

No. 678,958.

Patented July 23, 1901.

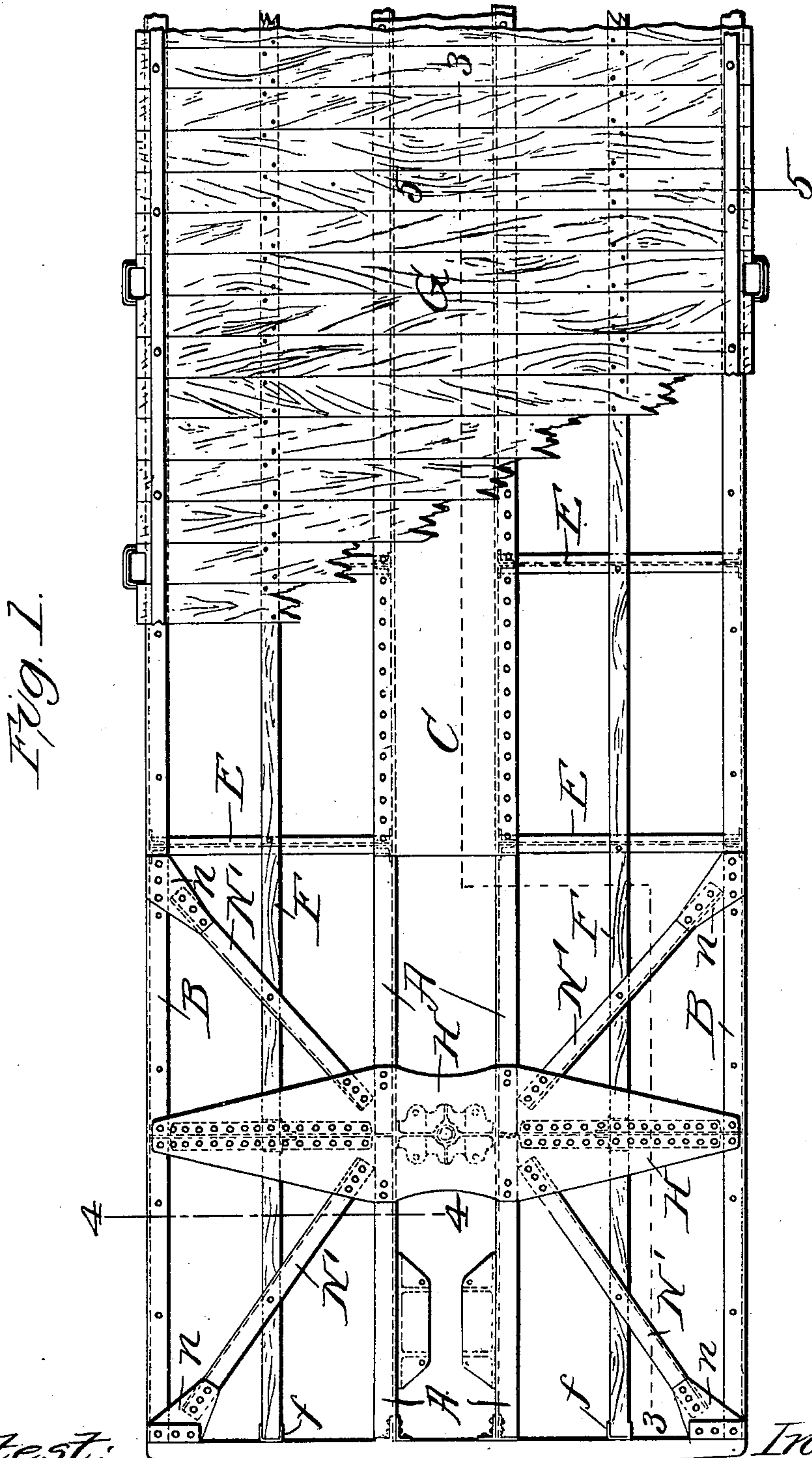
G. I. KING.

UNDERFRAMING FOR RAILWAY ROLLING STOCK.

(Application filed Nov. 23, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Attest:

Wm. A. Scott.
H. L. Ames.

Inventor:

George I. King.
by Wakewell & Cornwall
Attys.

G. I. KING.

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2 Sheets—Sheet 2.

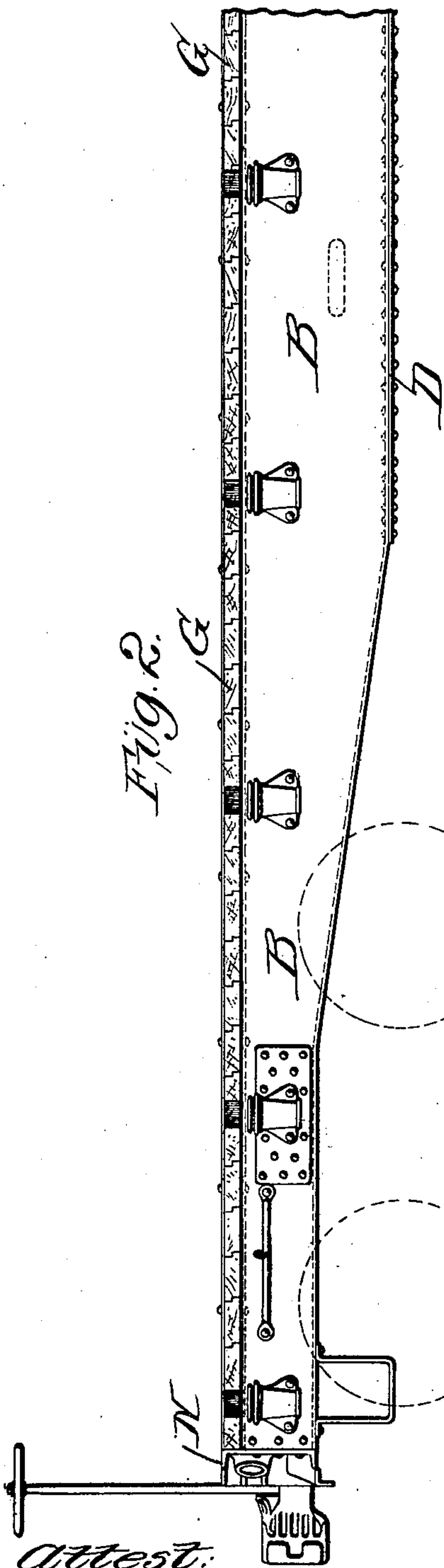


Fig. 2.

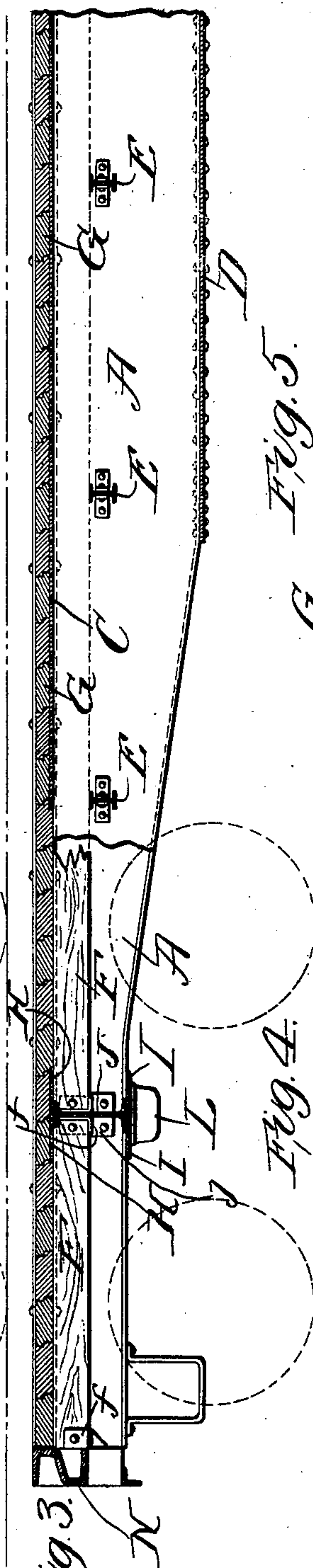


Fig. 3.

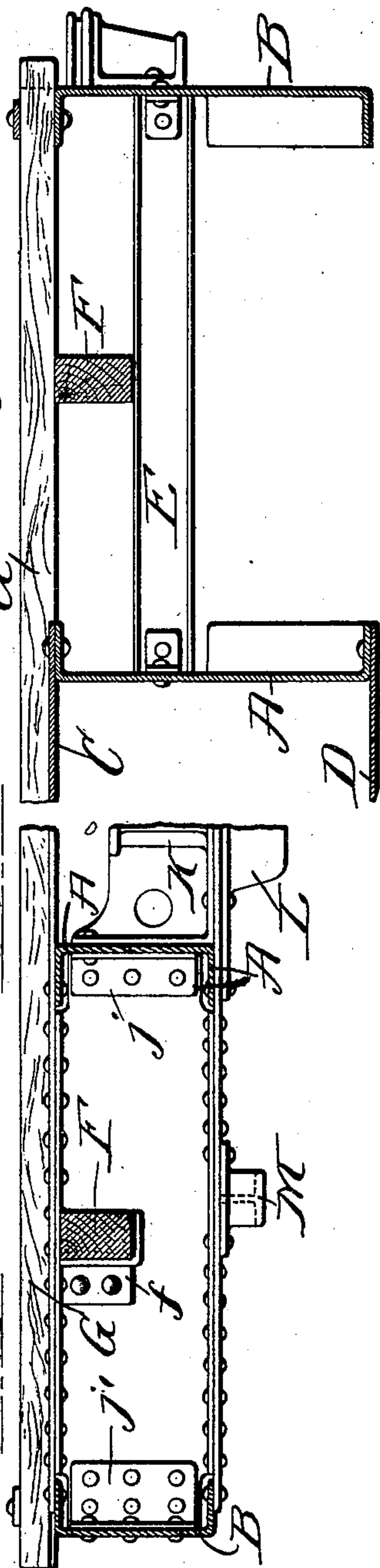


Fig. 5.

Attest:
H. L. Amer.

Inventor:
 George I. King.
 by *Rakewell & Co.*
 Attys.

UNITED STATES PATENT OFFICE.

GEORGE I. KING, OF DETROIT, MICHIGAN, ASSIGNOR TO THE AMERICAN
CAR & FOUNDRY COMPANY, OF ST. LOUIS, MISSOURI.

UNDERFRAMING FOR RAILWAY ROLLING-STOCK.

SPECIFICATION forming part of Letters Patent No. 678,958, dated July 23, 1901.

Application filed November 23, 1900. Serial No. 37,452. (No model.)

To all whom it may concern:

Be it known that I, GEORGE I. KING, a citizen of the United States, residing at the city of Detroit, in the county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Underframing for Railway Rolling-Stock, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of my improved underframing, the floor being broken away to more clearly show the framing of one end of the car. Fig. 2 is a side elevational view of my improved underframing as adapted to a flat-car. Fig. 3 is a sectional view on line 3 3, Fig. 1. Fig. 4 is a sectional view on line 4 4, Fig. 1; and Fig. 5 is a sectional view on line 5 5, Fig. 1.

This invention relates to a new and useful improvement in underframing for railway rolling-stock, the object being to construct a simple and strong underframing made up of pressed or structural shapes, the whole being rigidly secured together by rivets or other suitable fastening devices.

With this object in view the invention consists in the construction, arrangement, and combination of the several parts, all as will hereinafter be described and afterward pointed out in the claims.

In the drawings, A indicates the center sills, which are preferably deepest at the middle portion of the car and provided at their upper and lower edges with flanges which are presented outwardly.

B indicates the side sills, which are in substantially all respects similar to the center sills, with the exception that I prefer to have the flanges of the side sills presented inwardly. In order to strengthen the center sills, I prefer to employ a cover-plate C, which may extend throughout the length thereof from bolster to bolster; but in ordinary practice it is only necessary to cover a portion of this length. A bottom cover-plate D may also be provided along the deepest portions

of the center sills for adding strength to the structure.

E indicates floor-beams supported by the center and side sills through the instrumentality of suitable angle or corner connection plates, said beams carrying wooden nailing-strips or longitudinal intermediate floor-sills F, to which the floor-boards G may be secured.

Instead of using a removable body-transom in connection with my improved underframing I prefer to arrange an equivalent for such a structure, which equivalent is in the nature of a body-transom, but is built in the underframing and forms a material part thereof.

H indicates a cover-plate, which preferably extends entirely across the underframing, said cover-plate being riveted to the top flanges of the side sills.

I indicates a bottom cover-plate, which preferably extends entirely across the underframing and is riveted at its ends to the bottom flanges of the side sills. Between these cover-plates are webs J, either composed of structural rolled forms or pressed forms and angles or sheared plates and angles, the webs shown in the drawings being I-shaped in cross-section, their top and bottom flanges being riveted to the top and bottom cover-plates before described.

Corner-connection angles or plates *j* are employed to secure the webs to the center sills, and corner-connection angles or plates *j'* are employed to secure the outer ends of the webs to the side sill. Where webs I-shaped in cross-section are employed, top and bottom flanges are cut away to accommodate the flanges of the center and side sills, as shown in Fig. 4.

K indicates a casting arranged between the center sills and on top of the bottom cover-plate, and L indicates a center bearing riveted to the bottom cover-plate and to the casting K.

M indicates the side bearings, which are riveted to the bottom cover-plate and the bottom flanges of the web-plate J.

N indicates the end sill, which may be composed of structural members, said end sill in the drawings being illustrated as a casting, to the inner face of which the center and side

sills are secured by the employment of suitable corner angles or connection plates.

Both the web-plates J and the end sills have secured to them stirrup-brackets f for supporting the longitudinal wooden sills F.

n indicates connection-plates riveted to the top flanges of the side sills, and n' connection-plates riveted to said side-sill flanges and the end sills for the attachment of diagonal brace members N' and N'', whose inner ends are riveted to the top cover-plate, as shown in Fig. 1.

The underframing above described may be used for various types of cars, the type shown in the accompanying drawings being that of the well-known flat-car, which is provided with the usual stake-pockets, &c.

I am aware that minor changes in the arrangement, construction, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In an underframing for cars, the combination with flanged metallic center and side sills of uniform depth near the ends, of a transversely-disposed top cover-plate continuous from side sill to side sill and riveted to the top flanges thereof, a bottom cover-plate also continuous from side sill to side sill and riveted to the bottom flanges thereof, I-shaped web-plates adapted to lie flush with the upper and lower surfaces of the sills riveted to the cover-plates, and corner connections for securing the ends of said web-plates to the center and side sills, respectively, substantially as described.

2. In an underframing for cars, the combination with center sills whose flanges are presented outwardly, and side sills whose flanges are presented inwardly, said sills being of uniform depth near the ends of the car, of transversely-disposed top and bottom cover-plates continuous from side sill to side sill, the top plate being riveted at its ends to the upper flanges of the side sills, and the bottom plate being riveted to the lower flanges thereof, commercially-rolled I-shaped web-plates arranged between said cover-plates and extending between the side sills and their nearest center sill, the top and bottom flanges of said web-plates being removed at the ends of the plates to accommodate the flanges of the side and center sills, whereby the top and bottom faces of said side and center sill flanges and web-plate flanges are flush for the

continuous attachment of the cover-plates, connection-plates riveted to the reduced ends of the web-plates, and to the side and center sills, a casting between the center sills and in the transverse plane of said web-plates, and center and side bearings secured to the bottom cover-plate; substantially as described.

3. In an underframing for cars, the combination with center and side sills having their flanges presented toward each other, respectively, said sills being deepest at their middle portions, the shallow ends being of uniform depth for some distance from the end of the car, end sills to which the ends of said center and side sills are attached, floor-beams supported by the center and side sills, an elongated cover-plate for tying the center sills together at the center of the car, commercially-rolled I-shaped web-plates corresponding in depth to the shallow ends of the center and side sills, and arranged therebetween, the top and bottom flanges of said web-plates being cut away to accommodate the flanges of the center and side sills, a filler between the center sills in the transverse plane of the web-plates, connection-plates riveted to the web-plates and to the side and center sills, and top and bottom cover-plates riveted to the flanges of the web-plates and to the center sills; substantially as described.

4. The combination with side and center sills, of floor-beams supported thereby, transversely-disposed top and bottom cover-plates, web-plates interposed between said cover-plates, an end sill, stirrups on said end sill and web-plates, and longitudinally-disposed wooden sills mounted in said stirrups and supported by said floor-beams; substantially as described.

5. In an underframing for cars, the combination with center and side sills consisting of metallic beams continuous longitudinally of the car and made deepest at their middle portions, body-bolsters and end sills for tying the center and side sills together, an elongated cover-plate running lengthwise of the car secured to the center sills, and a bottom cover-plate extending throughout the deeper portions of the said center sills and secured thereto, substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 21st day of November, 1900.

GEORGE I. KING.

Witnesses:

WM. H. SCOTT,
H. L. ANEED.