

No. 697,949.

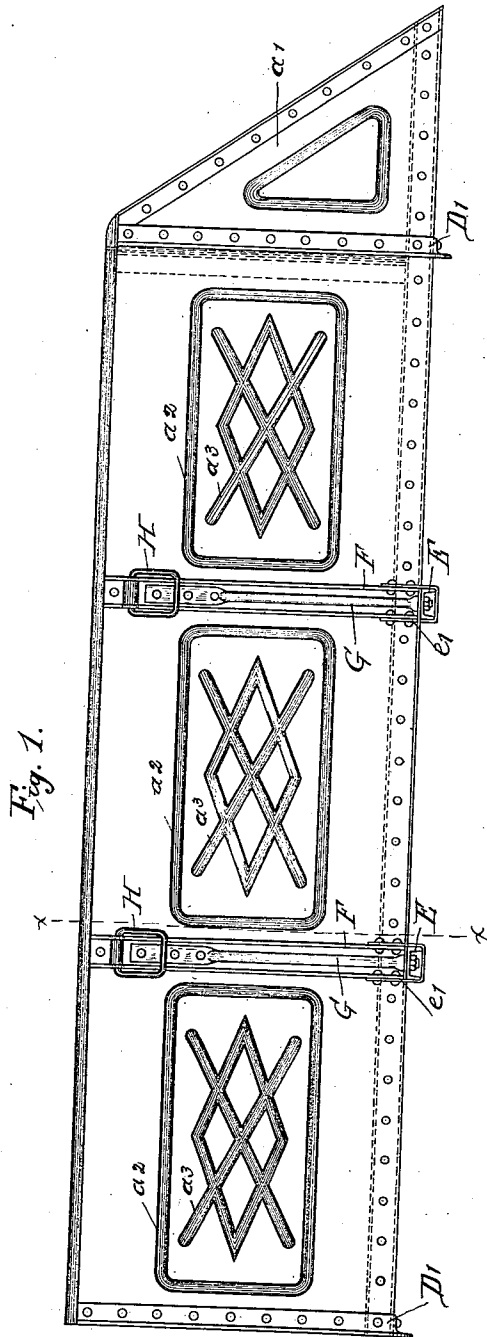
W. H. SCHOFIELD.
METAL WAGON BODY.

(Application filed July 19, 1901.)

Patented Apr. 15, 1902.

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:
O. K. Negro.
L. G. Snow.

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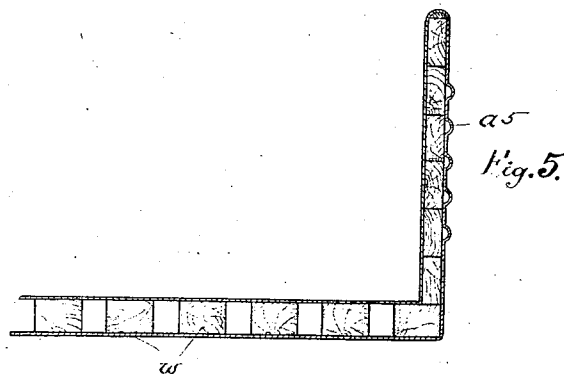
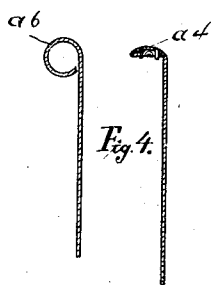
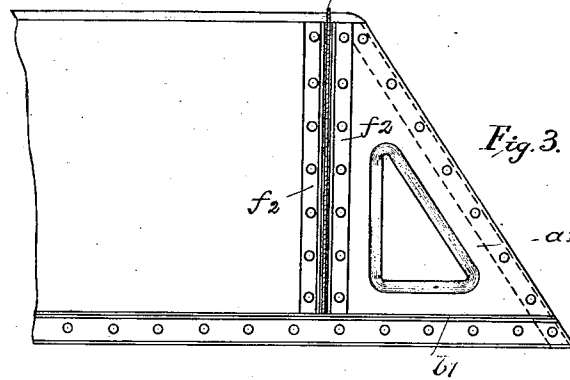
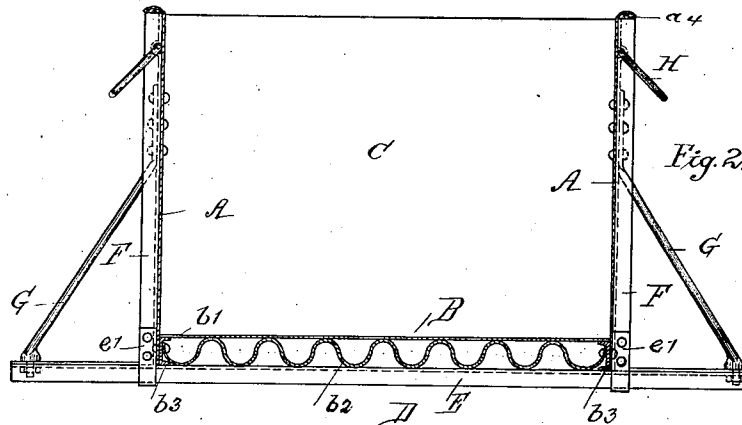
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(No Model.)

2 Sheets—Sheet 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM H. SCHOFIELD, OF CHICAGO, ILLINOIS.

METAL WAGON-BODY.

SPECIFICATION forming part of Letters Patent No. 697,949, dated April 15, 1902.

Application filed July 19, 1901. Serial No. 68,971. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. SCHOFIELD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metal Wagon-Bodies; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in the construction of metal wagon bodies or boxes.

The object of my improvements is to provide a wagon-body built substantially of metal in such manner as will give maximum strength and durability, ornamental finish, and minimum weight. In carrying out this object I have had in mind the requirements especially of a wagon-body suitable for handling ores and small grain in a dry climate where the ordinary wooden bodies shrink, thus opening cracks and loosening joints, which results in waste of the material being hauled and speedy deterioration in the structure as a whole.

One of the objects of my improved construction is to brace the wagon-body against the spreading of the sides and against buckling or doubling up of the ends.

A further object is to permit the use of comparatively thin plates of sheet metal by corrugating or embossing same, forming transverse ribs in the metal, which tend to stiffen the plates. In some instances I may reinforce these thin plates by a backing of wood on the sides or bottom or both sides and bottom and may employ a second plate, as shown in the drawings.

A still further object of my improvements is to strengthen the edges of the sides of the body, so that large pieces of ore falling on same will not crush or break them.

For the purpose of unloading wagon-bodies quickly it is sometimes desirable to lift them bodily from their running-gear or trucks and dump the contents, and to provide for this in my improved metal wagon-body I have placed grappling-rings at suitable points on the sides, which may be engaged by the hooks of a crane or other lifting device.

The manner in which the objects referred to and others of less importance is carried out will be described in detail and is illustrated in one form in the accompanying drawings, which form a part of this application, and in which—

Figure 1 is a side elevation of a metal wagon-body embodying my improvements. Fig. 2 is a cross-section of the body on the line xx of Fig. 1. Fig. 3 is a detail showing the end-gate and shoveling-board from the inside of the body. Fig. 4 shows in section two methods of finishing the edges of the sides; and Fig. 5 is a detail in section, showing a modified construction for the sides and bottom of the wagon.

Referring to the drawings in detail, it will be seen that the body of the wagon in addition to the parts to be described consists of the sides A, bottom B, front end C, and rear end-gate D, all of sheet metal. Each of the sides is formed of a single sheet or plate of metal having an angular rearward extension a' , formed integrally with the sides of the body, said extension forming the sides of the shoveling-platform b' . Before being assembled the plates forming the sides are passed through rolls or stamped by dies which impress therein corrugations extending transversely of the plates and preferably forming ornamental designs, as a^2 a^3 , the effect of which is to stiffen the sides. These corrugations may extend continuously throughout the sides or may be formed in panels, as shown. The upper edge of the sides is bent outwardly to form a curved flange a^4 or bent round, as at a^6 , Fig. 4, the effect of which is to stiffen such edge and give a broad striking-surface for material as it is thrown into the body. When light metal is used, the flange may be reinforced by an oval bar riveted to its under side, as shown in Fig. 4. If desired, the edges of the sides may be left straight and an angle-bar riveted thereto, thus taking the place of the bent-over flange, but performing the same function of stiffening and reinforcing the edges of the sides of the body.

The bottom of the wagon-body in the preferred form is made from two sheets or plates of metal, the upper plate b^1 being flat and the lower plate b^2 , upon which the upper is sup-

ported, being corrugated, with its corrugations running longitudinally of the body. Both plates are riveted to channel-bars b^3 , which extend along the lower edge of the sides of the body and to the web of which said side edges are also riveted, thus making a close joint at the corners of the body.

In the modified form of building the bottom and sides (shown in Fig. 5) I substitute for the corrugated plate as a stiffening means strips of wood w , which are placed between two plain plates of sheet metal, either solid or spaced apart, as shown. The outer plate b^5 may be corrugated in the manner shown in Fig. 1 to give it the required stiffness and for the purpose of ornamentation.

It will be apparent that by reinforcing the bottom plate either with a corrugated second plate or with strips of narrow and thick wood I prevent the wagon-body from doubling at its center and maintain a flat bottom on the inside.

Surrounding the sides and bottom at each end of the body, and more frequently, if desired, I rivet L-shaped bars bent to form U-shaped yokes D , the ends of which terminate just under the flanges of the sides of the body and serve to support the flanges at such points. For very heavy construction I may substitute channel-bars for the L-bars, and thus get the effect of the double flanges of the former.

At the center or waist of the body at suitable distance from each other I bolt to the bottom channel-bars E , which extend the full width of the bottom and project on each side. At the same points I rivet to the sides vertical channel-bars F , the lower ends of which rest on the back of the web of the bars E . U-shaped yokes e' surround the bars E and are bolted to the flanges of the bars F , thus locking them together and forming yokes which surround the sides and bottom of the wagon. To further brace and strengthen these channel-bar yokes, I apply braces G thereto, the lower ends of which are threaded and shouldered, as shown, the threaded portions passing through holes in the web of the channel-bars E and having nuts applied thereto and the upper ends of the braces being flattened and bolted to the web of the vertical bars F . This construction is designed to overcome the tendency to bulge which takes place at the center or waist of the wagon-box when heavily loaded.

In order to provide means for facilitating the lifting of the body from its trucks, I slightly crimp the bars F near their upper end to form a seat for rings H of suitable form and size to be grasped or engaged by hooks carried by a derrick or other lifting means of well-known form, which forms no part of this invention and is therefore not shown.

A way for the tail-gate f' is formed by riveting to the sides of the body near its rear end two L-shaped bars f^2 , with their flanges slightly spaced apart. A similar construction

may be used in forming the front end of the body.

The shoveling-board b' is formed by simply extending the bottom a suitable distance beyond the rear end-gate, with a corresponding extension of the channel-bars to support same. The portions of the side plates which serve as sides for the shoveling-board may be corrugated, as shown in Fig. 3.

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

1. As a new article of manufacture, a wagon-body having its sides, bottom and ends formed from sheet-metal plates, the sides having corrugations therein arranged in panels and in ornamental designs, and the bottom having corrugations extending throughout its length, and yokes each formed of a single flanged bar bent to embrace said sides and bottom and secured thereto, substantially in the manner and for the purpose set forth.

2. As a new article of manufacture, a wagon-body having its bottom and ends formed from sheet-metal plates, and having sides formed of two sheet-metal plates, the outer plate having corrugations therein, and the inner plate being plain, and the corrugations being arranged in panels of ornamental design, and yokes, each formed of a single flanged bar bent to embrace said sides and bottom and secured thereto, substantially as set forth.

3. As a new article of manufacture, a wagon-body having its bottom and ends formed from sheet-metal plates, sides formed from two plates spaced apart, the inner plate being plain, and the outer plate being corrugated, a stiffening backing or filling arranged between said side plates, and metal yokes embracing said sides, and bottom and secured thereto, substantially as described.

4. As a new article of manufacture, a wagon-body composed of sheet-metal sides, bottom and ends, said sides having corrugations therein, and said bottom being reinforced by a corrugated metal plate, and yokes embracing the sides and bottom, substantially as set forth.

5. A wagon-body composed of sheet-metal sides, bottom and ends, the sides formed of two plates, the outer one of which has corrugations formed therein, and the bottom formed of two plates, the lower one of which is corrugated and supports the upper one, and yokes embracing the sides and bottom, substantially as described.

6. As a new article of manufacture, a wagon-body having ends, sides and bottom formed from sheet-metal plates, yokes formed of flanged metal bars embracing said sides and bottom and secured thereto, metal channel-bars extending longitudinally under the bottom plate, other channel-bars extending transversely under the bottom plate, and vertical channel-bars embracing the side plates and secured to the transverse channel-bars, as described.

7. In a wagon having sides, bottom and

ends formed of sheet-metal plates, yokes embracing the sides and bottom, said yokes formed of horizontal channel-bars extending transversely under the bottom and projecting on each side thereof, and vertical channel-bars secured to said horizontal bars and embracing the sides of the wagon-body, lifting-rings secured to said vertical bars, and braces secured to said vertical and horizontal bars.

8. In a wagon, having sides, bottom and ends formed of sheet-metal plates, a shoveling-board formed by extending the side and bottom plates beyond the tail-gate or rear end of the wagon-body, and flanged bars extending

longitudinally under said bottom and its extension, to support same.

9. In a wagon, a bottom formed of two metal plates spaced apart with wooden bars interposed therebetween, and flanged metal bars extending longitudinally, and other flanged metal bars extending transversely, under said bottom, as set forth.

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

WILLIAM H. SCHOFIELD.

Witnesses:

O. K. TREGO,

FREDERICK BENJAMIN.