

(No Model.)

2 Sheets—Sheet 1.

H. H. PERKINS.
END GATE FOR WAGONS.

No. 496,793.

Patented May 2, 1893.

Fig. 1.

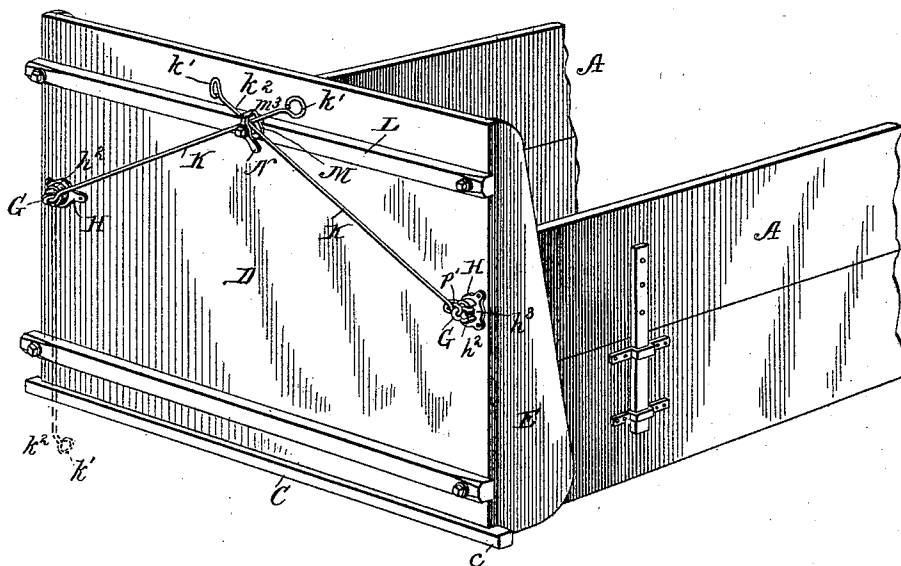
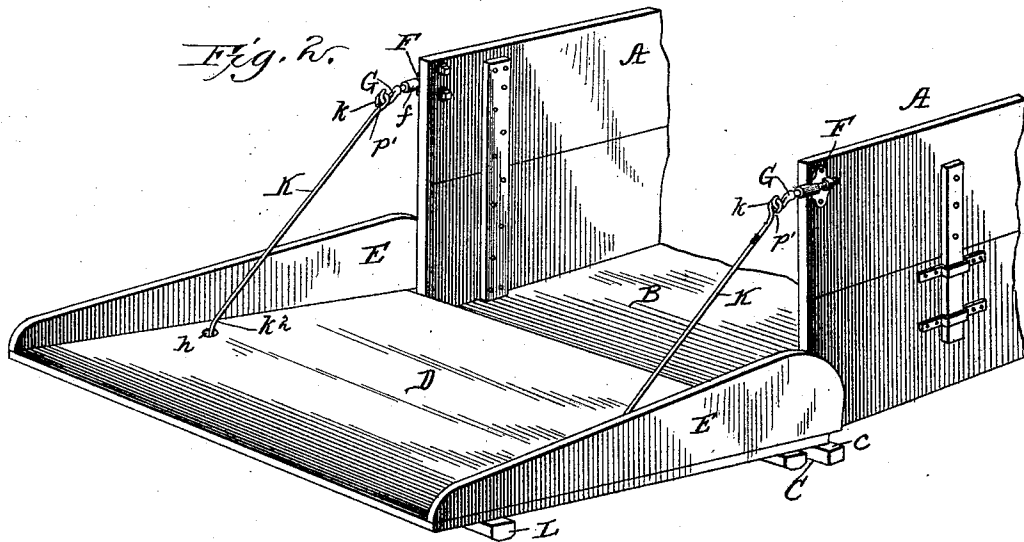


Fig. 2.



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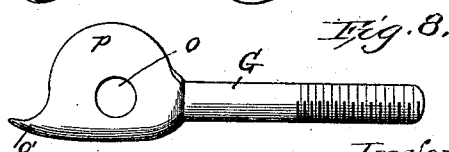
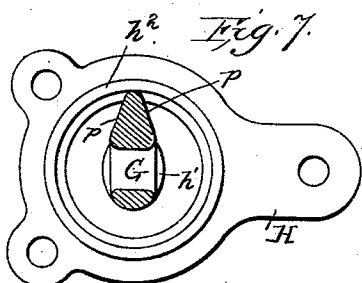
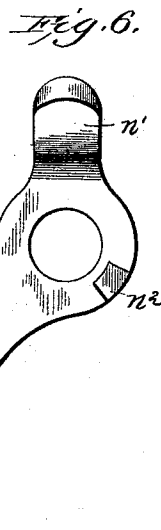
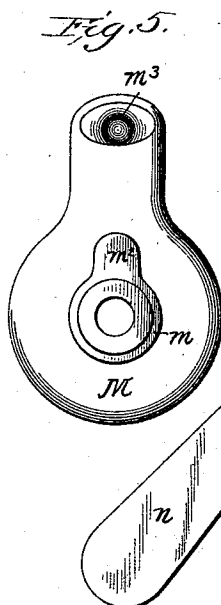
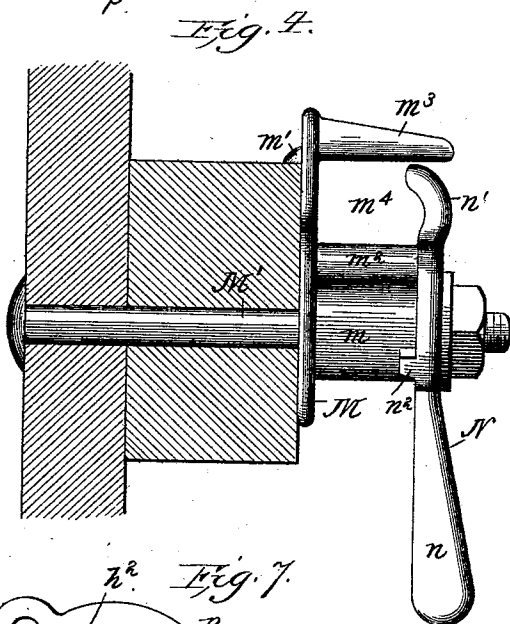
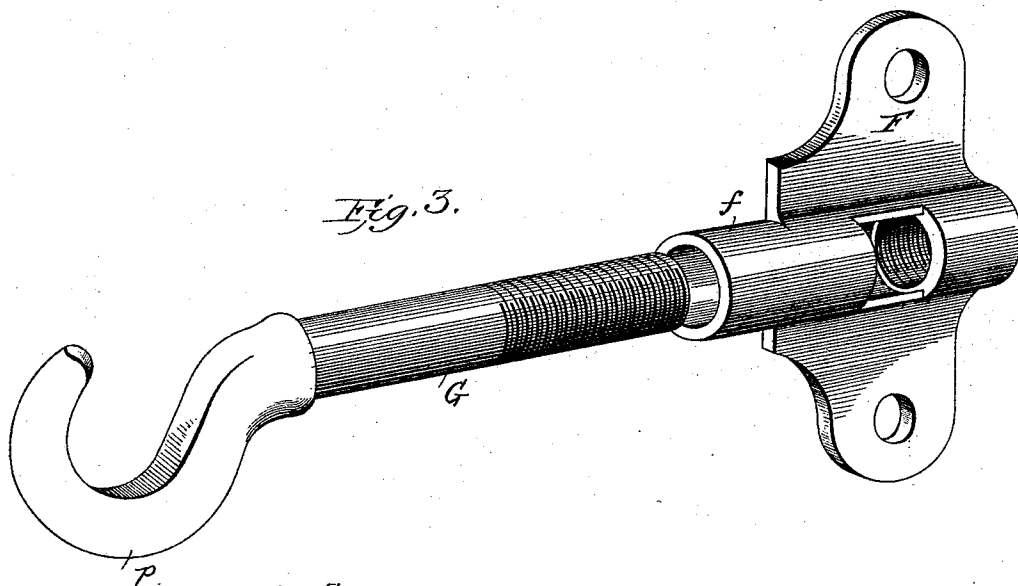
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2 Sheets—Sheet 2.

H. H. PERKINS.
END GATE FOR WAGONS.

No. 496,793.

Patented May 2, 1893.



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UNITED STATES PATENT OFFICE.

HAZEN H. PERKINS, OF KEWANEE, ILLINOIS.

END-GATE FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 496,793, dated May 2, 1893.

Application filed December 17, 1892. Serial No. 455,529. (No model.)

To all whom it may concern:

Be it known that I, HAZEN H. PERKINS, a citizen of the United States, residing at Kewanee, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in End-Gates for Wagons, of which the following is a specification.

Letters Patent of the United States were granted me on the 29th day of October, 1881, and numbered 250,280, for improvements in wagon end gates, wherein links or rods attached to the side-boards of the wagon body and playing through openings in the end gate were arranged to serve as braces to sustain such gate in position for use as a scoop-board on which to stand while shoveling from the tail of the wagon and as fastenings to secure the board when closed by snapping under hooks on the outer side of said board near the bottom thereof. The scoop-board also was constructed with side-boards which shut past the side-boards of the wagon body and rested and hinged upon the projecting ends of a bar fixed to the bottom of the wagon-box, so that when the wagon was used for dumping, the end gate could be raised or opened at its lower end, to allow the load to shoot out.

My present invention relates to the same type as the former and it consists in combining with the rods and links, a fastening or fastenings for their ends, fulcrum-plates upon which they pivot, and adjustable connections between the inner ends of said rods and the side-boards of the wagon body, whereby the degree of pressure upon the fulcrum-plates may be determined; in combining with the end-board and its sustaining rods and links, a fulcrum-plate upon which said rods and links pivot at their inner ends, a socket or fastening plate in which their outer ends may be crossed and held, and a button whereby they may be secured in such fastening plate against accidental escape; in combining with the end-gate and its supporting rods and links, plates provided with ribs projecting from the surface to serve as fulcrums, and adjustable eye-bolts with which the inner ends of the rods engage, playing through said plates and secured to the side-boards of the wagon; in combining with said end-gates and supporting rods and with the adjustable open eye-bolts, with which the inner ends of the rods

engage, plates through which said rods and eye-bolts play, provided with annular fulcrum ribs open at one side, whereby the supporting rods may be unhooked from the eye-bolts without disturbing the adjustment; and in the various other combinations and details of construction hereinafter pointed out and claimed.

In the drawings:—Figure 1 is a perspective view, showing the rear end of a wagon-box embodying my invention with the end-gate closed and the supporting rods crossed and secured; Fig. 2, a similar perspective view showing the end-gate open and sustained by the rods to serve as a scoop-board. Fig. 3 is an enlarged detail of one of the open eye-bolts or hook-bolts and of the screw-threaded socket whereby it is attached to the side-board of the wagon body; Fig. 4, an enlarged detail of the socket-plate and button for confining the ends of the supporting rods; Fig. 5, a rear end elevation of said socket-plate detached and with the button removed; Fig. 6, an elevation, from the inner side, of the fastening button detached; and Figs. 7 and 8 are modifications of the fulcrum-plate and eye-bolt.

A represents the rear ends of the side-boards of the wagon body and B the bottom board.

C is a bar bolted to the rear cross-bar of the bottom boards and projecting at each end, beyond the side boards, with its inner edge flush, or about flush, with the end of said side-boards. This bar, which may be termed the hinge-bar, is below the plane of the bottom boards to the extent of their thickness or of the thickness of the scoop-board or end-gate, D, which rests upon the upper face of the hinge-bar both when closed and when open. The scoop-board has side-boards, E, which project beyond the inner or lower edge of the board itself in the line of its inner or upper face continued, and, therefore, over the outwardly projecting ends of the hinge-bar and they are so spaced that they close past the outer sides of the side-boards when the scoop-board or end-gate is closed. As thus far constructed, the device is, or may be, the same as in my former patent.

F represents plates having long screw-threaded sockets, *f*, and attached to the rear outer faces of the side-boards near their top,

with the socket horizontal for the reception and adjustment of screw-threaded eye-bolts, G, which project beyond the ends of the side-boards and intersect the path of movement of the end-gate. At the points where the heads of these eye-bolts would come into contact with and stop by the end-gate as it closes, it is bored, as at h , to shut over them, and is fitted exteriorly with fulcrum-plates, H, having openings, h' , matching the openings in the gate to permit the heads of these eye-bolts to pass through, and project at its outer side when it is fully closed. An annular rib, h^2 , is formed upon the face of each plate at a little distance from the margin of the central opening, providing a socket in which the head of the eye-bolt is partly sunken and in which it can turn, and affording a sort of knife-edge or narrow fulcrum for the leverage of the supporting rods at the end-gate. This rib may be unbroken, as in Fig. 7, or may be cut away at one side, as in Fig. 1, to leave an opening, h^3 , for a purpose presently explained.

Links, K, having closed eyes, k , at their inner ends, engage with the eye-bolts, which may be either open or closed, and play with them through the apertures in the end-gate. At their outer ends these links have larger eyes, k' , or stops of other construction, too large to pass through the fulcrum-plates and, therefore, preventing the gate from riding off of the links when opened. Adjacent to these stops the links are bent slightly, as at k^2 , toward the wagon body so as to avoid cramping when the gate is opened to the full extent permitted by the stops.

To a cross-bar, L, attached to the outer face of the end-gate, or, it may be, directly to such face itself, is secured a fastening plate, M, having a boss, m , through which the fastening bolt passes, and a snug, m' , taking over the edge of the cross-bar, or some other equivalent device, to prevent its turning upon its securing bolt, M' , and thus being thrown out of position for its purpose. A rib, m^2 , projects upwardly from the boss and above this rib is a guard-finger, m^3 , leaving between the rib and the finger a socket, m^4 , in which the ends of the rods may be received and crossed upon each other, as in Fig. 1, to keep the end-gate closed. When the rods are crossed in the socket of the fastening plate, they will have a tendency to spring outward, caused by the leverage upon the ribs of the fulcrum-plates, and may be restrained against this tendency by making the outer end of the guard-finger with a sufficient downward curve to saddle the outer rod, or by making it as a button upon a pivot, but advisably an independent latch is used. This button, N, is journaled upon the turned down end of the boss and has a handle, n , and a curved latch-finger, n' , and is advisably provided with a lug, n^2 , on its inner face which, by coming in contact with the rib of the fastening-plate, will prevent its being swung too far for convenience in operation. In order to admit the rods to the socket

it will be turned out by swinging its handle from the position represented in Fig. 1, toward the left, until its lug comes against the rib from the boss, when the left hand rod will be laid in the socket and the right hand rod over it. Then by returning the lever-arm to position, the latch-finger will be swung past and snap over the outer one of said rods and the fastening will be complete, the curvature of the latch-finger forming a retaining socket into which the outer rod is sprung back by fulcrumage, preventing it from becoming disengaged unintentionally. The leverage of the rods upon their fulcrum-plates, when thus confined, holds the end-gate close against the extremities of the side-boards of the wagon body with a force readily determined by the adjustment of the eye-bolts. To adjust these the rods must be loosened from their fastening-plate and either detached from the bolts, provided the latter have open eyes or the inner eyes of the rods are formed as hooks, or else swung around to screw the bolts in or out of their sockets the required distance.

If the bolt-eyes are open, or hook-shaped, as in Fig. 1, the rods can easily be detached by swinging them around until they come opposite the openings in the sides of the fulcrum ribs when they may be slipped out underneath the hooks leaving the bolts free to be manipulated, or stationary at practically their former adjustment, to permit the end gate to be lifted off for dumping. In Fig. 8, however, I have shown the bolt with a closed eye, o , to which the rod will either be permanently attached or into which it may be hooked. This has a projecting spur, o' , beyond the eye, the purpose of which is to prevent the rod from being disarranged, so as to bring the curve at its lower end into the wrong position, that is in the reverse position to that shown in dotted lines in the first figure of the drawings. Should the rod and eye-bolt be so turned, the spur will be beneath the rod and cannot be dropped to permit the end-gate to open until turned to bring the spur overhead, when it will necessarily drop in the right position.

The spur obviously can be used with the open eye or hook-bolt, being arranged on the back of the hook, and will then serve the same purpose as with the closed eye, since the hook-bolt becomes essentially a closed eye as soon as the bolt is turned in far enough to bring the fulcrum-rib past the opening into the eye so as to prevent disengagement of the link. With the eye actually closed it is evident that the opening in the side of the fulcrum-rib is immaterial for the link cannot be detached from the bolt unless itself hooked but both must be removed together from the side-board in order to remove the end-gate bodily from the wagon.

Preferably the back of the closed eye or of the open eye is beveled, as at p , to fit into the convergence of the eye formed upon the supporting rod or link by the departure from and

return to the body, as at p' , so that the link cannot be swung around transversely to the wagon body or parallel with the end-gate without causing the eye-bolt to turn with it, thus insuring that the spur from the eye-bolt shall always be opposite the back of the link.

It is evident that other means than those herein suggested may be employed for the adjustment of the eyes or eye-bolts; that the rib from the boss of the fastening-plate may be dispensed with and the guard-finger be brought correspondingly nearer to the boss; that a different form of confining button may be employed; that the location of the fastening-plate may be changed and that more than one may be used; that the ribs on the fulcrum-plates need not have an annular outline; that the construction of the hinged connection between the end-gate and the wagon body, is not ultimately essential to the other features of my invention; that so far as the employment of adjustable eye-bolts and fulcrum-plates is concerned, any fastening device or devices for the outer ends of the links may be used and, therefore, I do not intend to limit myself in these respects. But,

What I claim is—

1. The combination, substantially as hereinbefore set forth, with the end-board, of the eye-bolts adjustably secured to the wagon-body, the links engaging with said eye-bolts, the fulcrum-plates, through which the links and eye-bolts play, and fastening devices for the ends of the links.

2. The combination, substantially as hereinbefore set forth, of the end-gate, the fulcrum-plates fixed thereto and having raised ribs, the adjustable eye-bolts, the links, and means for securing the ends of said links against the face of the end-gate when the latter is closed.

3. The combination, substantially as hereinbefore set forth, of the end-gate, the fulcrum-plates having central apertures and ribs surrounding said apertures, adjustable eye-bolts secured to the wagon body, the links, and means for securing the ends of the links against the gate.

4. The combination, substantially as hereinbefore set forth, of the end-gate, the ribbed fulcrum-plates having central openings and secured to said end-gate, the eye-bolts secured

to the wagon-body, the links, the socket-plate in which the ends of said links are crossed, and a button for confining the links in said socket-plate.

5. The combination substantially as hereinbefore set forth, of the threaded sockets on the wagon-body, the threaded eye-bolts, the ribbed fulcrum-plates, the links, and the central fastening for the crossed ends of said links secured to the end-gate.

6. The combination substantially as hereinbefore set forth, of the socket-plate formed with the boss and overhanging-finger, of the lever-button having a latch-finger.

7. The combination substantially as hereinbefore set forth, of the socket-plate having a boss and overhanging finger, of the lever-button fulcruming on said boss and having a curved latch-finger.

8. The combination substantially as hereinbefore set forth, of the socket-plate having a boss and overhanging finger, the lever-button journaled at the end of said boss and having a latch-finger and a lug or stop co-acting with a stop on said boss.

9. The combination substantially as hereinbefore set forth, of the socket-plate having a ribbed boss and an overhanging finger, a button journaled at the end of said boss and having a latch-finger, and a stop which comes in contact with the rib on the boss.

10. The combination substantially as hereinbefore set forth, with the links and their fulcrum-plates, of eye-bolts having spurs to stop the links against movement in the wrong direction.

11. The combination, substantially as hereinbefore set forth, with the links having eyes, of the eye-bolts beveled at their backs to fit into the convergence of the link-eyes so as to turn therewith.

12. The combination, substantially as hereinbefore set forth, with the links having eyes, of the closed eye-bolts having outsetting spurs, as shown and described.

13. The socket-plate formed as described with a boss for the reception of its fastening bolt, and an overhanging finger.

HAZEN H. PERKINS.

Witnesses:

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G. F. WILSON.