

No. 722,478.

PATENTED MAR. 10, 1903

J. H. ANDERSON.

WAGON BODY.

APPLICATION FILED MAY 1, 1902.

NO MODEL.

Fig. 1.

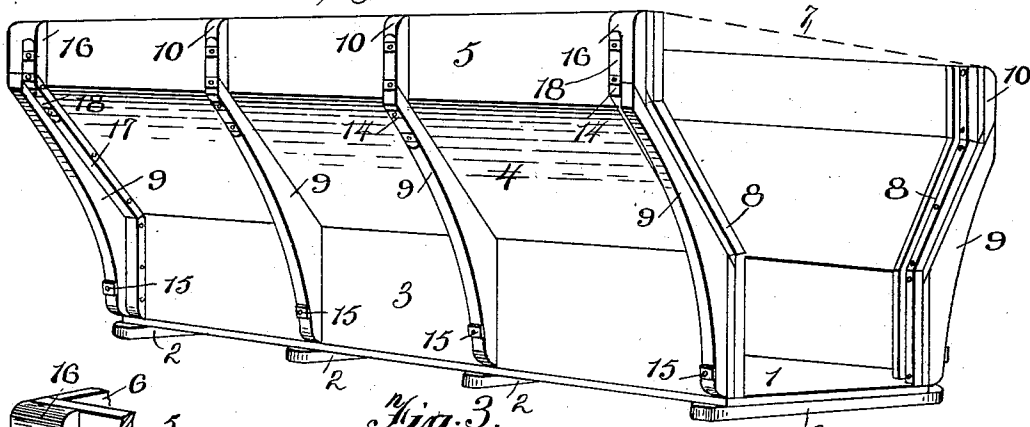


Fig. 2.

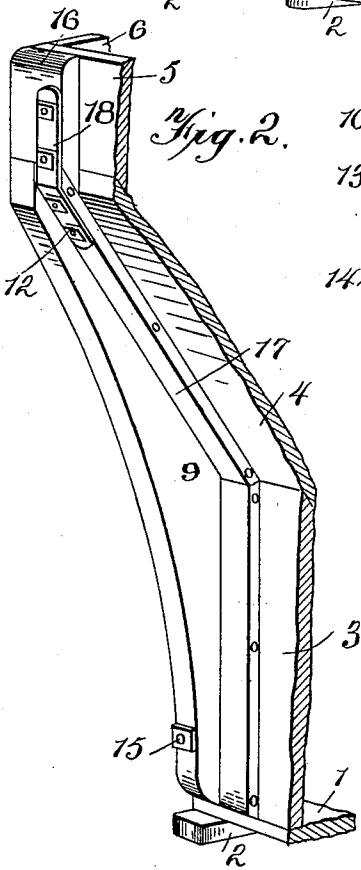


Fig. 3.

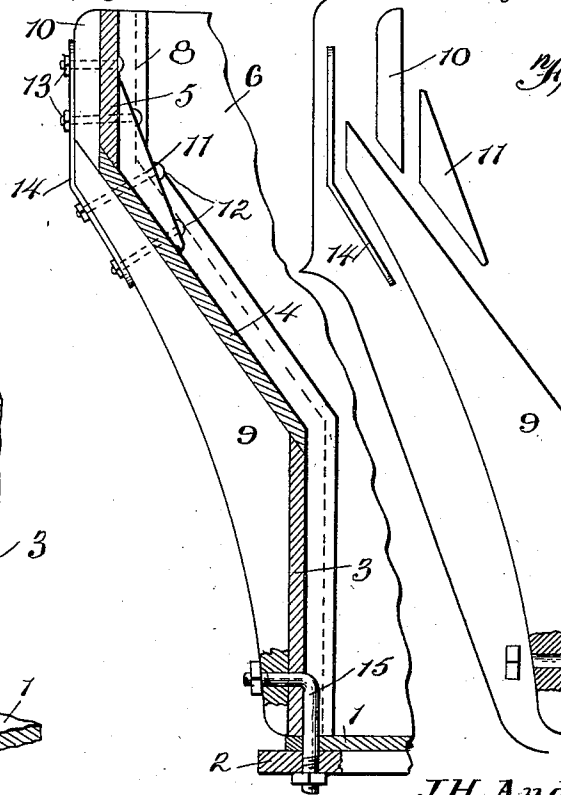
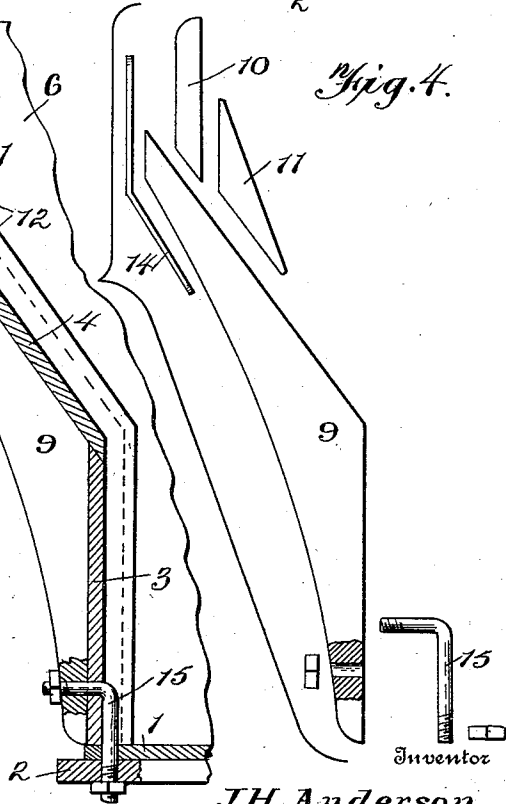


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## WAGON-BODY.

SPECIFICATION forming part of Letters Patent No. 722,478, dated March 10, 1903.

Application filed May 1, 1902. Serial No. 105,541. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. ANDERSON, a citizen of the United States, residing at Littlefalls, Morrison county, Minnesota, have invented certain new and useful Improvements in 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.

This invention relates to certain improvements in vehicles, and more particularly to certain improvements in the construction of wooden bodies for wagons, or what are commonly known as "grain-boxes" or "grain-tanks."

An object of the invention is to provide certain improvements in the construction of wooden wagon-bodies or grain-boxes, with the end in view of producing the body at a minimum cost and of maximum strength, durability, and rigidity.

Another object of the invention is to provide certain improvements in details and in arrangements of parts whereby a highly-efficient and improved grain-box will be produced.

The invention consists of certain novel features of construction and in combinations and arrangements of parts, as more fully and particularly pointed out and explained hereinafter.

Referring to the construction illustrated in the accompanying drawings as an example of a device within the spirit and scope of my invention, Figure 1 is a perspective view of a wagon-body constructed in accordance with my invention, the rear end not being shown, but being merely indicated by dotted lines. Fig. 2 is a detail perspective view of a front portion of the exterior of the body looking toward one of the end corners of the body to show an end knee and the parts adjacent thereto. Fig. 3 is a cross-section taken vertically through an intermediate portion of the wagon-body, one side thereof and a portion of the floor being broken away, as one side of the body is a duplicate of the other side. Fig. 4 is a detail elevation of one of the wooden

knees detached, cooperating parts being

shown in elevation and separated from each other and the knee.

It is very essential that large wagon-bodies, or what are commonly called "grain-tanks" or "grain-boxes," should be strongly and rigidly constructed in order to carry large quantities of grain without permitting leakage thereof at the junctions between the bottom and sides of the tank or between the planks forming the sides of the body by reason of springing or bending thereof under the weight of the grain. It is also desirable that such grain-tanks be as light in weight and as economical in construction as possible. To accomplish these desirable results, I have devised a construction which will be now described.

In the drawings, 1 is the floor or bottom of the wagon body, tank, or box, usually, although not necessarily, composed of longitudinally-arranged tongue-and-grooved planking or boards.

2 represents strong wooden cross-bars arranged transversely beneath the bottom or floor and at intervals throughout the length thereof. In the present illustration I happen to show four of these cross-bars, one at the front end of the bottom, one at the rear end thereof, and two intermediate equally-spaced cross-bars. The floor is usually rigidly secured to these cross-bars.

The vertical sides of the body are provided with overhanging portions and are formed, preferably, of longitudinal planks, usually extending from end to end of the body. For instance, the lower portion 3 of each side is vertical and at its lower edge rests on the floor. From the upper edge of the lower vertical portion 3 the intermediate portion 4 of the side extends upwardly and outwardly at an angle to form the shelf or overhanging portion of the side. The top portion 5 of each side is vertical and at its lower edge joins the top edge of the shelf portion 4.

The two sides of the wagon-body are usually similar in shape and construction and at the front end of the body are united by the front end 6, and at the rear end of the body is provided the rear wall or gate 7. (Indicated by dotted lines in Fig. 1.) At their rear ends

the sides are provided at their inner faces with the rigidly-secured grooved strips 8, as usual, to receive the rear end wall or gate of the tank or body.

5 It is necessary to provide strong and rigid means to support the overhanging sides and to which the side planking can be secured and by which the floor can be tightly and rigidly drawn up to and secured or coupled  
10 to the side walls. As means for this purpose I provide strong solid (preferably wooden) knees or braces 9, arranged vertically at the exterior of the sides and fitted and secured thereto. Each knee is approximately trian-  
15 gular in shape, with its long upwardly and outwardly inclined outer edge forming the hypotenuse of the triangle and usually extending from the floor upwardly and outwardly to a point above the horizontal plane  
20 of the top edge of the overhanging portion 4 of the side. The inner edge of each knee is formed to conform to and fit the exterior of the side below the top vertical portion 5 thereof and down to the floor. The lower  
25 portion of the inner edge of each knee is vertical and is parallel with and fits against and extends throughout the width of the vertical portion 3. The upper portion of the inner edge of each knee extends upwardly and out-  
30 wardly at an angle and fits against the under surface of the overhang 4 of the side and extends completely across the same. The upper end of each knee usually extends upwardly and outwardly beyond the outer top  
35 edge of the overhang 4 and receives the lower beveled edge of a vertical block 10, fitting against and extending transversely across the outer face of the vertical top portion 5 of the wagon-body. This block 10 extends ap-  
40 proximately from the top edge of the portion 5 downwardly, with its lower portion fitted against the outer face of the top edge of the overhang 4 and between the same and the projecting end of the knee. Said block 10 is  
45 located in the vertical plane of the knee and in effect forms an upward continuation of the knee. If desired, the block 10 can be formed integral with the knee, although I prefer to form the blocks and knees in separate pieces  
50 fitted together about as described, as greater strength is thereby secured.

11 is a brace, block, or short internal knee fitted in the angle formed by and between the overhang 4 and the top vertical portion  
55 5 of each side. Each brace or block 11 is preferably triangular in shape, with its inner angular edges or faces conforming to and arranged transversely of the top portion 5 and overhang 4 of the side. These blocks 11 are  
60 vertically arranged within the tank or body, and each block is located in the vertical plane of its knee. I provide these inner blocks or braces 11 for the intermediate knee, but usually do not provide them for the end  
65 knees.

The planks or boards forming the sides of

the body are nailed or otherwise secured to the knees, and the top vertical portions 5 are secured to the top extensions 10 of the knees. The internal blocks 11 are also secured to  
70 the planking of the sides, and strong rigid bolts 12 are provided extending transversely through the lower portions of the blocks 11, the planking of the overhangs 4, and the upper portions of the knees. Strong bolts 13  
75 are passed through the upper portions of the blocks 11, the planking of the vertical portions 5 of the sides, and the top extensions 10 of the knees.

If desired, the intermediate knees can be  
80 provided with the vertical longitudinal exterior strong metal bands 14, extended upwardly over the joint between the upper end of the knee and the extension 10 and longitudinally along said extension. These metal  
85 bands or straps can be suitably secured to the knees and extensions 10 and also can be secured by the bolts 12 and 13, having their heads or nuts at the outer face of the metal bands 14.  
90

The knees are preferably arranged in the vertical planes of the bottom cross-bars 2. In other words, the knees of the opposite sides are arranged in pairs, so that a pair of knees will be in the same vertical plane as a bottom  
95 cross-bar 2, the knees of the pair being arranged on opposite sides of the body. The lower ends of the knees can, if desired, abut against the top face of the floor 1 immediately over the ends of the cross-bars 2.  
100

15 represents angle-bolts, one being provided for each knee. Each angle-bolt has a horizontal portion passing transversely through the lower end of a knee and through the planking of the portion 3 of a side to the  
105 interior of the body. From thence the vertical portion of the bolt extends downwardly along the inner face of the side and transversely through the flooring and through the end of a cross-bar. The lower end of the bolt is pro-  
110 vided with a nut screwing tightly up against the under face of the cross-bar, while the outer end of the bolt has a nut screwing tightly up against the outer edge of the knee. By means of this construction the knees and  
115 the planking of the sides are most tightly drawn together and the flooring is most rigidly and tightly drawn up to the lower edges of the sides to form tight joints therewith.

At the rear end of the body the grooved  
120 strips 8 can be, if desired, secured through the sides to the end knees and to the blocks 16, forming upward extensions of the rear end knees. I usually form the blocks 16, which correspond to the extensions 10 of the  
125 intermediate knees, of extra or double width to receive the upper ends of the extra or additional bracing-strips 17, secured to said rear end knees and located at the front faces thereof and vertically along the exterior of  
130 the sides and conforming and secured thereto. Heavy band-iron 18 can be secured longitu-

dinally of the exterior faces of said blocks 16 and bracing-strips 17 and over the joints between said members.

By means of the construction substantially as described I provide a most strong, rigid, and durable wagon-body which can be economically manufactured and which is comparatively light in weight. The parts of the body are so rigidly secured together that opening or springing of the planking is avoided, and hence leakage of the grain is prevented. The parts are so braced and connected that the strain and pressure are distributed, thereby avoiding the concentration of strain at any one point.

It is evident that various changes and modifications might be resorted to in the forms, constructions, and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the exact construction illustrated.

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

1. A grain tank or body having its sides formed with the intermediate overhanging portions, the vertically-disposed exterior knees triangular in shape and having their inner edges fitting and conforming to the lower vertical and overhanging portions of the sides, the vertical and overhanging portions of the sides being secured to and against the inner edges of said knees, and angle-bolts securing the floor to the sides and to the lower ends of the knees, substantially as described.

2. A grain tank or body comprising the floor, the bottom cross-bars, the sides having the intermediate overhanging portions, the vertically-disposed exterior knees, said knees being solid and triangular in shape, each pair of knees arranged in the vertical plane of a cross-bar, the inner edges of the knees fitting and conforming to the overhanging portions and lower vertical portions of the sides and throughout their lengths rigidly secured thereto, and angle-bolts securing the lower ends of the knees, sides, floor and cross-bars together, substantially as described.

3. A wooden wagon-body or grain-tank having its sides formed with the intermediate overhanging portions, in combination with the solid wooden triangular-shaped knees fitted vertically beneath said overhanging portions and extending down along the lower vertical portion of the side, and throughout their lengths rigidly secured to said portions of the sides, substantially as described.

4. In combination, in a wagon-body, a floor, the sides formed with intermediate overhanging portions, the exterior vertically-disposed triangular-shaped knees fitting beneath the overhanging portions and secured thereto and down along and secured to the lower vertical portions of the sides, upward extensions of said knees extending along the top vertical

portions of the sides, internal angular knees, within the upper vertical and overhanging portions of the body, and means securing said internal knees to said portions of the body and to the upper portions of said exterior knees and to said extensions, substantially as described.

5. In a wagon-body, the combination, of a floor, the sides having the intermediate overhanging portions, the vertical exterior triangular-shaped knees extending from the floor upwardly along and conforming to the lower vertical and overhanging portions of the sides, the sides being secured to said knees, means securing the floor to the sides and to the lower ends of the knees, upward extensions of the knees along the top vertical portions of the sides, internal knees in the vertical planes of the exterior knees, bolts passing through the internal knees, the overhanging portions of the sides and the exterior knees, and bolts passing through the internal knees, the top vertical portions of the sides, and the said extensions, substantially as described.

6. In combination, in a wagon-body, a floor, the sides comprising intermediate overhanging portions and upper and lower vertical portions the vertically-disposed exterior triangular solid knees having upper angular faces fitting the overhanging portions and vertical faces fitting said lower vertical portions of the sides, the upper ends of the knees projecting upwardly and outwardly beyond said overhanging portions, the upward extensions fitted against and secured to said upper vertical portions of the sides at their lower ends fitted to said projecting ends of the knees, metal straps arranged longitudinally of and secured to the knees and extensions and over the joints between the same, said sides secured to said knees, and means securing the knees, sides and floor together, substantially as described.

7. A wagon-body having its sides formed with upper and lower vertical portions and intermediate overhangs, the angular vertical knees fitting the lower vertical portions and the overhangs and secured rigidly thereto and at their upper ends extending upwardly and outwardly beyond the overhangs, and the vertical upward extensions of the knees fitting and secured to said upper vertical portions of the sides and at their lower ends fitting between the wagon-body sides and said extended ends of the knees, substantially as described.

8. A wagon-body having its sides formed with the upper and lower vertical portions and the intermediate overhangs, the exterior angular knees fitted vertically across the overhangs and lower vertical portions of the sides and rigidly secured thereto, and the interior angular knees fitted vertically to the upper vertical portions and overhangs of the sides and rigidly secured thereto and to the exterior knees, substantially as described.

9. A wagon-body having the floor, the sides

formed with vertical portions resting on the floor and overhangs, the vertical angular knees, each knee extending from the floor completely across and fitting said vertical  
5 portion and its overhang and bridging the meeting edges thereof, said portion and overhang being secured to said knee, and means passing through the floor, sides and knees and

rigidly securing them together, substantially as described. 10

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

JOHN H. ANDERSON.

Witnesses:

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R. E. LESTER.