

No. 725,307.

PATENTED APR. 14, 1903.

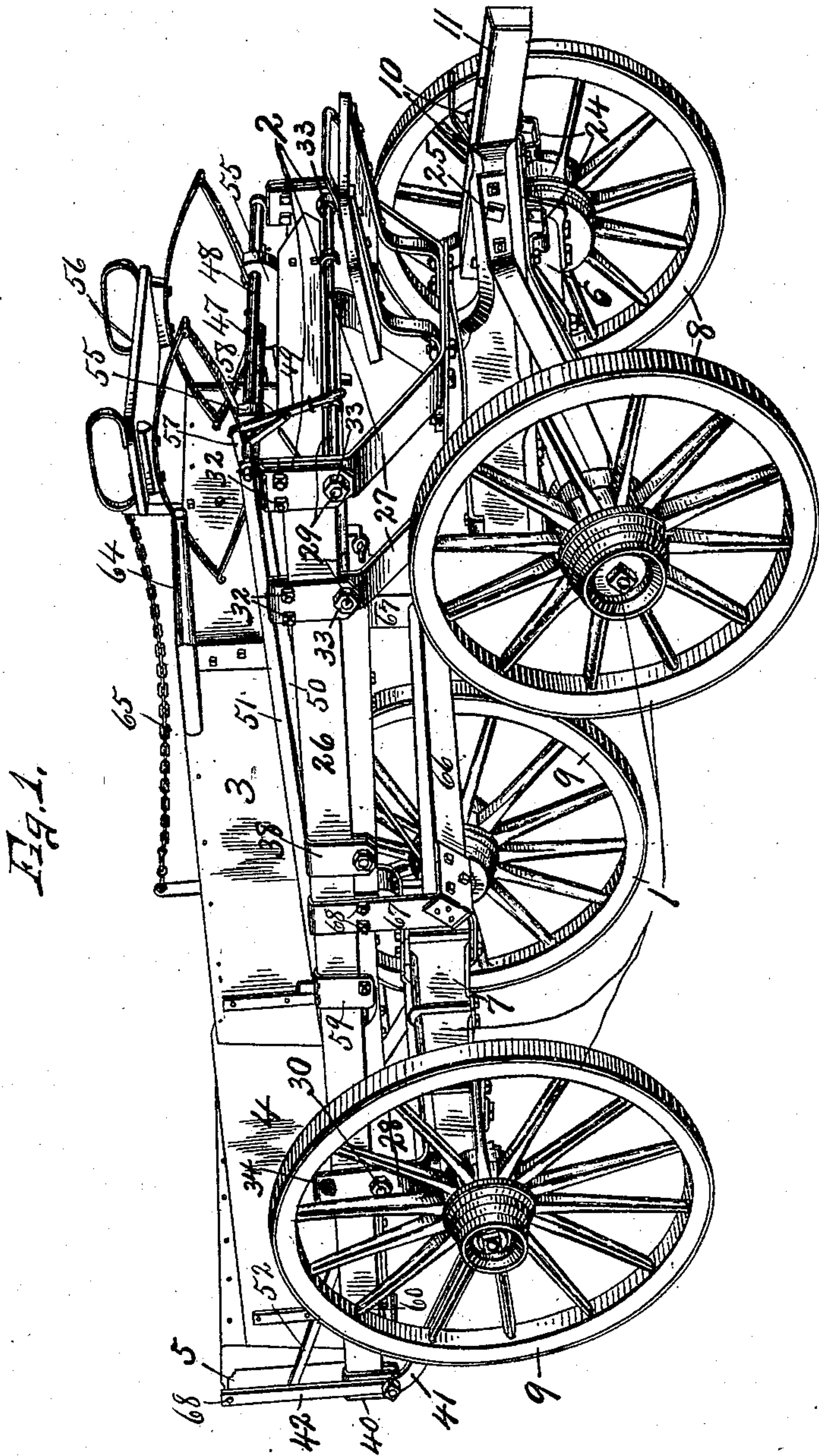
J. D. WHITNEY.

WAGON.

APPLICATION FILED NOV. 11, 1901.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

H. Arthur,
W. C. Chase

INVENTOR,

Jonah D. Whitney

BY

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ATTORNEYS.

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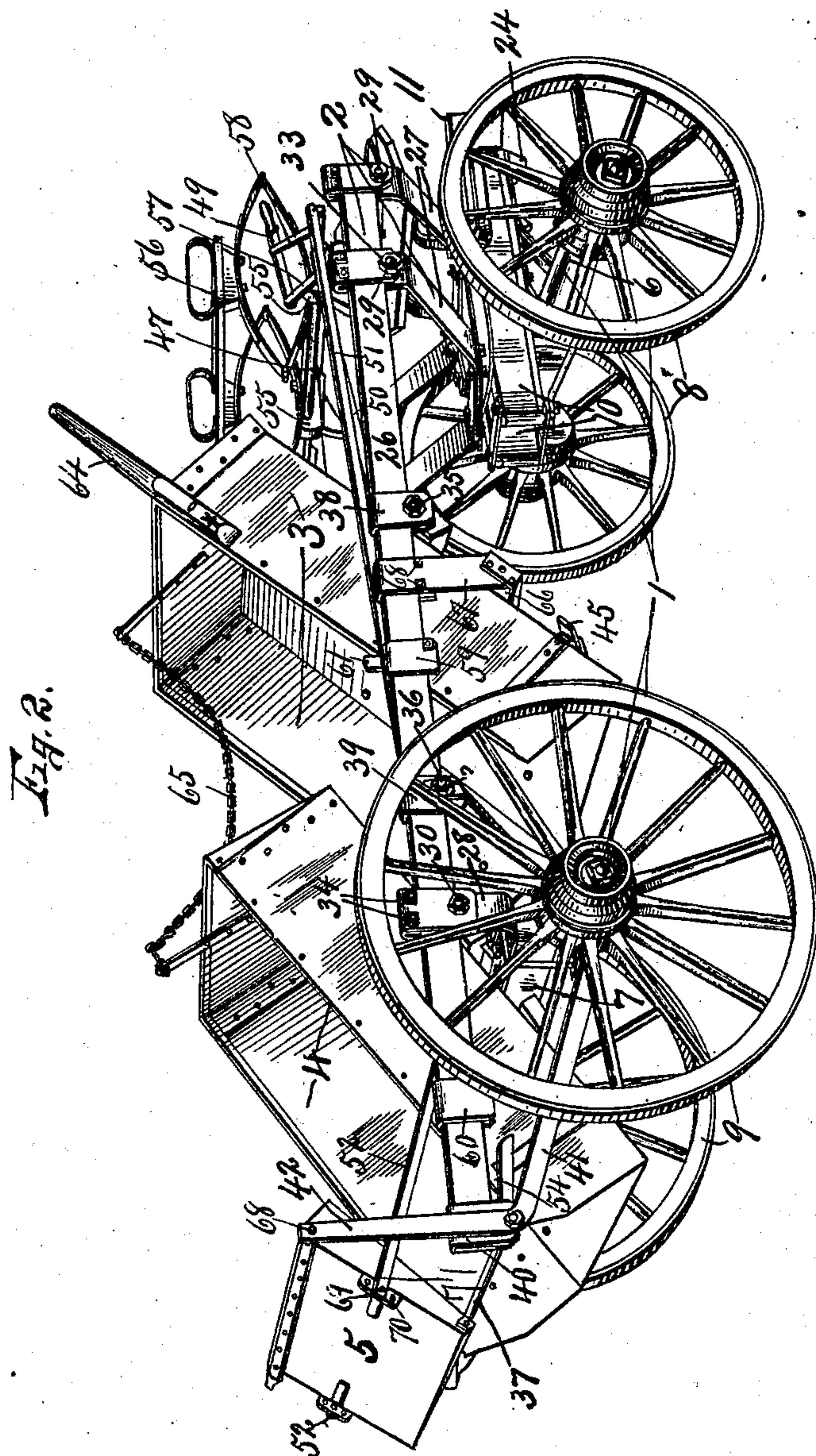
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APPLICATION FILED NOV. 11, 1901.

NO MODEL.

4 SHEETS—SHEET 2.



WITNESSES:
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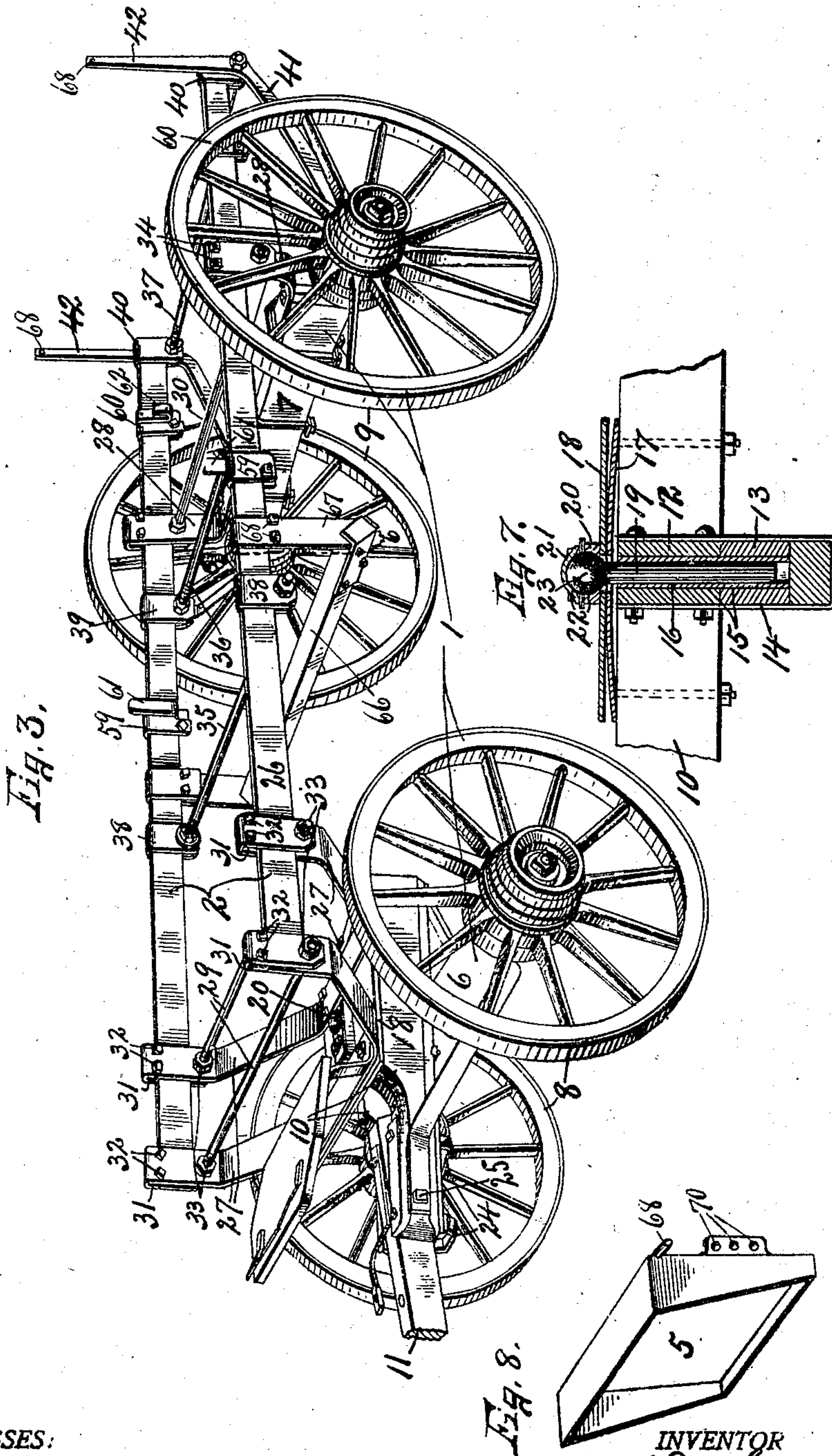
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NO MODEL.

4 SHEETS—SHEET 3.



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Fig. 8.
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NO MODEL.

4 SHEETS—SHEET 4.

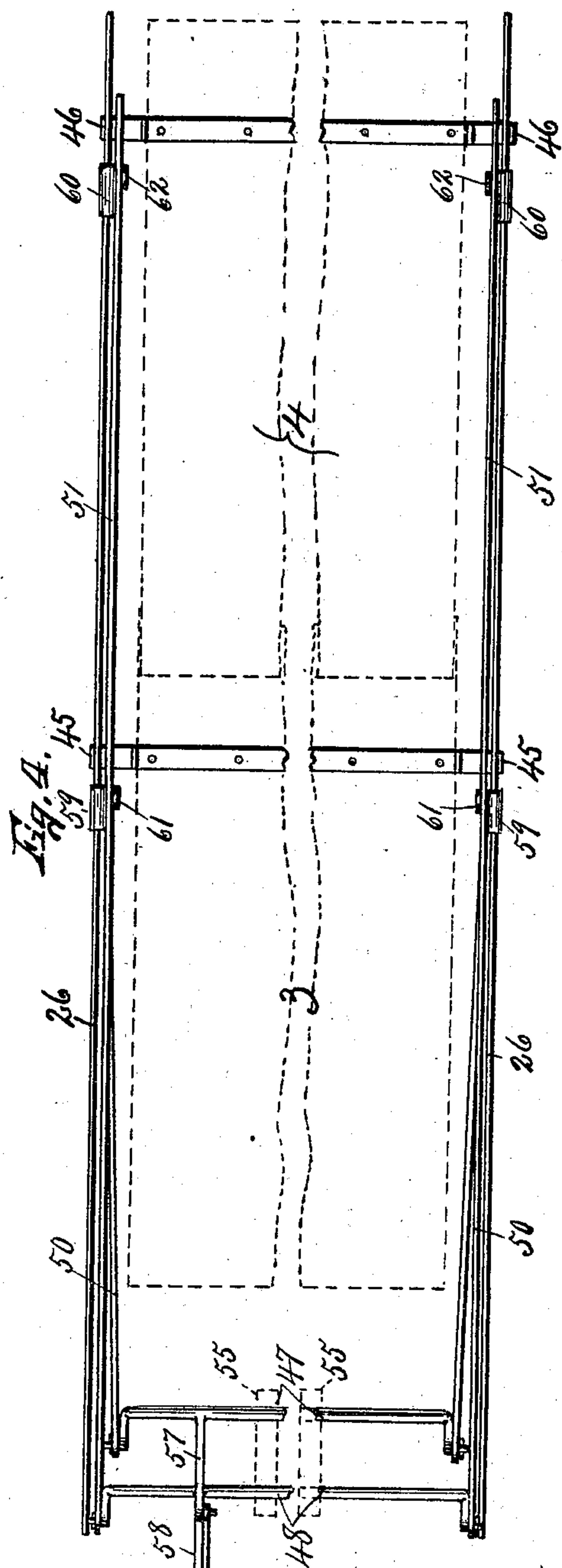


Fig. 4.

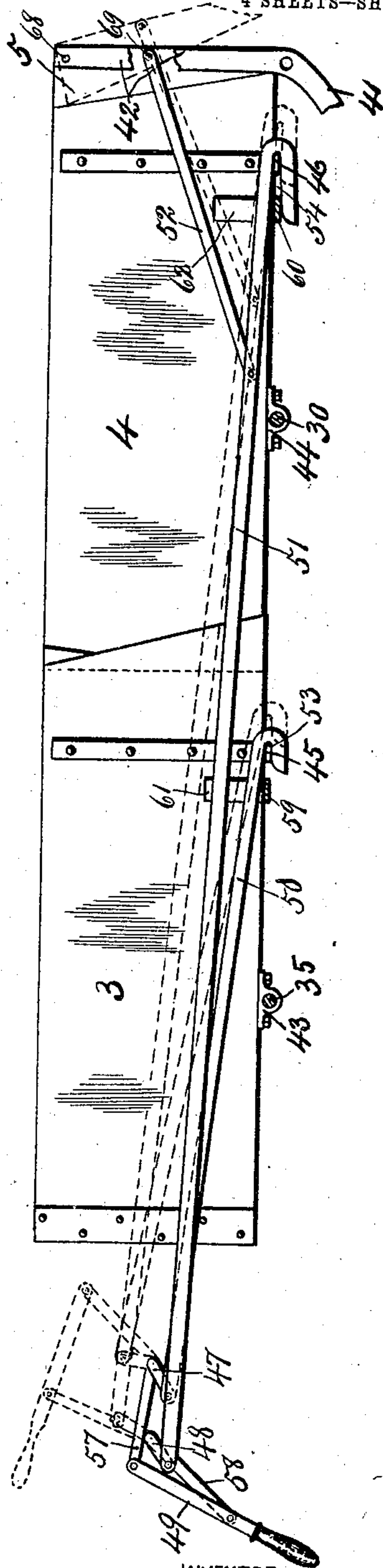


Fig. 5.

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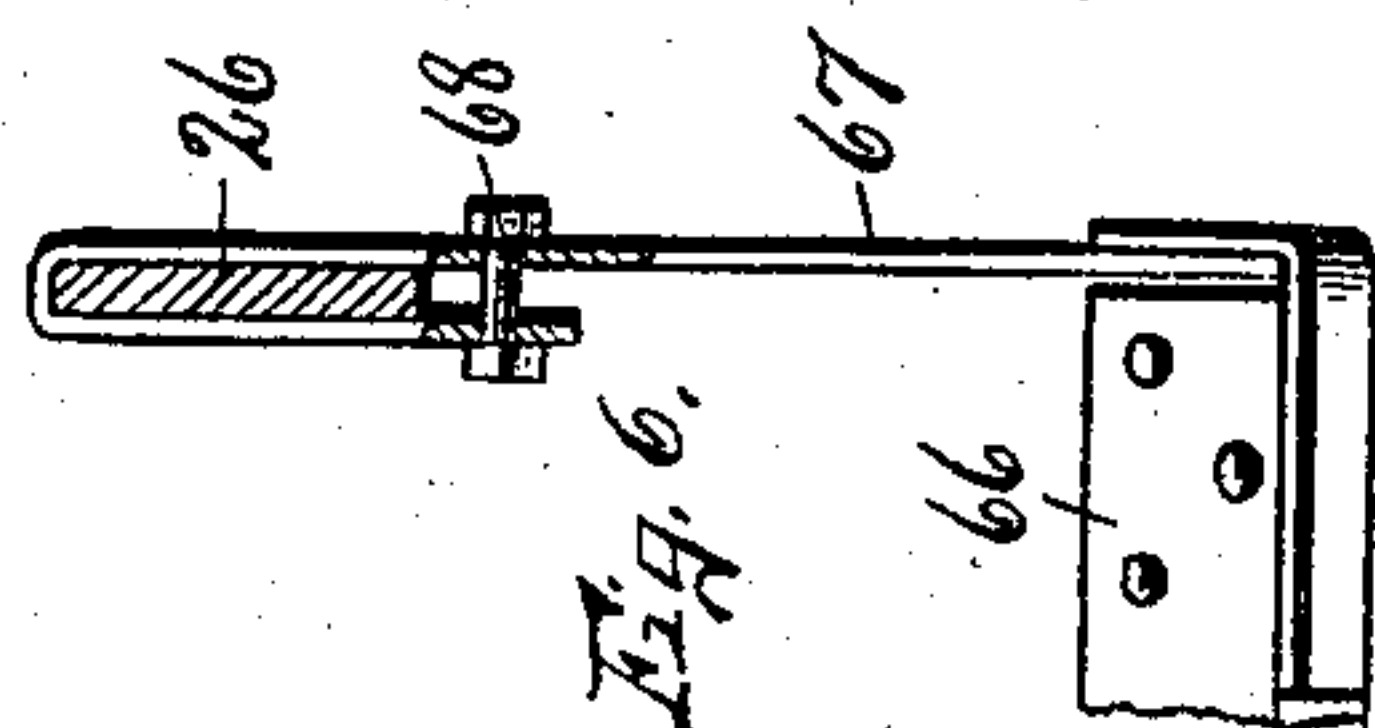


Fig. 6.

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UNITED STATES PATENT OFFICE.

JONAH D. WHITNEY, OF SYRACUSE, NEW YORK.

WAGON.

SPECIFICATION forming part of Letters Patent No. 725,307, dated April 14, 1903.

Application filed November 11, 1901. Serial No. 81,913. (No model.)

To all whom it may concern:

Be it known that I, JONAH D. WHITNEY, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and
5 useful Improvements in Wagons, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in
10 wagons, having more particular reference to dump-wagons.

The object of my invention is to produce a simple and durable dump-wagon provided with one or more tilting box-sections, which
15 may when desired be removed and the wagon used as an ordinary lumber-wagon adapted to receive any ordinary box, if desired.

In brief, the broad object of the invention is to produce a practical wagon, which is
20 adapted to any use to which a wagon may be applied.

A further object is to so construct and arrange the various parts of the wagon as to enable the operator to control the movement
25 of one or more tilting box-sections from the seat and to provide other means to render the wagon adaptable for general use either as a dump-wagon or for general utility.

To this end the invention consists in the combination, construction, and arrangement
30 of the several elements of the wagon, as hereinafter fully described, and pointed out in the claims.

In the drawings, Figures 1 and 2 are front
35 and rear perspective views of my improved wagon, the tilting box-sections being shown in their normal position in Fig. 1 adapted to receive and retain the load, while in Fig. 2 the box-sections are shown as tilted in the act
40 of dumping the load therefrom. Fig. 3 is a front perspective view of the truck and frame of the wagon seen in Figs. 1 and 2, the tilting box-sections and tail-board being removed. Fig. 4 is a top plan view of a portion
45 of the frame and the means for controlling the movement of the tilting box-sections, which are shown by dotted lines, the lengthwise intermediate portions of said parts being broken away. Fig. 5 is an elevation of
50 the tilting box-sections, tail-board, and the means for controlling the movement of the tilting box-sections and the tail-board. Fig.

6 is a vertical section taken on line 6 6 of Fig. 3. Fig. 7 is a transverse vertical sectional view through the fifth-wheel and adjacent
55 portions of the hounds and front axle, showing particularly the king-bolt and its bearings. Fig. 8 is a perspective view of the detached tail-board.

Similar reference characters indicate corresponding parts in all the views.

As seen in the drawings, this wagon consists of a truck 1, a superimposed frame 2, mounted upon the truck, tilting box-sections
60 3 and 4, mounted upon the frame, a tail-board 5, also mounted upon the frame, and means for controlling the movement of the tilting box-sections and tail-board.

The truck 1 may be of any desired construction, usually consisting of front and rear axles
70 6 and 7, having suitable wheels 8 and 9 journaled thereon, the front axle being provided with hound-bars 10, to which is pivotally connected in the usual manner a pole or tongue
11. The hounds are firmly secured to the
75 front axle in any desired manner and are provided with a cross-piece 12, Fig. 7, and the axle 6 is provided with a seat-block 13, interposed between the axle 6 and hounds, the axle
80 proper being usually formed of steel and the seat-block 13 is usually formed of wood. The transverse bar 12 and the seat-block 13 and axle 6 are secured together by a suitable clip
14, bolted to the cross-bar 12, this clip or U-shaped strap serving to stiffen the connection
85 between the hounds and axle. The bar 12 and seat-block 13 are provided with sockets 15, alined with each other for receiving a tube 16, which usually extends from the upper face
90 of the axle 6 to the upper face of the hounds or of the cross-piece 12.

Mounted upon the upper face of the hounds is one section 17 of a fifth-wheel, the other
95 section, 18, being secured to the frame 2 of the wagon. These sections 17 and 18 are provided with substantially center apertures for receiving a suitable king-bolt 19, the section 17 having a crowning upper bearing-face for the section 18, and the section 18 is provided
100 with a plate or block 20, a removable cap 21, said block and cap 20 and 21 being formed with a substantially spherical socket 22 for receiving a ball or spherical head 23 upon the upper end of the king-bolt 19, the shank of

the king-bolt being extended downwardly into the tube 16.

It is evident from the foregoing description that the upper section 18 of the fifth-wheel is free to rock upon the crowning-face of the section 17, the spherical head and socket permitting this rocking movement and serving to hold the sections 17 and 18 in their proper relative positions.

The purpose of the tube 16 is to provide a suitable bearing for the shank of the king-bolt 19, which permits the king-bolt to play vertically within the tube without liability of binding or unduly straining any of the adjacent parts, as the fifth-wheel sections rocked one upon the other. It might be stated here that when the king-bolt is arranged in the ordinary way—that is, inserted directly into the socket formed in the wood without any metal wearing-surface—the opening in the wood soon becomes enlarged by continually wearing and the king-bolt frequently catches or binds in its socket and prevents the free return of the king-bolt to its normal position when the fifth-wheel sections are rocked one upon the other. It has been found that by providing a metal wearing-tube for the shank of the king-bolt the king-bolt rides more freely in its opening in the hounds and prevents the straining or breakage of the king-bolt or adjacent members operating in conjunction therewith.

As previously stated, the pole or tongue 11 is pivoted at the hounds, said hounds being provided with suitable stop-shoulders 24, which are arranged at the opposite sides of the pivot 25, preferably beneath the pole, for preventing undue movement of the pole and hounds relatively to each other—as, for example, when the forward wheels enter a depression in the roadway or strike an obstruction or from any other cause which would tend to rock the hounds or the poles one upon the other.

The frame 2 is mounted upon the truck 1 and preferably consists of substantially parallel lengthwise bars 26, front and rear braces 27 and 28, and transverse tie-rods 29 and 30, the front braces 27 being mounted upon the plate 18, and the braces 28 are secured to the rear axle 7. Each of the braces 27 usually consists of a strap of iron having its opposite ends bent upwardly and then downwardly for forming slots or openings 31, which receive the forward ends of the side bars 26, said upper ends of the braces 27 being provided with apertures both above and beneath the adjacent ends of the side bars 26, the upper aperture being arranged to receive clamping-bolts 32, and the lower apertures are arranged to receive the opposite ends of the transverse tie-rods 29, these tie-rods 29 being formed with inner and outer lock-nuts 33, which, together with the clamping-bolt 32, serve to firmly clamp the upper ends of the braces to the adjacent ends of the lengthwise bars 26, thereby firmly holding the bars 26 in

position. In like manner the rear brace 28 is secured to the adjacent portions of the side bars 26, said brace 28 being formed with apertures above and beneath the said side bars 26 for receiving clamping-bolts 34 and the tie-rod 30, this latter tie-rod being provided with inner and outer lock-nuts, which, together with the clamping-bolt 34, serve to firmly clamp the brace 28 to the side bars 26. In order to further stiffen the side bars 26 of the frame 1, I provide additional tie-rods 35, 36, and 37, which are secured to the side bars 26 by suitable clips 38, 39, and 40, each of these clips consisting of a strap of iron bent upon the side bars 26 and extending beneath their lower faces, the lower ends of said clips being provided with apertures for receiving the opposite ends of the tie-rods 35, 36, and 37, which are arranged in substantially the same plane as the tie-rods 29 and 30 beneath the lower edges of the side bars 26, said tie-rods 35, 36, and 37 being provided with lock-nuts for firmly clamping the clips upon their respective side bars and serve to hold the tie-bars in their adjusted position. The rear ends of the side bars 26 extend a considerable distance beyond the rear axle 7 and are secured to said axle by suitable braces 41, having their rear ends perforated for receiving the opposite ends of the tie-rod 37, said rear ends having upwardly-extending arms 42 for receiving and supporting the tail-board 5, presently described.

It is evident from the foregoing description that the side bars are free from apertures or other cut-outs which would tend to weaken the material and that by loosening the lock-nuts which hold clips on the tie-bars 29, 30, 35, 36, and 37 the bars 26 may be readily moved endwise when desired to remove or adjust the frame-bars 26.

The front and rear tilting box-sections 3 and 4 are pivotally mounted, respectively, upon the tie-rods 35 and 30, being substantially balanced thereon and having their bottom walls provided with substantially central boxes or bearings 43 and 44 for receiving the tie-rods 35 and 30. It is understood, however, that although these sections are pivoted at substantially central portions they are so arranged as to dump or tilt rearwardly automatically between their pivotal rods and the rods 36 and 37, respectively, the pivotal bearings of said sections being slightly in front of the central portions of their bottom walls. These box-sections are preferably formed of sheet metal and are open at their rear end, the front section having its bottom and side walls extending rearwardly beyond the front ends of the bottom and side walls of the rear section and preferably at the outer sides of the front end of the rear section, and it is thus evident that the rear end of the bottom wall of the front section forms a suitable stop for the front end of the rear section and that the front end wall of the rear section forms the rear end wall of the front section.

The sections 3 and 4 are provided with stop-shoulders 45 and 46, arranged at the rear of their supporting-rods 35 and 30 and preferably in a plane substantially coincident with or slightly beneath the bottom walls of their respective sections, each of these shoulders 45 and 46 being formed on the lower ends of suitable straps secured to the side walls of their respective box-sections and project laterally from said side walls for engaging the lower faces of the lengthwise bars 26 for limiting the upward or return movement of the tilting box-sections to their normal positions.

The means for controlling the movement of the tilting box-sections 3 and 4 and tail-board 5 consists of crank-shafts 47 and 48, an operating-lever 49, and links 50, 51, and 52, the links 50 and 51 being provided with open-ended slots 53 and 54 for receiving the shoulders 45 and 46 and holding the box-sections in their normal position. The crank-shafts 47 and 48 are journaled in suitable bearings mounted upon the front end of the frame 2, these bearings being preferably formed in spring-seats 55 for the seat 56, the supporting-frame for said seat being detachably mounted upon the front tie-bars 29 in any suitable manner not necessary to herein illustrate or describe.

I preferably provide the opposite ends of each of the crank-shafts 47 and 48 with suitable crank-arms, which are connected to the links 50 and 51, arranged in pairs at the opposite sides of the box-sections and preferably between the box-sections and adjacent side bars 26. Secured to these crank-shafts 47 and 48 are additional arms 57 and 58, the operating-lever 49 being detachably connected to the free ends of the arms 57 and 58, whereby the links 50 and 51 may be operated either simultaneously or independently of each other for locking or releasing the tilting box-sections.

Secured to the opposite frame-bars 26 are clips 59 and 60, which are securely clamped to their respective side bars, one pair in advance of the other, and are each provided with upwardly-extending arms 61 and 62 for forming guides and supports for the links 50 and 51. These clips also consist of metal straps folded upon the side bars 26 and having their lower ends extended beneath the lower edges of the said side bars and are perforated for receiving suitable clamping-bolts beneath the side bars and adapted to firmly clamp the clips thereon, at the same time permitting the clips to be adjusted lengthwise of the side bars 26 when desired. The front end of the front box-section is provided with a suitable handle 64, by which the operator may return the front box-section to its normal position, this front section being connected to the rear section by a chain or other flexible connection 65, which automatically returns the rear box-section to its normal position when the front box-section is returned.

Adjustably mounted upon and preferably

in a plane beneath the side bars 26 is a stop-bar 66, extending transversely of the frame and having its opposite ends provided with upwardly-extending arms 67, the upper ends of which are around the side bars 26 and are provided with apertures for receiving clamping-bolts 68, said apertures and clamping-bolts being beneath the edge of the frame-bars 26, the clamping-bolts serving to firmly hold the stop-bar in its adjusted position and at the same time permitting said stop-bar to be moved lengthwise of the bars 26 for limiting the tilting movement of the front box-section for the purpose of dumping at different angles—as, for instance, when it is desired to use my dump-box section for conveying and dumping broken stone, coal, or similar material the stop-bar would be moved rearwardly for dumping at a less angle than would be necessary if the device were used for conveying and dumping wet clay or other adhesive material.

If desired, the rear box-section may also be provided with an adjustable stop-bar similar to the stop-bar 66; but I preferably adjust the chain 65 so that the rear box-section may dump at the same angle as the front section or at a different angle, as may be desired.

The tail-board 5 is preferably box shape, with its open end toward the rear box-section 4 for closing the open end of the said rear box-section, and is pivotally mounted upon the upper ends of the arms 42 in such manner as to telescope with the open rear end of the box-section 4 when in its normal position, the lower end wall of said tail-board being normally extended under the rear end of the bottom wall of the section 4 for forming a complete closure for said section 4 and preventing the escape of any material which may be conveyed therein. This lower wall of the tail-board forms no support for the tilting section 4 and is entirely free to move into and out of its normal position without liability of binding upon the adjacent walls of the section 4.

The means for rocking the tail-board upon its pivot 68 consists of the link 52, which is connected at one end to one of the other links, as 51, its other end being adjustably connected to the tail-board at 69, said tail-board being provided with a series of apertures 70 for receiving a pivoted pin 71 upon the link 52, this adjustment permitting of a greater or less throw of the tail-board as the link 51 is moved back and forth. The connection 52 between the link 51 and tail-board is so arranged as to move the bottom wall of the tail-board out from under the tilting box-section 4 before said box-section is released, so that the bottom walls of the section 4 and tail-board will not catch or bind one upon the other, and the link 50 is also so arranged as to release and dump the front section 3 before the rear section is released, this difference in time of the release of the sections 3 and 4 being effected by the lengths of the

slots which receive the shoulders 45—that is, the slot in the link 50 being shorter than the slot in the link 51, so that the lower wall of the slot of the link 50 moves out of the path of the shoulder 45 before the lower wall of the slot in the link 51 is out of the path of the shoulder 46, this position being indicated by dotted lines in Fig. 5.

It is evident from the foregoing description and by reference to Fig. 5 of the drawings that the link 50 normally rests upon the lower end of the arm 61 and that the link 51 normally rests upon the lower end of the arm 62, thus preventing the downward movement of said links, and that when the links are in their normal position the lower walls of the slots which receive the shoulders 45 and 46 hold the sections 3 and 4 from tilting.

In the operation of the means for controlling the movement of the tilting box-sections and also the tail-board 5, assuming that the parts are in their normal position and it is desired to dump the load, the operator raises the lever 49, and thereby rocks the crank-shafts to the dotted position seen in Fig. 5, in which position the front box-section is released and the tail-board is rocked out of the path of the rear end of the box-section 4. In the continued movement of the lever 49 the rear box-section is released and the tail-board is elevated to the position seen in Fig. 2, the box-sections 3 and 4 being free to move to the positions seen in said Fig. 2.

The operation of my invention will now be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be noted that some change may be made in the detail construction and arrangement of the various parts of the wagon without departing from the spirit of this invention. Therefore I do not limit myself to the precise construction and arrangement shown and described.

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

1. In a dump-wagon, the combination with a frame and having imperforate side bars, clips clamped upon the bars, a tie-rod connecting the clips, a tilting box pivotally mounted on the tie-rod, arms depending from and adjustable along the side bars toward and from the clips, and a stop-bar uniting the lower ends of the arms beneath the tilting end of the box for the purpose set forth.

2. The combination with the frame of a wagon having lengthwise side bars, of a tilting box-section mounted on the side bars and extending under the box-section, and a stop adjustably mounted on the frame for limiting the tilt of the box at different angles.

3. The combination with the frame of a wagon, of a box-section, hinged to the frame, and a stop-bar adjustable toward and away from the hinge connection of the box to limit the tilt of the box at different angles.

4. In a dump-wagon, a frame, guides on

the frame, tilting box-sections mounted end to end on the frame and pivoted with stop-shoulders at the rear of the guides, separate links movable in the guides and having open-ended slots receiving the stop-shoulders, for the purpose set forth.

5. In a wagon, a frame having opposite side bars, a guide on one of the bars, a tilting box-section having a shoulder engaging the bars, and a movable member sliding in the guide and having an open-ended slot to receive said shoulder for locking and permitting the release of the box-sections.

6. In a wagon, the combination with tilting box-sections each having a shoulder, of sliding members having open-ended slots of unequal length to receive said shoulders for locking and permitting the release of one of the box-sections before the other is released, and means connecting said members to simultaneously actuate the same.

7. In a dump-wagon, a frame, guides on the frame, tilting box-sections mounted end to end on the frame and pivoted with stop-shoulders at the rear of the guides, separate links movable in the guides and having open-ended slots receiving the stop-shoulders, separate crank-arms connected to the links, and an operating member connected to rock said arms simultaneously.

8. In a dump-wagon, a frame, guides on the frame, tilting box-sections mounted end to end on the frame and provided with stop-shoulders at the rear of the guides, separate links movable in the guides and having open-ended slots receiving the stop-shoulders, the slot in one link being shorter than the other slot, separated crank-arms connected to the links, and an operating member connected to rock the arms simultaneously.

9. In a dump-wagon, a frame, guides on the frame, tilting box-sections mounted end to end on the frame and provided with stop-shoulders at the rear of the guides, separate links movable in the guides and having open-ended slots receiving the stop-shoulders, a tail-board pivotally mounted on the frame, and an additional link connecting one of the former links to the tail-board for rocking the same before the former links are disengaged from the stop-shoulders on the box.

10. The combination with a tilting wagon-box, a tail-board pivotally mounted independent of the box, and means separate from the box to rock the tail-board out of operative position.

11. A tilting wagon-box, and a rocking tail-board mounted independently of the box, and having a lower wall normally extending under the bottom wall of the box, and means independent of the tail-board for holding the box from tilting and to permit the tail-board to be rocked without releasing the box.

12. In a wagon, tilting boxes arranged end to end, a rocking tail-board for the rear box mounted independently thereof, an operating member connected to hold the boxes, and

tail-board in their normal positions and connected to first rock the tail-board and to successively release the boxes for the purpose set forth.

5 13. In a wagon, a frame and a tilting box mounted thereon and provided with a stop-shoulder to engage the frame and limit the return movement of the box to its normal position, a guide on the frame and a manually-
10 operated sliding member movable in the guide and having an open-ended slot receiving the stop-shoulder for the purpose described.

14. A frame for dump-wagons comprising
15 lengthwise side bars having opposite clips adjustably secured thereto, and transverse bars connecting opposite clips.

15. A frame for dump-wagons comprising
20 lengthwise side bars having opposite clips adjustably secured thereto, and transverse bars connecting opposite clips in a plane beneath the side bars.

16. In a dump-wagon, a frame comprising
25 lengthwise side bars, front and rear supporting-braces having upturned ends provided with slots receiving the opposite ends of the lengthwise bars, transverse tie-rods uniting the upturned ends of the braces, and tilting
30 box-sections mounted on the frame and swinging between the side bars.

17. In a dump-wagon, a frame comprising
lengthwise side bars, a brace having upturned ends provided with slots receiving the side bars, a transverse tie-rod connecting the up-
35 turned ends of the brace, a tilting box-section journaled on the tie-bar and means to tilt the box.

18. In a dump-wagon, a frame comprising
40 lengthwise side bars, a brace having upturned ends provided with slots receiving the side bars, a transverse tie-rod connecting the upturned ends of the brace, a tilting box mounted on the tie-rod and provided with oppositely - projecting shoulders engaging the
45 lower edges of the side bars, clips secured to the bars in proximity to points of engagement by said shoulders and links movable in

the guides and having open-ended slots receiving the shoulders.

19. In a dump-wagon, a frame comprising 50
lengthwise side bars, a brace having upturned ends provided with slots receiving the side bars, a transverse tie-rod connecting the upturned ends of the brace, a rearwardly-tilting box mounted on the tie-rod and provided 55
with a shoulder, arms rising from the rear ends of the side bars and secured thereto, a box-shaped tail-board pivotally mounted on said arms and normally telescoping with the rear end of the box, a link having an open- 60
sided slot receiving said shoulder and connected to the tail-board to open and close the same as the link is moved into and out of engagement with said shoulder, and means to
65 move the link.

20. In a dump-wagon, the combination with
opposite lengthwise side bars, front and rear braces having upturned ends provided with slots receiving the side bars, transverse tie- 70
rods connecting the upturned ends of the braces, clips secured to the rear ends of the side bars at the rear of the rear brace, separate pairs of clips secured to the side bars intermediate the front and rear braces, tie-rods 75
connecting the corresponding pairs of clips, a tilting box-section mounted on one of the intermediate tie-bars and having its front end normally resting on the front tie-rod and its rear end swinging between the intermediate rods, a second box-section mounted on the 80
tie-rod of the rear brace and having its front end normally resting on the other intermediate rod and its rear end tilting between its supporting-rod and the extreme rear tie-rod, a tail-board separate from the box-sections, 85
and means to operate the box-sections and tail-board.

In witness whereof I have hereunto set my hand on this 7th day of November, 1901.

JONAH D. WHITNEY.

Witnesses:

MILDRED M. NOTT,
HOWARD P. DENISON.