No. 740,909. PATENTED OCT. 6, 1903.

O. T. PATTERSON.

ROAD SCRAPER.

APPLICATION FILED MAY 29, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

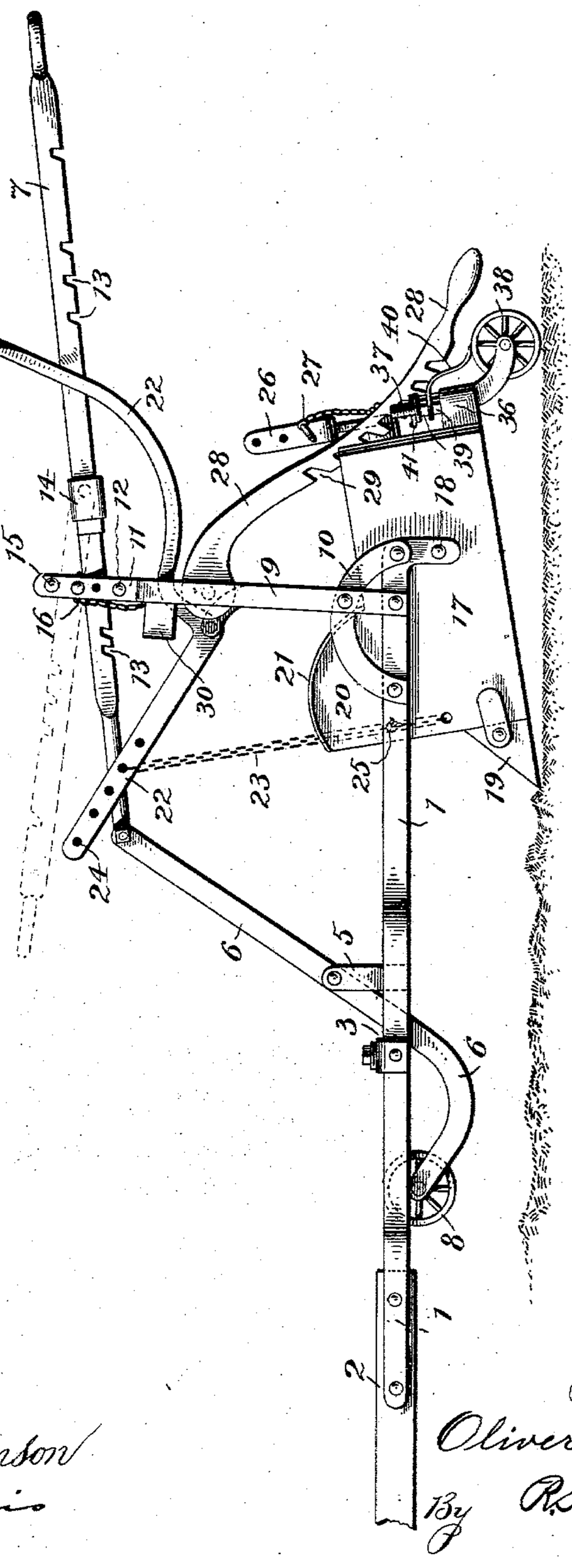

Fig. 1.

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NO MODEL. 3 SHEETS—SHEET 2.

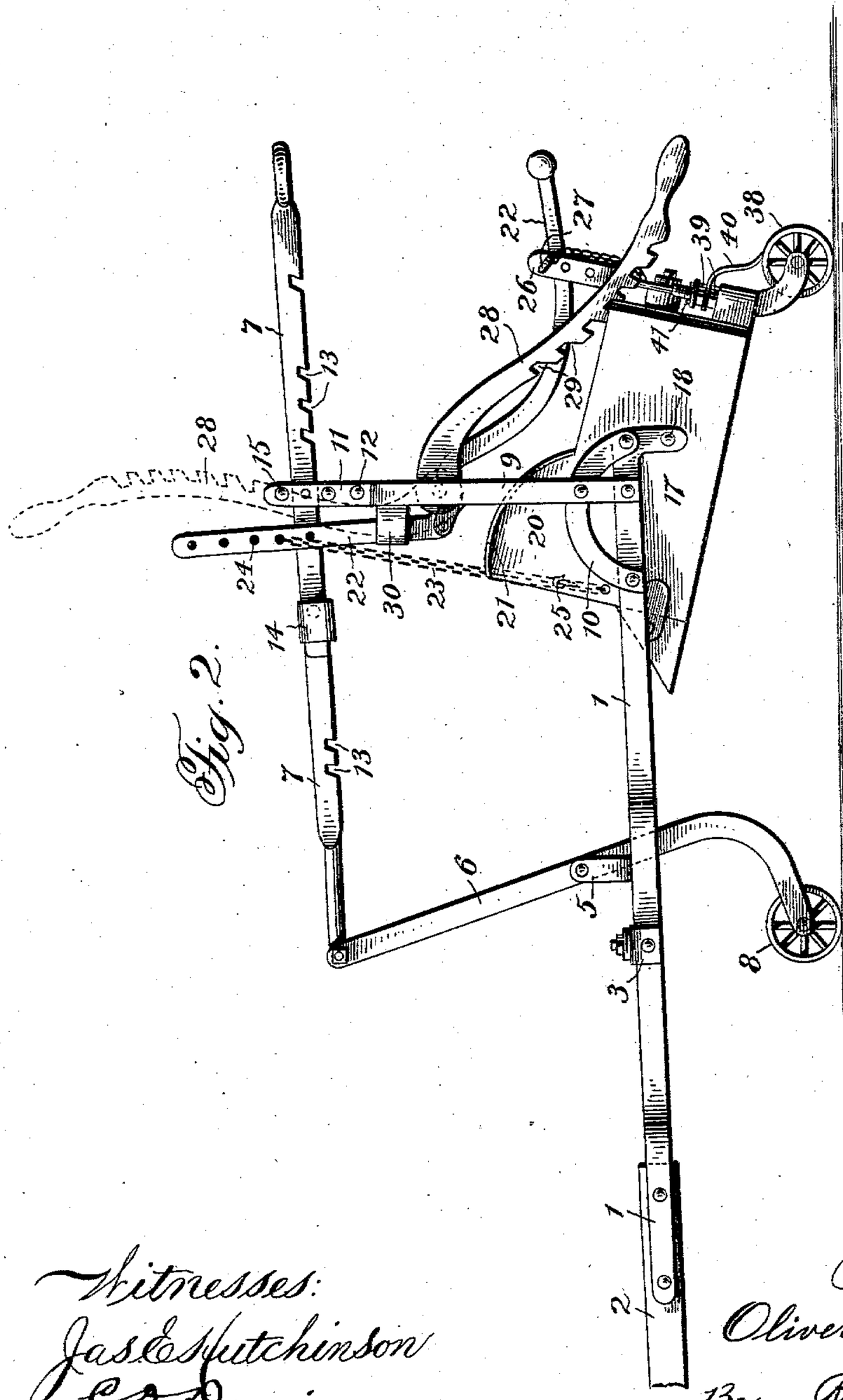

Fig. 2.

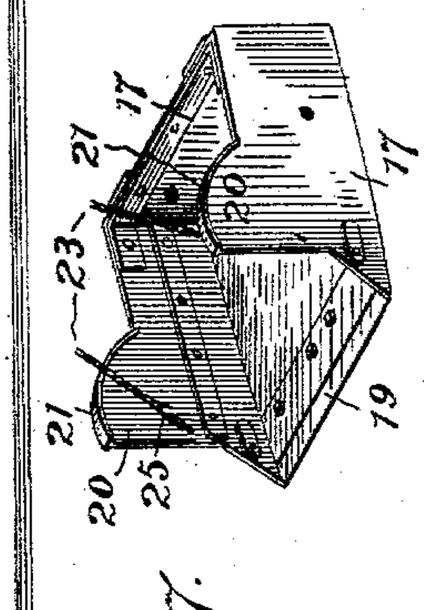

Fig. 7.

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NO MODEL. 3 SHEETS—SHEET 3.

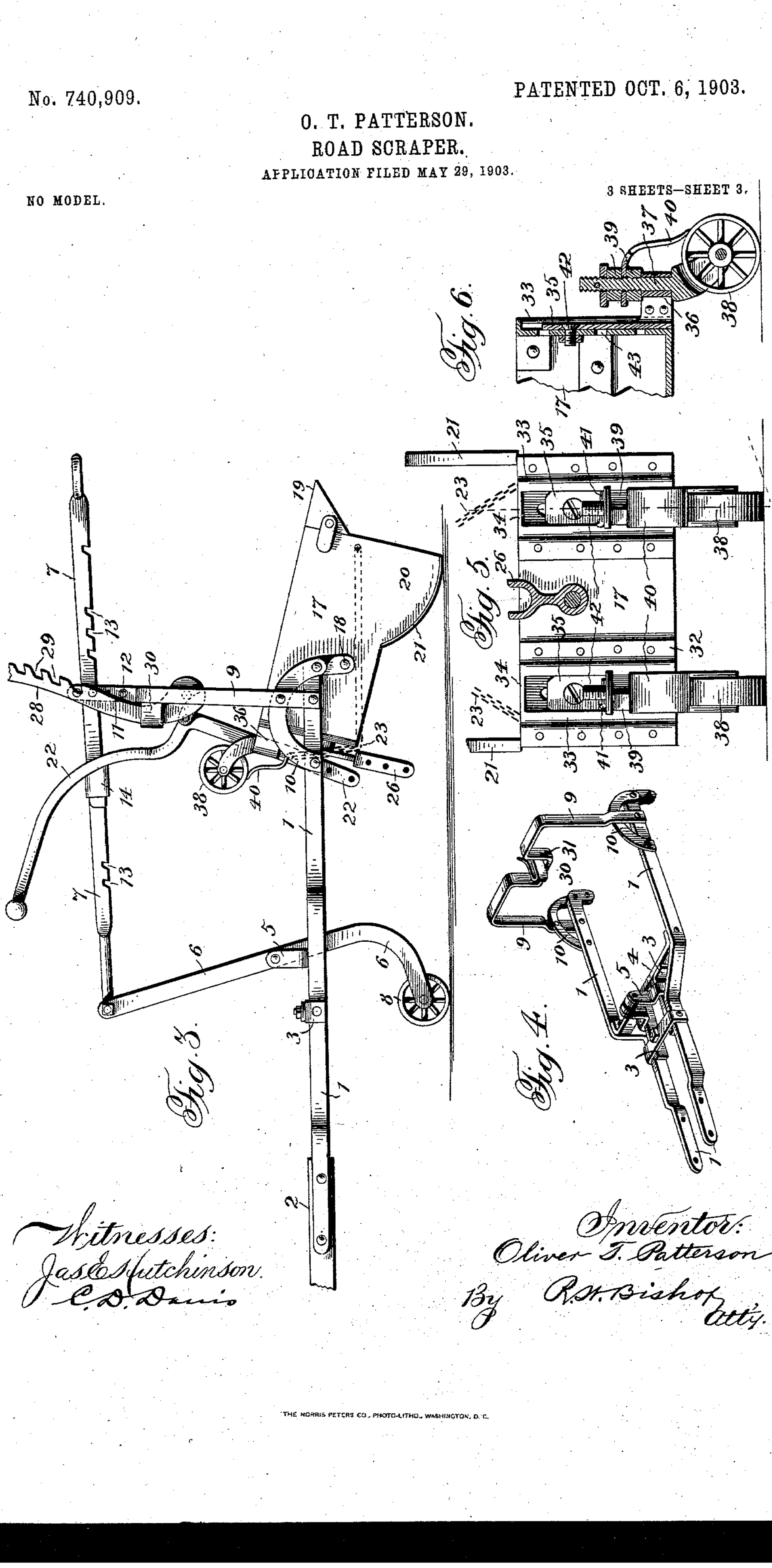

Fig. 3.

Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE.

OLIVER T. PATTERSON, OF BLOOMINGTON, NEBRASKA.

ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 740,909, dated October 6, 1903.

Application filed May 29, 1903. Serial No. 159,254. (No model.)

To all whom it may concern:

Be it known that I, OLIVER T. PATTERSON, a citizen of the United States of America, residing at Bloomington, in the county of Franklin and State of Nebraska, have invented certain new and useful Improvements in Road-Scrapers, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to wheeled scrapers, and aims to provide a scraper which will be simple in construction, which can be easily manipulated, and which will be efficient in operation.

To this end the invention consists in certain novel features of the device illustrated in the accompanying drawings, as will be hereinafter first fully described and then particularly pointed out in the claims.

In the drawings just mentioned, Figure 1 is a side elevation of a wheeled scraper constructed in accordance with my invention, showing it at work. Fig. 2 is a similar view showing the scraper adjusted to carry a load to the dumping-point. Fig. 3 is a similar view showing the scraper dumped. Fig. 4 is a detail perspective view of the frame. Fig. 5 is a rear elevation of the scoop. Fig. 6 is a detail vertical section of the mounting for one of the rear wheels, and Fig. 7 is a detail perspective view of the scoop.

The frame of my machine is constructed of metal bars, and to and between the front ends of the main bars 1 a tongue 2 is secured. These main bars diverge at about their centers and are then carried rearward in parallel planes to pass on opposite sides of the scoop, which is pivotally mounted between their rear ends. Transverse braces 3 are secured to and extend between these main bars in front and in rear of the diverging portions of the same, and between these braces extend supports 4, on which are erected short posts or standards 5. A swinging wheel-support 6 is pivotally mounted between the upper ends of these posts and extends some distance above the same, a push-rod or handle 7 being pivoted to its upper end and extended rearward therefrom over the machine. The lower end of this wheel-support 6 is bent forward, as clearly shown, and the front wheel 8 is mounted in its forked extremity. Rising from the main bars 1 of the frame, near the rear ends thereof, is an arch 9, the sides of which are secured to said bars and are braced by arcs 10, as shown. On the upper side of the shoulder or cross-bar of the arch is erected a guide 11, through which the push-rod 7 passes. This guide is provided with a horizontal pin or rest 12, over which the push-bar passes and which may be engaged by one of a series of notches 13 in the lower edge of the push-bar to hold the same in its adjusted position. As shown in the drawings, this push-bar is preferably made in two sections pivoted together and provided with a slidable coupling sleeve or collar 14. When this coupling is over the pivotal connection of the sections, they are held rigidly in alinement; but if the coupling be moved away from the pivot the rear section of the push-bar may be folded forward out of the way of the operator and be supported by a rest 15 in the guide 11, similar to the rest 12. In order to hold the push-bar against any liability of slipping when the front wheel is lowered and the loaded scoop is being carried to the dump, I provide a key or latch 16, which may be inserted through the guide 11 and a perforation in the body of the push-bar, as will be readily understood.

The scoop 17 is mounted between the main bars 1 of the frame by pivot-bolts 18, inserted through its sides and the extremities of said bars, the points of attachment being in rear of the center of the scoop, so that the front edge of the scoop will normally drop and cut into the ground. The scoop is in the form of a rectangular box having an open front and top, and to the front edge of its bottom I secure a steel blade 19, having upturned ends, which are attached to the sides of the scoop. The upturned ends of the blade are specially advantageous when the device is being used for ditching or to cut close to a hill, and the cutting edge may be straight or forked, as desired. On the upper edges of the scoop, at the front ends thereof, I form or secure the shoes 20, which have curved upper edges on which are secured the broad treads 21. The front edges of these shoes are continuations of the

front edges of the scoop and form sharp corners at their junctions with the treads.

A hoisting-lever 22 is fulcrumed on the cross-bar or shoulder of the arch and is connected at its front end with the front end of the scoop by a chain 23, passing through one of a series of openings 24 in the lever and having its ends attached to the sides of the scoop at the front ends of the same. In order to provide for a quick adjustment of the chain, I prefer to have a hook 25 at one side engaged in one of the chain-links. A decided shortening of the chain is desirable if the exigencies of the work require the scoop to be dumped backward. The rear or operating arm of the hoisting-lever is adapted to enter a fork 26, which is pivotally secured on the back of the scoop, and a keeper-pin 27 is adapted to be inserted through the fork over the said lever to hold the scoop in its raised position. To prevent dumping of the scoop while it is being loaded, I provide a locking bar or latch 28, which is pivotally mounted on the arch of the frame and is adapted to extend rearward and downward therefrom over the back of the scoop, its under edge having a series of notches 29, with one of which the back edge of the scoop engages. When it is desired to dump the scoop, this locking-bar is raised into engagement with a spring-clip 30, by which it is held in its raised position. This clip is secured on the cross-bar of the arch, which is provided with a depressed portion 31 to permit the arrangement of the clip and the pivoted end of the locking-bar in their proper relative positions.

On the back of the scoop are secured vertical cleats or guides 32, in which are mounted adjustable brackets 33, and stops 34 are formed on the back of the scoop at the upper ends of the guides to limit the upward movement of the said brackets. Each bracket consists of a vertical plate 35, having its edges engaged under the guides or cleats and a box or bearing 36 at the lower end of the plate in which is mounted a spindle 37, having a forked lower end, a carrying-wheel 38 being journaled in said forked end. The upper portion of the spindle is threaded, and nuts 39 are mounted thereon. These nuts carry between them a blade or cleaner 40, which extends down to and bears on the periphery of the wheel 38, so as to scrape therefrom all accumulated dirt, and thereby prevent clogging. In order to prevent the nuts working up and off the spindle, I insert a key 41 through the spindle above the nuts, as shown. A bolt 42, carried by the plate 35 and adapted to engage one of a series of openings 43 in the back of the scoop, serves to secure the bracket in its adjusted position.

The construction and arrangement of the several parts of the machine being thus made known, the operation will be readily understood. When the device is at work—*i. e.*, is scraping a road or field—the parts are arranged as shown in Fig. 1, the front carrying-wheel 8 being thrown up between the draft-bars 1 and the scoop being lowered, so that the blade secured to its front edge will take into the ground. In this position the machine is drawn over the ground and the surface thereof will be cut off, as will be readily understood, the dirt thus removed passing up into the scoop. The locking-bar 28 engages the back of the scoop and prevents the same rising, so that the scoop cannot swing under the influence of the draft applied thereto, but will be forced to go forward, removing and taking up the obstacles in its path. The operator follows behind the scoop and maintains a slight downward pressure on the rear end of the hoisting-lever, so as to hold the scoop at the proper grade. When the scoop has been filled, the push-bar 7 is shoved forward, thereby throwing the front carrying-wheel 8 down to the ground. The scoop is thus lifted slightly, so as to be out of contact with the ground, and the hoisting-lever is then thrown into the position shown in Fig. 2, so as to raise the front end of the scoop, as clearly shown. The back of the scoop will ride down the locking-arm and engage a lower notch therein, and the end of the hoisting-lever is held by the keeper-pin 27, as before described. The scoop will thus be held positively against all movement on its pivotal connection with the draft-bars, so that the load may be safely carried to any part of the field or down a hill without any liability of accidental dumping. When the loaded scoop has been hauled to the point where it is to be dumped, the locking-bar is thrown up, as shown in dotted lines in Fig. 2 and in full lines in Fig. 3, and will be held in this position by the spring-clip 30. The hoisting-lever is also released from the keeper-pin, when the scoop will at once drop to the ground, and as the team moves forward the front of the scoop will serve as a fulcrum on which it will swing over into the inverted position shown in Fig. 3, discharging its contents, and riding on the shoes 20. When the scoop has been drawn forward clear of the dump, if the team be backed the corners of the shoes 20 will take into the ground and act as fulcrums on which the scoop will be returned to its initial position. It frequently happens in actual practice that the load must be dumped over the edge of an embankment, so that the scoop cannot be emptied by the forward movement just described. In this emergency the hook 25 is engaged in a higher link of the chain 23, so that the hoisting-lever will have a greater sweep and will consequently raise the front end of the scoop to a higher point when it is manipulated by the operator. After the scoop has been thus raised if the machine be backed against a stop on the edge of the embankment the scoop will be turned over and the load discharged backward. It will be understood, of course, that the yoke or fork 26 is turned to one side before the dumping operation is

performed in order to offer no resistance to the discharge of the load or to clear the arch as the scoop swings over.

It will be observed that the rear carrying-wheels are behind the scoop, so that it may be worked close to the side of a hill, and as these wheels run over nearly level ground the scoop can be kept at the desired angle for work with very slight effort on the part of the operator and strain on the draft-animals. These wheels may be adjusted to any desired height, so as to cause the scoop to run at a greater or less angle. The nuts 39 can be turned down hard on the box 36, so as to hold the wheels rigid, and thus aid in keeping the device to a straight line, or they may be loosened to permit the wheels to turn freely from side to side and consequently facilitate the turning of the machine when it is being hauled from place to place. When the scrapers 40 are worn so as to be no longer efficient, they may be readily removed over the tops of the spindles 37 and new ones substituted. When the front carrying-wheel is lowered, the continued forward draft on the machine causes the said wheel to serve as a fulcrum on which the team raises the scoop, so that very little labor is required to lift the scoop to the position shown in Fig. 2. When the scoop is in this position, no dirt can spill from the scoop even when it is being carried downhill. When the front carrying-wheel is drawn up between the draft-bars, it is out of the way of any large stones or other obstructions in its path sharp contact with which would tend to injure or destroy it. The blade is detachably secured to the front edge of the scoop, so that it may be easily removed for sharpening or the substitution of a new blade for one that is worn out. This detachability furthermore facilitates the use of different blades having varying contours in their front edges according to the work to be done.

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

1. In a wheeled scraper, the combination with the frame, of a carrying-wheel adapted to be swung down below the same or up between the draft-bars thereof.

2. In a wheeled scraper, the combination with the frame, of a swinging wheel-support fulcrumed thereon, a carrying-wheel mounted on the lower end of said support, and a push-bar pivoted to the upper end of the same and adapted to engage the frame.

3. In a wheeled scraper, the combination with the scoop, of carrying-wheels adjustably mounted on the back of the same.

4. In a wheeled scraper, the combination with the scoop having vertically-disposed guides on its back end, of brackets adjustably mounted in said guides, and carrying-wheels mounted in the lower ends of said brackets.

5. In a wheeled scraper, the combination with the scoop, of brackets adjustably secured on the back of the same, spindles journaled in said brackets, carrying-wheels mounted in the lower ends of said spindles, and cleaners secured on the upper portions of the spindles and bearing on the said wheels.

6. In a wheeled scraper, the combination with the frame, and the scoop pivotally hung therein, of a locking-bar pivoted on the frame above the scoop and adapted to engage the upper edge of the back end of the scoop to prevent dumping of the same.

7. In a wheeled scraper, the combination with the frame, and the scoop pivotally hung therein, of a locking-bar mounted on the frame above the scoop and adapted to engage the back end of the scoop, and a clip secured on the frame above the pivot of said bar and adapted to receive and hold said bar in its raised position.

8. In a wheeled scraper, the combination with the frame, and the scoop pivotally hung therein, of a hoisting-lever fulcrumed on the frame above the scoop, a chain attached to the front end of the scoop and adjustably secured to the front end of the hoisting-lever, and means for locking the rear end of the lever to the rear end of the scoop.

9. In a wheeled scraper, a scoop provided with shoes on its sides at its front ends, the said shoes having angular corners at the upper extremities of their front ends.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

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Witnesses:

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