

G. A. TRUE.
CRANE.

APPLICATION FILED JUNE 18, 1908.

981,820.

Patented Jan. 17, 1911.

2 SHEETS—SHEET 1.

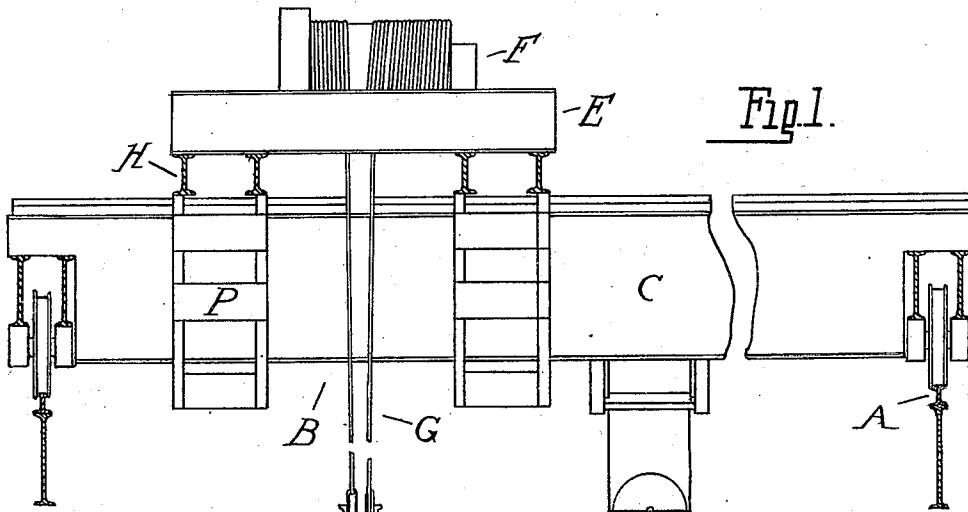


Fig. 1.

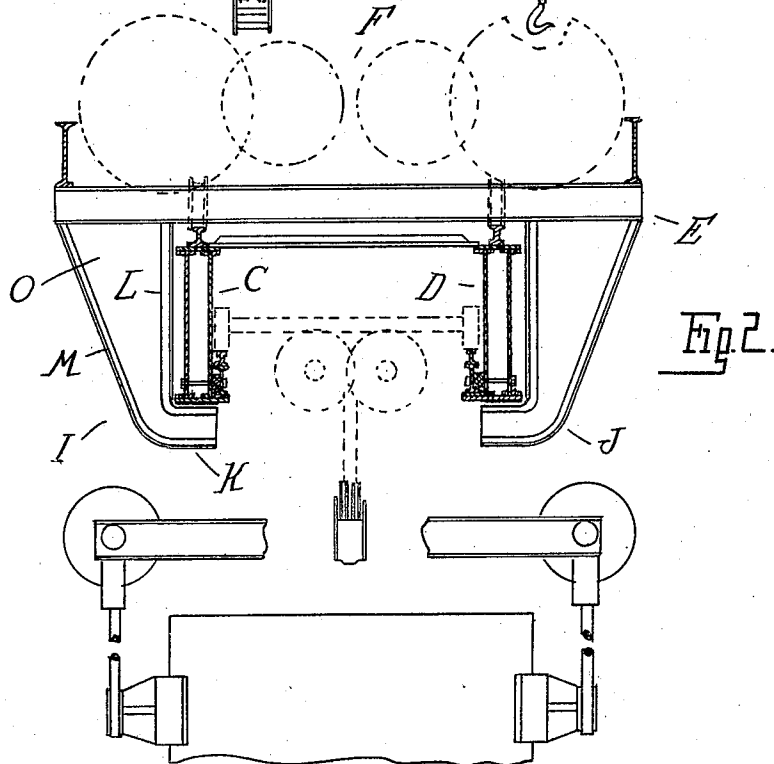


Fig. 2.

Witnesses

W. C. Ford

J. K. Belknap

Inventor
George A. True.

By *William H. Hubert & William H. Hubert*
Attys

G. A. TRUE.

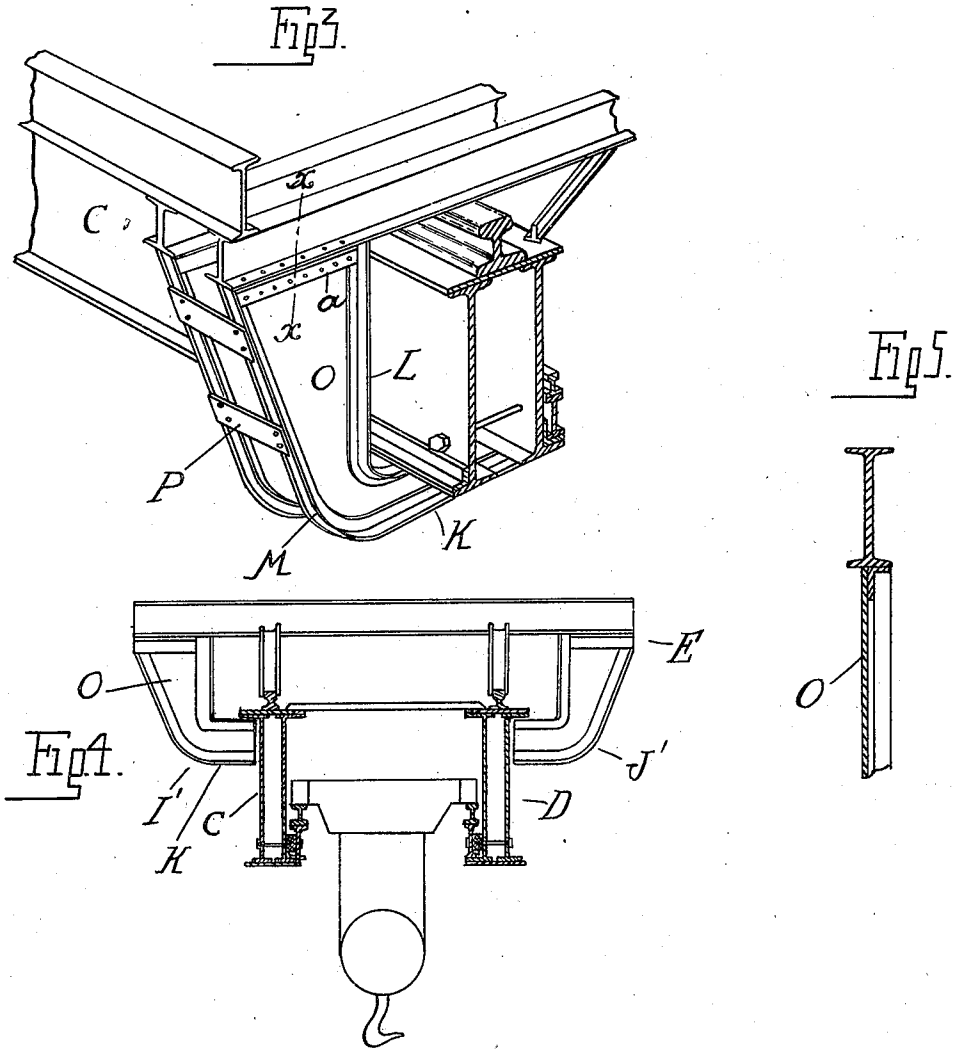
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H. B. Ford
C. B. Belknap

Inventor

George A. True
By *William H. Belknap*
Att'y

UNITED STATES PATENT OFFICE.

GEORGE A. TRUE, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO NORTHERN ENGINEERING WORKS, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

CRANE.

981,820.

Specification of Letters Patent.

Patented Jan. 17, 1911.

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To all whom it may concern:

Be it known that I, GEORGE A. TRUE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Cranes, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates particularly to ladle cranes of the ordinary type, wherein but two girders are used in the construction of the bridge, and the hoisting ropes or cables extend downwardly in the ordinary manner
15 outside of the bridge girders.

The invention consists primarily in a safety mechanism for preventing possible tilting or overturning of the trolley in cases where, owing to the breakage of parts, as
20 one of the hoisting cables or ladle trunnions, the entire weight of the load is shifted to one side of the trolley, and it further consists in the novel and simple construction of the safety appliances, and in the peculiar
25 arrangement and combination of parts as will be more fully hereinafter set forth.

In the drawings,—Figure 1 is a view in front elevation of a crane construction embodying my invention; Fig. 2 is an end view
30 of the trolley; Fig. 3 is a sectional perspective view, showing the formation of one of the safety devices; Fig. 4 is an end view of the trolley, showing a modified form of my invention; and Fig. 5 is a section taken on
35 line *x—x* of Fig. 3.

In the drawings thus briefly described, the reference-letter A designates the usual tracks, running lengthwise in the building in which the crane is installed, and B is the
40 usual traveling bridge running upon the rails and constructed with the complementary girders C and D.

E represents the trolley of ordinary construction, mounted upon suitable rails upon
45 the bridge for longitudinal travel thereon.

F is the usual hoisting mechanism upon the trolley, the detail construction of which, as it forms no part of the present invention, will not be described, and G are the hoisting
50 cables extending downwardly from the trolley, as shown, in the usual manner outside of the bridge girders.

The trolley is constructed in such manner as to extend beyond the bridge girders some
55 considerable distance, the trolley beams H

being cut to a proper length for this purpose.

The safety appliances for preventing the tilting or possible sidewise tipping of the trolley, due to the load being shifted to one
60 side thereof, are in the form of hook-shaped members I and J arranged one on each side of the trolley and depending therefrom into a position for engagement with the bridge
65 girders upon the tilting or tipping movement of the trolley. I have here shown the safety members in the form of frames, forming rigid structural portions of the trolley
70 and depending from the projecting portions thereof, the inturned ends K extending beneath the lower flanges of the bridge girders
and at a slight distance therefrom so as to permit free longitudinal travel of the trolley. Each safety member I form preferably
75 of two hook-shaped angle bars L and M extending downwardly from the trolley extension in a common plane at right angles to the plane of the bridge girder, and spaced apart, and a web member, as O, bolted to
80 the adjoining flanges of the angle bars, uniting the same and filling the space therebetween. The upper ends of the angle bars and the web are connected to the trolley by
85 an angle bar *a* preferably riveted to the trolley beams, as shown, so as to form a rigid structural portion thereof.

In practice, I preferably employ a number of safety devices on each side of the trolley, and arrange said devices in groups
90 or pairs as shown in Fig. 1. Each member of the pair is formed in the manner described, and the members spaced and united by cross bars, as P. It will be understood, however, that this particular construction
95 is not essential and that a greater or less number of the devices may be used as desired, it being merely required that one of the safety appliances shall be carried at
100 each side of the trolley, for the purpose set forth.

It will be obvious from the foregoing description that the safety appliances effectively prevent any tipping or sidewise tilting
105 of the trolley, as in the event of the shifting of the load to one side of the trolley the hook member upon the opposite side immediately engages the bridge girder and holds the trolley on its track. In the modification shown in Fig. 4, the members I' J'
110 have their inturned ends K' extending be-

neath the upper flanges of the bridge girders. This arrangement shortens the length of the safety members, but otherwise the construction of said members is the same as
5 that of the safety members previously described.

What I claim as my invention is,—

1. In a ladle crane, the combination with
10 a traveling bridge, of a traveling trolley thereon, hoisting cables extending downwardly from the trolley outside of the bridge girders, and hook-shaped members upon the trolley engageable with the bridge girders
15 upon tilting of the trolley, comprising each a pair of hook-shaped bars lying in a common plane at substantially right angles to the plane of the bridge girders and spaced apart, and a connection between the bars.

2. In a ladle crane, the combination with

a traveling bridge, of a traveling trolley 20 thereon, hoisting cables extending downwardly from the trolley outside of the bridge girders, and hook members upon the trolley engageable with the bridge girders upon the tilting of the trolley, each comprising a pair of hook-shaped angle bars lying
25 in a common plane at right angles to the plane of the bridge girder and spaced apart, and a metallic web riveted to the bar flanges uniting the bars and filling the space there- 30 between.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. TRUE.

Witnesses:

V. L. CHESEBROUGH,
LOUIS H. OLFS.