S. W. MURRAY. 2 Sheets—Sheet 1.

Railway Box-Car.

No. 196,926. Patented Nov 6, 1877.

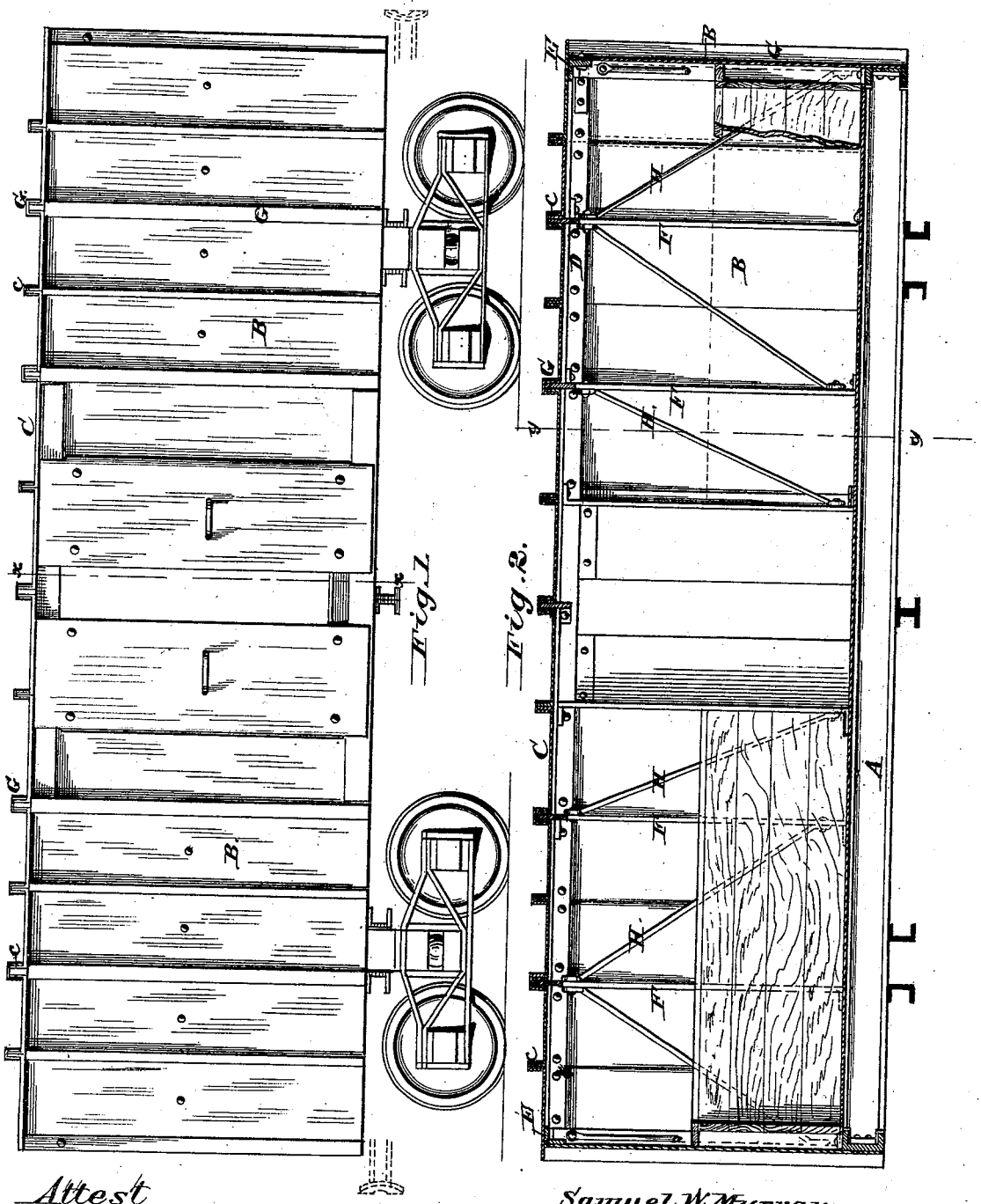

Fig. 1.

Fig. 2.

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H. C. Perine

J. A. Rutherford

Samuel W. Murray.

Inventor.

By James L. Norris,

Attorney.

2 Sheets—Sheet 2.

S. W. MURRAY.

Railway Box-Car.

No. 196,926. Patented Nov. 6, 1877.

Fig. 4.

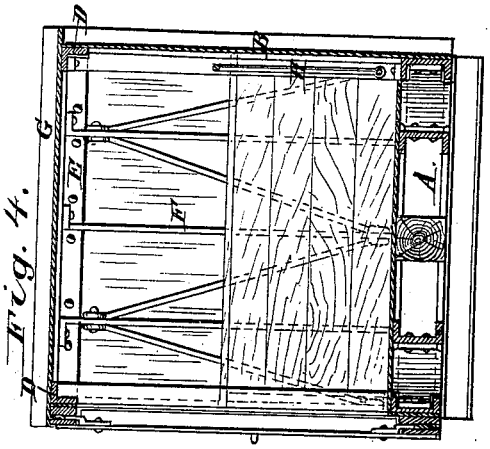


Fig. 6.

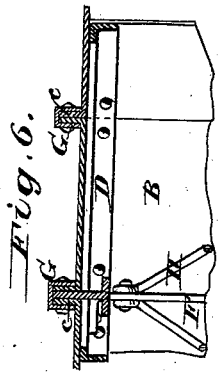


Fig. 7.

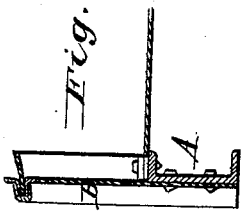


Fig. 5.

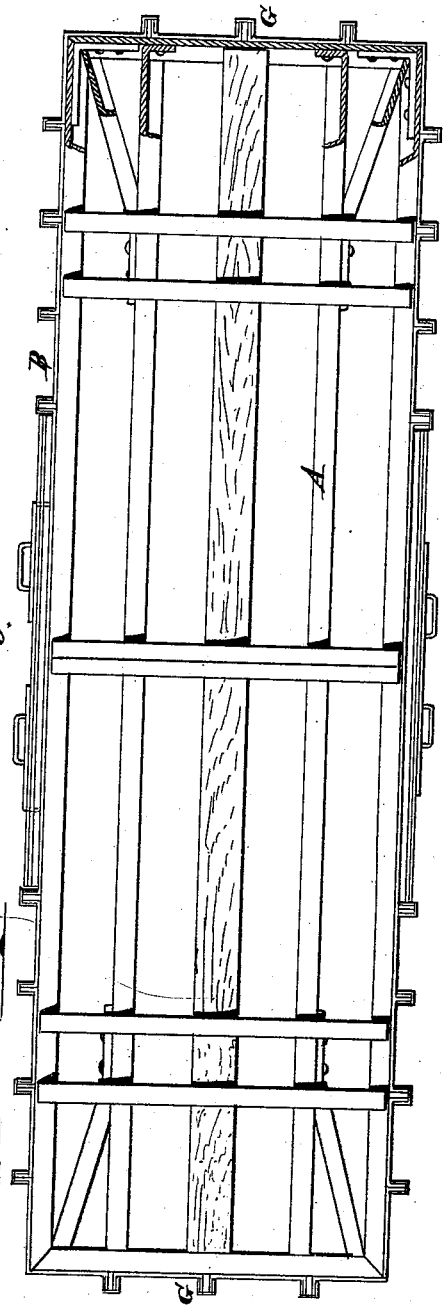
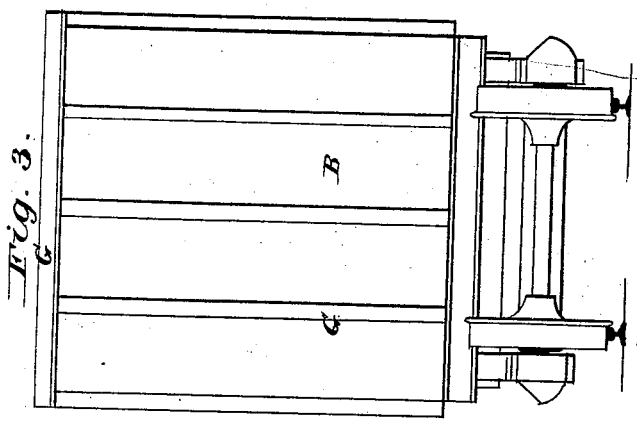


Fig. 3.



Attest:
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UNITED STATES PATENT OFFICE.

SAMUEL W. MURRAY, OF MILTON, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY BOX-CARS.

Specification forming part of Letters Patent No. **196,926**, dated November 6, 1877; application filed October 10, 1877.

To all whom it may concern:

Be it known that I, SAMUEL W. MURRAY, of Milton, in the county of Northumberland and State of Pennsylvania, have invented certain new and useful Improvements in Railroad Box-Cars for Carrying Grain, of which the following is a specification:

This invention relates to certain improvements in the construction of sheet-metal box-cars; its object being to dispense with the heavy frame-work heretofore employed to support the sides and roof, and produce a car possessing extreme strength with the least possible weight.

To this end my invention consists, first, in the combination, with the panels forming the walls and roof of the car, of a series of flat bars secured between the flanges of said panels, for the purpose of strengthening the sides and roof of the car and to afford a support for the interior lining of the same, as more fully hereinafter specified; second, in the combination, with the flanged panels forming the sides of the car, of the flat bars, bent at right angles at the ends and attached to the lower sills of the car, and the angle-irons supporting the roof, as more fully hereinafter specified; third, in the combination, in a box-car, of the flanged panels forming the body and roof of the car, the bars secured between the flanges of the panels, and the metallic caps secured to the flanges, as more fully hereinafter set forth.

In the accompanying drawings, Figure 1 represents a side elevation of my improved car; Fig. 2, a longitudinal sectional view; Fig. 3, an end elevation; Fig. 4, a transverse vertical section; Fig. 5, a bottom view; Fig. 6, a detached sectional view, showing a modification of the plates located between the flanges of the panels; and Fig. 7, a detached view, showing the lower sills of the car and the side panels attached thereto.

The letter A represents the sills of the car, forming part of the lower frame or truck of the same, and constructed in the usual manner. The letter B represents the sides, and C the roof, of the car, composed of a series of sheet-metal panels, provided with flanges *c* at their edges, and secured together at such flanges by means of bolts, rivets, or otherwise. The panels forming the sides of the car are secured at their lower ends to the sills A, and at their upper ends to a rectangular frame, composed of a series of angle-irons, D, secured together at the corners by means of the angle-irons E, bolted thereto. The panels forming the roof of the car are also secured to the angle-irons D, and are supported thereby. In order to support the interior walls or lining of the car, a series of flat bars, F, is interposed between the flanged panels forming the sides and roof of the car, and secured between the same by the rivets or bolts which secure said panels together, said bars projecting some distance inside of the car, so as to leave a space between the inner and outer walls thereof. The bars secured between the side panels are bent at right angles at their upper and lower ends, and attached to the sills A and angle-irons D by means of bolts and rivets. The said flat bars may be interposed between all the panels of the series, or a portion thereof, only, in the present instance, being interposed alternately between every two panels of the series.

The letter G represents a series of caps, constructed, preferably, of light sheet metal, and adapted to fit over the flanges of the panels, and to be secured to the same in any desired manner—preferably, however, by the same bolts or rivets by means of which the panels are secured together—said caps serving to close the joints between the flanges and impart a finished appearance to the outside of the car. The walls of the car may be strengthened by braces H, if desired, secured to the flat bars between the flanges.

As thus constructed, it will be perceived that the vertical framing heretofore employed to support the sides and roof of the car is entirely dispensed with, whereby a car of extreme lightness is secured by means of the flanges of the panels and the interposed flat bars, the latter also serving at the same time as a support for the interior lining of the car.

The framing usually employed for the doors of the car is also dispensed with, as the side sills of the same are formed by two of the vertical flat bars, whereby the weight of the car and expense of construction are also materially lessened.

What I claim, and desire to secure by Letters Patent, is—

1. In combination with the flanged panels

forming the walls and roof of the car, the flat bars secured between said panels, whereby the strength of the car is increased and a support for the interior lining of the same is formed.

2. In combination with the flanged panels forming the sides of the cars, the flat bar secured between the panels and bent at right angles at the ends and attached to the lower sills of the car, and the angle-irons supporting the roof, substantially as set forth.

3. The combination, in a box-car, of the flanged panels forming the sides and roof of the same, the bars secured between the flanges, and the metallic caps fitting over said flanges and bars, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

SAMUEL W. MURRAY.

Witnesses:
W. R. KRAMER,
R. M. LONGMORE.