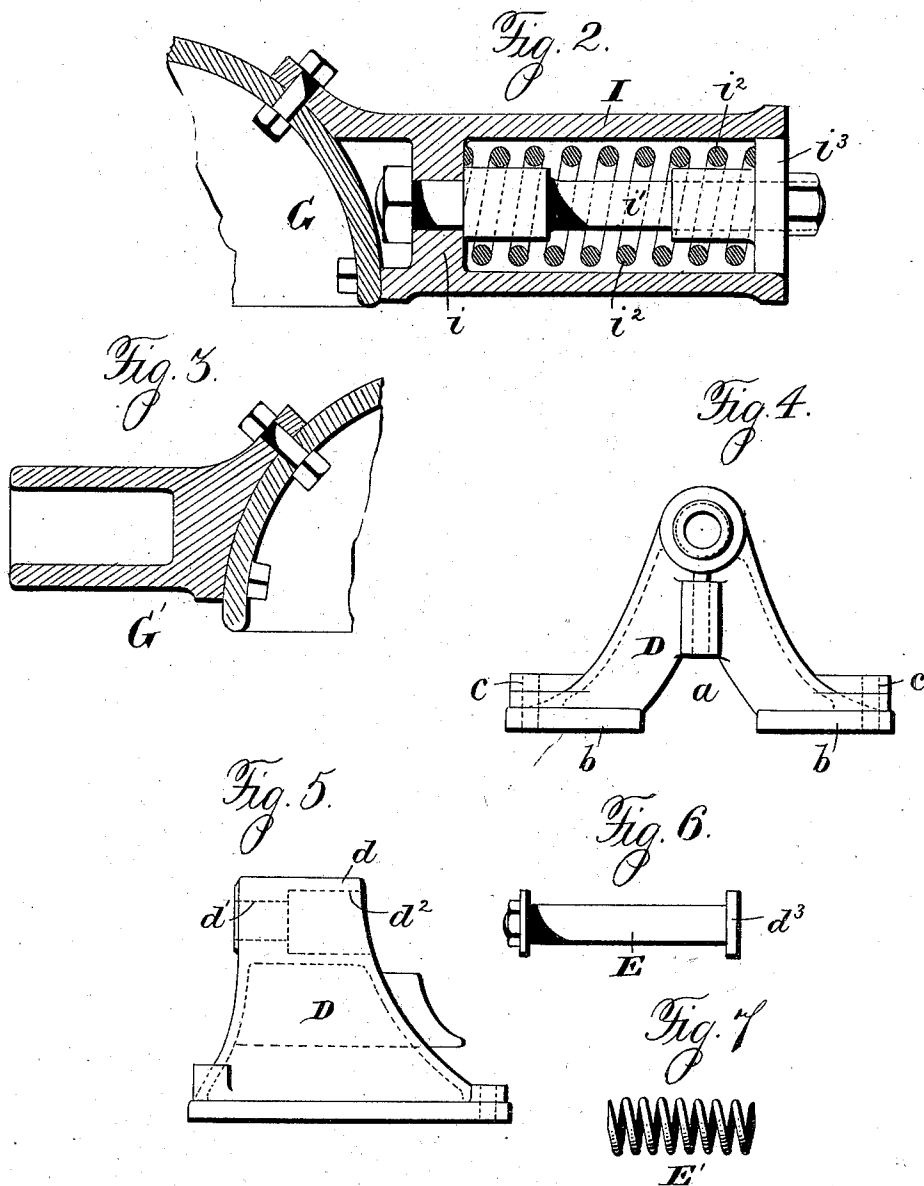
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Inventor

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# UNITED STATES PATENT OFFICE.

WILLIAM HENRY MORGAN, OF ALLIANCE, OHIO, ASSIGNOR OF THREE-FOURTHS TO THOMAS R. MORGAN, SR., THOMAS R. MORGAN, JR., AND JOHN R. MORGAN, OF SAME PLACE.

## OVERHEAD TRAVELING CRANE.

SPECIFICATION forming part of Letters Patent No. 560,736, dated May 26, 1896.

Application filed January 7, 1893. Serial No. 457,647. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY MORGAN, of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Overhead Traveling Cranes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in overhead traveling cranes, and more particularly to that class of cranes wherein a traveling trolley or trolleys are mounted on a traveling bridge. Up to the time of the employment of the electric motor on this class of cranes the speed of the trolley was, owing to the complicated character of the driving-gear, necessarily slow, and it was not a difficult matter to promptly stop them at the end of the trackway or stop them in time to prevent collision between trolleys and consequent damage to one or both trolleys. Since the introduction of the electric motor on cranes of this class a much wider range of speed of trolley is attainable and the danger of the trolleys colliding with each other or leaving the track at the ends of the bridge is correspondingly increased.

The object of my invention is to provide means for absorbing the shock to the trolley occasioned either by collision between two trolleys or by one trolley approaching too near the terminals of the track; and it consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of an overhead traveling crane having two trolleys thereon. Fig. 2 is a view in section of one form of yielding buffer. Fig. 3 is a view of a rigid abutment or buffer; and Figs. 4, 5, 6, and 7 are views of detached parts of another form of buffer.

A represents a traveling bridge actuated by any suitable motive power, and BB are two trolleys mounted on the bridge and adapted to move lengthwise thereof, the said trolleys being preferably propelled by electric motors. In some instances the ends of trackway C on

which trolleys BB' move are turned up, forming abutments to limit end travel of trolleys. In other cases stops of various kinds are attached to the tracks, and in others no provision is made for limiting end travel. Owing to the fact that the operator who controls the movements of the trolleys is located in a cage below the bridge and not always within sight of the trolleys it frequently happens that the trolleys collide with considerable force against the end abutments and are frequently injured, and if they should overrun or ride over the abutments considerable expense is incurred in replacing the trolley on the track.

To prevent the trolley from leaving the track at the ends or from passing predetermined points on said track, I employ the frames or brackets D. (Shown in Figs. 4 and 5.) This frame is bifurcated at its lower end, as shown at *a*, to straddle the rail, and is provided in its base *b* with holes *c* for the passage of bolts which secure it to the girder carrying the rail. This bracket decreases in size as it projects upwardly and terminates in a sleeve *d*, which latter is in a plane with the trolley-frame. The sleeve *d* is of two diameters, as shown at *d'* *d*<sup>2</sup>, the larger diameter *d*<sup>2</sup> being for the reception of the spring E', (shown in Fig. 7,) while the smaller one is for the passage of the buffer E. (Shown in Fig. 6.) The spring E' is placed within sleeve *d*<sup>2</sup>, and the bolt is passed centrally through the spring and through sleeve *d'* and is locked by the washer and nut shown in Fig. 6. The head *d*<sup>3</sup> of the buffer E projects forwardly in advance of the sleeve and abutting against the frame of the trolley, receives and absorbs all the shock occasioned by the contact. One buffer like that described can be located centrally between the rails at each end of the track, but I prefer to locate two at each end immediately over the rails, as described. By so locating the buffers that they engage the frames of the trolleys and not the wheels all danger of the trolleys riding over the abutments is prevented.

In Fig. 1 I show two trolleys mounted on the bridge, and to prevent injury to the trolleys by collisions I have provided one of the trolleys B with the abutments G and the trolley

B' with the buffers G', the former being shown in section in Fig. 3 and the latter in Fig. 2. The buffers G consist simply of a cylindrical sleeve with an enlarged base shaped to conform to the shape of the portion of the trolley-frame to which it is secured. This sleeve I is provided with a partition *i* near its rear end, through which passes bolt *i'*, the latter having an enlargement, as shown, adapted to rest against the front wall of said partition. This bolt *i'* is secured in place by a nut, as shown, and is encircled by a spring *i*<sup>2</sup>, which latter bears against the partition at one end and against the follower *i*<sup>3</sup> at its other end. This follower is mounted on the bolt and held against outward displacement by a nut and is adapted to be impinged and forced inwardly by the abutment G, secured to the trolley B. This abutment is simply a rigid projection firmly bolted to the trolley and hollow throughout the greater portion of its length to receive the bolt *i'* when the abutment G enters sleeve I. One buffer G' can be located centrally on one trolley, and one abutment G, located centrally on the other trolley, but I prefer to employ two abutments on one trolley and two buffers on the adjacent end of the other trolley. In either event it will be seen that if the trolleys come to-

gether, either when moving at different rates of speed in the same direction or when moving in opposite directions, or when one is at rest and the other moving, the force of the blow is taken up by the springs and serious damage to the trolleys prevented.

It is evident that changes in the construction and relative arrangement of the several parts might be made without avoiding my invention, and hence I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described; but,

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

The combination with a traveling bridge, of two trolleys thereon one trolley having a hollow sleeve with a yielding buffer therein and the other trolley provided with a projection adapted to engage said buffer and enter the sleeve substantially as set forth.

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

WILLIAM HENRY MORGAN.

Witnesses:

HEATON W. HARRIS,  
F. E. DUSSEL.