

No. 634,875.

Patented Oct. 17, 1899.

J. C. BUTLER.

END GATE.

(Application filed June 14, 1899.)

(No Model.)

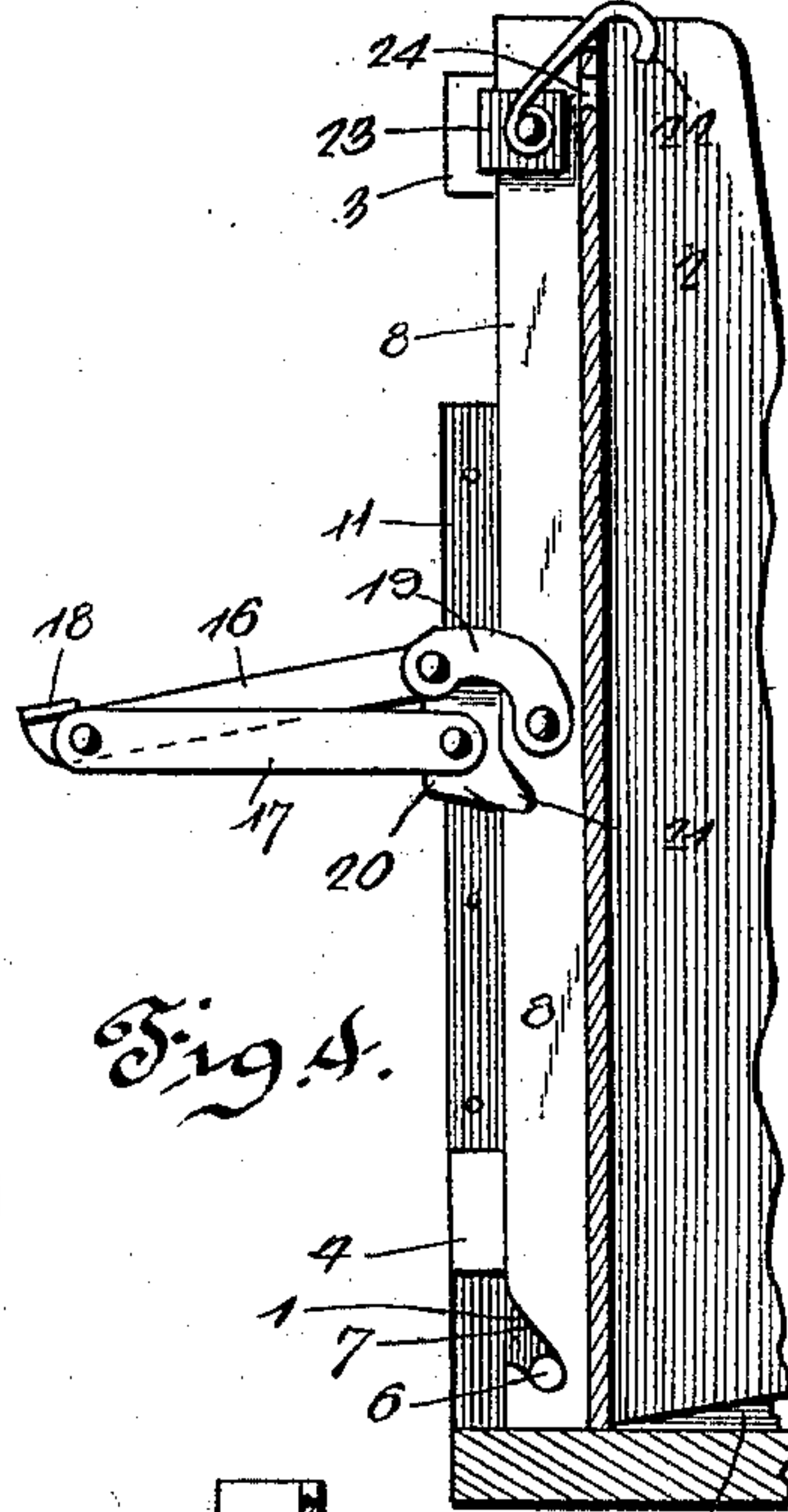
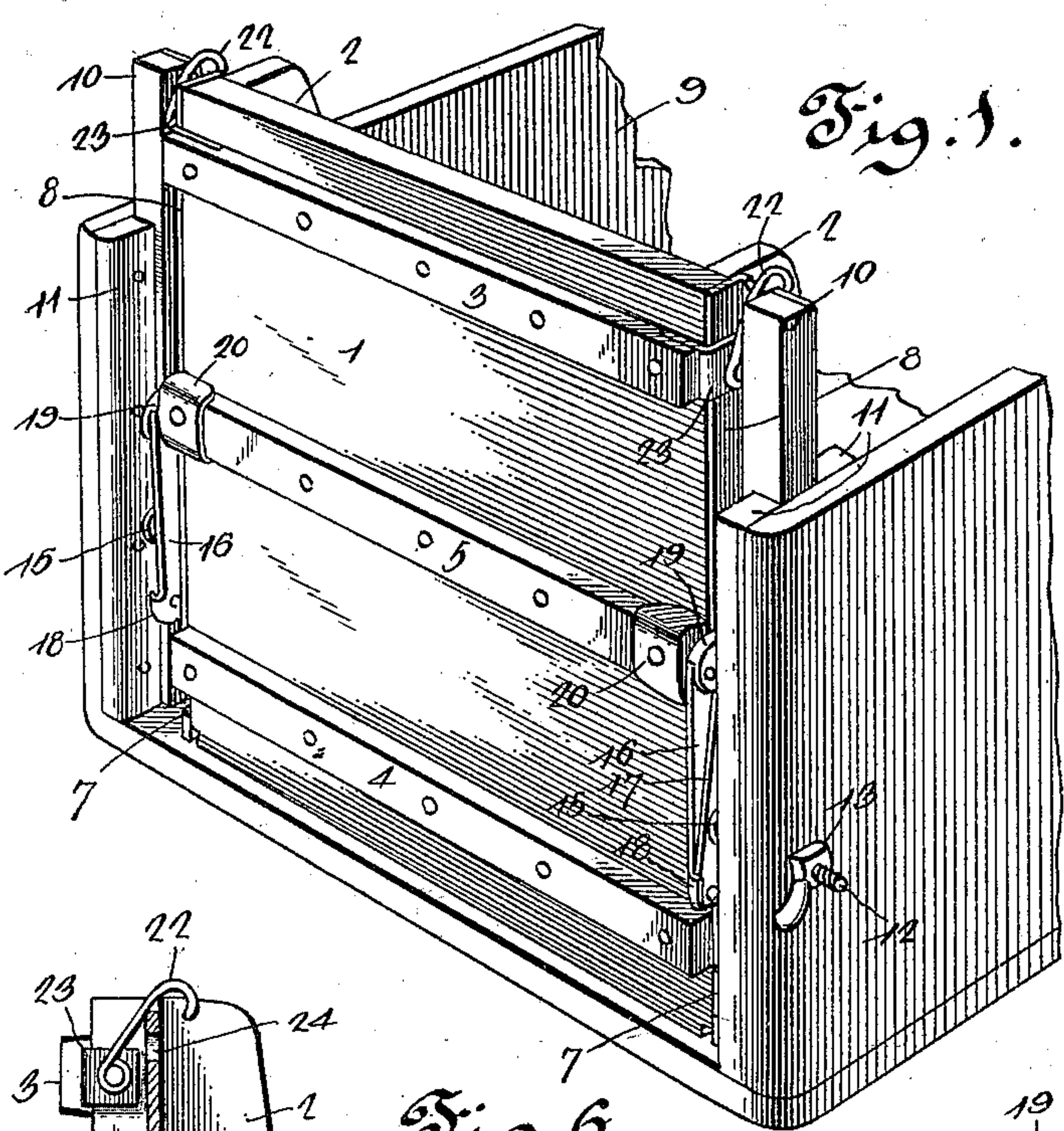


Fig. 6.

Fig. 3.

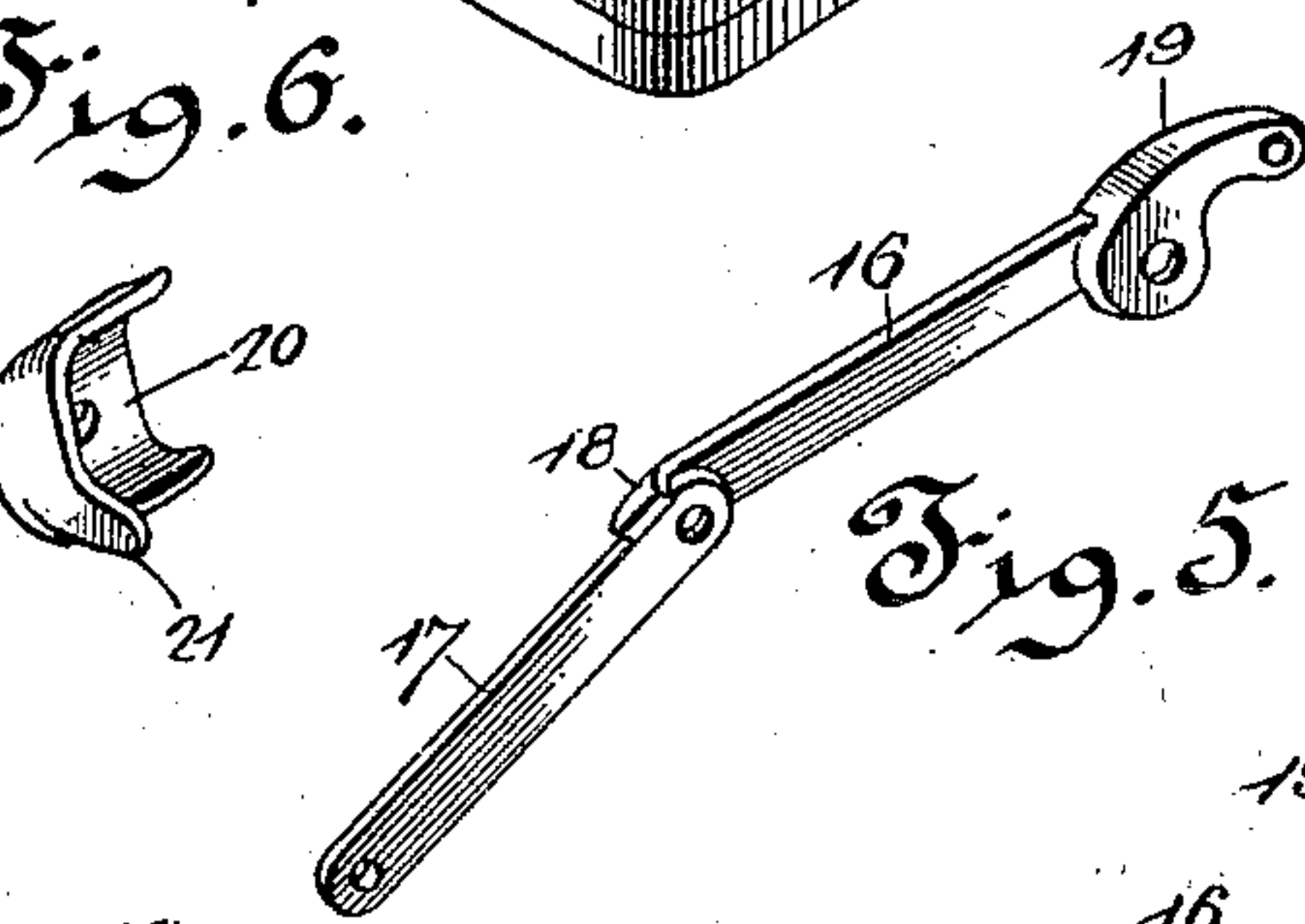
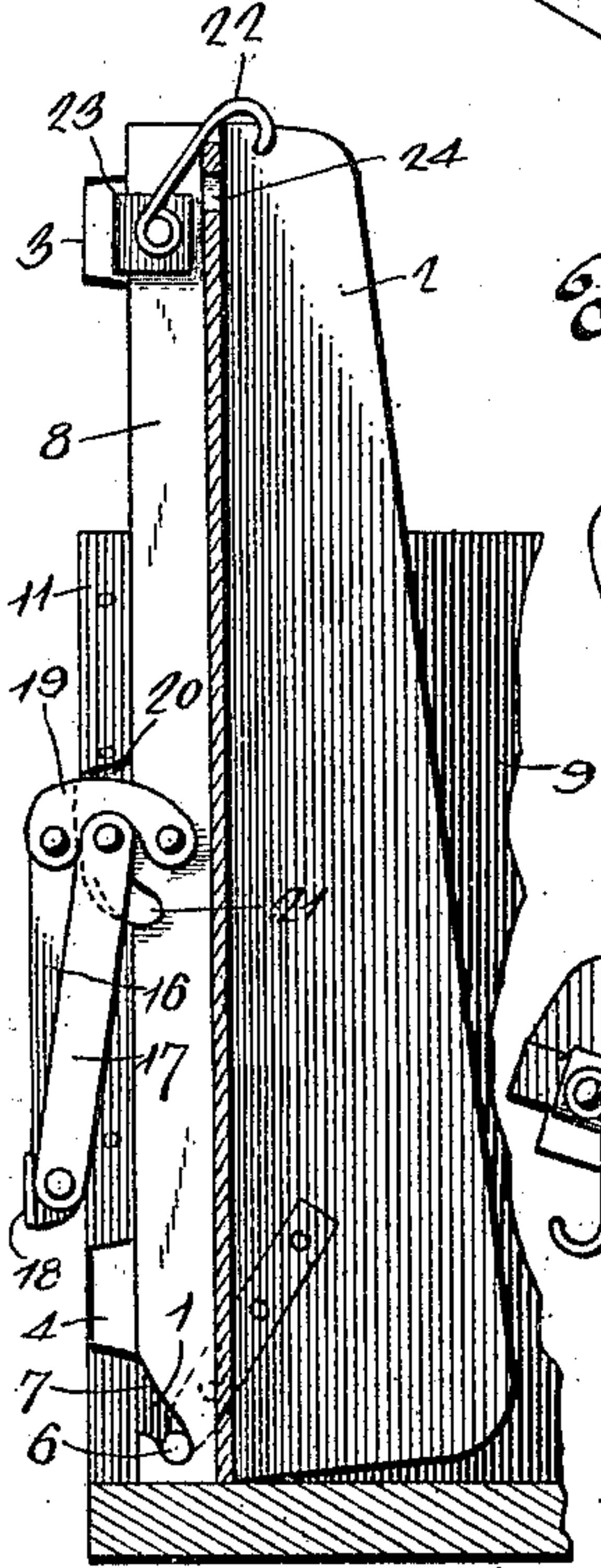


Fig. 5.

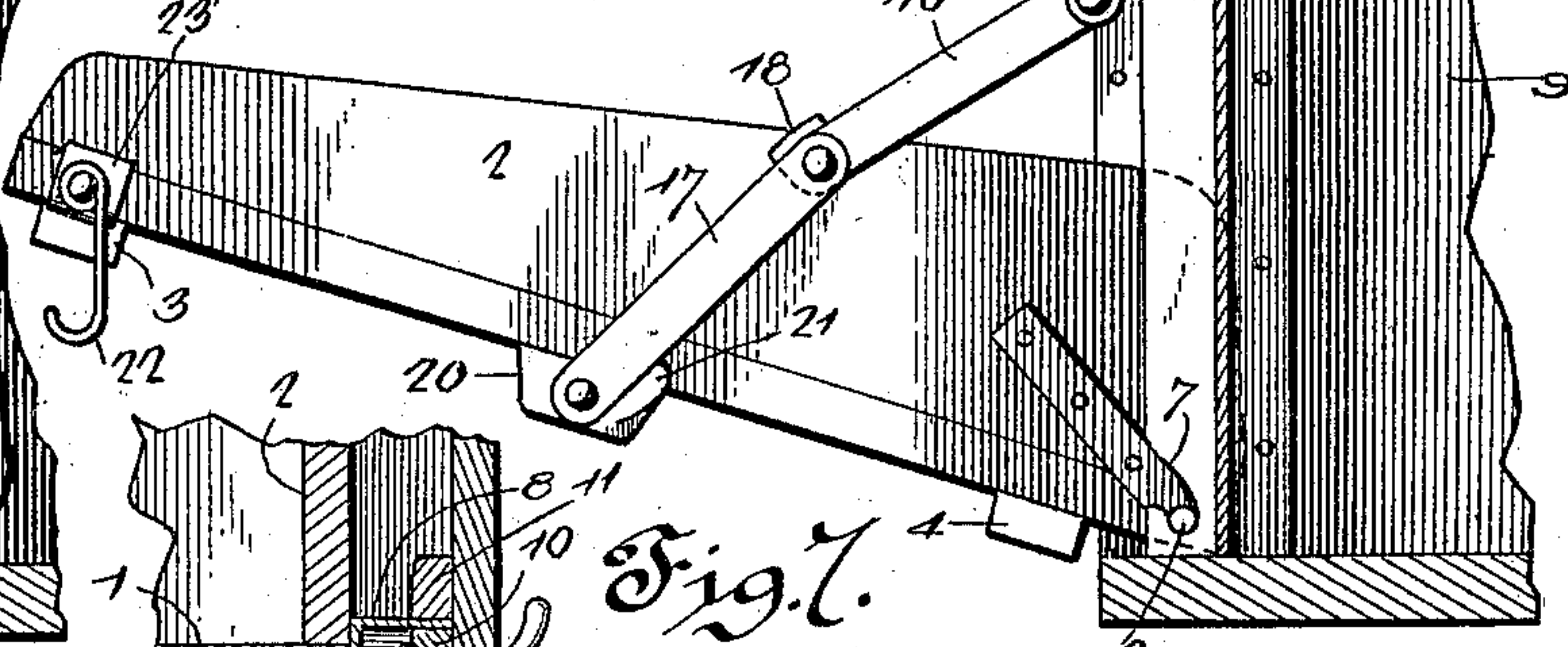


Fig. 7.

Fig. 2.

Witnesses

J. Frank Culverwell.

J. F. Riley

By his Attorneys,

J. C. Butler,

Inventor.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOSEPH C. BUTLER, OF IOWA FALLS, IOWA.

END-GATE.

SPECIFICATION forming part of Letters Patent No. 634,875, dated October 17, 1899.

Application filed June 14, 1899. Serial No. 720,520. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH C. BUTLER, a citizen of the United States, residing at Iowa Falls, in the county of Hardin and State of Iowa, have invented a new and useful End-Gate, of which the following is a specification.

The invention relates to improvements in end-gates.

The object of the present invention is to improve the construction of end-gates and to provide a simple, inexpensive, and efficient one which will be strong and durable and which will be adapted to be arranged to form a shoveling-board and for dumping purposes.

A further object of the invention is to provide a pair of links for supporting the end-gate in an inclined position to form a shoveling-board and to enable the links to operate as a locking device for retaining the end-gate in a vertical position and also as a lever for lifting the end-gate to release its bottom portion when it is desired to dump the contents from a wagon-body.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of an end-gate constructed in accordance with this invention and shown applied to a vehicle-body. Fig. 2 is a vertical sectional view illustrating the manner of locking the end-gate in a vertical position. Fig. 3 is a similar view illustrating the manner of supporting the end-gate to form a shoveling-board. Fig. 4 is a similar view showing the links arranged to form a lever for lifting the end-gate. Fig. 5 is a detail perspective view of the links. Fig. 6 is a detail view of one of the caps of the intermediate cleat of the end-gate. Fig. 7 is a horizontal sectional view of one side of the end-gate and the adjacent side of the wagon-body.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates an end-gate provided at opposite sides with wings 2 and supported by cleats 3, 4, and 5, arranged on its outer face and located near its top and bottom and center, as clearly illustrated in Fig. 1 of the accompanying drawings.

The end-gate is provided at its bottom with

laterally-disposed pivots 6, which detachably engage inclined bearing-recesses 7 of vertical bars 8, which are detachably mounted within a wagon-body 9. The bars 8 are constructed of angle or flanged metal and are substantially L-shaped in cross-section, one of the flanges of each bar being disposed longitudinally of the vehicle and the other being arranged transversely thereof and supported by a reinforcing bar or strip 10. The wagon-body is provided at the inner faces of its sides with vertical cleats 11, arranged in pairs and forming ways for the removable vertical supporting-bars 8, and the latter are secured within the ways by fastening devices 12, consisting of bolts or screws passing through the sides of the wagon-body and provided at their outer ends with nuts 13 and carrying clamping-plates 15 at their inner ends. The clamping-plates 15 are arranged on the outer cleats of the wagon-body and engage the adjacent edges of the reinforcing-bars 10. The vertical supporting-bars detachably mount the end-gate within the wagon-body and enable the same to be readily removed when it is desired to use an ordinary end-gate.

The end-gate, which fits between the vertical supporting-bars, is connected with the same by inner and outer links 16 and 17, pivoted together at their adjacent ends and similarly connected at their outer ends with the end-gate and with the vertical supporting-bars. The inner ends of the inner links are provided with lugs 18, arranged to engage the upper edges of the outer links to limit the downward movement of the end-gate, whereby the latter is supported at an inclination, as clearly shown in Fig. 3 of the accompanying drawings. The links 16 are connected to the bars 8 by means of curved plates or pieces 19, pivoted to the said links and to the longitudinal flanges of the bars 8. These curved pieces permit the link-bars to swing downward to the position illustrated in Fig. 2 when it is desired to lock the end-gate in a vertical position. The curved plates or pieces are also adapted to be swung upward against the transverse flanges of the bars 8, as illustrated in Fig. 4 of the accompanying drawings, when it is desired to form a lever for lifting the end-gate to disengage it from the bearing-recesses 7. The curved plates or pieces form fulcrums, and when the folded links are swung upward they lift the

end-gate and free the bottom thereof. The outer ends of the outer links are pivoted to caps 20, secured on the ends of the intermediate cleats 5 of the end-gate and provided with wedge-shaped bosses 21, arranged to be engaged by the links, whereby the latter are firmly held in the position shown in Fig. 2 of the drawings. The wedge-shaped boss 21 binds against the links and securely clamps the same when the end-gate is locked.

When the end-gate is arranged in a vertical position, as shown, it is adapted to be raised to disengage its lower portion from the bars 8, and it is provided at opposite sides with hooks 22, mounted on brackets or plates 23 and arranged to project over the upper edges of the bars 8 and engage perforations 24 thereof, whereby the end-gate is supported when its bottom is disengaged from the bearings of the bars 8. These hooks suspend the end-gate from the tops of the bars 8 and permit the same to swing outward for dumping the contents of a wagon-body.

The invention has the following advantages: The end-gate, which is simple and comparatively inexpensive in construction, is strong and durable and is adapted to be readily arranged as a shoveling-board and for dumping. The links which support the end-gate in an inclined position to form a dumping-board also lock the end-gate in its vertical position and enable it to be readily lifted to disengage its bearings from the recesses of the vertical supporting-bars 8. The links are firmly secured when arranged to lock the end-gate in its vertical position, and the said end-gate is supported by the hooks when it is arranged for dumping. The curved plates or pieces which connect the inner links with the detachable bars 8 form fulcrums for the links when the latter operate as levers, and they permit the links to swing downward to form a lock. The vertical bars, which are mounted in the ways of the sides of the wagon-body, are adapted to be readily removed and replaced therein, and they enable the end-gate to be readily mounted on and removed from the wagon-body. When the end-gate is removed, an ordinary end-gate may be arranged in the ways formed by the cleats of the sides of the wagon-body.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. A device of the class described comprising an end-gate designed to be hinged to a wagon-body, inner and outer links pivoted together, the outer link being connected with the end-gate, and a curved plate or piece pivoted to the inner link and similarly connected with the wagon-body, said curved piece or plate being arranged to form a fulcrum and adapted to permit the links to swing down-

ward to provide a lock, substantially as described.

2. In a device of the class described, the combination with a wagon-body, of an end-gate provided with a wedge-shaped boss, and links pivotally connected with the wagon-body and end-gate and arranged to engage the boss, whereby the end-gate is locked in its closed position, substantially as described.

3. A device of the class described comprising supporting-bars designed to be mounted in suitable ways of a wagon-body and provided with bearings, an end-gate having pivots detachably arranged within the bearings of the said bars, curved plates pivoted to the bars, and the inner and outer links pivoted together at their inner ends and having their other ends pivoted to the end-gate and to the curved plates, whereby the links are adapted to form a locking device and a lever, substantially as described.

4. In a device of the class described, the combination with a wagon-body provided with open bearings, of an end-gate detachably journaled at its bottom in the said bearings and adapted to be lifted out of the same, links connected with the end-gate and with the body and forming a lever for lifting the end-gate to disengage it from the said bearings, and hooks mounted on the end-gate at the top thereof and adapted to engage the wagon-body, whereby the end-gate is supported when its bottom is disengaged from the bearings, substantially as described.

5. A device of the class described comprising an end-gate provided with a wedge-shaped boss, a curved plate designed to be mounted on a wagon-body, and links pivotally connected together and similarly secured to the end-gate and to the curved plate and adapted to engage the wedge-shaped boss, substantially as described.

6. A device of the class described comprising angle-bars, reinforcing-bars secured to the transverse flanges of the angle-bars, curved plates pivoted to the other flanges of the angle-bars, and links connecting the end-gate with the curved plates, substantially as described.

7. In a device of the class described, the combination with a wagon-body provided at opposite sides with ways, removable bars mounted in the ways, an end-gate carried by the bars, and fastening devices comprising bolts passing through the sides of the wagon-body at one side of the ways, nuts arranged at the outer ends of the bolts, and clamping-plates mounted on the inner ends of the bolts and engaging the faces of the bars, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH C. BUTLER.

Witnesses:

H. C. MILLER,

GEO. A. COURTNEY.