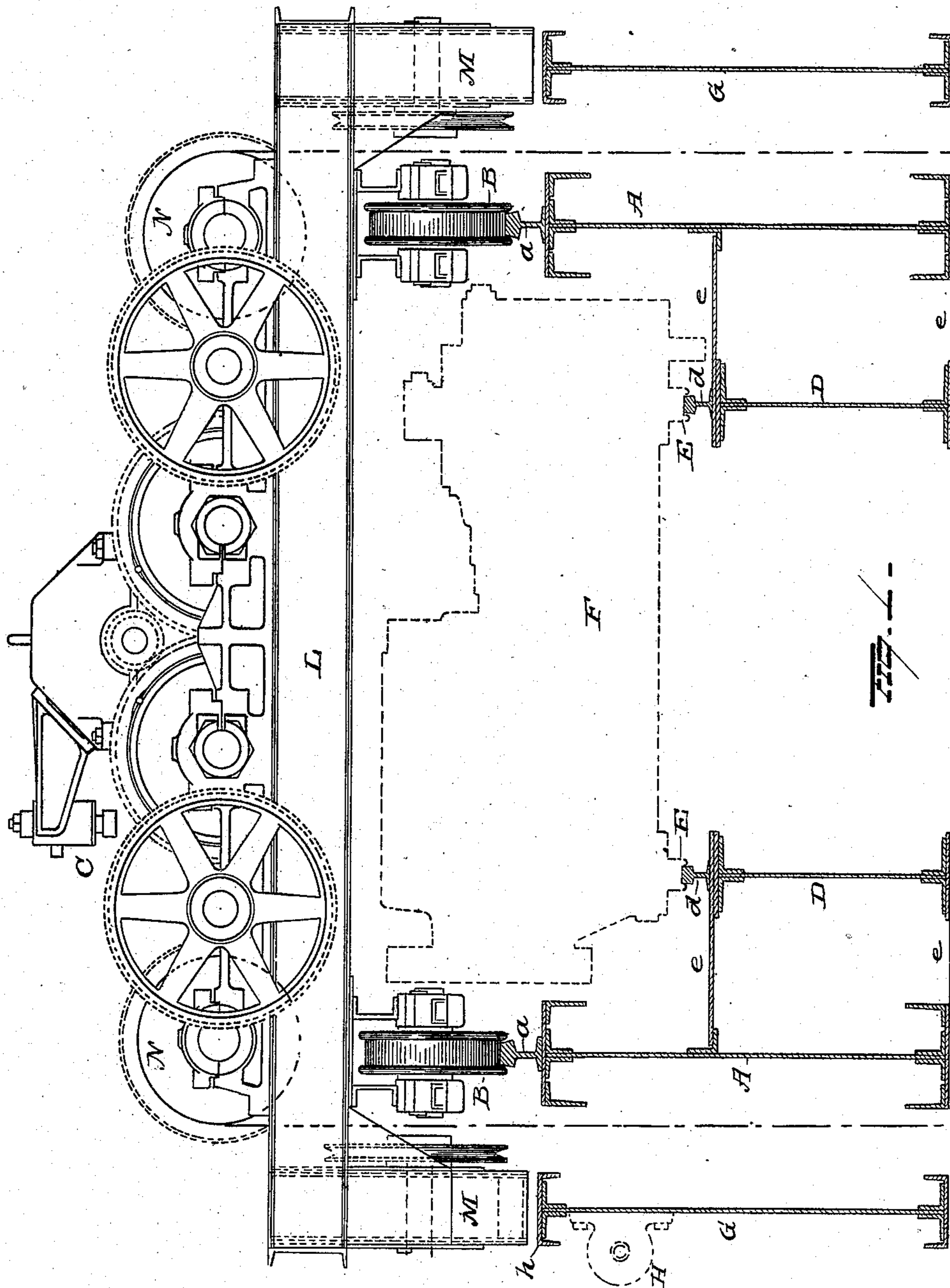


A. W. BRIGHT.
TRAVELING CRANE.
APPLICATION FILED FEB. 4, 1908.

899,712.

Patented Sept. 29, 1908.
3 SHEETS—SHEET 1.



WITNESSES
E. Nottingham
G. J. Downing

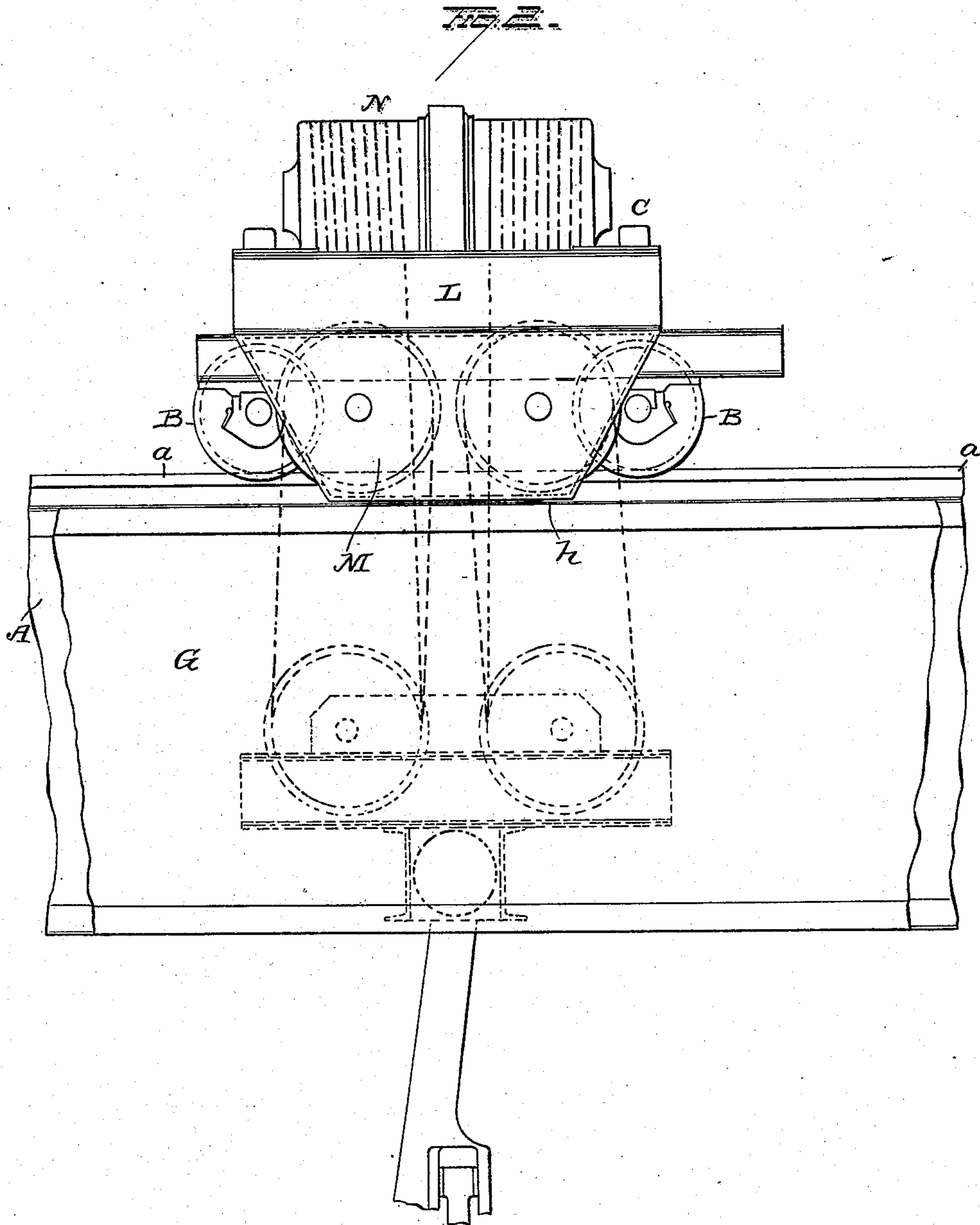
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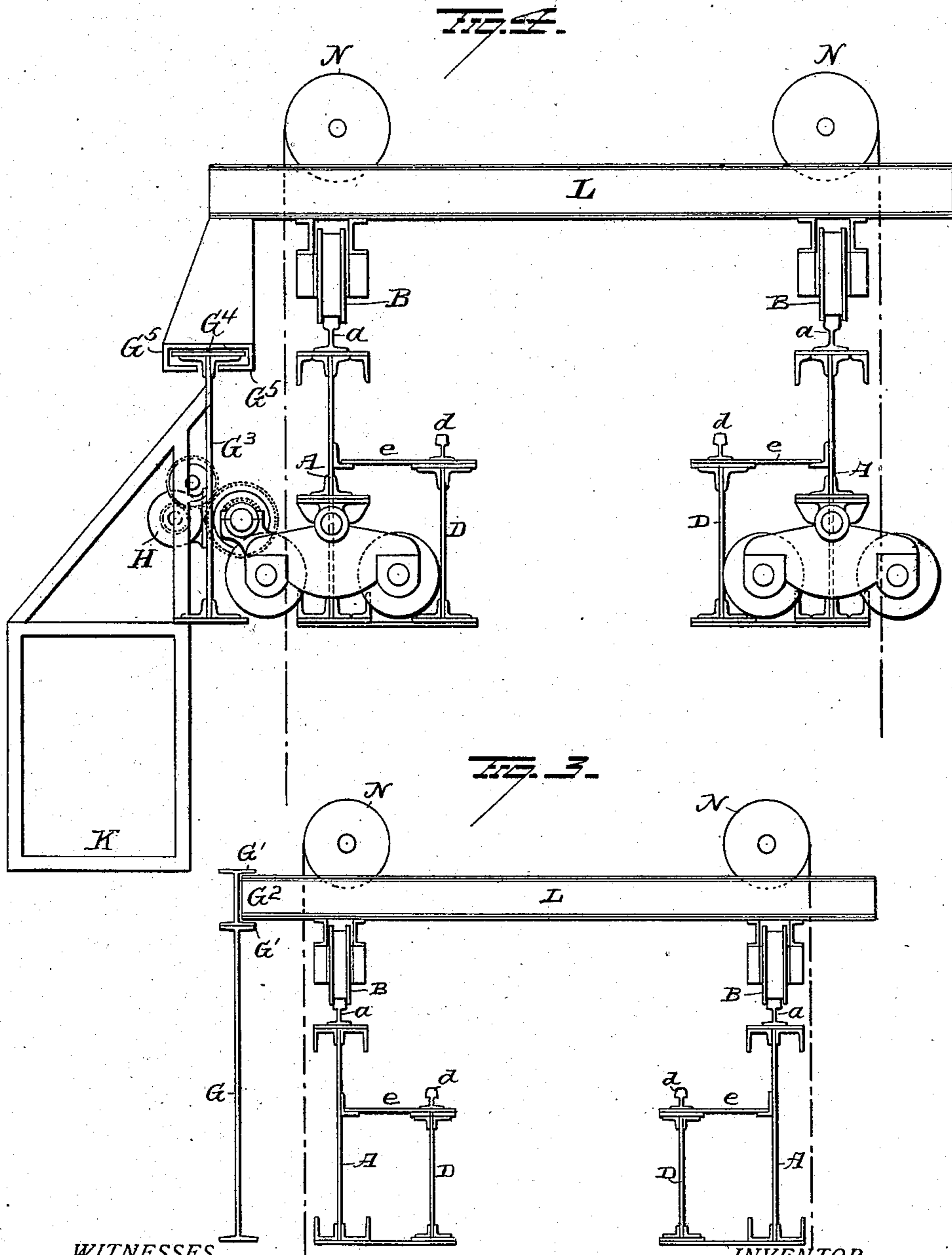
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UNITED STATES PATENT OFFICE

ALBERT W. BRIGHT, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO THE MORGAN ENGINEERING COMPANY, OF ALLIANCE, OHIO.

TRAVELING CRANE.

No. 899,712.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed February 4, 1908. Serial No. 414,207.

To all whom it may concern:

Be it known that I, ALBERT W. BRIGHT, of Washington, District of Columbia, have invented certain new and useful Improvements in 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 traveling cranes and more especially to an improvement in ladle cranes.

The object of the improvement is to provide a simple economical and efficient construction of ladle crane which will permit of the free and independent operation and travel of the main and auxiliary trolleys; and will prevent the main trolleys from overturning in the event of the breaking of one of the main hoisting ropes or chains.

With these objects in view my invention consists in certain features of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in cross-section of a ladle crane embodying my invention, Fig. 2 is a view in side elevation of the same, Figs. 3 and 4 are end views of modifications, the end carriages and mechanism of the trolley being omitted.

A A represent the main girders which are provided with track rails *a, a*, on which run the double flanged track wheels B B of the main trolley C. Located inside of the main girders are the auxiliary girders D D which are provided with track rails *d d* on which run the double flanged track wheels E E of the auxiliary trolley F. The main and auxiliary girders may be of the box or web girder type, the drawings illustrating the latter, and showing them connected by horizontal lacing bars *e, e*, which serve to impart lateral stiffness and rigidity to both the main and auxiliary girders.

If desired a sheet metal plate may be used to connect the upper portion of the auxiliary girder with the main girder and thus serve the purpose of a horizontal brace and as a foot walk for the workmen to facilitate their

inspection and repairs of the auxiliary trolley.

The rails are located vertically over the webs of the girders which insures the transmission of vertical strains in a vertical line passing through the webs which obviates all tendency to any spreading or lateral deflection of the girders.

G G represent safety girders located outside of the main girders, and which may be the box or web girder type, the latter being illustrated in the drawings. These girders are unprovided with rails as they do not serve to support the main trolley. The operator's cage K may be supported by either one of the safety girders and the bridge driving motor H may be located thereon as shown. The frame L of the main trolley is constructed with depending portions M preferably located at each one of the four corners of the frame, although if desired such depending portion may extend the entire width of the frame or be located intermediate the ends. Such depending portions M extend down in close proximity to the upper flanges *h* of the safety girders, so that in the event one of the main hoisting ropes should break, the depending portion M on the side of the main trolley opposite the broken rope will immediately be brought into contact with the safety girder and prevent the trolley from being overturned. As illustrated in the drawings the main hoisting ropes pass down from the main hoisting drum N between the main girders and the safety girders, hence should one of the main hoisting ropes break, the safety girders will effectually prevent the overturning of the main trolley.

Owing to the fact that the main hoisting ropes pass down in close proximity to the outer sides of the main girders, and the track rail thereon, the latter constitutes the fulcrum of the trolley in the event of the breaking of one of the main hoisting ropes. The tendency of the main trolley to overturn is comparatively slight, and is effectually resisted by the employment of safety girders of much less size and strength than the main girders.

The hoisting drums of the main trolley are arranged parallel to the main girders, and hence as the drums are operated the ropes on each side will be parallel to the main girders and hence, it is only necessary to provide a narrow space between the main and safety girders for the passage of the main hoisting ropes.

By supporting the main trolley on two single web girders, the employment of transversely arranged equalizing trucks is rendered unnecessary, as each side of the main trolley frame may be supported by single supporting wheels. In the construction of large ladle cranes, the supporting wheels may be mounted in trucks arranged to swivel in a line parallel with the main girder rails and thus afford an increased bearing surface for the support of the main trolley and its load.

The safety girders serve not only to safeguard the main trolley against accidental displacement, but also serve as a support for the operator's cage, and for the bridge travel motor and shaft.

In the modification shown in Fig. 3 I dispense with the safety girder on one side, and provide the remaining one with upper and lower flanges G^1 between which projections G^2 from the adjacent end of the trolley frame rest and move. This double flanged girder will operate to prevent the overturning of the trolley in the event of the breakage of either rope.

In the construction shown in Fig. 4 I have provided the single safety girder G^3 with a horizontal flange G^4 which latter is engaged by the brackets G^5 depending from the trolley. These brackets embrace the top and under side of the flanges and will effectually resist any overturning of the trolley at either side.

As it is evident that many slight changes in the construction and relative arrangement of the several parts might be made without departing from the invention I would have it understood that I do not restrict myself to the particular construction shown and described.

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

1. In a ladle or double trolley crane, the combination with the main girders, and a safety girder located outside the main girder, of the main trolley frame constructed to travel in close proximity to the safety girder, and having its main hoisting ropes extending downward outside the main girders the entire weight of the load being normally carried by the main girders, substantially as set forth.

2. In a ladle or double trolley crane, the combination with main and auxiliary girders for supporting the main and auxiliary trol-

leys, and safety girders located outside the main girders, of main trolley, the opposite sides of the main trolley or parts carried thereby being arranged to project over the safety girders the weight of the load on the main trolley being normally carried by the main girders, substantially as set forth.

3. In a ladle or double trolley crane, the combination with the main and auxiliary girders, and safety girders located outside the main girders, of the main trolley or portions connected therewith, constructed to project over the safety girders, and having its hoisting ropes arranged to extend down between the main and safety girders the weight of the load on the main trolley being normally carried by the main girders, substantially as set forth.

4. In a ladle or double trolley crane, the combination with main and auxiliary girders, safety girders located outside the main girders, of the main trolley or portion connected therewith constructed to project outwardly in the same vertical plane as the safety girders and an auxiliary trolley mounted on rails intermediate the main girders the weight of the load on the main trolley being normally carried by the main girders.

5. In a ladle or double trolley crane, the combination with main and auxiliary girders, a safety girder located outside the main girder, of the main trolley constructed to overhang the safety girder the weight of the main trolley and its load, being normally carried by the main girders, substantially as set forth.

6. In a ladle or double trolley crane, the combination with main and auxiliary girders, safety girders located outside the main girders, and operator's cage carried by a safety girder, of the main trolley constructed to overhang the safety girders, and having its main hoisting ropes arranged between the main and safety girders the weight of the main trolley and its load being normally carried by the main girders, substantially as set forth.

7. In a ladle or double trolley crane, the combination with the main girders, a safety girder located outside the main girder and bridge motor and shaft carried by said safety girder; of the main trolley frame constructed to travel in close proximity to the safety girder and having its main hoisting ropes extending outside the main girders, the weight of the load being normally carried by the main girders substantially as set forth.

8. In a ladle or double trolley crane, the combination with the main girders normally supporting the weight of the main trolley and load carried thereby, and a safety girder located adjacent to outer side of one of the main girders, of the main trolley wholly supported on the main girders and provided

with means for engaging the safety girder, whereby the overturning of the main trolley is prevented.

5 9. In a ladle or double trolley crane, the combination with main and auxiliary girders for normally supporting the entire weight of the main and auxiliary trolleys and loads carried thereby, of safety girders located outside the main girders, and means for causing
0 the main trolley frame to engage one of the

safety girders in the event the trolley tilts due to the breaking of one of the main hoisting ropes.

In testimony whereof, I have signed this specification in the presence of two subscrib- 15
ing witnesses.

ALBERT W. BRIGHT.

Witnesses:

GEORGE F. DOWNING,
S. G. NOTTINGHAM.