April 8, 1930. C. H. ARNTZEN 1,753,637

END GATE

Filed March 9, 1928 2 Sheets-Sheet 1

Fig. 1.

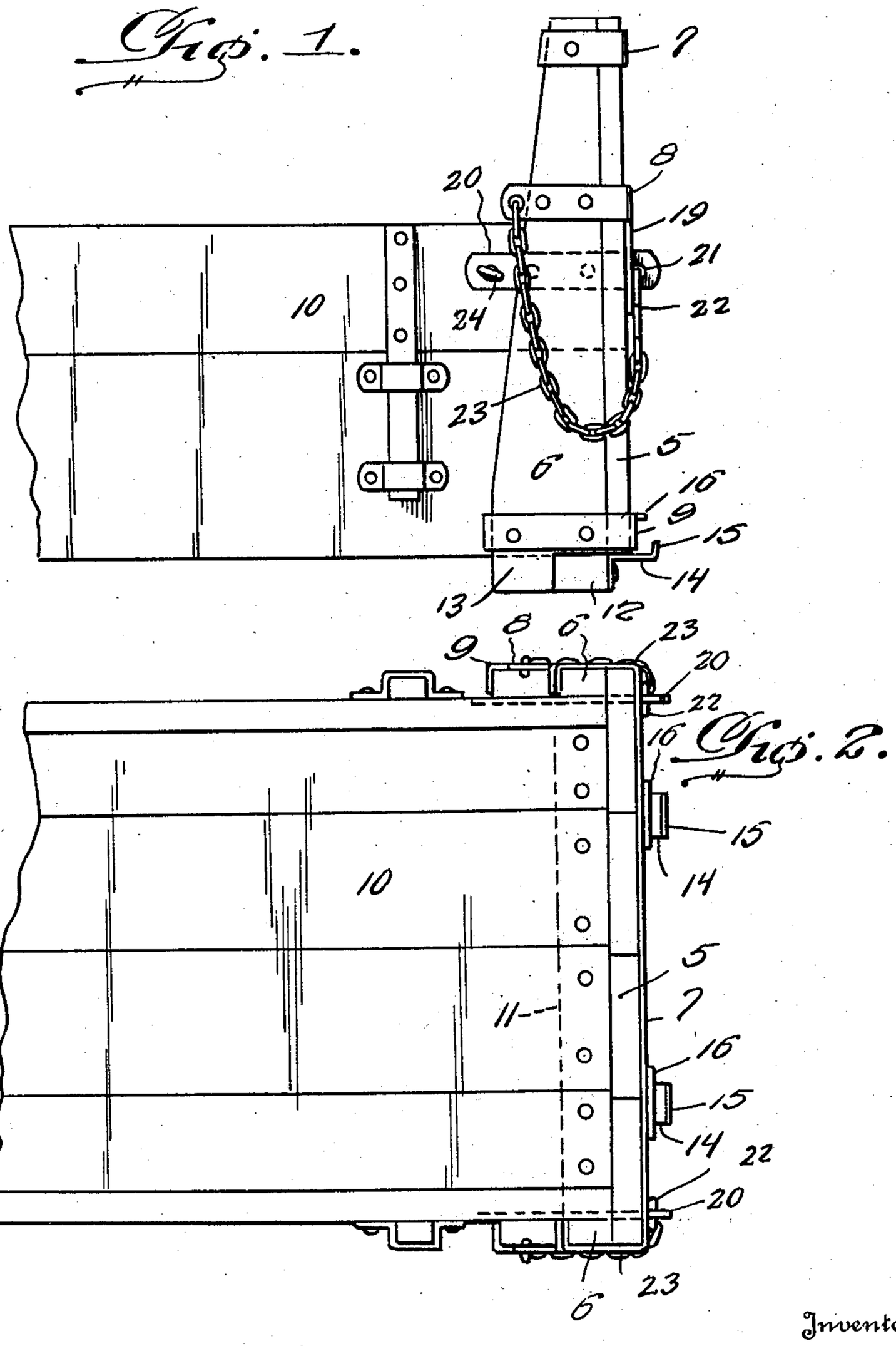


Fig. 2.

Inventor

Cloyd H. Arntzen,

By J. Stanley Buck

Attorney

April 8, 1930. C. H. ARNTZEN 1,753,637

END GATE

Filed March 9, 1928 2 Sheets-Sheet 2

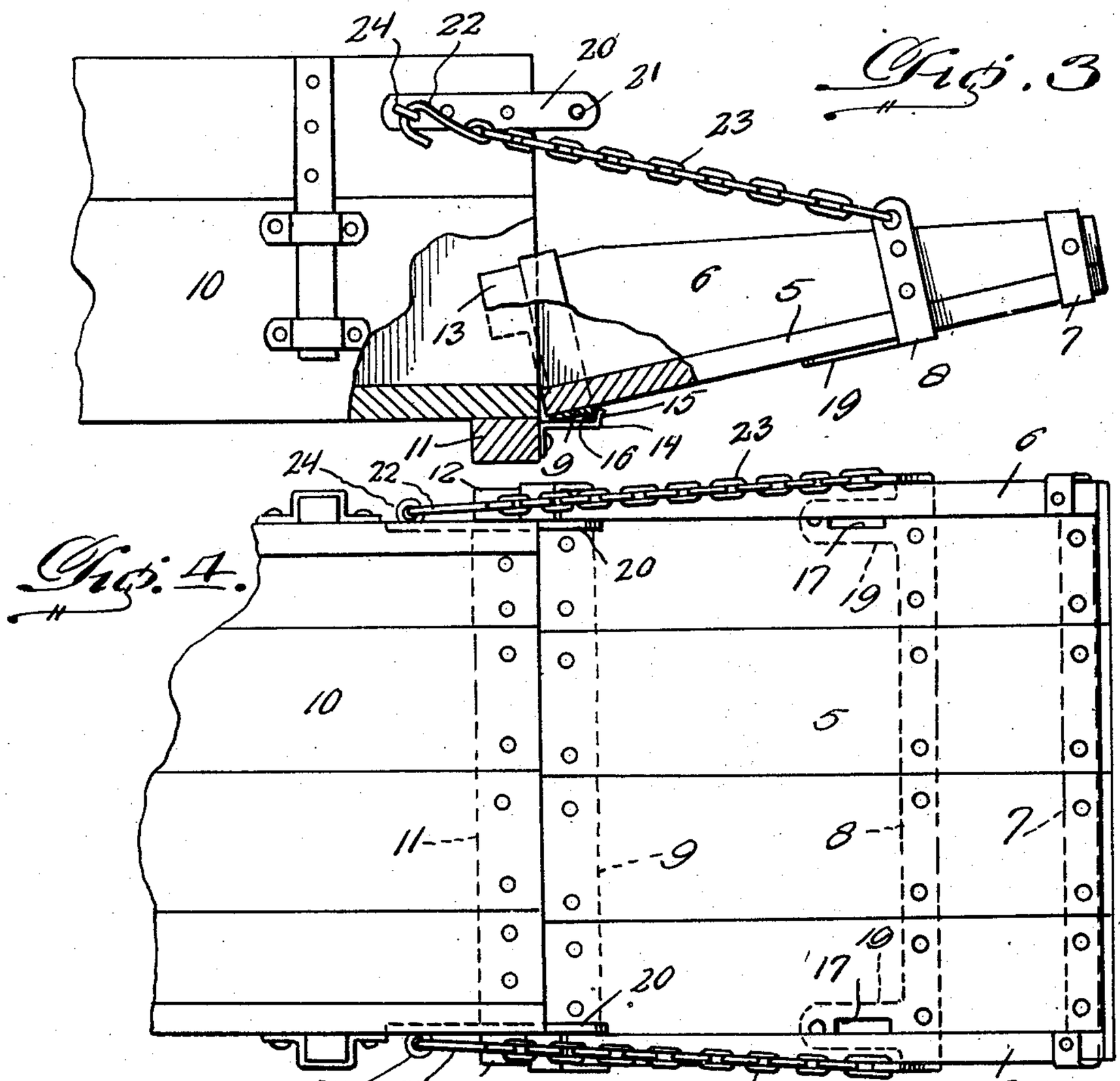


Fig. 3.

Fig. 4.

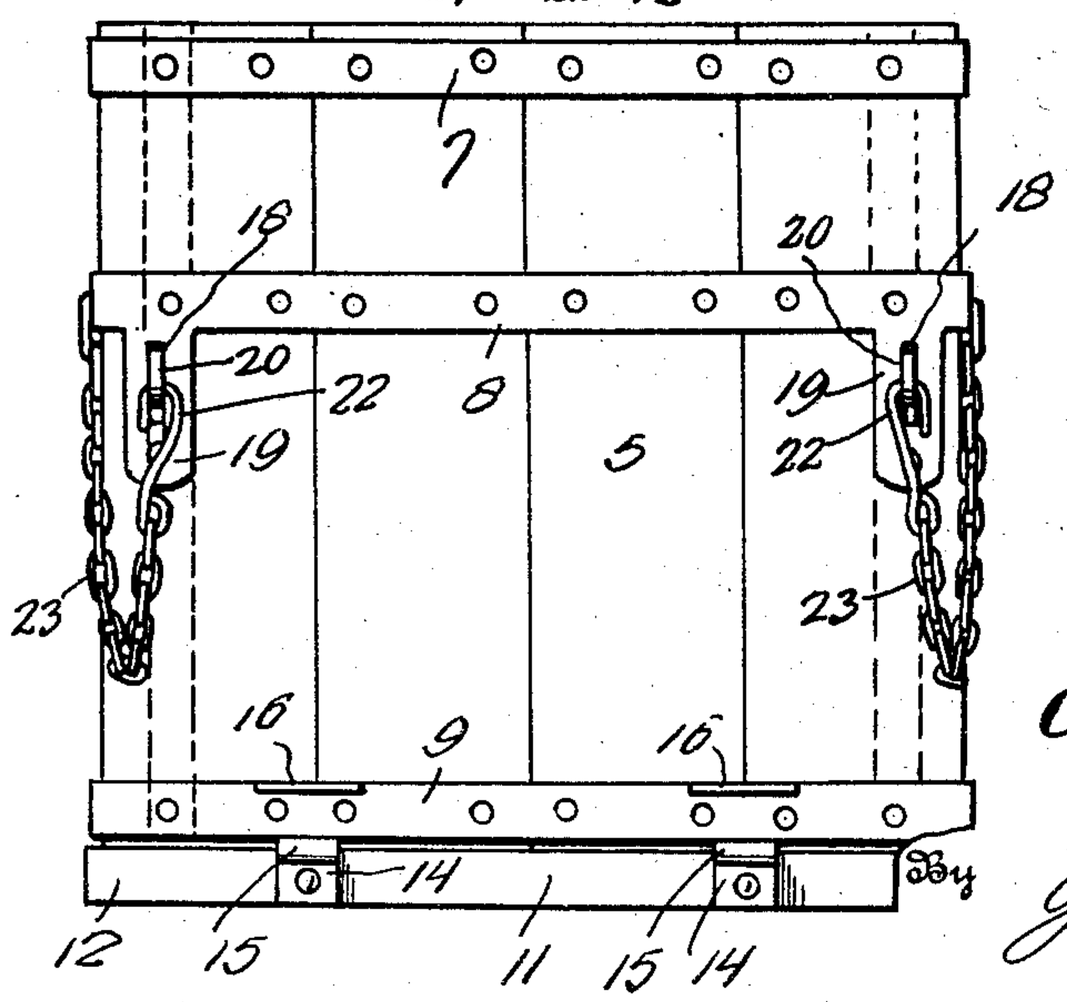


Fig. 5.

Inventor.

Cloyd H. Arntzen,

J. Stanley Burch

Attorney

Patented Apr. 8, 1930 1,753,637

UNITED STATES PATENT OFFICE

CLOYD HAROLD ARNTZEN, OF CANTON, MISSOURI

END GATE

Application filed March 9, 1928. Serial No. 260,506.

This invention relates to improvements in an end gate to be used as a shoveling board as well as a closure for a wagon-body.

The primary object of the present invention is to provide simple and efficient means for effectively holding the gate in raised or closed position, and for supporting and holding the gate in proper lowered shoveling position.

A further object is to provide an end gate of the above kind which is extremely simple and durable in construction and capable of being readily opened and closed.

The invention consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings, and claimed.

In the drawings;

Figure 1 is a side elevational view of an end gate constructed in accordance with the present invention, the gate being closed and locked against the rear end of a wagon-body.

Figure 2 is a top plan view thereof.

Figure 3 is a view similar to Figure 1, partly broken away and in section, and with the end gate lowered, to show it adapted for service as a shoveling-board.

Figure 4 is a top plan view of the construction as shown in Figure 3; and

Figure 5 is a rear elevational view of the construction as shown in Figures 1 and 2.

Referring more in detail to the drawings, the present gate consists of a flat rear wall 5 provided at its side edges with tapering wings 6. These parts are preferably constructed of wood and are reinforced and braced by horizontal straps or bars 7, 8 and 9 snugly embracing and rigidly fastened to the rear wall 5 and side wings 6, respectively at the top, intermediate and bottom portions of the gate. This construction is very simple and produces a gate which is strong and durable in service.

A conventional form of wagon-body is indicated at 10, and this body is usually constructed with an outside horizontal cleat 11, which is fastened to the lower side and at the rear edge of the bottom of the wagon-body, and is extended at its ends beyond the side walls of the wagon-body as indicated at 12. Depending or projecting tongues 13 are provided on the forward portion of the lower edges of the wings 6 for engagement behind the projecting ends 12 of the cleat 11, to hold the lower end of the gate tightly against the rear end of the wagon-body 10 when the gate is in its vertical position. Further, the tongues 13 engage the projecting ends 12 of the cleat 11 so that said projecting ends 12 act as bearings for the wings of the end gate when the latter is swung open or closed. To the rear edge of the bottom of the wagon-body are attached a pair of spaced brackets or keepers 14 upon which the end gate rests and by which the inner or lower edge of the gate is supported in position when the gate is opened or lowered. These brackets each consists of an angular piece of metal flanged to fit against the edge of the bottom of the wagon-body, to which said bracket or keeper is attached by screws or bolts. The brackets extend rearwardly to form efficient supports for the lower edge of the end gate, and said brackets have upwardly extending flanges 15 at their rear ends arranged to engage behind rearwardly projecting lugs 16 provided on the lower brace bar or strap 9 for effectively holding the lower edge of the end gate forwardly or in against the rear edge of the bottom of the wagon body, when the end gate is in lowered or opened position as shown in Figure 3. In this way the end gate is effectively held against displacement rearwardly of the wagon-body when in use as a shoveling-board, so that the grain or the like may not pass downwardly between the rear end of the wagon body and the end gate.

Near the sides of the end gate at points between the top and bottom edges thereof are formed holes or slots 17 (Figure 4), which coincide with similar holes 18 provided in wear plates 19 which are rigid with and depend from the intermediate brace bar or strap 9 and are suitably fastened by bolts or screws to the rear wall 5 of the end gate. Horizontal rearwardly projecting holding straps 20 are rigidly secured to the outside of the side walls of the wagon body, and these holding straps are adapted to pass through the slots 17 and 18 when the end gate is raised or closed as shown in Figure 1. The free rear ends of

the holding straps 20 are formed with eyes 21 adapted to receive the hooks 22 provided upon corresponding ends of a pair of chains 23 which are attached at their opposite ends to the free forwardly projecting ends of the side members of the intermediate brace bar or strap 9. It is thus apparent that when the holding straps 20 are entered through the slots 17 and 18, and the hooks 22 are engaged in the eyes 21, the end gate will be effectively maintained in closed position with the tongues 13 engaged behind the projecting ends 12 of the cleat 11. Laterally projecting eyes 24 are provided upon the forward ends of the holding straps 20 to receive the hooks 22 of the chains 23 when the end gate is opened or lowered, whereby the chains 23 effectively support the end gate at the proper opened position in cooperation with the brackets 14. The wear plates 19 obviously form bearings for the hooks 22 when they are engaged in the eyes 21 so as to avoid enlargement of the slots 17 or other damage to the rear wall 5 of the end gate.

In use, the hooks 22 are disengaged from the eyes 21, whereupon the end gate is free to be swung rearwardly and downwardly to the open position of Figure 3. When in this position the flanges 15 of the brackets 14 are engaged behind the lugs 16 so as to effectively hold the lower end of the gate in against the end of the wagon body. The major part of the weight of the end gate is then sustained by the chains 23 as soon as the hooks 22 are engaged in the eyes 24, the lower end of the end gate being effectively supported by the brackets 14. In closing the gate the hooks 22 are disengaged from the eyes 24, and after the holding straps 20 pass through the slots 17 and 18, the hooks 22 are engaged in the eyes 21, thereby securely locking the end gate in closed position.

From the above description it will be readily seen that the construction of the present device is extremely simple and durable, insuring a long life of use and economical manufacture. Moreover, the construction is such as to enable ready release of the gate when in either closed or opened position as well as effective disposition of parts for retaining the gate in either of said positions.

Minor changes may be made without departing from the spirit and scope of the invention as claimed.

What I claim as new is:

The combination with a wagon body having an end gate provided with a bottom and side wings, of a transverse cleat at the rear of the wagon body, tongues extending from the side wings for engaging behind the ends of the cleat when the gate is in raised position, outer, inner and intermediate brace bars embracing and secured to the bottom and side wings of the end gate, depending wear plates integrally formed with the intermediate brace bar and having slots for registering with slots in the bottom of the end gate and adapted to receive holding straps on the body for holding the end gate in place, a pair of rigidly mounted rearwardly projecting lugs carried by the inner bar, and located at longitudinally spaced points, and a pair of complemental right angularly shaped duplicate brackets secured to the rear end of the bottom of the wagon body, the lower edge of said end gate being removably fulcrumed in said brackets, said brackets having their horizontal portions provided with upwardly directed and outwardly curved cam-forming flanges, said lugs being engageable with said flanges and serving to produce a cam action for forcibly binding the lower end of the end gate firmly against the end of the wagon body, when the end gate is swung down, thereby providing a tight joint between the end gate and wagon body.

In testimony whereof I affix my signature.

CLOYD HAROLD ARNTZEN.