

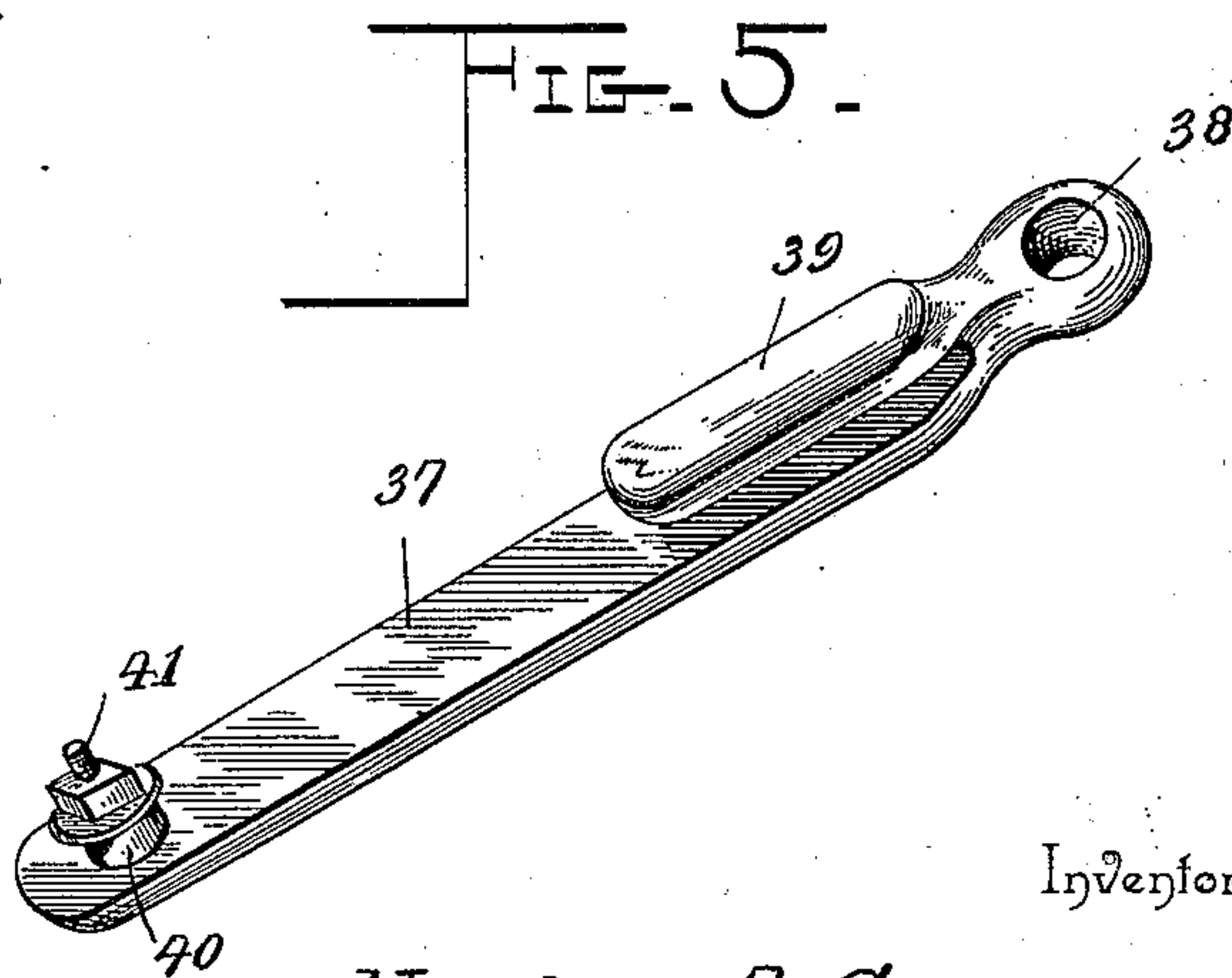
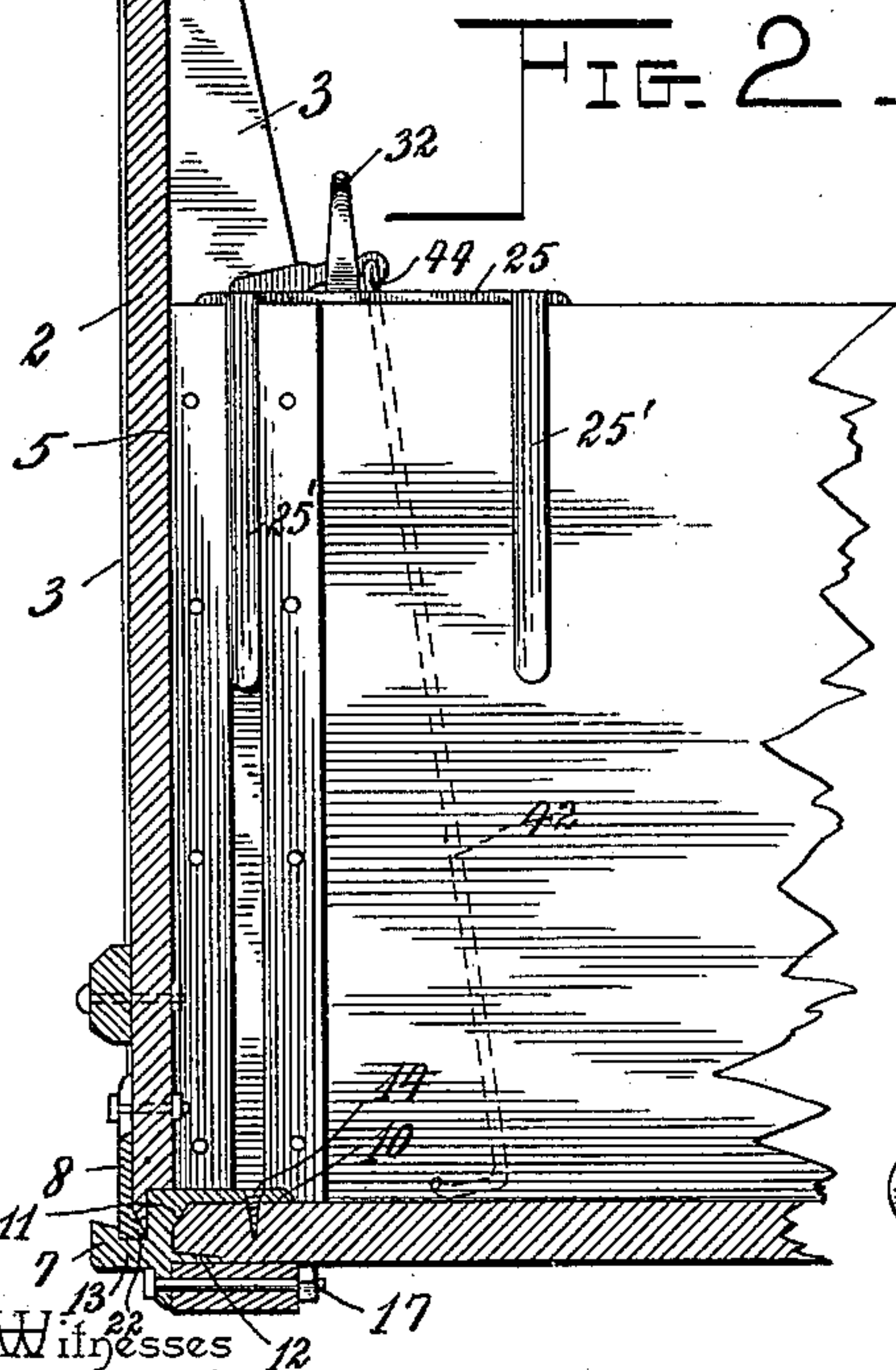
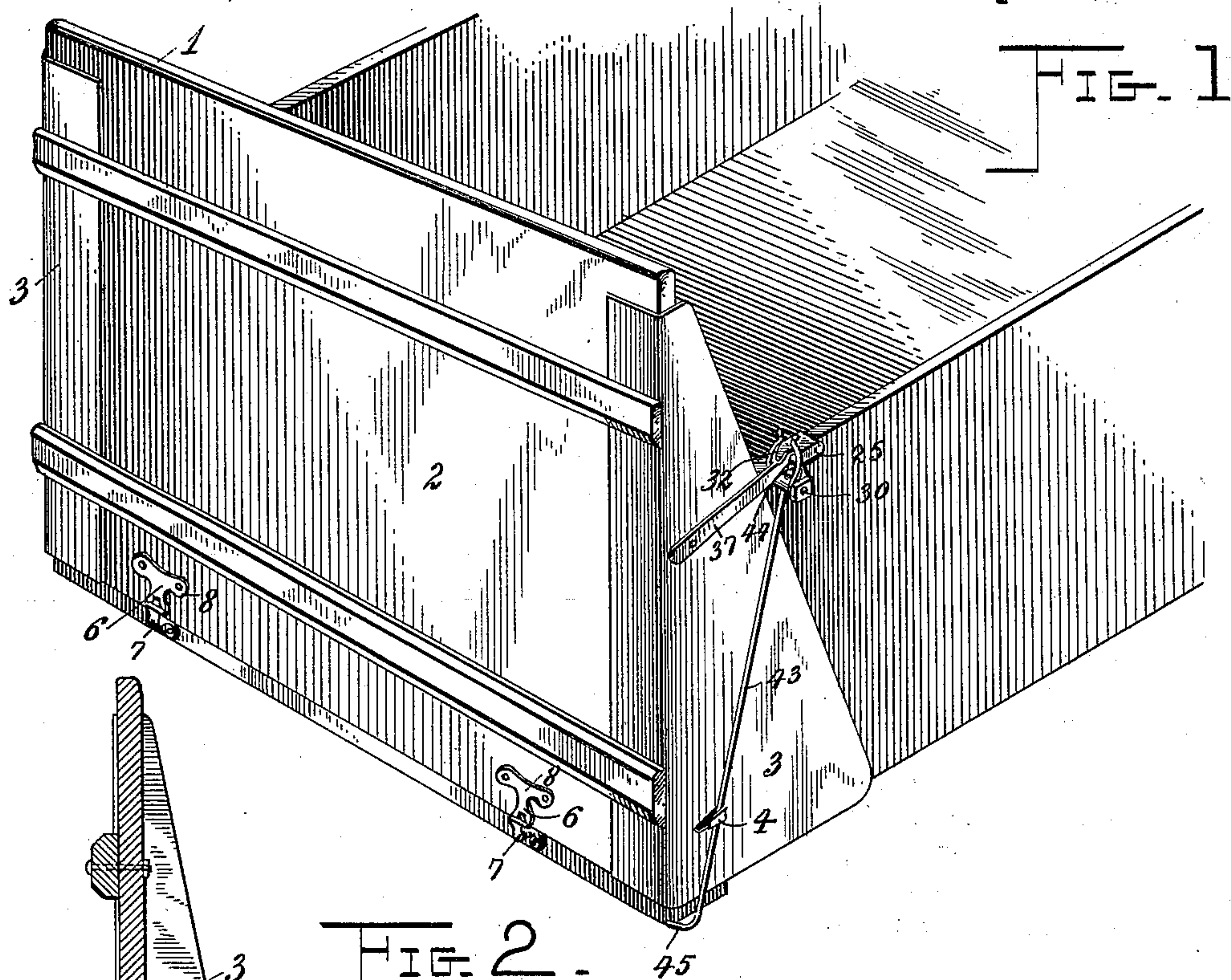
(No Model.)

2 Sheets—Sheet 1.

N. A. CRUZAN.
SHOVELING BOARD.

No. 601,636.

Patented Apr. 5, 1898.



John F. Seufferweil
H. A. Bernhart

By his Attorneys,

Newton A. Cruzan.
C. A. Snow & Co.

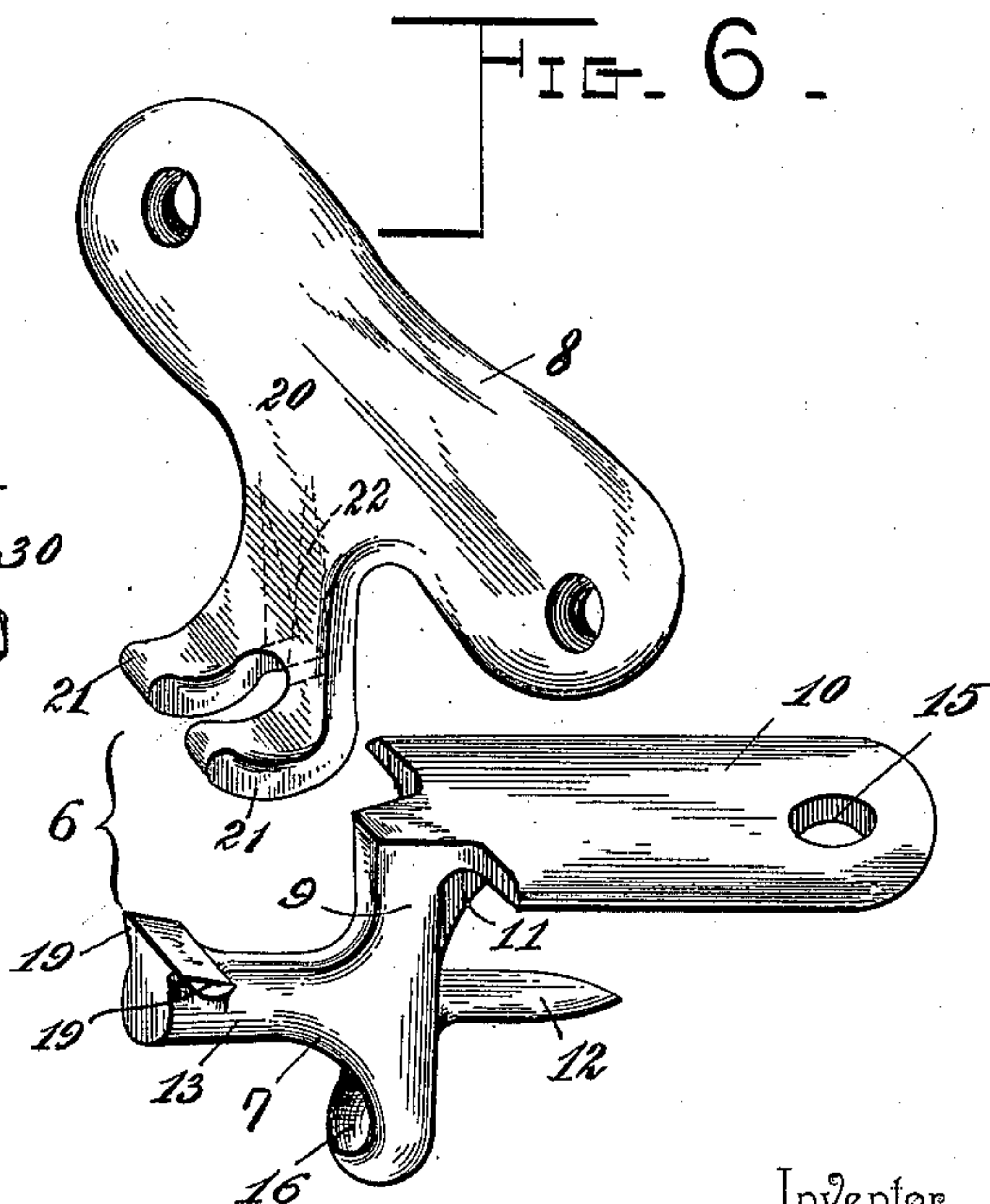
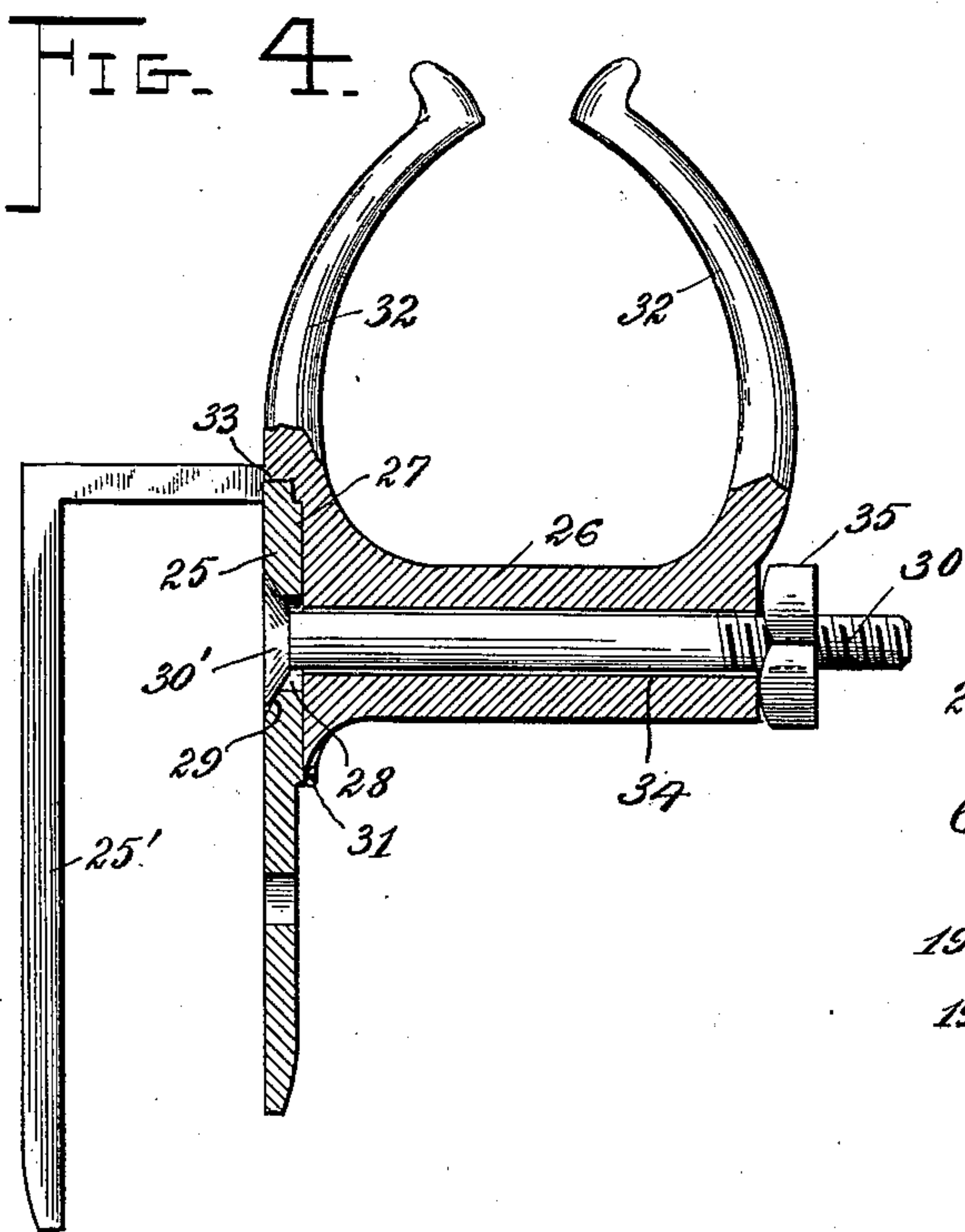
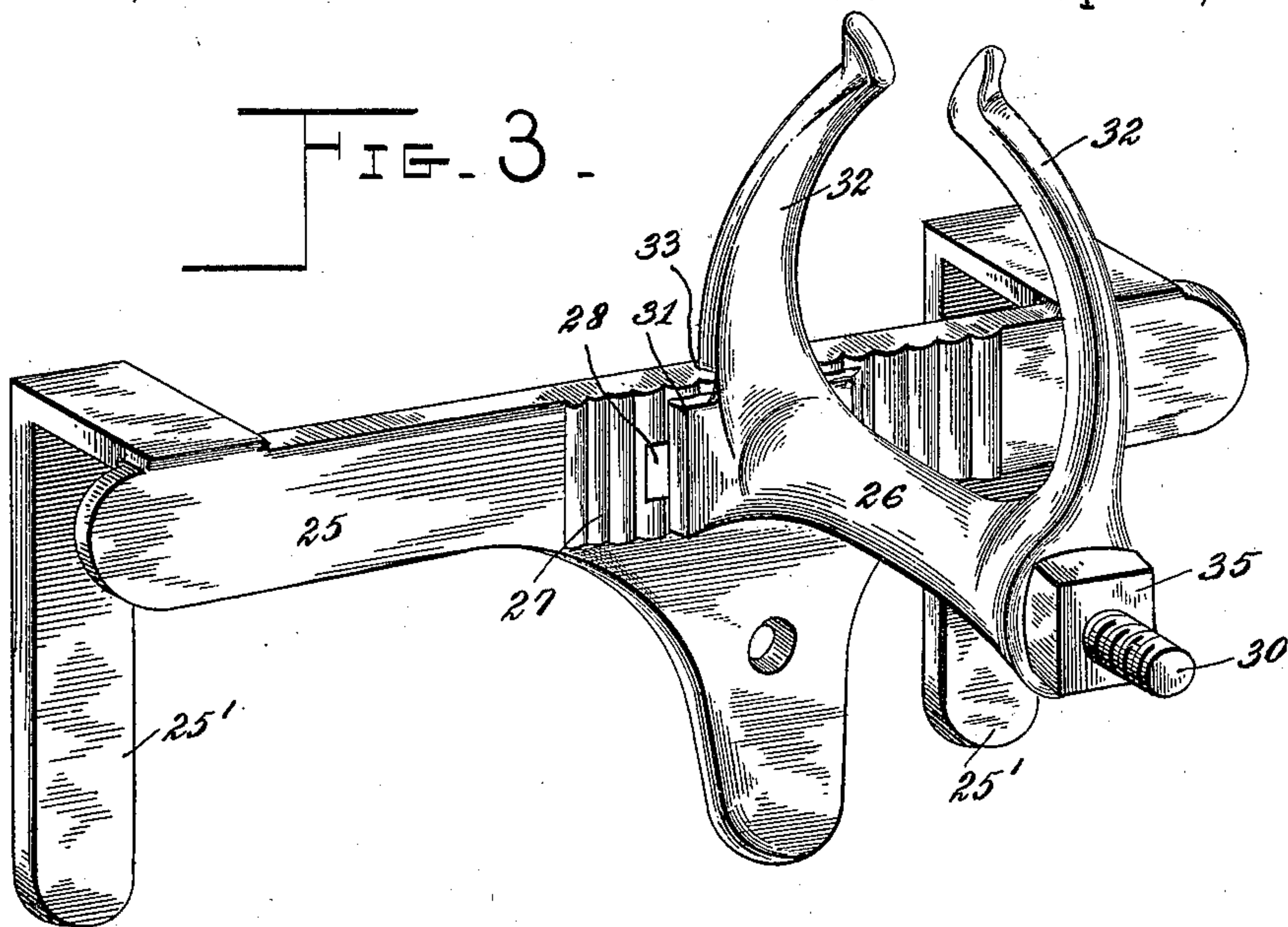
(No Model.)

2 Sheets—Sheet 2.

N. A. CRUZAN.
SHOVELING BOARD.

No. 601,636.

Patented Apr. 5, 1898.



Witnesses

John F. Seufferheld
H. A. Berwick

By his Attorneys,

Newton A. Cruzan.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

NEWTON ALLEN CRUZAN, OF DECATUR, ILLINOIS.

SHOVELING-BOARD.

SPECIFICATION forming part of Letters Patent No. 601,636, dated April 5, 1898.

Application filed June 28, 1897. Serial No. 642,645. (No model.)

To all whom it may concern:

Be it known that I, NEWTON ALLEN CRUZAN, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented a new and useful Shoveling-Board, of which the following is a specification.

My invention relates to improvements in shoveling-boards for wagons of that class in which the gate may be raised to a vertical position against the end of the wagon-body to close the same or lowered to a horizontally-inclined position for convenience in removing the contents of the body.

One of the objects of my invention is to provide a construction which may be easily and readily applied to any ordinary wagon-body, without changing the construction of the same, for sustaining the end-gate and shovel-board in either its opened or closed positions.

Another object of my invention is to provide an adjustable attachment to sustain the end-gate at different angles or inclinations to the body.

A further object is to provide a means for locking the end-gate or board in the closed position; and a further object is to provide an improved form of hinge connection between the board or end-gate and the body of the wagon.

To the accomplishment of these ends my invention consists in the novel combination of devices and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of an end-gate and shoveling-board, showing the same closed against the open rear end of an ordinary wagon-body. Fig. 2 is a vertical sectional view through the end-gate and the rear end of the wagon-body, showing the improved construction of the hinge. Fig. 3 is a detail perspective view of the hanger detached from the side of the wagon-body, and Fig. 4 is a vertical transverse sectional view through the bracket and outwardly-projecting arm of

the hanger. Fig. 5 is a detail perspective view of the clip by which the holding and locking rod is attached to the winged end-gate or board. Fig. 6 is a detail perspective view of the hinge.

Like numerals of reference denote corresponding parts in all the figures of the drawings, referring to which—

1 designates the end-gate and shoveling-board. This consists of a bottom 2 and the tapering wings or sides 3, which are rigidly fastened to the bottom 2 in any suitable way. I preferably construct the wings or sides 3 of the gate or board 1 of stout sheet metal, and in this case I punch or force out the metal of the sides, near the inner broad end thereof, to form the spring-keepers 4 4, with which are adapted to engage the locking and holding rods when the gate is closed against the rear end of the wagon-body, indicated at 5 in the drawings.) The wings or sides 3 of the end-gate and board 1 may, however, be made of wood or other suitable material, and in this event I employ spring-metal keepers 4, which are attached in a suitable way to the outside of the wings 3 for the locking-rods to engage therewith.

I provide novel hinges 6, by which the end-gate may be pivotally attached to the end of the wagon-body, and each hinge is constructed in separable members, which may themselves be easily and rigidly fastened to any suitable form of wagon-body. The hinge 6 is illustrated in Fig. 6 of the drawings, and it consists of a member 7 and another member 8, adapted to be attached, respectively, to the edge of the wagon-body and to the gate. The member 7 of the hinge is cast in a single piece of metal, and it consists of a vertical bar 9, a top flange or plate 10, the prongs 11 12, and the pintle 13. The top flange or plate 10 extends from the upper extremity of the vertical bar 9 at right angles thereto, and said flange or plate 10 is adapted to rest upon the top side of the bottom of the wagon-body, to which it is fastened by a screw 14, which passes through a hole 15 provided in said plate 10. The shank or pintle 13 extends rearwardly from the vertical bar 9 of the hinge member at a point intermediate of the length of said bar. The lower extremity of the vertical bar 9 of the hinge member 7 is

provided with a transverse bolt or screw hole 16, through which passes a bolt or screw 17, that fastens the bar 9 of the hinge member 7 to the bottom cleat on the wagon-body. As
 5 further security for the hinge member 7 the prongs 11 and 12 are provided on the side of the vertical bar 9 that faces the end edge of the bottom of the wagon-body, and one of these prongs is arranged in a horizontal position, while the other prong occupies a vertical
 10 position, whereby the prongs lie at right angles to each other and are adapted, when forced into the bottom and lower cleat of the wagon-body, to hold the hinge member securely in against turning on the bottom. The
 15 pintle 13 of the hinge member 7 projects rearwardly a suitable distance from the vertical shank or bar 9, and the rear extremity of this pintle has the ears or lugs 19, which extend laterally from opposite sides of the upper
 20 rounded edge of said pintle 13, for a purpose to be explained. The other hinge member 8 consists of a substantially flat perforated plate 20 and a pair of curved offstanding ears
 25 or lugs 21, which are spaced laterally with respect to each other to provide an intermediate space or throat which receives the pintle of the hinge member 7. The plate 20 of the hinge member 8 is applied to the outside face
 30 of the gate or board 1, to which it is fastened rigidly by suitable screws or bolts, and said hinge member 8 is arranged to straddle the pintle of the hinge member 7. The end-gate or board is connected to the bottom of the
 35 wagon-body by fitting the hinge members 8 to and upon the pintles 13 of the hinge members 7. When the gate or board is turned to an upright position against the end of the wagon-body to close the latter, the lower edge
 40 of the gate or board rests upon the pintles 13, while the ears or lugs 21 fit under and closely embrace the headed outer extremity of the pintles 13. To enable the gate or board to fit close to the rear edge of the bottom of the
 45 wagon-body, I provide recesses or notches 22 in said end-gate or board to receive the upper part of the vertical shank 9 of the hinge member 7.

It is apparent from the foregoing description
 50 that the hinge members may be easily and quickly fastened to the wagon-body and to the gate or board in a very secure manner, and such application of the hinge members 7 is effected without changing the wagon-body
 55 in any way, while the gate or board only requires notches cut therein to receive the vertical shanks of the hinge members 7, applied to the body.

I will now proceed to describe my improved
 60 form of hangers by which the end-gate may be held in a horizontal or inclined position with relation to the rear open end of the wagon. There are two of these hangers provided, one for each side wall of the wagon-body, but as both hangers are identically the
 65 same in construction a description of one of them will answer equally for the other

hanger. The hanger is shown more clearly by the detail views, Figs. 3 and 4 of the drawings, and it consists of a bracket-plate 70 25, an adjustable arm 26, and means for clamping the arm 26 adjustably to the bracket-plate 25. The bracket-plate 25 has the angular arms 25' extending from one side thereof, and the other face of the bracket-plate is corrugated or serrated, as at 27, for a part of its
 75 length. In this corrugated part of the bracket-plate 25 is formed a horizontal slot 28, which extends longitudinally of said plate 25, and the inner edges of the slot are beveled or
 80 chamfered at 29 to accommodate the chamfered edges on the head 30' of an adjustable bolt 30. The adjustable arm 26 of the hanger is cast in a single piece of metal with a corrugated or serrated plate 31 at its inner end, 85 and this arm is provided with the upwardly-extending fingers 32 32, which are integral with said arm. The arm is rounded or curved between the fingers for the purpose of enabling the spring or elastic rods to slide easily
 90 over the same. The fingers 32 are situated at the extremities of the arm 26, and they are curved inward toward each other, but they do not come in contact, so that the locking-rod may easily be fitted to the hanger. 95 The inner finger 32 of the arm which is situated over the corrugated plate 31 forms an abrupt shoulder 33, that is adapted to be fitted to the bracket-plate 25 to rest squarely thereon. Through the arm 26 is formed a
 100 longitudinal passage or bolt-hole 34 to receive the bolt 30. The arm is fitted to the bracket-plate by adjusting its corrugated plate 31 against the corrugated face 27 of the bracket-plate and so that its shoulder 33 rests
 105 on the top edge of the bracket-plate. The bolt 30 has its headed end fitted slidably in the slot of the bracket-plate, and said bolt passes through the bolt-passage in the arm 26 to receive a nut 35, that tightens against
 110 the arm 26, and thus clamps it securely to the bracket-plate. The nut and bolt may be loosened to permit the arm 26, with the bolt, to be adjusted longitudinally on the bracket-plate, and when the arm shall have been ad-
 115 justed to the desired position the bolt and nut are tightened to again clamp the arm 26 rigidly on the bracket-plate. The angular arms 25' of the bracket-plate are arranged to fit over the top edge of the side or wall of
 120 the wagon-body to hold the hanger thereon, and one of the arms 25' may be engaged with the parallel cleats usually provided on the inner face of the wall or side of the wagon-body, so that the hanger is prevented from
 125 endwise displacement on the wagon-body.

To each wing or side 3 of the gate or board 1 is attached a link 37. (Shown by the detail view Fig. 5 of the drawings.) This link or clip is cast in a single piece of metal in the
 130 form of a plate having a solid eye 38 at one end and with a short parallel flange 39, the latter being arranged laterally with respect to the flat plate or body of the clip or link, so

as to form a space within which the edge of the wing or side 3 may fit. At the end opposite to the eye 38 the flat plate or body of the clip has a rounded boss 40, through which
 5 passes a transverse hole. This clip is fitted against the wing 3 of the gate or board to receive the edge of the latter in the space between the flange 39 and the flat body of the clip and to have the boss 40 fit in a hole in
 10 the wing, and this clip or link is pivotally attached to the winged board by a transverse bolt 41. The link or clip is pivoted by the bolt 41 to the end-gate to have a certain play or movement thereon and enable the gate to
 15 accommodate itself to wagon-bodies of different heights, and this play or movement of the link on the gate is limited in one direction by the arm or shoulder which joins the flange 39 to the plate or clip 37, so that said shoulder
 20 forms a stop for the plate or clip.

The rods for holding the gate when lowered and for locking it when raised are indicated at 42 43 in the drawings. Each rod has at one end an open eye 44, which engages with
 25 the solid eye 38 of the link or clip 37; but the other end of the rod is provided with an open hook 45, adapted to fit around the arm 26 of the hanger.

To apply my end-gate and shoveling-board
 30 to a wagon, the hinges are fastened to the rear edge of the bottom of the wagon-body and to the lower edge of the gate or board. The hangers have their brackets 25 fitted to the top edges of the sides or walls of the wagon-body, so that one of the arms 25' of said brackets engages with the cleats on the wagon-body to hold the hangers against endwise
 35 movement. The arms 26 of the hangers are properly adjusted on the bracket-plates 25, according to the length of the rods 42 43 and the inclination it is desired to give to the gate or board when lowered. The gate is fitted to the body, and the rods are attached to the links and to the arms 26 of the hangers. To
 40 close the gate or board against the open end of the body, it is turned on the hinges to a vertical position, and the rods are moved around the arms 26 of the hangers and sprung into engagement with the keepers 4 of the
 45 gate, thus locking the latter in place. By releasing the rods from the keepers the gate or board may be lowered, and the hooked ends of the rods engage with the arms 26 of the hangers to sustain the gate or board in its
 50 lowered position. To vary the angle or inclination of the gate with relation to the wagon-body, it is only necessary to adjust the arms 26 on the brackets 25 of the hangers. The limited play or movement of the links 37 on the end-gate enables the gate or board to accommodate itself to wagon-bodies of different
 55 heights.

I am aware that changes in the form and proportion of parts and in the details of construction of the devices herein shown and described as the preferred embodiment of my
 60 invention may be made by a skilled mechanic

without departing from the spirit or sacrificing the advantages thereof—as, for example, the keepers 4 may be riveted or otherwise
 70 rigidly attached to the wings of the gate instead of being struck up therefrom. I therefore reserve the right to make such modifications as fall within the scope of my invention.

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

1. The combination with an end-gate, of the shouldered links pivoted at one end to said gate and arranged thereon for the opposite shouldered end of the link to engage with the free edge of the gate, and a rod connected to the link beyond its shouldered end, whereby the link loosely connects the rod to the gate and permits a limited vertical adjustment of
 80 the rod relative to the gate to accommodate the latter to wagon-bodies of different heights, substantially as described.

2. The combination with a wagon-body and an end-gate of the loose links or clips pivoted
 85 to said end-gate and provided with flanges which embrace the gate and with shoulders to limit the play or movement of said links, hangers on said body, and rods loosely connected to the free ends of the links and engaging with the hangers, for the purposes described, substantially as set forth.

3. A hinge for an end-gate or shoveling-board, comprising the separable members, one of which is provided with prongs situated
 90 at right angles to each other to be embedded in a wagon-body, as and for the purposes described.

4. The combination with a wagon-body and an end-gate of the separable hinge comprising a member, 7, fixed to said wagon-body and provided with a rearwardly-extending
 95 pintle and with the lateral extending head at the rear extremity of said pintle, and the plate-like member, 8, fastened to the end-gate and having its curved and forked members, 21, arranged to straddle the pintle to rest thereon; the forked parts of said hinge member, 8, being adapted when the gate is in a vertical position to turn under the head
 100 of the pintle and prevent vertical displacement of said end-gate, substantially as described.

5. A hanger for an end-gate and shoveling-board comprising a horizontal bracket member constructed for application to the upper
 105 edge of the wagon-body, and an outwardly-projecting horizontal arm fastened to said bracket member to lie substantially at right angles thereto and adjustable longitudinally
 110 thereon, substantially as described, for the purposes set forth.

6. A hanger comprising a horizontal bracket member, an outwardly-projecting forked arm applied laterally to the bracket member to
 115 lie substantially at right angles thereto, and means for clamping said arm rigidly and adjustably to the bracket member, as and for the purposes described.

7. An end-gate hanger, comprising a horizontal bracket constructed for application to the upper edge of a wagon-body and provided with an exposed corrugated face, a
5 horizontal fulcrum-arm extending outwardly from said bracket and having a corrugated inner end which is interlocked with said corrugated face of the bracket, and a bolt which
10 unites the arm and bracket rigidly together and is adjustable with said arm in a horizontal direction on the bracket, substantially as and for the purposes described.

8. A hanger comprising a bracket member provided with angular arms on one side and
15 having a corrugated face and a slot, an arm provided with fingers and with a corrugated face-plate arranged in such relation to one of the fingers as to form a shoulder, and a bolt
20 with its head fitted in the slot of the bracket member and passing through the arm to hold

the latter adjustably on said bracket member, as and for the purposes described.

9. An end-gate hanger, comprising an elongated horizontal bracket constructed for application to the upper edge of a wagon-body, a
25 horizontal fulcrum-arm extending outwardly from the bracket substantially at right angles thereto and provided with forks arranged to confine between themselves a locking-rod, and means for clamping said bearing-arm ad-
30 justably to the bracket, substantially as and for the purposes described.

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

NEWTON ALLEN CRUZAN.

Witnesses:

W. M. LEWIS,

CHARLES MOORE.