(No Model.) 3 Sheets—Sheet 1.

L. M. BUCHANAN.

END GATE AND SHOVELING BOARD.

No. 563,218. Patented June 30, 1896.

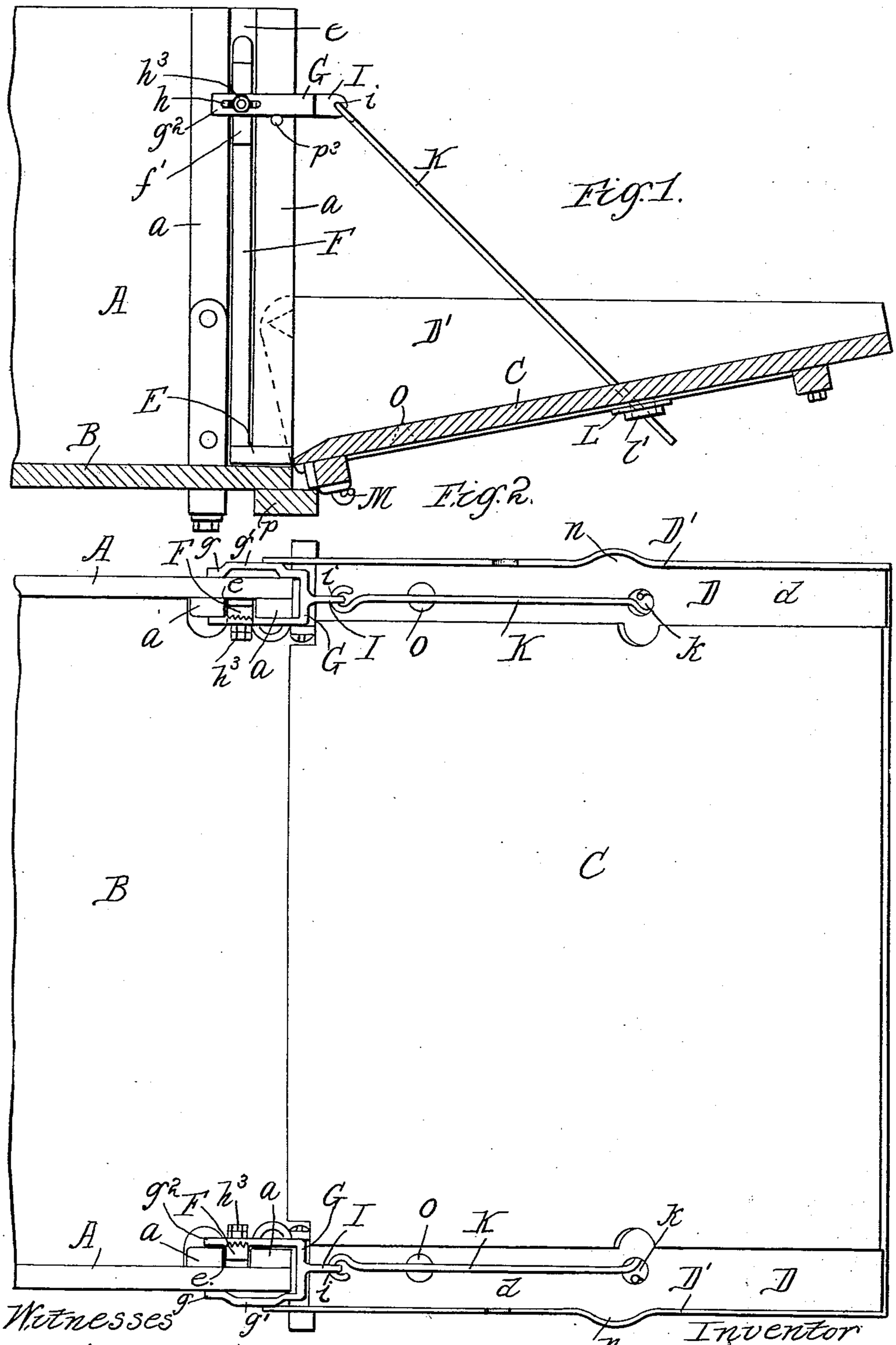

Fig. 1.

Fig. 2.

(No Model.) 3 Sheets—Sheet 2.

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Fig. 3.

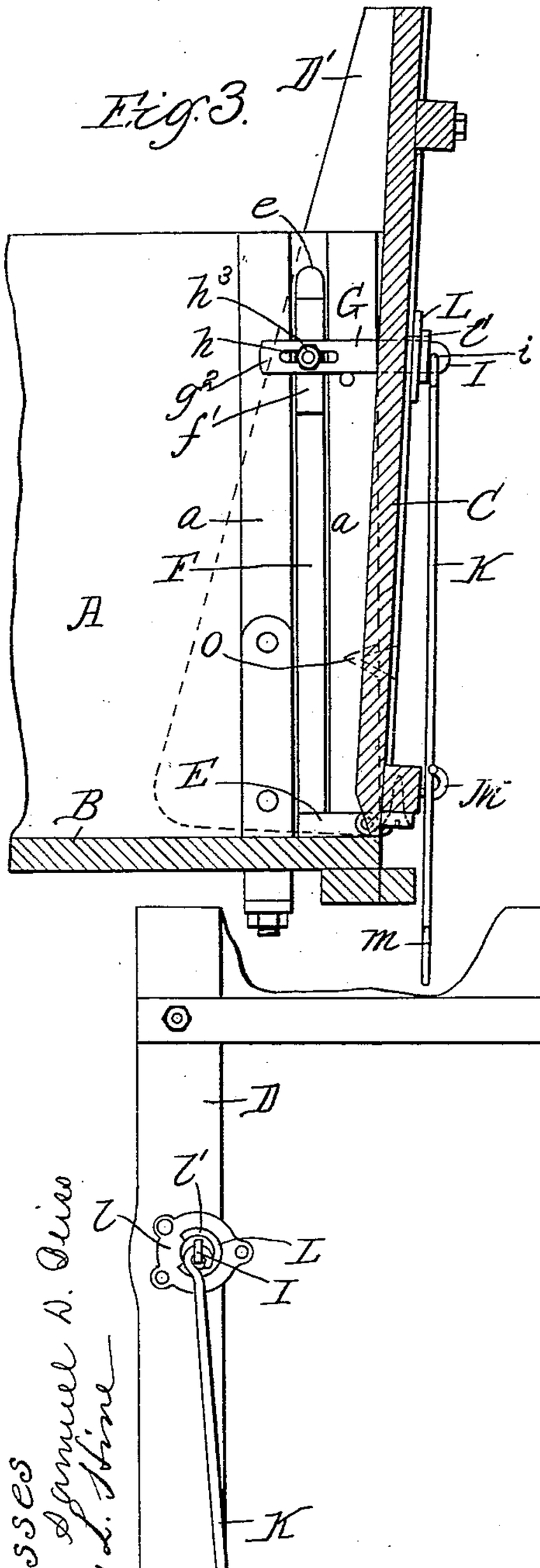


Fig. 7.

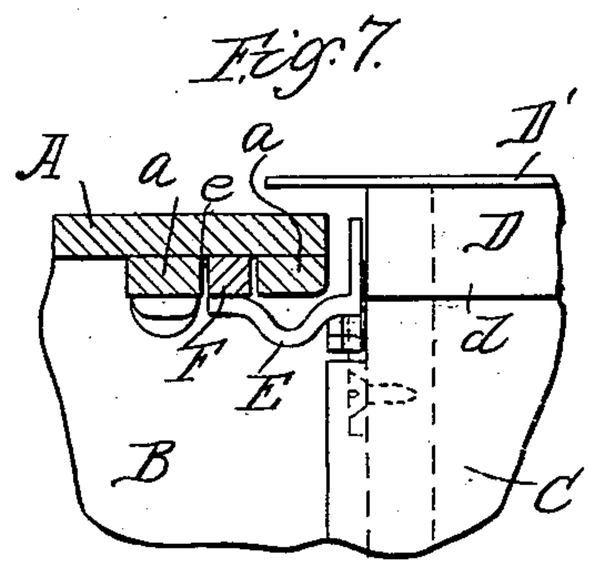


Fig. 8.

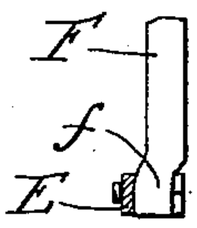
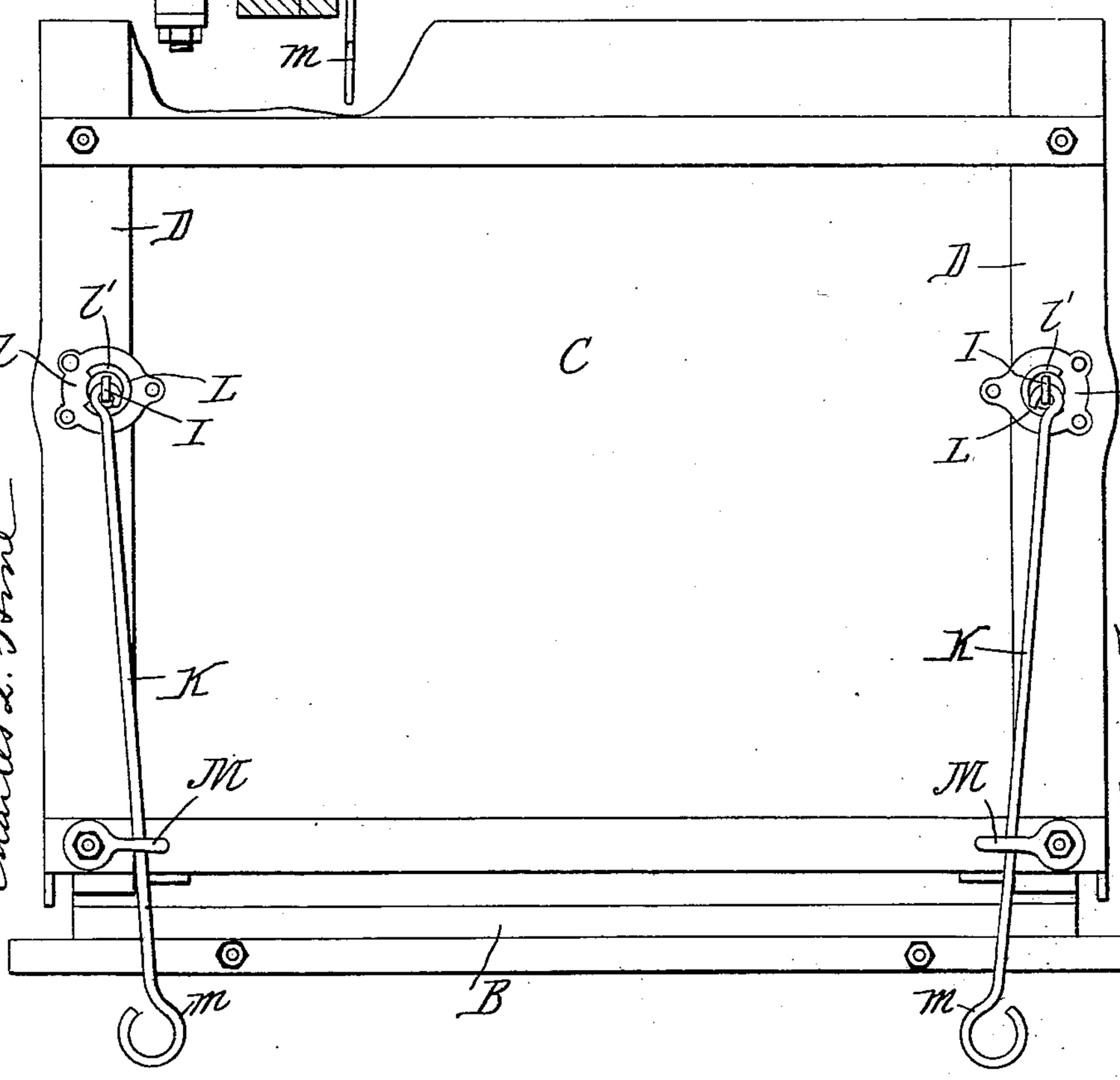


Fig. 4.



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(No Model.) 3 Sheets—Sheet 3.

L. M. BUCHANAN.

END GATE AND SHOVELING BOARD.

No. 563,218. Patented June 30, 1896.

Fig. 5.

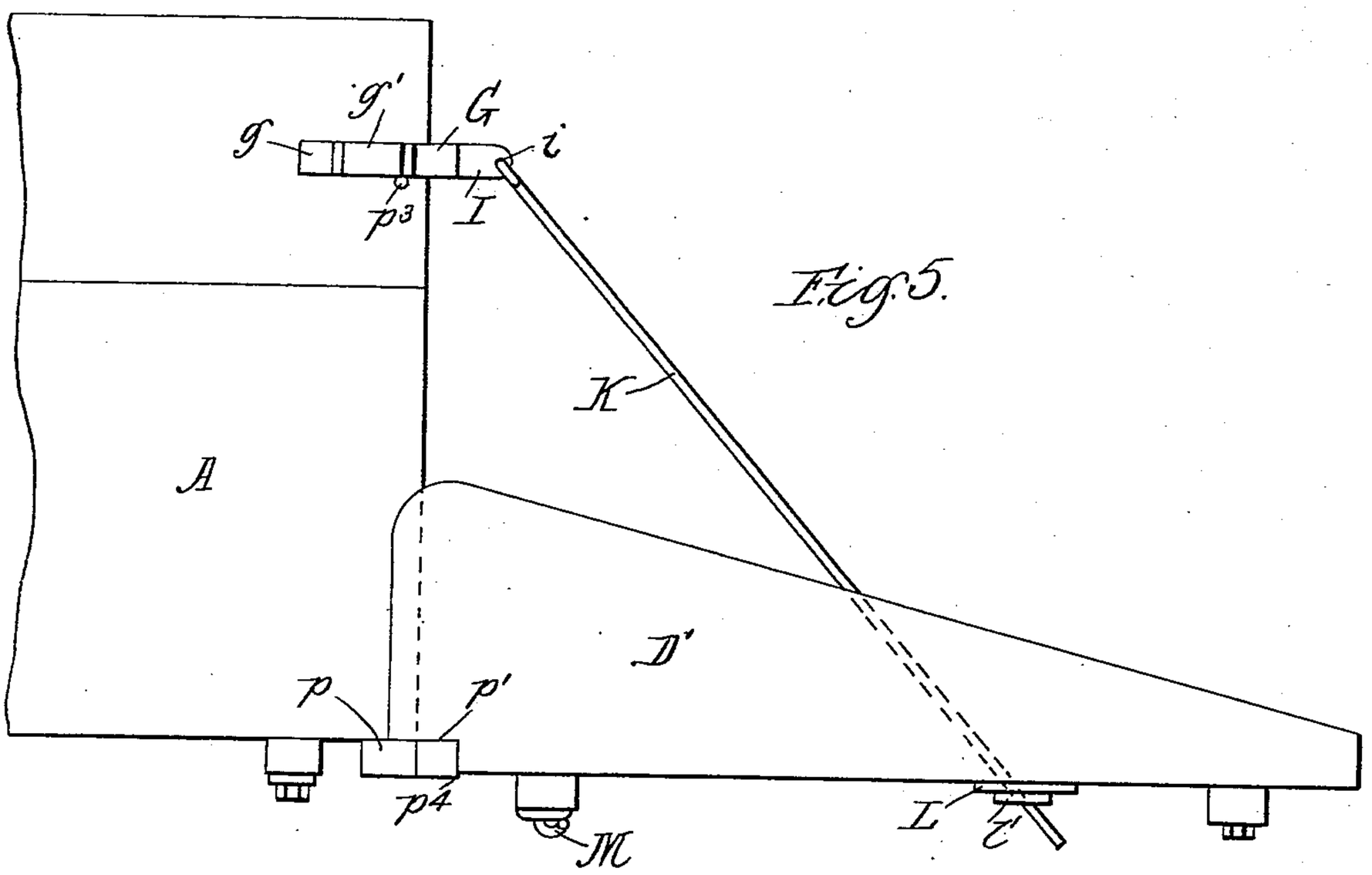

Fig. 6.

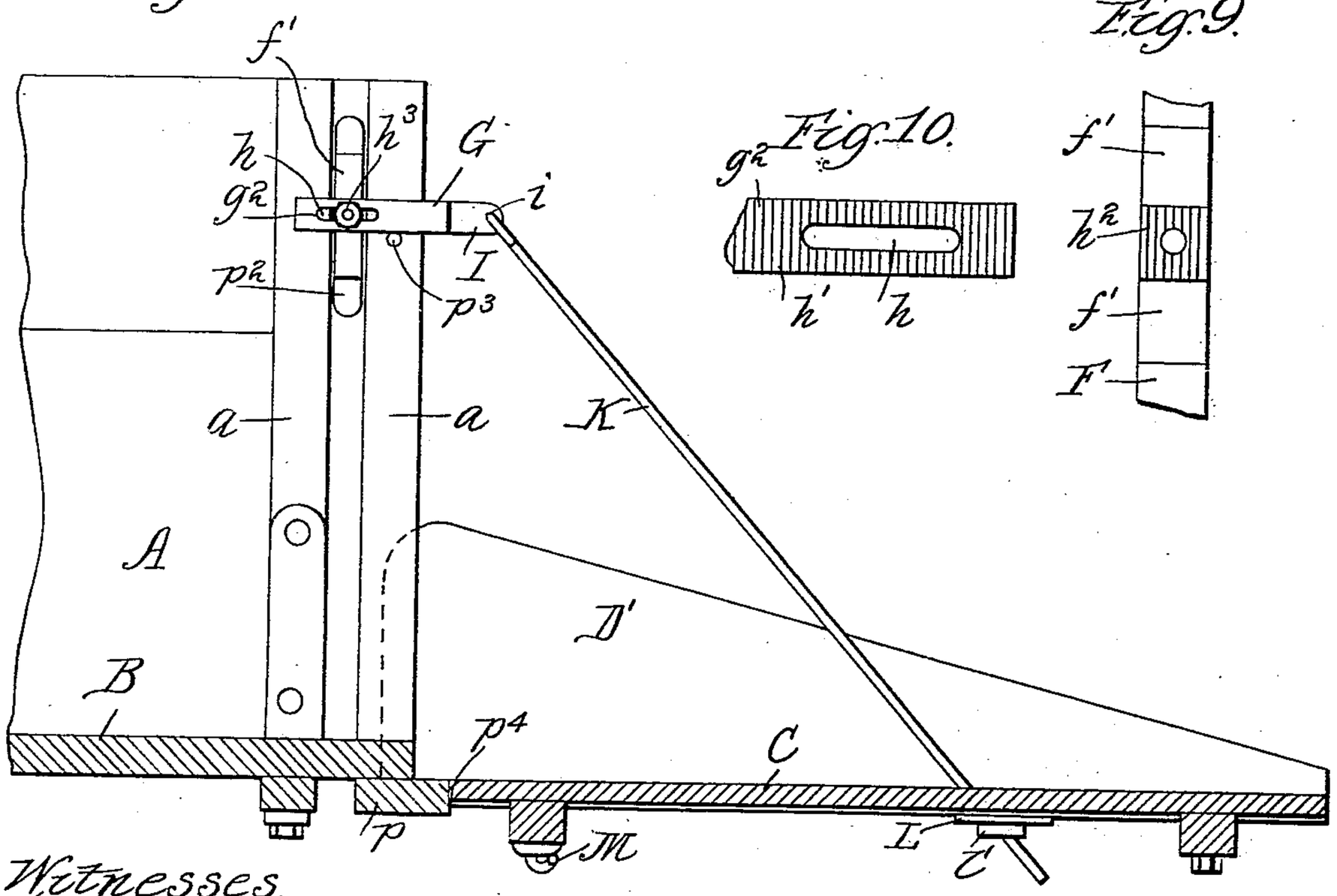

Fig. 10.

Fig. 9.

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UNITED STATES PATENT OFFICE.

LAUGHLIN M. BUCHANAN, OF KEWANEE, ILLINOIS, ASSIGNOR TO THE BOSS MANUFACTURING COMPANY AND CLARA E. BUCHANAN, OF SAME PLACE.

END-GATE AND SHOVELING-BOARD.

SPECIFICATION forming part of Letters Patent No. 563,218, dated June 30, 1896.

Application filed June 22, 1895. Serial No. 553,661. (No model.)

To all whom it may concern:

Be it known that I, LAUGHLIN M. BUCHANAN, a citizen of the United States of America, residing at Kewanee, in the county of Henry, in the State of Illinois, have invented certain new and useful Improvements in Wagon End-Gates and Shoveling-Boards, of which the following is a specification.

This invention relates to that class of end-gates for wagons which can be let down to serve as shoveling-boards or swung up, as on a hinge, and locked in position to close the rear of the wagon-box. Its object is to render such gates more readily applicable to ordinary freight or farm wagons without special provision in the frame or box of the wagon for their reception, and more readily removable therefrom and replaceable, if desired, by the common sliding tail-board.

To this end the invention consists in providing the end-gate itself with attachments which can be slipped between the guide slats or cleats for the ordinary tail-board, and which, when so placed and seated in proper position, will serve not only to confine the gate against the end of the flooring of the wagon-box, but to lock it in position when closed up as a gate. In its approved form this attachment is intended to be so constructed that it may be applied to the usual farm-wagon, or goods-wagon, built for use with the ordinary vertically-sliding gate, without any alteration in such wagon whatever, and, if so intended, it will carry its own hinge between its inner edge and the supporting and locking attachments, but when intended to go out with a wagon from the same shop or factory it may be built with only one member of the hinge, the other member being provided upon the wagon in such manner that the gate can be lifted off therefrom as in end-gates now in use and hereinafter referred to.

In the drawings, Figure 1 is a side elevation of the rear end of a wagon with my improved end-gate applied thereto, the gate being let down for use as a shoveling-board. Fig. 2 is a plan thereof with the parts in the position represented in the preceding figure. Fig. 3 is a side elevation, in vertical section, with the end-gate closed and locked in position. Fig. 4 is a rear elevation, also with the end-gate closed. Figs. 5 and 6 represent a sectional elevation of a modification of the improvement, and Figs. 7 to 10 are details.

A represents the rear ends of the side-boards of the wagon-box. To these side-boards are attached the usual guide slats or cleats *a*, vertical and parallel with each other, to form ways for the ordinary tail-board, and also for one member of the end-gate attachment, as hereinafter described.

B is the bottom-board or flooring of the wagon against which the lower ends of the guide slats or cleats abut. This wagon-box mounted upon axles and wheels and with a sliding tail-board, as used on the ordinary farm-wagon or goods-wagon, would represent a well-known type.

The main object of my invention is to apply a swinging end-gate to this wagon-box, in place of the tail-board, without change or alteration in the wagon itself or in its box, and in such a manner that the end-gate may be locked in position to serve as a tail-board or may be let down to serve as a shoveling-board, by means of attachments or appliances carried by itself and retained in position by being slipped into the channels left vacant by the removal of the ordinary tail-board.

C represents the improved end-gate and shoveling-board, or rather that part of it which serves as the floor when let down for shoveling, and as the tail-board when closed up as an end-gate. It is preferably of sufficient width to shut in between the side-boards of the wagon and against the guide slats or cleats for the usual tail-board, but it may be made so as to abut against the ends of said side-boards. I have shown the preferred form in Figs. 1 to 4, where the inner edge of the gate rests upon the top of the rear portion of the bottom boarding of the wagon and closes between the side-boards and against the cleats and is provided with metal wings D, attached to its outer surface at each lateral edge. These wings project sidewise parallel with the outer face of the end-gate to the thickness of the side-boards of the wagon, and then are turned up to form side plates D′, which close past the side-boards of the wagon,

on the outer side thereof. The spaces between the side plates and the edges of the gate proper form grooves *d* to embrace the ends of the side-boards and make a close joint, steadying the whole construction and preventing leakage, should grain or other fine material be carried.

Hinged to the bottom of the end-gate at either side, in close proximity to the inner face of the side-boards of the wagon-box at said sides, are bent castings E, which project a sufficient distance to bring their inner ends opposite the groove or guideway *e* between the tail-board cleats, and at this point they are bolted, or otherwise secured, to confining-rods F, adapted to fit and slide in said guideway and reaching toward the top thereof. To these confining rods or bars, near their upper ends, are bolted keepers G, which embrace the outer sides of the wagon side-boards and the cleats on the inner sides. These keepers have in their outer arms *g*, when necessary, a jog *g'* to clear the thumb nut or screw which tightens the rod holding the tail-board to the ordinary wagon. I also make jogs *f* and *f'* in the confining-rods, so that the heads of the bolts which secure the castings E and these keepers G may clear the bottom of the groove formed by the tail-board cleats.

The attachment between the keepers and the confining rod or bar is preferably made adjustable, so that the end-gate may be closed with proper tightness against the ends of the side-boards of the wagon, and for this purpose the inner arm g^2 of the keeper is longitudinally slotted, as at *h*, and the inner face of said arm is roughened or serrated, as at *h'*, while the opposing face of the confining-bar is also roughened or serrated, as at h^2, so that the bolt h^3, passing through said bar and the slot in the keeper, may hold the two parts in any desired relative position.

Projecting from the rear of the keepers are spurs I, having eyes *i*, in which are hooked or hinged links K, passing through perforations *k* in the bottom of the end-gate or shoveling-board, these perforations being so located that when the gate is closed and in proper position they are exactly opposite the spurs and will admit them. Outside of these perforations are fulcrum-plates L, such, for instance, as shown in patent of H. H. Perkins, dated May 2, 1893, No. 496,793, having lateral openings *l* through their ribs *l'*, which permit the links to be unhooked from the spurs, if necessary, and to the foot of the end-gate, that is to say, to or adjacent to that part which will be the foot when the gate is closed, are attached hooks or catches M, under which the links can be sprung when the gate is closed.

On the ends of the links are stops *m*, which are preferably made, as shown, by bending the end of the link back toward itself to form an eye. These stops prevent the links from passing through the fulcrum-plates and perforations when the end-gate is turned down for use as a shoveling-board and which, therefore, support the gate in the position shown in Fig. 3 at such time.

If there are jogs in the outer arms of the keepers, for the purpose heretofore mentioned, they will project into the path of the side plates of the end-gate. Such side plates are, therefore, swaged out, if metal, to form a groove *n*, which passes over this jog when the gate is closed, or if wooden side plates are used channels are formed therein. If the keeper is made without a jog, the grooves or channels will also be omitted.

In order to prevent the end-gate from rising or being wedged upward when it is closed, steadying pins or spurs O are provided, which may take into sockets already provided in the ends of the side-boards of the wagon-box or may force their passage into the wood when pointed or sharpened, as shown. In this construction it is evident that when the gate is sufficiently open to release the steadying-pins, or even when it is closed, if the steadying-pins are omitted, it may be removed integrally, with its supporting and confining attachments, from the wagon-box by simply sliding the confining-bars and gate itself vertically until relieved from the tail-board cleats.

In the modification shown in Figs. 5 and 6 I have omitted the confining-bars and consequently the hinges between the confining-bars and the end-gate and have shown the latter constructed to rest upon a cross-bar P and to hinge against its projecting ends *p* by means of shoulders *p'* on the side plates, forming an open hinge, such, for instance, as in the before-mentioned patent of Perkins. The upper keepers alone are retained, the inner arms of each keeper being adjustably secured to a block p^2, that projects into the tail-board groove and fits snugly therein, and stops p^3, being provided upon the side-boards to sustain the keepers at the proper elevation. This construction I consider within the principle of my invention, although it will be observed that it requires the addition of the cross-bar with projecting ends to the tail of the wagon-bottom, the outer edge p^4 of the cross-bar extending beyond the flooring of the wagon and acting to support the inner edge of the end-gate or shoveling-board, and the outer ends forming the lower member of the hinge. This modified form may be adopted, if desired, when the end-gate is sent out from the shops accompanying a wagon constructed in the same shops, but it is not generally so desirable as the first-described form.

I do not intend to limit myself to the specific details of construction herein described, as they may be altered in various features without departing from the spirit of my invention, nor do I limit myself to making the keepers adjustable on the confining-bars, or, in the case of the modification, to the employment of a separate block attached to the inner arm of the keeper.

I claim as my invention—

1. The combination, substantially as described, with the wagon-body, of the end-gate having locking and supporting devices adapted to slide into sockets in said wagon-body, and stay pins or spurs carried by the end-gate to catch into sockets or enter the woodwork of the wagon sides to prevent the rising of the end-gate when it is in position.

2. The combination, substantially as described, with the wagon-body, of the swinging end-gate adapted to shut in between the sides thereof, the locking devices, and the side plates secured to the outer surface of the end-gate and extending laterally the thickness of the side-boards and then turned up to embrace the outer surface of the side-boards.

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