No. 664,454. Patented Dec. 25, 1900.

A. G. ANDERSON.

WAGON BODY.

(Application filed Apr. 11, 1900.)

(No Model.)

Fig. 1.

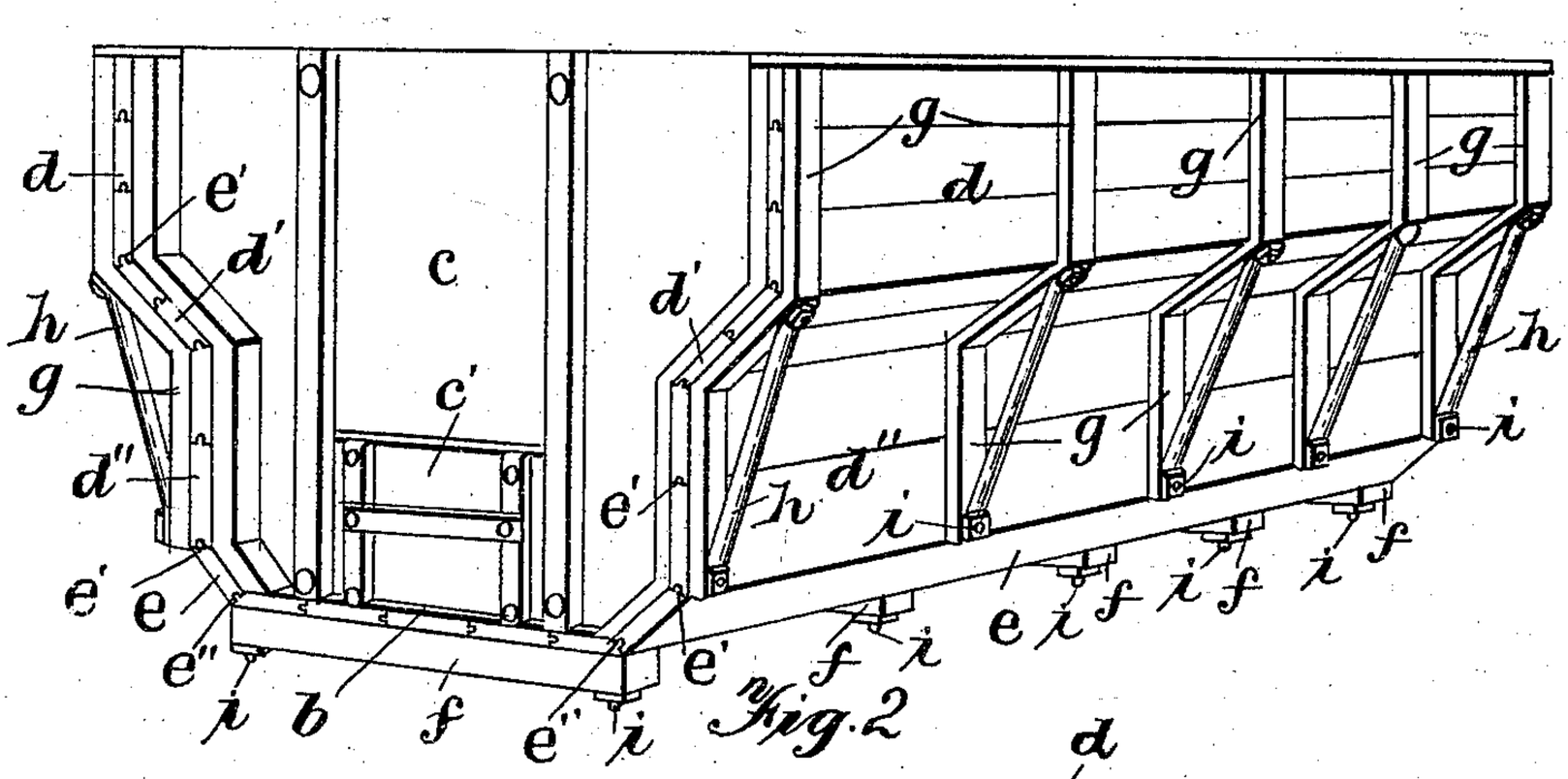


Fig. 2.

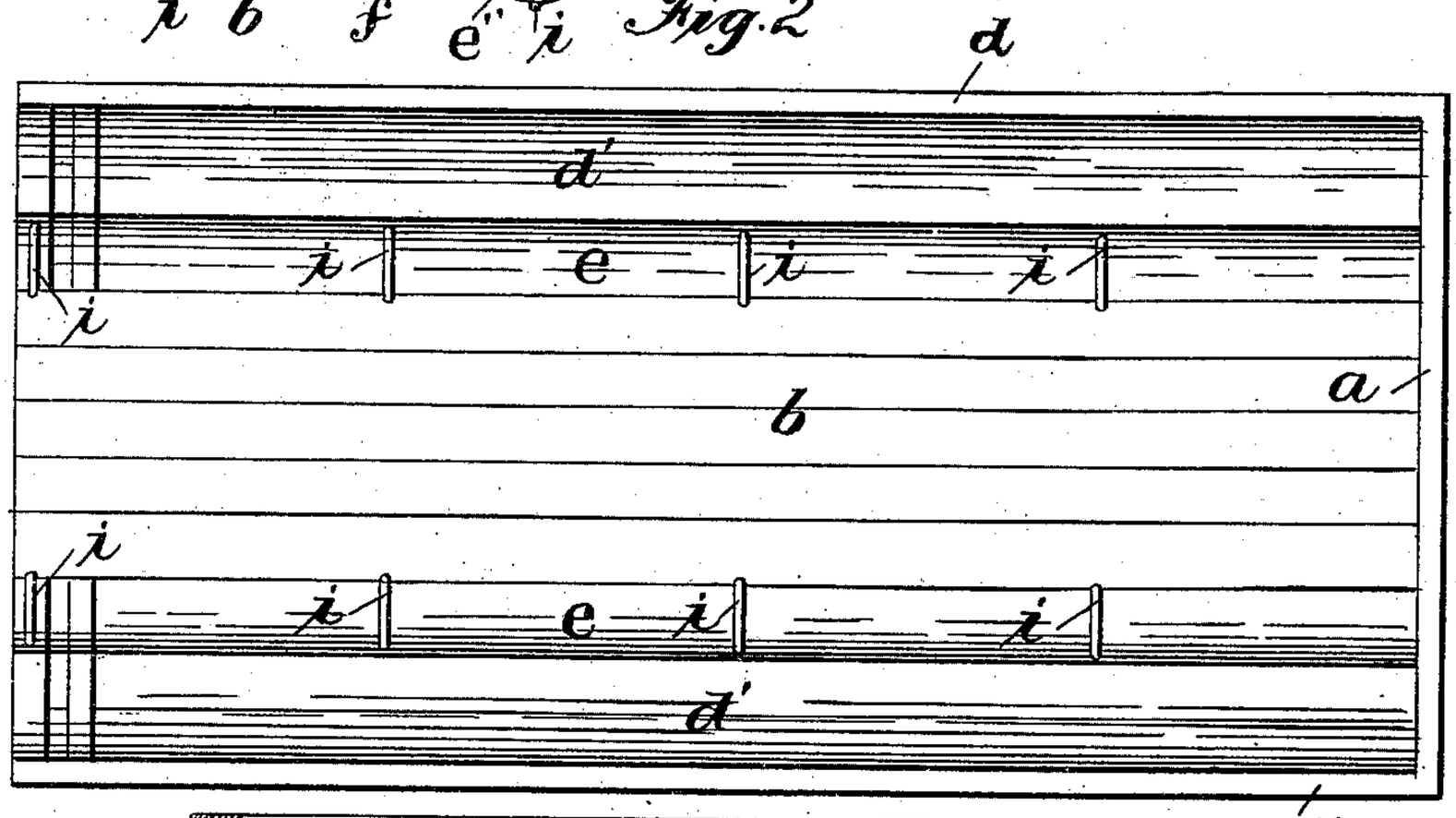
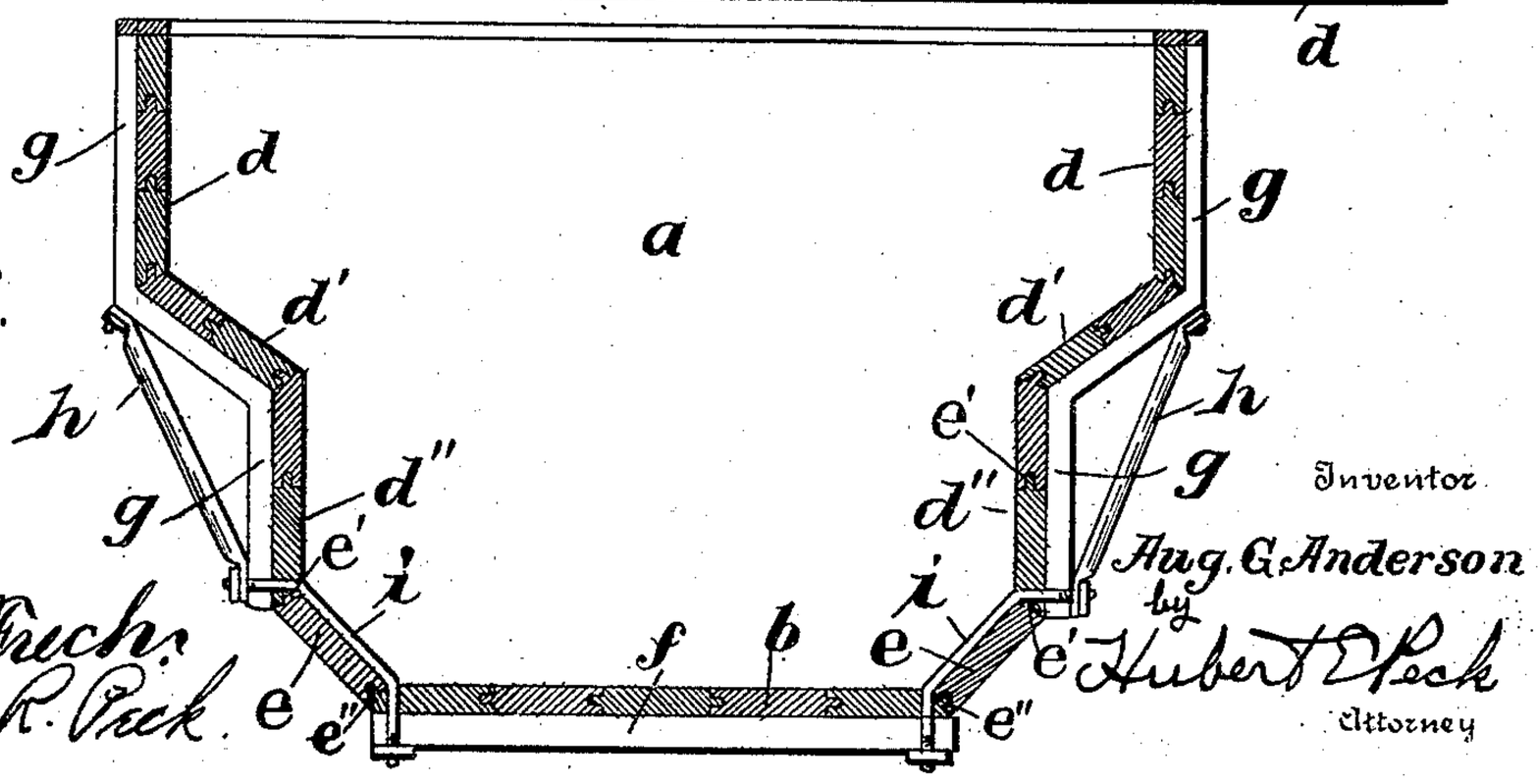


Fig. 3.



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WAGON-BODY.

SPECIFICATION forming part of Letters Patent No. 664,454, dated December 25, 1900.

Application filed April 11, 1900. Serial No. 12,469. (No model.)

To all whom it may concern:

Be it known that I, AUGUST G. ANDERSON, a citizen of the United States, residing at Moorhead, in the county of Clay and State of 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 improvements in wagon-bodies, and more particularly involves certain improvements in grain-tanks; and the objects and nature of my invention will be obvious to and fully understood by those skilled in the art in view of the following explanation of the accompanying drawings, which for the purposes of description show one construction as an example from among other constructions within the spirit and scope of my invention.

Referring to the accompanying drawings, Figure 1 is a detail perspective view of the wagon-body or grain-tank, the running-gear and wheels not being shown. Fig. 2 is a top plan view of the wagon-body, the end-gate being removed. Fig. 3 is a cross-section.

In the drawings, *a* is the usually rigid permanent closed vertical front end or frame of the wagon bed, body, or grain-tank, at its lower edge secured to or tightly fitting the horizontal bottom or floor *b*, and at its vertical edges tighly fitting and secured to the two sides of the tank. The top edges of said front head and said sides usually, although not necessarily, end in the same horizontal plane, and tight joints are formed between said head and the sides and bottom of the tank. Said head can be suitably braced and is usually strongly and durably constructed of tongue-and-grooved planking.

c is the end-gate or rear head of the tank, usually corresponding to the front end in construction and shape and forming a tight joint with and fitting the bottom and sides. However, if desirable, the end-gate can rest in grooves or ways and be removable, and is usually, although not necessarily, provided with a bottom initial grain-discharge opening, normally closed by a suitable slide or door *c'*.

The two parallel side walls of the tank extend throughout the length thereof and are correspondingly constructed. Each side is preferably, although not necessarily, constructed with a top overhang—that is, each side consists of the top vertical portion *d*, the downwardly and inwardly inclined portion *d'*, forming the overhang, and the bottom vertical portion *d''*.

The side walls are joined to the bottom or floor of the tank by the longitudinal downward and inward inclines *e e*, as more fully and particularly described hereinafter.

The side walls are usually composed of longitudinal tongue-and-grooved planking or boards, each board usually extending the length of the tank, although such construction may not always be employed. The floor or bottom of the tank is also usually composed of tongue-and-grooved planks or boards extending longitudinally the length of the tank. As ordinarily constructed, the side walls of grain-tank wagons meet the floors at right angles, and by reason of the great weight of the grain the floor-planks often spring or bend downwardly between the bottom cross braces or supports, leaving cracks or openings between the outer edges of the floor and the bottom edges of the side walls, through which the grain escapes, resulting in considerable waste and loss, particularly when long hauls are necessary over rough roads.

One of the objects of my invention is to provide such a construction of grain-tank as to avoid such leakage by preventing the floor from springing away from the side walls of the tank. In carrying out this object I construct the lower vertical portions of the side walls with their lower edges located a distance above the horizontal plane of the floor and also a distance outside of the side edges of said floor—that is, the distance between the said lower vertical portions of the side walls is considerably greater than the width of the floor. Each side wall is then connected with the floor by the inwardly and downwardly inclined portion *e*, which extends throughout the length of the tank and is united with the lower edge of the side wall and outer edge of the floor by continuous tongue-and-groove connections *e'*. I preferably (although possibly not necessa-

rily) form each inclined or angle connection *e* by a single plank or board extending throughout the length of the side wall and floor and having its upper longitudinal edge cut at an angle to squarely fit the lower longitudinal edge of the bottom plank of the side wall, said two edges being united and interlocked by the continuous tongue-and-groove connection *e'*, and the lower edge of said plank or board *e* is correspondingly cut to fit squarely against the longitudinal edge of the outer plank or board of the floor, and is suitably interlocked therewith and united thereto—as, for instance, by employing the continuous tongue-and-groove connection *e''* before described. The two inclined bottom connections *e e* are similarly constructed and arranged. It will thus be obvious that where such a construction is employed the floor of the tank cannot spring down away from the side walls and the bottom of the tank is maintained perfectly tight against escape of grain.

Suitable braces and reinforcing constructions are provided to render the tank rigid and to hold the various planks and joints rigidly maintained against loosening and separation under the great weight and shifting movement of the load of grain. For instance, I can arrange a series of cross-bars *f* along the under side of the floor of the tank. These bars are spaced suitable distances apart, and bars are usually arranged beneath the extremities of the floor. In the same vertical plane with each bottom cross-bar *f* strengthening or bracing pieces *g* are secured, if desired, to the exteriors of the side walls, extending usually from the lower ends thereof upwardly along the under sides of the overhangs and to the top edges of the walls. Preferably the lower ends of the vertical strengthening-pieces *g*, secured to the lower vertical portions of the side walls, end at the upper edges of the inclined connections *e* and do not extend down to and meet the cross-bars, although my invention is not limited in this regard, nor is it limited to the employment of the reinforces *g*.

h are metal braces, angles, or knees extending from the overhangs downwardly and inwardly to the lower portions of the side walls. Usually these braces are arranged in the same vertical planes with the cross-bars *f* and the reinforces *g* and have their upper ends bolted to the reinforces near the outer edges of the overhangs and from thence incline downwardly and inwardly to the lower ends of the reinforces *g* at the bottom edges of the side walls and have flattened ends fitted against said reinforces. Bolts *i* pass through said lower ends of the braces and inwardly through the reinforces and side walls to the interior of the tank. Each bolt has the inclined body portion extending downwardly and inwardly across the inner face of the connection *e* and the end passing vertically down through the floor of the tank and through a cross-bar *f*. These bolts are usually threaded at both ends and provided with tightening-nuts at the under faces of the cross-bars *f* and at the outer faces of the lower ends of the braces from the overhangs of the side walls. It will thus be observed that these bolts tie the floor directly to both side walls and draw both said parts directly against the inclined side connections *e e* and are so arranged that the downward pressure of the floor also tends to correspondingly press down the side connections *e e*, because the bolts lie and rest on transversely of said side connections *e e*. The parts are also thoroughly strengthened and tied together by arranging the bolts in the braces from the side wall overhangs and also through the cross-bars *f*. However, I do not care to limit my invention to locating these bolts in the cross-bars and braces from the overhangs, although in the specific construction shown as an example I attain material advantages by employing such a structure and arrangement.

The tank is suitably mounted on wheeled running-gear, which I do not deem it necessary to show in the drawings, and by reason of the bottom inclined connections *e e* the vehicle can make a shorter turn than with the old constructions without the front wheels engaging the tank and wearing holes therethrough.

It is evident that various changes might be made 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 constructions shown, but consider myself entitled to all such changes as fall within the spirit and scope of my invention.

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

1. The grain-tank, substantially as described, having the floor and the sides, combined with the inclined planks arranged longitudinally of the tank and at opposite longitudinal edges interlocking with the lower edges of the sides and the outer edges of the bottom, whereby sagging of the bottom is prevented, substantially as described.

2. A grain-tank having the horizontal floor, the vertically-disposed side walls, and the two inclined planks arranged longitudinally of the tank and having their lower edges interlocked with the end longitudinal edges of the floor, respectively, by tongue-and-grooving, and their upper edges interlocked, respectively, with the lower longitudinal edges of the sides by tongue-and-grooving, and locking the parts together against separation, whereby sagging of the bottom is prevented, substantially as described.

3. A grain-tank having the floor, the vertical sides, the inclined planks arranged longitudinally of the tank and having their longitudinal edges cut at an angle and tongue-and-grooved, the lower edges of the sides and the longitudinal end edges of the floor being

correspondingly cut at an angle and tongue-and-grooved, said inclined planks uniting the floor and sides by said tongue-and-grooving, and bolts locking the parts rigidly together for the purposes described.

4. A grain-tank having the vertical ends, the horizontal floor, the vertically-disposed side walls, the inclined interlocking plank connections between the side walls and floor, and tie-bolts between the side walls and floor drawing the same toward each other and against the interposed inclined plank connections, substantially as described.

5. A grain-tank having the inclined connecting-planks between the side walls and floor of the tank, and the tie-bolts between the side walls and floor resting on the upper faces of said connecting-planks, substantially as described.

6. A grain-tank having the side walls with top overhangs, the floor, the inclined connections between the lower edges of the side walls and the side edges of the floor, the angles or braces for the overhangs, and the bolts passing through the lower ends of said braces and through the side walls and downwardly over said inclined connections and through the floor, substantially as described.

7. A grain-tank having the ends, the vertical side walls composed of tongue-and-grooved planking and formed with the top overhangs, the horizontal floor formed of tongue-and-grooved planking and provided with the lower cross-pieces, the angle-braces for the overhangs extending downwardly along the outer faces of the sides, the inclined planks extending longitudinally of the tank and having the tongue-and-grooved connections between the lower edges of said walls and the side edges of the floor, and the bent tie-bolts passing through the lower ends of said angle-braces inwardly through the side walls and from thence downwardly along said inclined planks and through the floor and cross-pieces, substantially as described.

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

AUGUST G. ANDERSON.

Witnesses:
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LOUIS B. CHERRY.