

No. 772,518.

PATENTED OCT. 18, 1904.

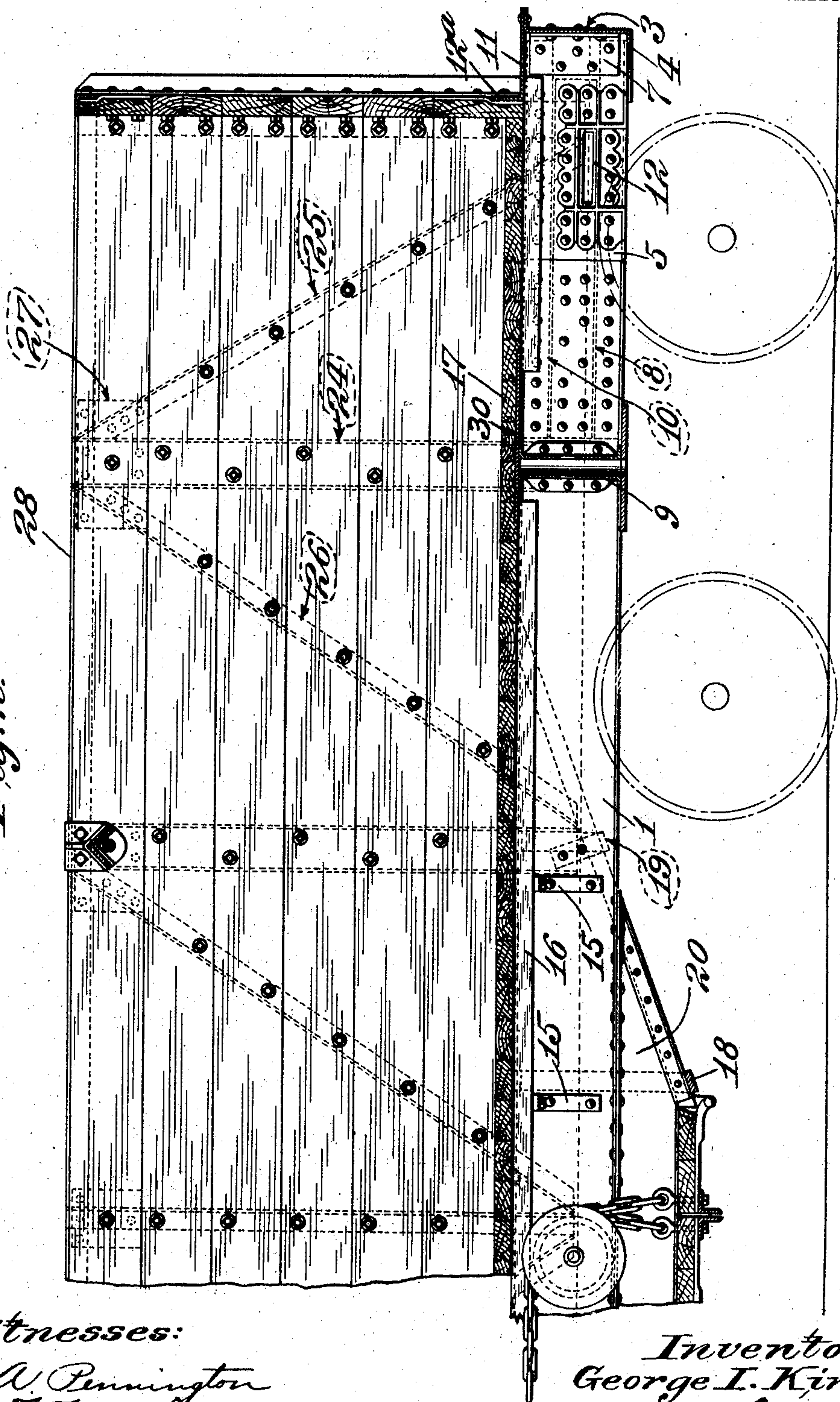
G. I. KING.
HOPPER CAR.

APPLICATION FILED JULY 20, 1904.

NO MODEL.

5 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
G. A. Pennington
R. F. Frank

Inventor:
George I. King,
by McKewell Lamontall
Attys.

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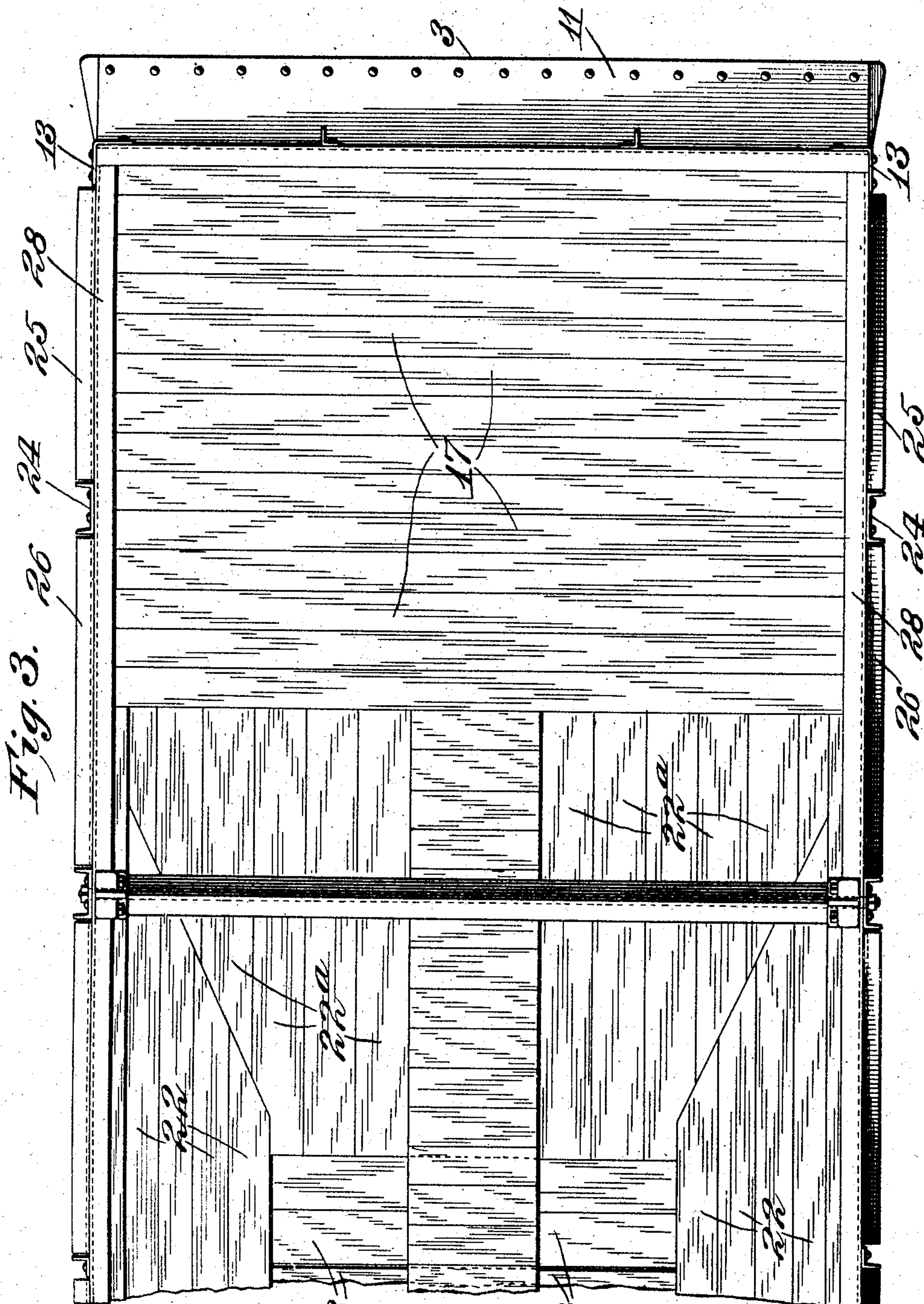
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NO MODEL.

5 SHEETS—SHEET 3.



Witnesses:
G. A. Pennington
B. F. Frank

Inventor:
George I. King,
by Baker & Lamorell
Attys.

No. 772,518.

PATENTED OCT. 18, 1904.

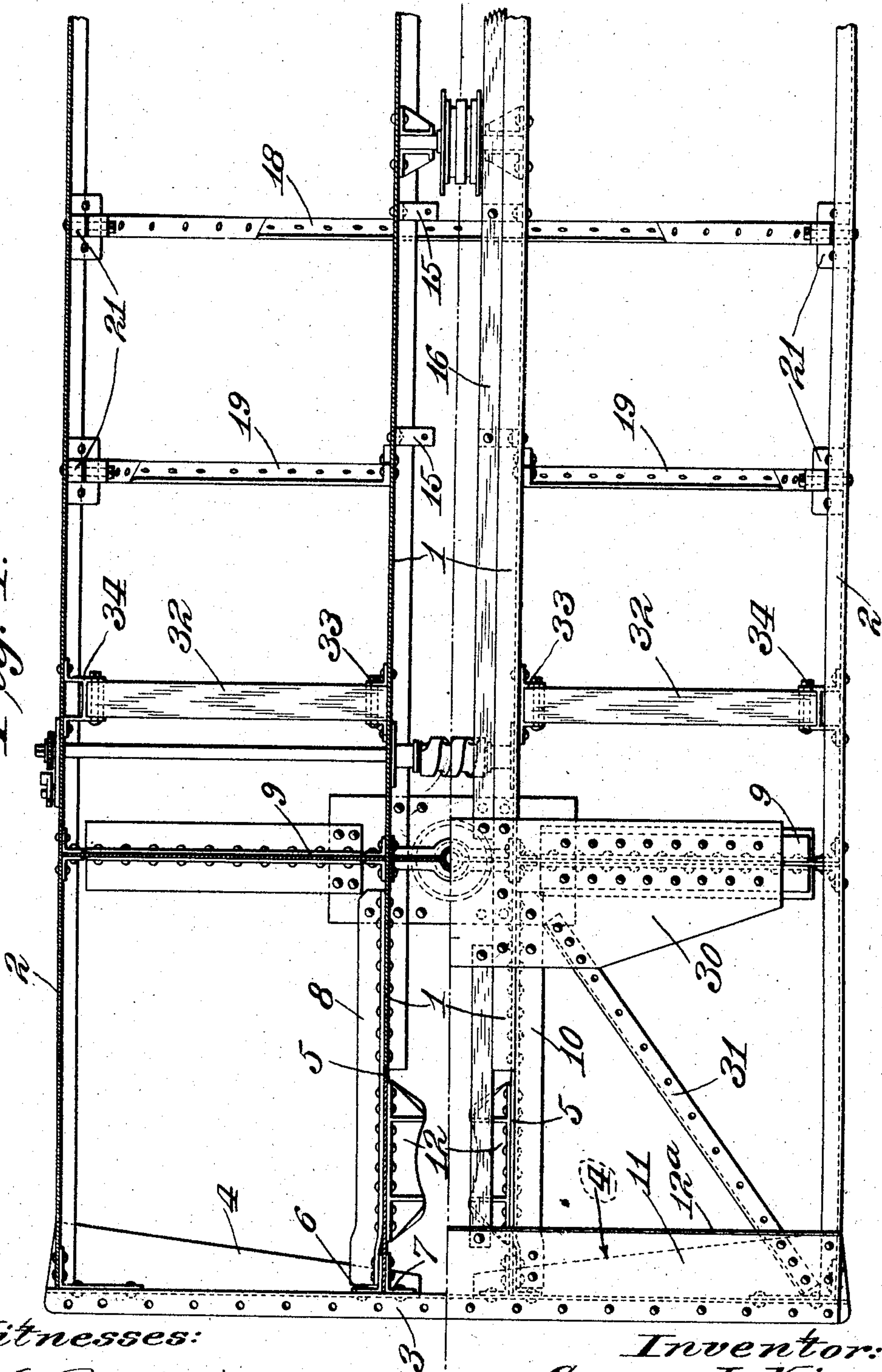
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HOPPER CAR.

APPLICATION FILED JULY 20, 1904.

NO MODEL.

5 SHEETS—SHEET 4.

Fig. 4.



Witnesses:
G. A. Pennington
R. F. Frank

Inventor:
George I. King,
by Bakerwell & Cornwall
Attys.

No. 772,518.

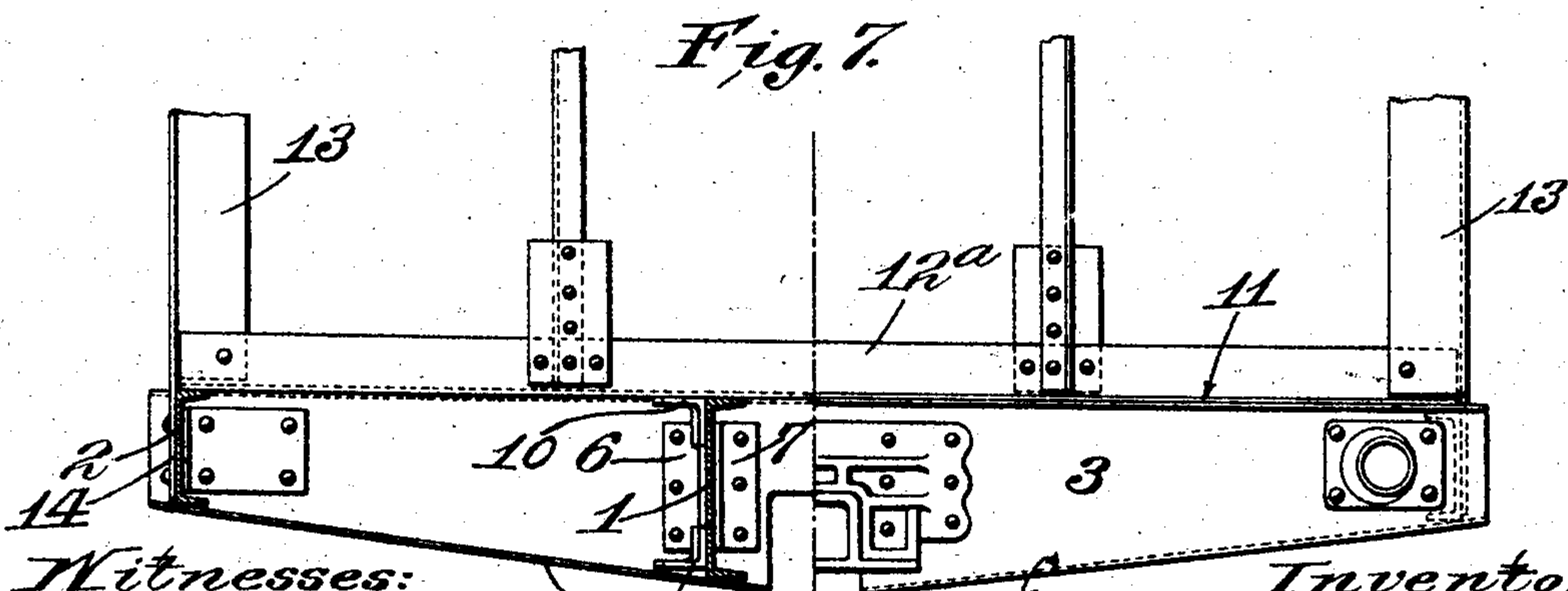
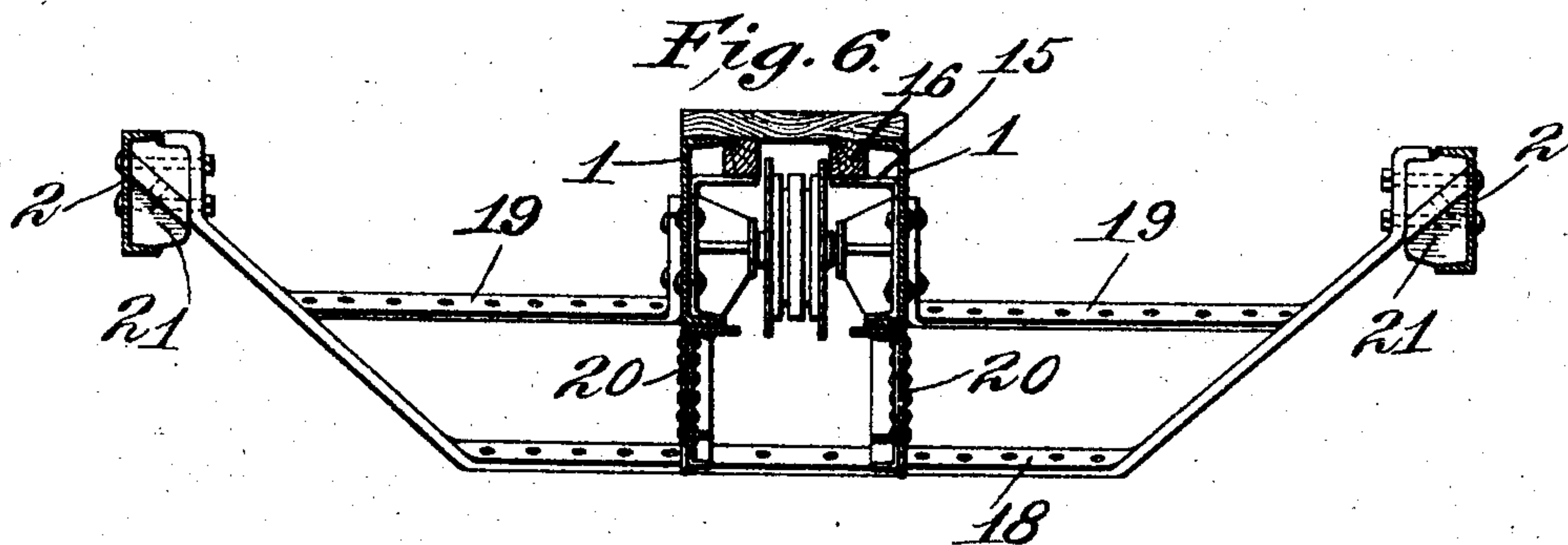
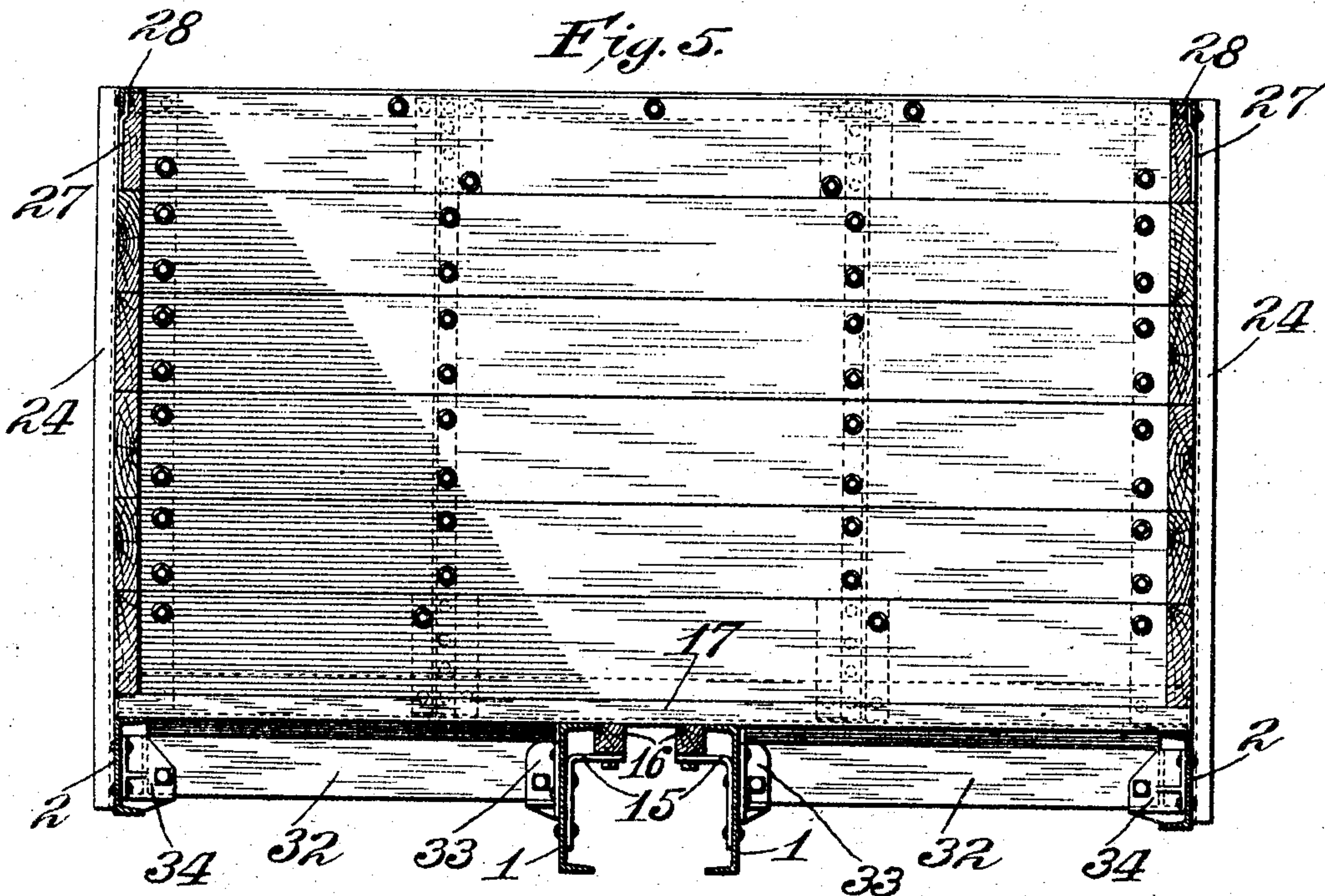
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G. I. KING.
HOPPER CAR.

APPLICATION FILED JULY 20, 1904.

NO MODEL.

6 SHEETS—SHEET 5.



Witnesses:
G. A. Pennington
B. F. Funk

Inventor:
George I. King,
by Russell L. Arnold,
Attys.

UNITED STATES PATENT OFFICE.

GEORGE I. KING, OF MIDDLETOWN, PENNSYLVANIA.

HOPPER-CAR.

SPECIFICATION forming part of Letters Patent No. 772,518, dated October 18, 1904.

Application filed July 20, 1904. Serial No. 217,420. (No model.)

To all whom it may concern:

Be it known that I, GEORGE I. KING, a citizen of the United States, residing at Middletown, Dauphin county, Pennsylvania, have invented a certain new and useful Improvement in Hopper-Cars, 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 side elevational view of one-half of a car constructed in accordance with my invention. Fig. 2 is a vertical longitudinal sectional view through one-half of the car. Fig. 3 is a top plan view of a portion of the car. Fig. 4 is a plan view of the underframing for the car. Fig. 5 is a cross-sectional view through the car. Fig. 6 is a sectional view through the underframing, showing the positions of the hopper-slings; and Fig. 7 is a divided sectional view through the underframing, part of the corner-posts and end posts being illustrated in elevation.

This invention relates to hopper-cars; and the primary object thereof is to provide a strong, durable, and efficient car and to generally improve the construction thereof.

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

The center sill is illustrated as comprising channels 1 1, having inturned edge flanges.

2 2 designate the side sills, and 3 indicates the end sills. Each end sill is in the form of a Z-beam, and the bottom flanges are in the form of gussets 4, which are connected to the flanges of the side sills and may be attached to the draft-sills.

By reference to Figs. 2 and 4 it will be observed that the channels 1 1 terminate short of the end sills and that a draft-sill 5 extends from the end of each channel to the end sill, to which it is secured by means of the connection-angles 6 and 7. The draft-sills 5 are illustrated as comprising plates, and each plate is secured to the center sills, and they are secured to the center sills by the angle-bars 8,

which extend from points adjacent to the bolster 9 to the end sill, said angles 8 being riveted to the webs of the center-sill channels and to the draft-sill 5. The angles 10 are secured to the webs of the channel center sills and to the plates near their top edges in substantially the same manner as are the angles 8 secured to the lower edges thereof. Thus it will be seen that the draft-sills practically constitute part of the center sill. The object of so constructing the draft-sills is to provide means whereby the draft-rigging members 12 may be readily positioned with respect to the underframing and whereby they may readily be removed as occasion may demand without interfering with the remaining portion of the underframing. Attention is also directed to the fact that the flanges of the angles 8 and 10 project outwardly, while those of the channels 1 1 project inwardly. This construction tends to strengthen the draft and center sills at points between the end sills and bolsters, so that the most strength is provided where it is most essential to resist shocks and strains due to end-on collisions, &c.

The cover-plate 11 for each end sill is provided with an upstanding flange 12^a, which is connected to the angle corner-post 13 by suitable tie-plates. The flange of each angle corner-post on the side of the car is of greater length than the length of the flange which extends from the end-post cover-plate to the top of the car. This longer flange I have designated by the reference-numeral 14, and it is fastened to the web of the adjacent side sill.

Secured to the inner webs of the center-sill is a plurality of brackets, (designated by the reference-numeral 15.) These brackets support longitudinally-disposed nailing-strips 16, the upper edges of which are flush with the tops of the upper flanges of the center sill channels and with the upper flanges of the channel side sills. These nailing-strips are designed to receive the floor-boards 17, which constitute the floor of the car. Suitably disposed at intermediate points of the car are the hopper-slings 18 and 19. Those designated by the reference-numeral 18 extend from side sill to side sill, passing beneath the center sill, to which they are secured by the inner hop-

per-plates 20. Those designated by the reference-numeral 19 extend from the side sills to the center sill. The castings 21 are fastened to the webs of the side sills, so as to receive the ends of the slings 18 and 19.

The floor of the hoppers consists of longitudinal boards 22^a, which are carried by the slings, the outer side walls consisting of longitudinally-disposed planks 22, which are also embraced within the slings.

23 represents the hopper-doors, which may be of any preferred construction, a suitable operating mechanism being adapted to be attached thereto for controlling their opening and closing positions.

The sides of the car are reinforced by the side posts 24, which in the present instance are illustrated as comprising channels extending to the tops of the car and secured to the inclined braces 25 and 26 by the plates 27, with which they coöperate. The inclined braces 25 and 26 and the channel side post 24 are all connected to the top angle 28 by said plate 27 through the medium of rivets 29.

30 is the top cover-plate for the bolster, which is braced by the diagonal braces 31, secured to said cover-plate and to the end-sill cover-plate 11.

The cross-braces 32 are disposed between the side sills and the center sills and are seated in pockets 33 and 34 on the center sills and side sills, respectively.

I am aware that minor changes in the construction, arrangement, 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 spirit of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A car having channel side sills, center sills, and end sills, hopper-slugs extending from side sill to side sill, and castings connected to the side sills and supporting the ends of the hopper-slugs; substantially as described.

2. A car having channel side sills, center sills and end sills, hopper-slugs extending from side sill to side sill, hopper-slugs extending from the center sill to the side sills, and castings carried by the side sills and supporting the ends of the respective hopper-slugs; substantially as described.

3. In a car, an underframing therefor comprising side sills, end sills and center sills, a bolster, the center sills terminating short of the end sills, draft-sills in line with the center sills and connected to the end sills, said draft-sills comprising plates, and angles connected to the center sills and to the plates with their flanges extending outwardly; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 12th day of July, 1904.

GEORGE I. KING.

Witnesses:

WM. A. CROLL,
JOHN H. FRANK.