



(No Model.)

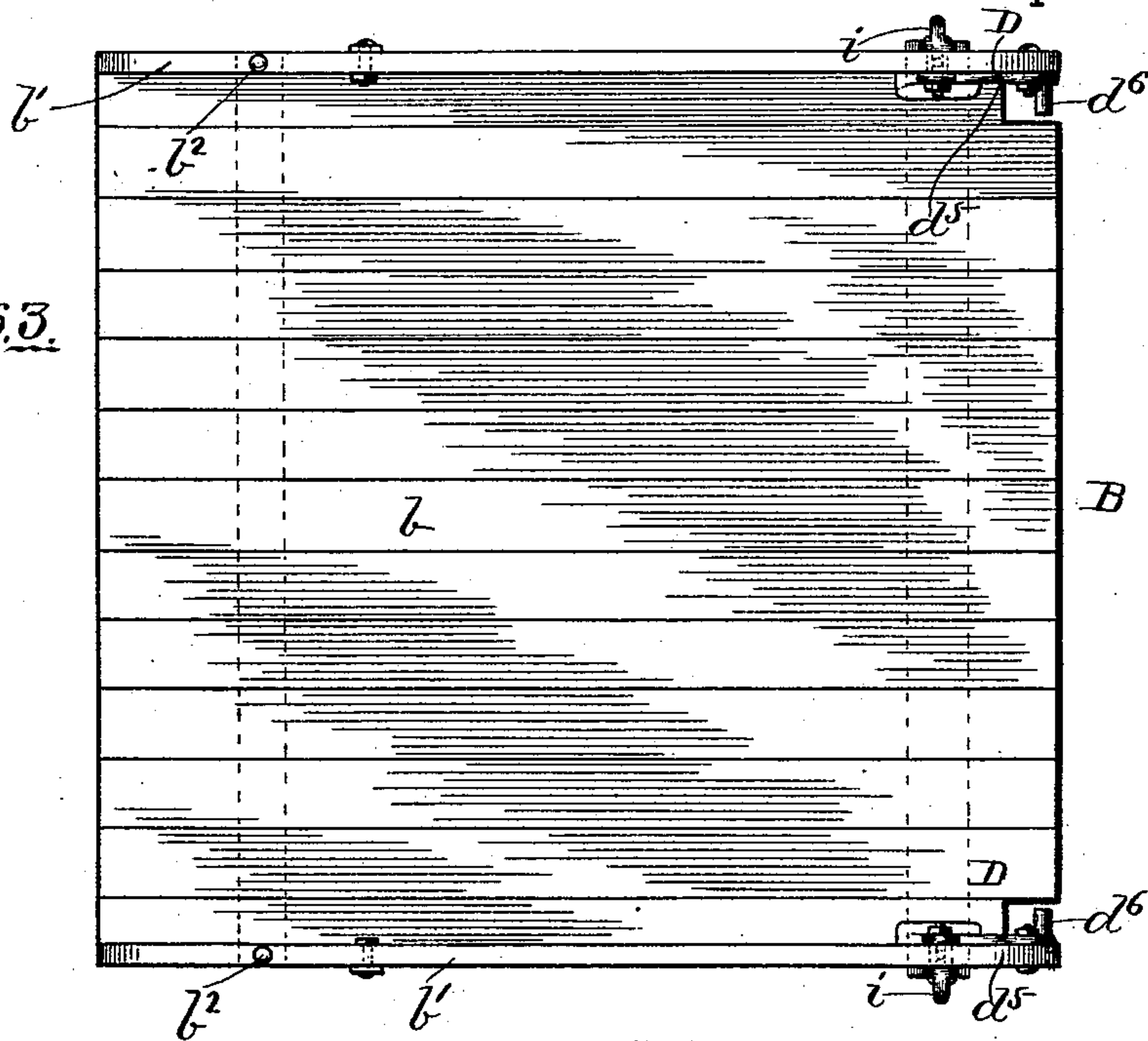
2 Sheets—Sheet 2.

E. K. HAYES.  
WAGON END GATE.

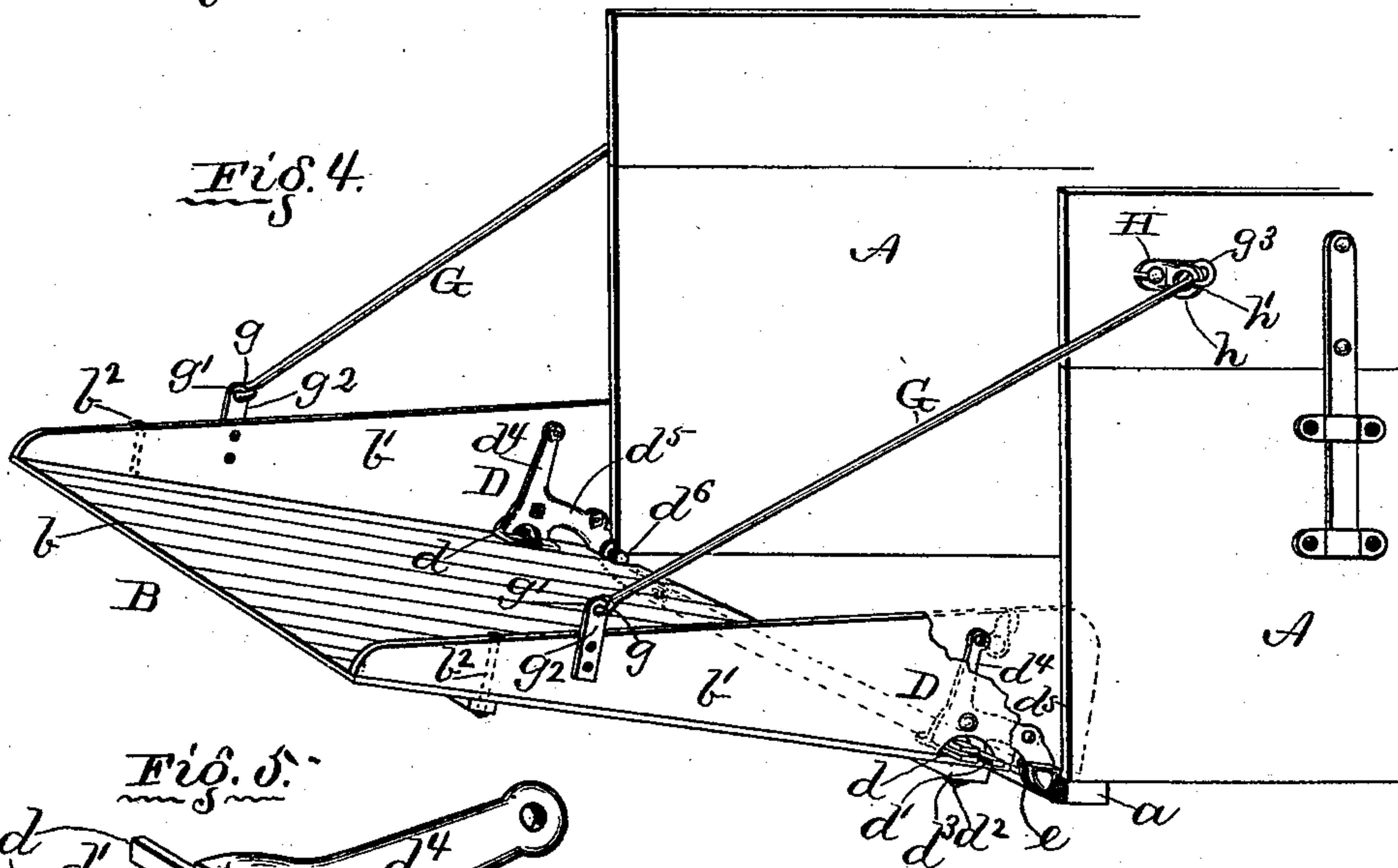
No. 517,649.

Patented Apr. 3, 1894.

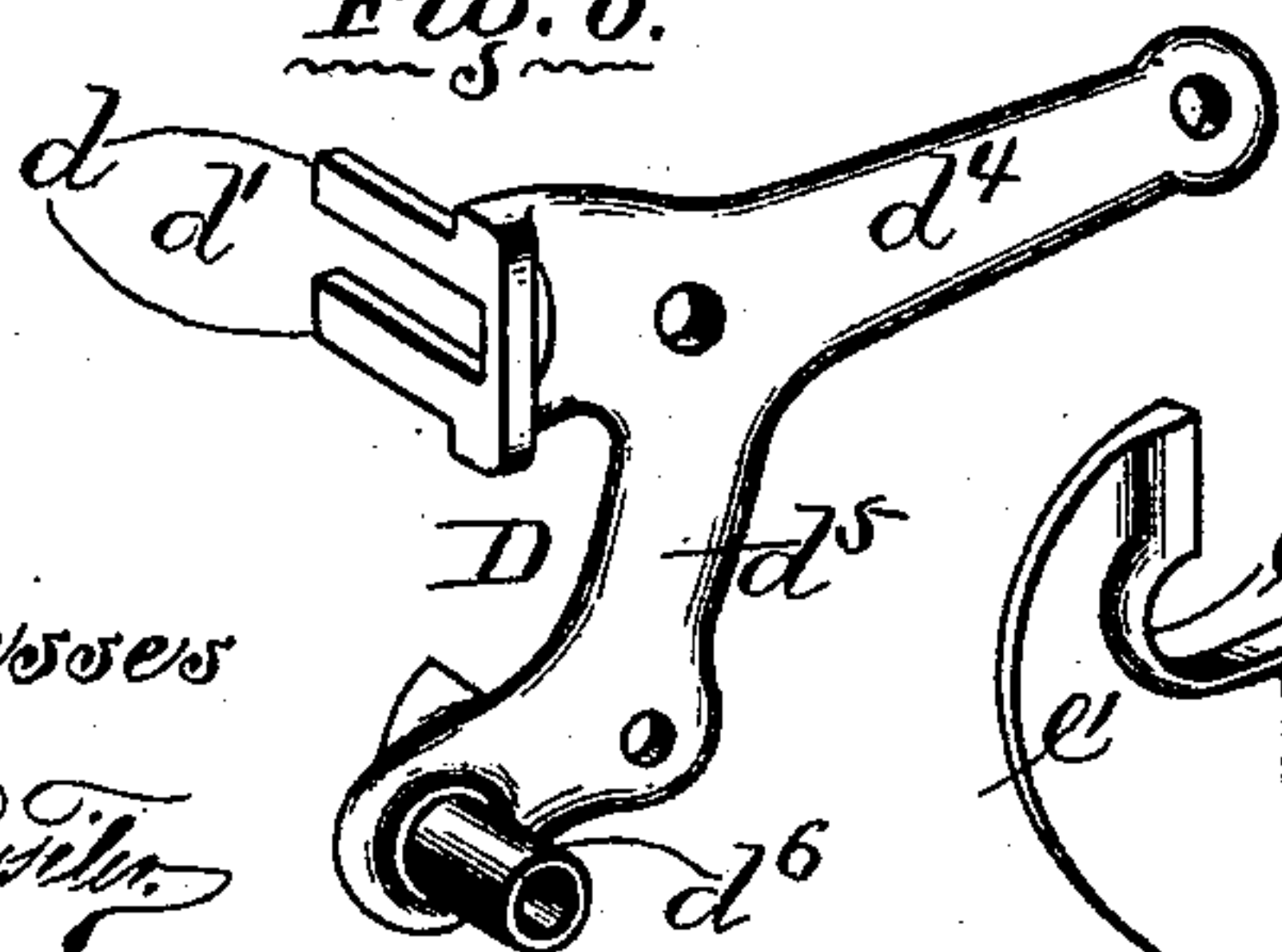
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*

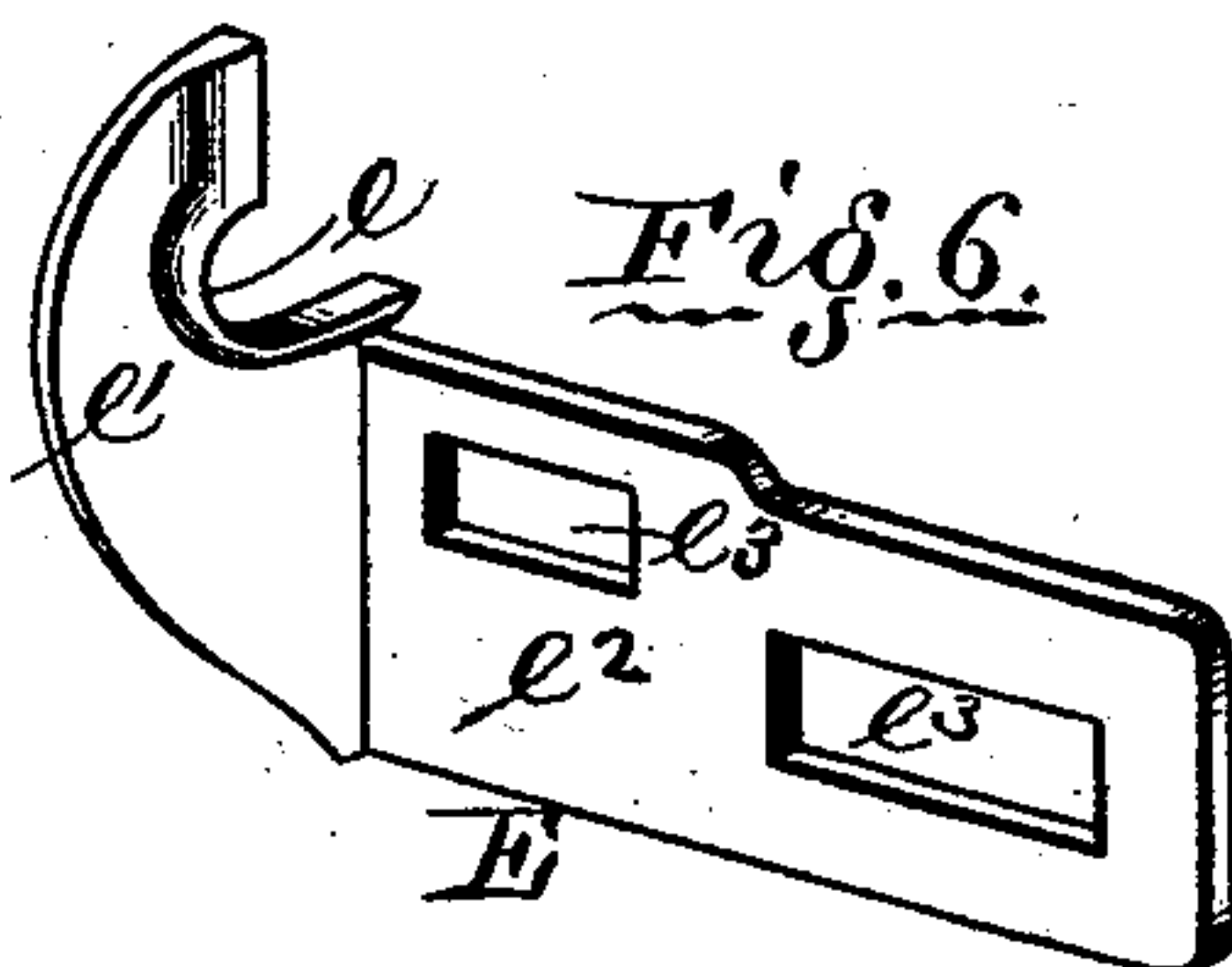


Witnesses

*W. D. Richards,*

*H. M. Richards,*

*Fig. 6.*



Inventor

*E. K. Hayes,*

*By W. D. Richards,*

*Atty.*



# UNITED STATES PATENT OFFICE.

EUGENIO K. HAYES, OF GALVA, ILLINOIS.

## WAGON END-GATE.

SPECIFICATION forming part of Letters Patent No. 517,649, dated April 3, 1894.

Application filed January 28, 1892. Serial No. 419,490. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENIO K. HAYES, a citizen of the United States, residing at Galva, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in Wagon End-Gates, of which the following is a specification.

The object of this invention is to furnish an improved wagon end-gate of that class which are turned or swung downwardly and rearwardly on their lower edges for use as scoop boards or shoveling boards, and which when turned into perpendicular positions serve as end gates, and in which rods are used in connection with other mechanism to suspend the end-gate as a shoveling board, and to lock it as an end-gate proper to close the end of the wagon box or body.

The novel means employed in carrying out the objects of my invention are hereinafter described, and made the subject matter of the claims hereto appended.

The preferred construction of parts and arrangement thereof are illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the rear end of a wagon body, with my improved end gate in its closed position thereon in full lines, and in its shoveling board or scoop board position in dot lines; Fig. 2, a rear elevation of the parts shown by full lines at Fig. 1, with the lower ends of the rods G broken away; Fig. 3, a top plan of the end-gate, and of parts fixed thereto; Fig. 4, a perspective of the rear end or part of a wagon body, and the end-gate in its scoop board or shoveling board position thereon, and partly broken away. Figs. 5 and 6 are perspectives of the two parts of the hinge.

The reference letters herein used indicate respectively the same part in the different figures of the drawings.

The wagon body A, of which the rear end is shown in the drawings, is of ordinary construction, and has the ordinary bar  $a$  beneath its rear bottom part.

The end-gate B has an ordinary bottom part  $b$ , and side boards  $b'$  which are at such distance apart as to be on the exterior sides of the wagon body when the end-gate is in position as shown at Fig. 1. Each side board

$b'$  is pivoted by a bolt  $b^2$  to the bottom part  $b$ , so that the side boards can be to a limited extent adjusted, as may be required for different wagon bodies, at different distances apart at their ends next the lower part of the wagon body. After said adjustments the side boards are fixed to the bottom board, each by a hinge plate or angle plate D, one arm,  $d$ , of which has a slot  $d'$  through which a bolt  $d^2$  passes, which also passes through the bottom board, and has a nut  $d^3$  on one of its ends by which it may be fixed and thus fix the side board to the bottom board after adjustment thereof. The other arm  $d^4$  is bolted to the side board. Another arm  $d^5$  projects from the angle plate or hinge plate D, from which arm  $d^5$  a short journal shaft  $d^6$  projects laterally. The arms  $d^5$  project beyond the ends of the side boards, and the journals  $d^6$  are seated, each in a journal bearing  $e$  which is formed by the hook shaped and outwardly turned end  $e'$  of a plate E, the body part  $e^2$  of which has slots  $e^3$  through which bolts  $e^4$  pass to secure the plate E to the bar A. By loosening the bolts  $e^4$  the plates E may be adjusted toward or from each other to suit different adjustments toward or from each other of the side boards  $b'$ . The ends of the hooks  $e'$  do not extend to the end of the wagon body or bar  $a$ , and hence permit of placing the end-gate on the wagon body by simply lowering each journal  $d^6$  into its respective bearing  $e'$ , and the end-gate may be removed by a reverse operation. When the end-gate is in place it swings on the hinge  $e'—d^6$ .

The rods G have each an eye  $g$  at one end, which interlocks with an eye  $g'$  in the outer end of a bracket  $g^2$  which is fixed to and projects from the side board  $b'$ , and thus forms a hinge connection between the side board and rod. A plate H is fixed to each side of the wagon body or box, and each plate H has fixed thereto an eye  $h$  with an opening  $h'$  in its outer side or part. A rod G passes through each eye  $h$ , and when the end-gate is lowered as shown at Fig. 4, to serve as a shoveling board, an eye  $g^3$  on the end of said rod will come in contact with an eye  $h$  and hold the shoveling board in the position shown.

In raising the end-gate on its hinges, each rod G will slide endlong of itself entirely



through its respective eye  $h$ , and the bracket  $g^2$  following said rod will enter and pass through the eye  $h$ , as shown at Fig. 1, and to such an extent that when the rod  $G$  is swung or turned downwardly, as shown at same figure, its upper portion will bind against the lower part of the eye  $h$  so that the lower part of the rod can be sprung into engagement with a hook  $i$  and be thus securely locked to hold the end-gate in a locked position as an end-gate, and as shown at same figure. The hooks  $i$  are fixed to the side boards. The openings in the outer parts of the eyes  $h$  are of such width that they will prevent the escape therethrough of the rods  $G$ , when said rods are in positions oblique to the plane of said eyes, as they are when the end-gate is in position as a shoveling board.

When it is desired to remove the end-gate from the wagon box, it should be raised to near its upright position or until the rods  $G$  project through the eyes  $h$  in substantially horizontal positions, when said rods can by lateral movements thereof be passed outwardly, each through the opening  $h'$  in its respective eyes  $h$ , and thereby be released from said eye. When the rods  $G$  are thus released, the end-gate can be easily removed from the wagon body by lifting it until the journals  $d^6$  are raised above their bearings  $e'$ , as hereinbefore described. By a reverse operation, in an evident manner, the end-gate may be mounted in place on the wagon body.

The rods  $G$  when secured to the wagon body by means of the eyes  $h$  each with an opening  $h'$  in its outer vertical side part, cannot escape from said eyes while the end gate is being raised or lowered, except when the end gate is at that particular degree of elevation nearly perpendicular to the body in which elevation each rod  $G$  is substantially in a horizontal position to provide for removal of the rod  $G$  from said rings; hence the rods  $G$  cannot become disengaged from the eyes  $h$  as they slide endlong of themselves through said eyes as the end gate is being raised or lowered, as is often the case when hooks or similar devices open at their upper sides are used to secure the rods  $G$  to the wagon body.

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

1. In a wagon, the combination with the body, of an end gate, sides on the gate, a supporting plate connected to the gate and sides constituting a connecting brace therefor and having a lateral horizontal bearing, located between the ends of the gate of a hook shaped rest extending out from the body, in which the bearing rests, and a supporting rod on the gate, substantially as described.

2. In a wagon, the combination with the body, of an end gate, a laterally adjustable bearing on the gate, and a laterally adjustable seat for the bearing secured on the body, substantially as described.

3. In combination in a wagon end-gate and shoveling board, the side boards  $b'$  secured and pivoted at one end to the bottom  $b$  by pivot bolts  $b^2$ , and at their other ends adjustably fixed to the bottom board by angle plates  $D$ , one arm of each of which is slotted to receive a bolt, and adjustably secure it to the bottom board, substantially as specified.

4. In combination in a wagon end-gate and shoveling board, the side boards  $b'$  secured and pivoted at one end to the bottom  $b$  by pivot bolts  $b^2$ , and at their other ends adjustably fixed to the bottom board by angle plates  $D$ , one arm of each of which is slotted to receive a bolt, and adjustably secure it to the bottom board, said angle plates  $D$  being further provided with arms  $d^5$  having each a journal  $d^6$ , which engages with a hook shaped bearing  $e'$  carried by an adjustable plate  $E$ , substantially as specified.

5. In a wagon, the combination with a body, of an end gate hinged to the body at its lower end, a bracket extending beyond the sides of the gate, a rod  $G$  pivotally secured to the bracket, an eye  $h$  on the wagon body having an opening  $h'$  in its vertical outer side part which opening will not permit the escape of the rod until the end gate is elevated to a nearly vertically position, and a hook on the end gate with which hook the rod engages, substantially as described.

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

EUGENIO K. HAYES.

Witnesses:

RANDOLPH BOYD,  
WESLEY D. PATTY.