Nov. 27, 1923. 1,475,732

J. WOODS

COMBINED WAGON BOX AND END GATE

Filed April 8, 1922

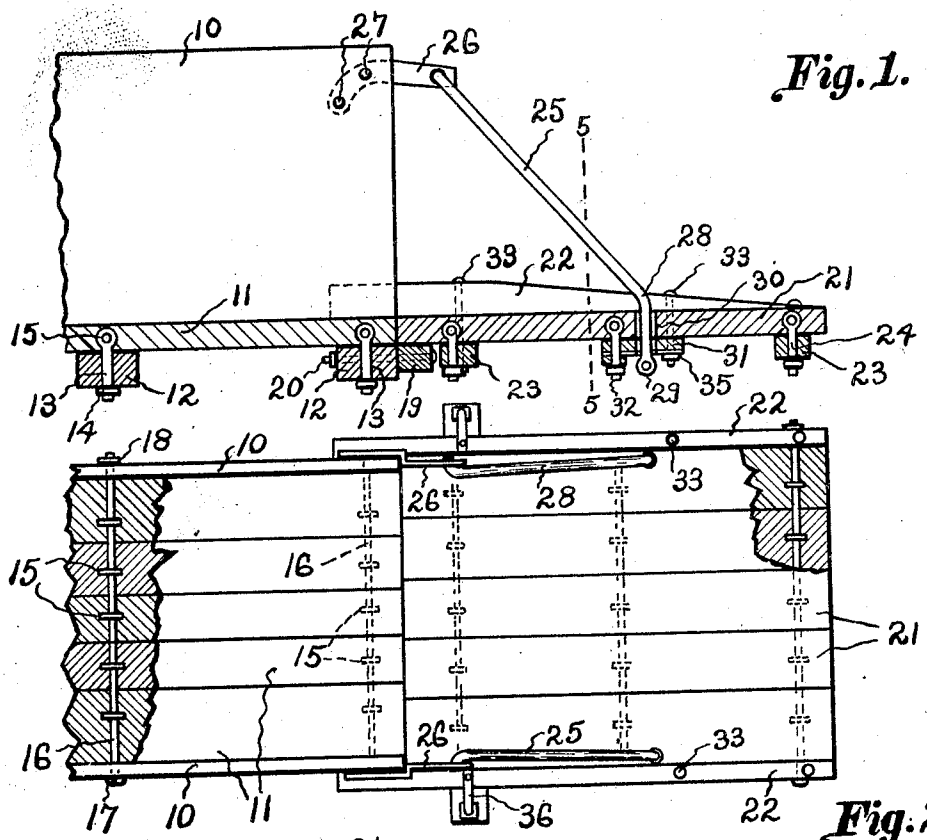


Fig. 1.

Fig. 2.

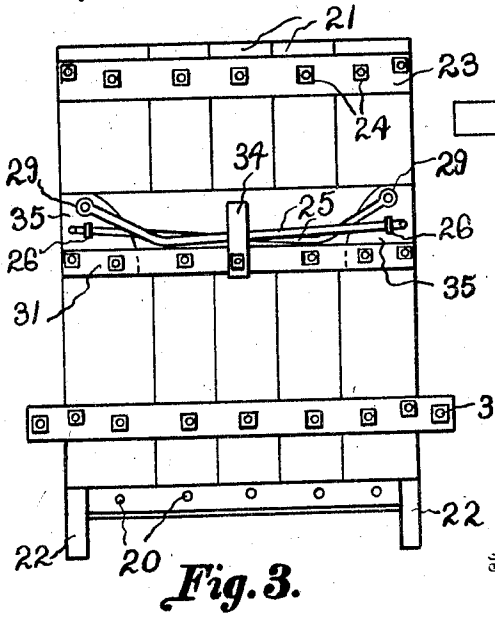


Fig. 3.

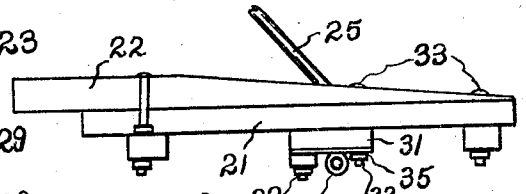


Fig. 4.

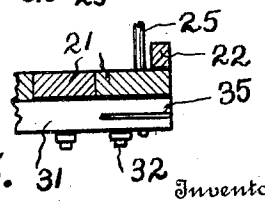


Fig. 5.

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UNITED STATES PATENT OFFICE.

JACOB WOODS, OF GRISWOLD, IOWA.

COMBINED WAGON BOX AND END GATE.

Application filed April 8, 1922. Serial No. 550,709.

To all whom it may concern:

Be it known that I, JACOB WOODS, a citizen of the United States, residing at Griswold, in the county of Cass and State of Iowa, have invented certain new and useful Improvements in Combined Wagon Boxes and End Gates, of which the following is a specification.

The present invention relates to improvements in vehicle structures and more particularly relates to a combined wagon box and end gate and the supporting means therefor.

It is an object of the invention to provide a construction of wagon body and end gate in which the upper surfaces thereof will be free of nail or bolt heads or other obstacles which interfere with a smooth surface and are apt to catch a shovel or other implement as the material is being removed from the vehicle; at the same time the wagon body and end gate are appropriately reinforced and form a strong and rigid structure and the various boards comprising these parts are adapted to be held together against accidental spreading.

Other objects of the invention are to provide for the support of the end gate in a position even with the wagon body floor and to dispense with the use of nails, bolts, chains and the like for supporting the end gate and for keeping it closed, the supporting means being capable of easy and convenient operation and acting to permit of the quick raising or lowering of the tail gate, the tail gate being held against lateral movement by suitable side rails which prevent material also from spilling over the sides of the gate.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Fig. 1 is a fragmentary vertical sectional view through a wagon body and end gate with the latter in the lowered position;

Fig. 2 is a top plan view of the same;

Fig. 3 is a rear view of the end gate in the raised or closed position;

Fig. 4 shows a side view of the end gate construction with a part of the supporting rod illustrated; and,

Fig. 5 is a section taken on the line 5—5 in Fig. 1.

Referring more particularly to the drawings, 10 indicates the sides of the wagon body and 11 the floor boards which may be of a usual construction and laid lengthwise between the sides 10 in accordance with the conventional plan. Reinforcing beams 12 in any suitable number and at desirably spaced intervals are placed transversely across the floor of the body beneath and against the floor boards 11, but these beams are not bolted in the usual manner but are secured to the boards by the use of bolts 13 having nuts 14 at their lower ends beneath the beams and provided with perforated heads 15 lying embedded in suitable sockets made therefor in the floor boards 11. The structure is that of an eye-bolt in which the eyes of the various bolts, as best seen in Fig. 2, are connected by coupling rods 16 which pass in common through the various eyes and through the floor boards 11 and act to prevent the separation of the floor boards by shrinkage and also bind together the various eye bolts which support the reinforcing beams 12.

The rods 16 are provided with heads 17 at one end and nuts 18 at the other, the nuts providing for taking up any looseness in the boards which is apt to occur from time to time. The rearmost supporting beam 12 is situated at the rearmost end of the wagon body and is adapted to carry a shelf beam 19 projecting beyond the end of the wagon body and having its upper surface flush with the lower surface of the floor boards 11.

Bolts or other suitable means 20 may be employed to pass through the beams 12 and 19 for the purpose of holding the latter firmly and rigidly in place in such wise as to form a rest for the end gate which is composed in the main of similar floor boards 21 disposed longitudinally and flanked at the sides by rails 22. The end gate is slightly wider than the wagon box and the side rails 22 are projected forwardly in order that they may overlap upon the sides 10 of the wagon and thus avoid the casual shifting of the end gate in a sidewise direction. The end gate is further provided with reinforcing beams 23 supported therebeneath by the use of eye-bolts 24 similar to the eye-bolts heretofore described and counter-sunk within the boards 21 and connected by rods as previously described in connection with the floor of the wagon box. The foremost beam 23 is extended beyond the sides of the

end gate as indicated in Figs. 2 and 3 and reinforcing and steadying bolts 36 are connected between the side walls 22 and these extended portions of the beam.

These beams are placed at suitable intervals to provide for an adequate supply of the boards and to prevent shrinkage therebetween.

The inner end of the gate is adapted to rest upon the shelf beam 19 so as to lie flush with the wagon box and form a continuous and unbroken surface therewith. The shelf beam 19 also forms a support for the end gate when in the raised position indicated in Fig. 3, in which case the projecting end portions of the side rails 22 extend downwardly at the ends of the beam 19 and thus prevent lateral shifting of the gate.

The gate is supported in both upper and lower positions by the use of rods 25 which have out-turned upper ends engaged pivotally in perforations provided in rearwardly extending brackets 26 which are inclined at a slight downward direction and are carried on the sides of the wagon box to which they are secured by bolts 27. The lower ends of the rods 25 are off-set as indicated at 28 and are provided with heads 29 at their lower extremities. The off-set parts of the rods pass downwardly through perforations 30 made through the end gate boards and through an exceptionally wide beam 31 lying beneath the intermediate part of the end gate and secured thereto as by eye-bolts 32 and other bolts 33 which pass through the side rails 22.

The rods 25 are two in number and project downwardly from the brackets 26 and connect with the end gate just inside of the side rails 22. The beam 31 is thicker or deeper at its rear edge portion where it receives the eye-bolts 32, this thicker portion providing a ledge to support the rods 25 when they are folded over against the rear side of the end gate when it is elevated. A clip 34 is carried by this beam 31 or upon another part of the end gate for the purpose of confining the folded rods 25 and thus securing the end gate in its raised position.

The end portions of the large beam 31 are reinforced by wear plates 35 where the heads 29 of the rods engage them and to more effectively hold the wear plates in place, the rear thicker portion of the beam 31 is slit, as indicated in Fig. 5, to receive the same. The bolts holding the beam also go through this metallic or other wear plate and hold the same securely in place.

In the use of the device, the end gate may be caused to assume the position shown in Fig. 1 when the loading or unloading of the wagon is to be accomplished. In this case, the floor of the wagon and the end gate lie flush with one another and form unbroken even surfaces for the shoveling of loads. There are no obstructions, such as bolt, nail or other heads, to interfere or strike the operator's shovel, but the construction is not sacrificed as to strength but is in reality stronger than in common structures where bolts project above the floor surface.

The end gate is supported upon the ledge 19 and upon the rods 25 and the material is confined at the sides by the rails 22. When the vehicle is in motion, the end gate of course is in the raised position. By simply lifting the gate in the manner of a hinged gate, the rods 25 will slide through the openings 30 and finally the brackets 26 will be received into these openings with the gate supported on end upon the shelf beam 19. The rods 25 are thereupon folded over one upon the other and adapted to rest upon the clip 34 upon the shelf provided by the enlarged portion of the beam 31.

It will be appreciated from the foregoing that the invention is simple, inexpensive and durable and that it will enable the quick lifting and lowering of the tail gate and will hold it effectively in place in either of these positions with great strength when loading and unloading, and without rattling when in motion.

What is claimed is:

The combination with a wagon body having a bottom and sides, a ledge secured across the lower side of the bottom and projecting from the rear edge thereof, an end gate having a bottom and sides, said bottom being adapted to seat upon the projecting portion of the ledge and to hinge upon said ledge in swinging the bottom into raised and lowered positions, said sides of the end gate being adapted to overlap the sides of the wagon body and extending beyond the inner end of the end gate for holding the end gate in alinement with the wagon body and for interlocking engagement with the ledge when the end gate is raised, a pair of rods hinged to the sides of the wagon body in spaced relation above the bottom thereof and being offset inwardly and projecting through the bottom of the end gate, said rods being hinged at their upper ends and adapted to be folded in overlapping relation against the outer sides of the end gate when the latter is raised, supporting means for holding said rods in crossed transverse relation against the outer side of the end gate, and a clamp carried upon the outer side of the end gate and adapted for binding engagement against said rods when overlapped.

In testimony whereof, I have affixed my signature in presence of two witnesses.

JACOB WOODS.

Witnesses:
ARTHUR H. STURGES,
HIRAM A. STURGES.