

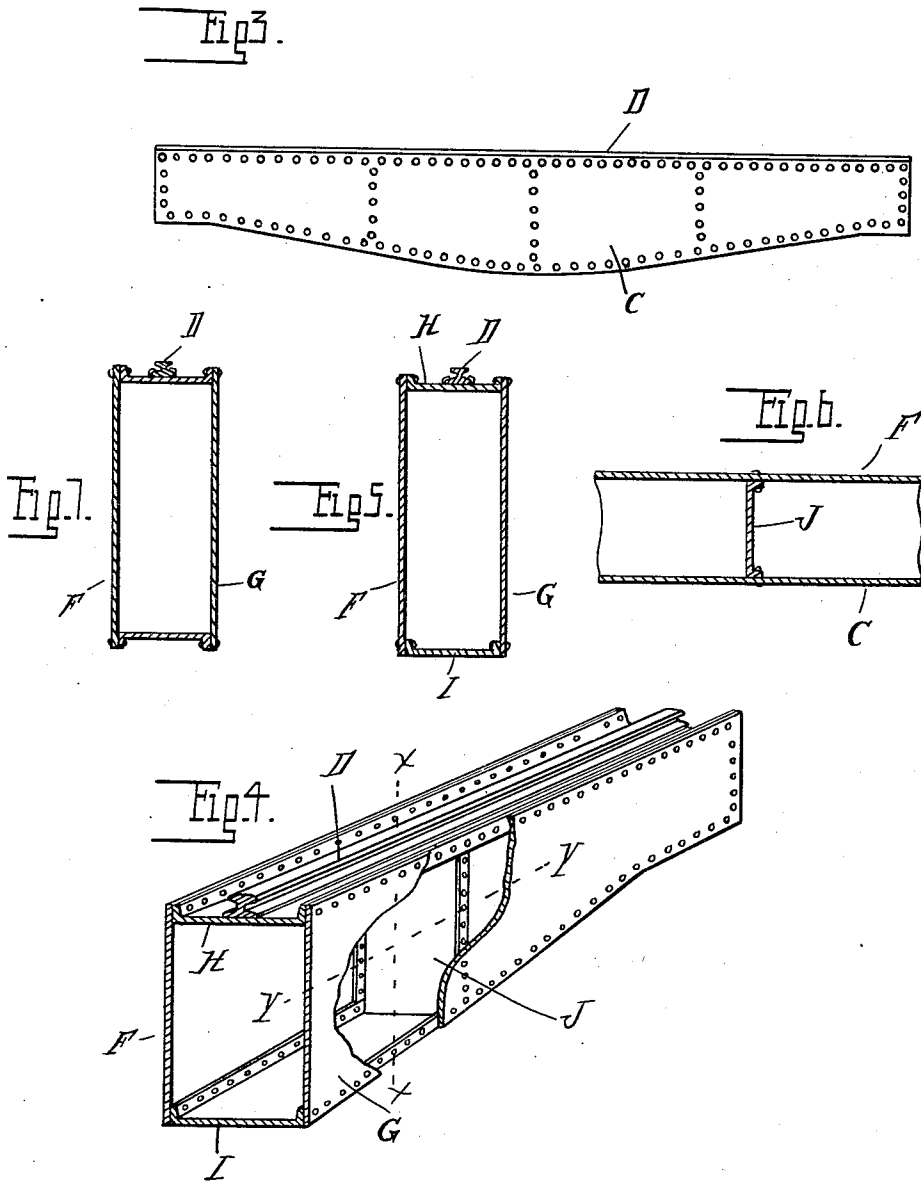
G. A. TRUE.
CRANE.

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1,017,824.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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CRANE.

1,017,824.

Specification of Letters Patent.

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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.

My invention relates to cranes and more particularly to the girders for the traveling bridge.

The invention resides in the peculiar construction, arrangement and combination of parts as more fully hereinafter described and particularly pointed out in the claims.

In the drawings,—Figure 1 is a side elevation of a crane embodying my invention; Fig. 2 is an end elevation; Fig. 3 is a side elevation of the bridge girder; Fig. 4 is a sectional perspective view; Figs. 5 and 6 are sections on the line $x-x$ and $y-y$ respectively of Fig. 4; and Fig. 7 is a view similar to Fig. 5 showing a modified construction.

A represents the tracks for the bridge B, and C the trolley traveling upon tracks D on the bridge girders E. Necessarily the bridge girders must have considerable rigidity to withstand the enormous strains transmitted thereto and also since the girders are of considerable length it is desirable to reinforce the central or middle portion of the girder. By my novel construction as herein-after described, I provide comparatively light weight girders having the necessary strength. I have also so arranged the girder parts as to prevent the trolley leaving the bridge in case the former is derailed.

As shown my improved girder comprises vertically disposed web plates F and G and channel members H and I which are arranged between the web plates with their flanges positioned adjacent the margins of the web plates and riveted or otherwise secured thereto. The web plates have their lower marginal edges tapering from the center to the ends and the lower channel or chord member is correspondingly curved, producing in effect a strut. The upper channel member which is straight and faced upward, supports the track rails D, the latter being secured to the base of the channel so that the flanges form guards for the trolley wheels in case the trolley is derailed. Internal reinforcements are preferably pro-

vided for the web plates and chord members such as the channel-shaped members J. These members have their flanges secured to the web plates by riveting and are of a length so that their ends abut against the upper and lower chord members.

The construction before described forms a box-shaped structure possessing the requisite rigidity and strength and yet permits the girder to be made of comparatively light weight metal. Furthermore, both the web plates and channel members may be constructed from standard stock and by standard machinery which reduces the cost of manufacture to a minimum.

The lower chord member may be so disposed that its flange portions project downward as shown in Fig. 6 or upward as in Fig. 7, since the bending of the lower chord member so that it will conform to the contour of the lower marginal edges of the web plates may as readily be effected in either arrangement.

What I claim as my invention is,—

1. In a crane, a bridge girder comprising spaced vertically disposed web plates having their lower marginal edges tapering for a portion of their length to the ends, and top and bottom chord plates in the form of channel irons arranged between the web plates and having their flanges positioned intermediate the web plates and secured thereto, the lower channel being bent to conform to the lower marginal edges of the web plates.

2. In a crane, a bridge girder comprising spaced vertically disposed web plates having their lower marginal edges tapering for a portion of their length to the ends, and top and bottom chord plates in the form of channel irons arranged between the web plates and having their flanges positioned intermediate the web plates and secured thereto, the lower channel being bent to conform to the lower marginal edges of the web plates and the upper channel being substantially straight, and a trolley rail supported upon the base of the upper channel, the latter being faced upward, whereby the flanges thereof form guards for the purpose described.

3. In a crane, a bridge girder comprising spaced vertically disposed web plates having their lower marginal edges tapering for a portion of their length to the ends, and top and bottom chord plates formed of channel irons arranged between the web plates and

having their flanges secured thereto, the lower channel being bent to conform to the lower marginal edges of the web plates, and an internal reinforcement for said web
5 plates.

4. In a crane, a bridge girder comprising spaced vertically disposed web plates having their lower marginal edges tapering for a portion of their length to the ends and top,
10 and bottom chord plates formed of channel irons arranged between the web plates and having their flanges secured thereto, the lower channel being bent to conform to the lower marginal edges of the web plates, and
15 a vertically arranged channel reinforcing member for the chord members and web plates positioned intermediate the latter

and having the flanges thereof secured to the web plates, the ends of said reinforcing member engaging the chord members. 20

5. In a crane, a bridge girder comprising spaced vertically disposed web plates and top and bottom chord plates formed of channel irons arranged between the web plates and having their flanges secured thereto, and
25 a plurality of spaced internal reinforcements for the chord members and web plates.

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

GEORGE A. TRUE.

Witnesses:

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