

(No Model.)

2 Sheets—Sheet 1.

J. A. TAYLOR.
ROAD SCRAPER AND CARRIER.

No. 555,270.

Patented Feb. 25, 1896.

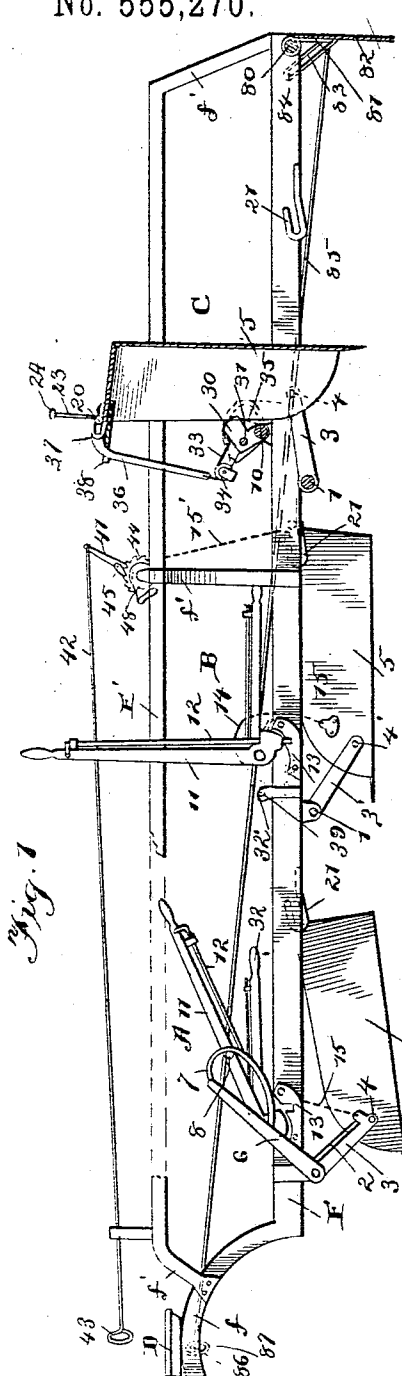


Fig. 1

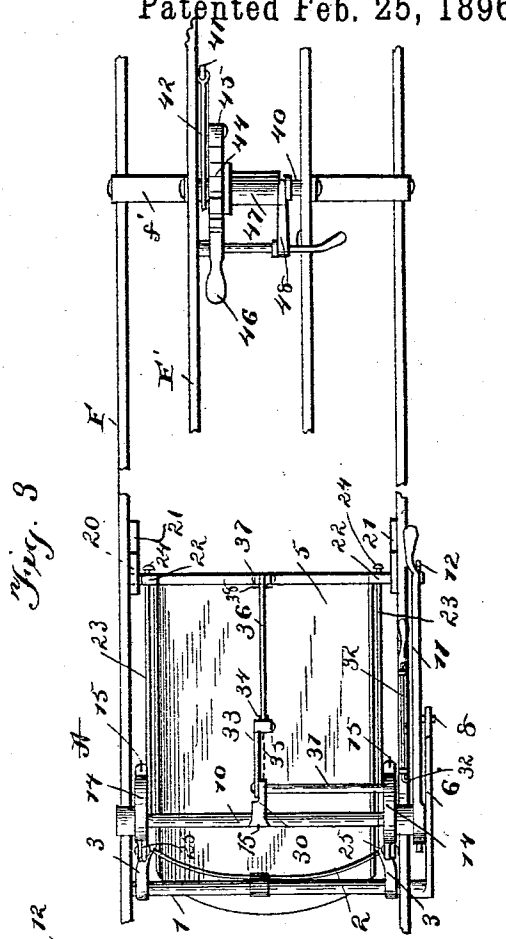


Fig. 3

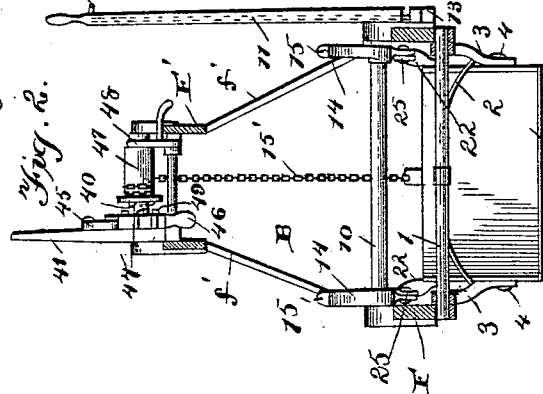


Fig. 2

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

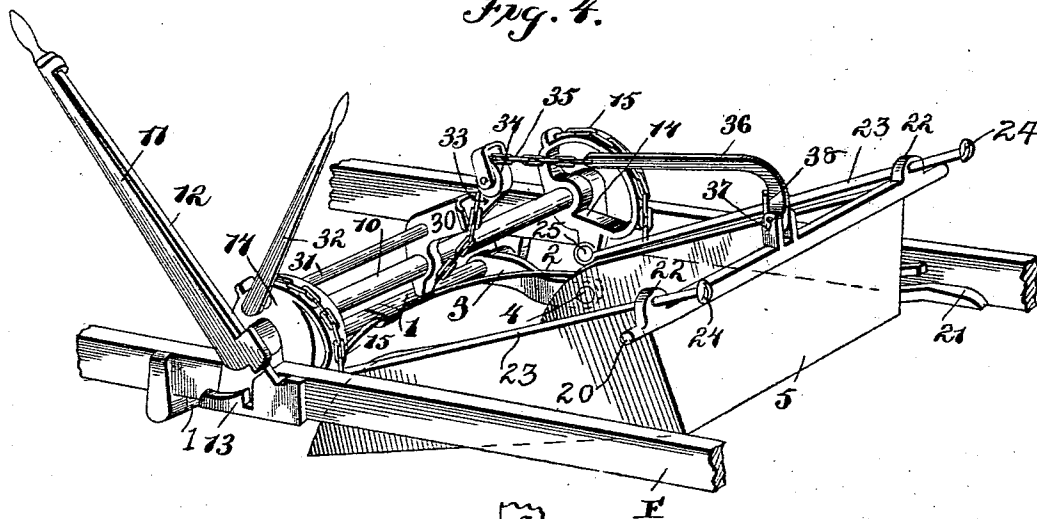
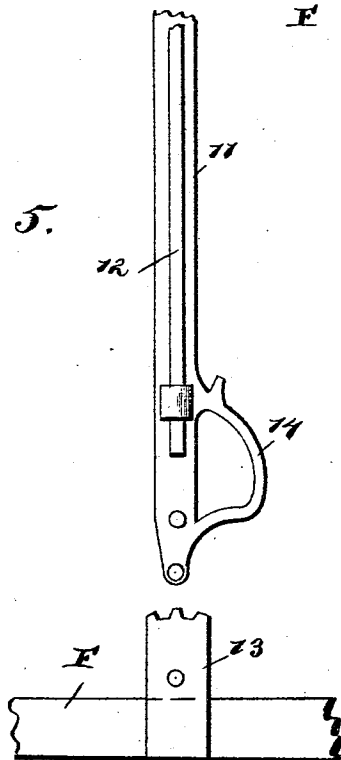


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES A. TAYLOR, OF LIMA, INDIANA, ASSIGNOR OF ONE-HALF TO
CHARLES S. NICHOLS, OF SAME PLACE.

ROAD-SCRAPER AND CARRIER.

SPECIFICATION forming part of Letters Patent No. 555,270, dated February 25, 1896.

Application filed May 31, 1895. Serial No. 551,199. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. TAYLOR, a citizen of the United States, and a resident of Lima, La Grange county, State of Indiana, have invented certain new and useful Improvements in Road-Scrapers and Carriers, (Case A;) and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with claims particularly specifying the novelty.

This invention relates to road-scrappers and carriers, and more especially to that class thereof known as "self-loading" carts; and the object of the same is to produce improvements in the details of construction of devices of this character.

To this end the invention consists in a road-scraper constructed substantially as hereinafter described and claimed, and as shown in the accompanying drawings.

Reference is made to a companion application filed this day and bearing Serial No. 551,200, wherein is shown, described, and claimed a scraper of slightly-different construction than that herein set forth, and a leveling-board to be used at the rear end of the machine, as shown and described, but not claimed herein. No claim is made in the present application to the details claimed in said companion application, and vice versa.

Referring to the accompanying drawings, Figure 1 is a longitudinal section, partly in side elevation, showing the front scraper, A, in side elevation in the act of scraping, and illustrating the employment of the slotted lever; the second scraper, B, in side elevation as raised to a carry and dispensing with the slotted lever, and to the dumping-lever being here added an overhead windlass, and the third scraper, C, in section, with its forward end still further raised by the main lever, and its body dumped by the dumping-lever. Fig. 2 is a cross-section taken just forward of the scraper B in Fig. 1, showing the windlass in elevation with its clutch thrown open, and omitting the dumping-lever. Fig. 3 is a plan view of the scraper A of Fig. 1, and of the windlass above scraper B. Fig. 4 is an enlarged perspective view showing one scraper only, and in the act of being raised,

its position being one between the carry, as at B, and the dumped, as at C. Fig. 5 is an elevation of a slightly-different form of main lever.

In the said drawings, the letter F designates the main framework, comprising side bars supported by a rear axle, (not shown,) and having an arch *f* at their front ends under which turn the wheels on the front axle, (also not shown,) and upon the arch is preferably supported the driver's seat D, all these details forming no part of the present invention. The framework is intended to carry three (more or less) scrapers, arranged tandem, and a leveling-board at its rear end, and the whole is to be drawn by a horse or team. The latter is controlled by the driver, who may also dump the scrapers when the windlass is employed, and who in addition has charge of the leveling-board while an attendant or additional man controls the lowering of the scrapers to active position and the raising of them to a carry.

The numeral 1 designates a shaft journaled in the framework F, and 2 is a bail secured to this shaft at its center. 3 3 are arms also secured to this shaft and having their outer ends pivoted at 4 4 to the sides of the mouth of the scraper 5, which latter may be of scoop shape, as shown, or of any other appropriate construction. The extremities of the bail 2 are connected with the mouth of the scraper or with the arms 3, as shown. The scraper A is shown as having one end of this shaft 1 provided with a lever 6 having a slot 7 in its body about of the shape illustrated. 10 is the main shaft, also journaled across the framework and carrying at one extremity the main lever 11, having a suitable thumb-lever 12 for engagement with a toothed segment 13 in the usual manner, and when the slotted lever 6 is employed this main lever 11 has a pin 8 in its body which engages the slot 7 therein. The scraper B is shown as dispensing with this slotted lever, and in that event the shaft 1 will be secured to the framework so that it shall not rotate, the bail may be omitted, and the arms 3' (and bail if used) are journaled on the fixed shaft. The main shaft has fixed thereto, near its ends and inside the side bars of the frame-

work, two cams 14, to which are secured chains 15 leading down to the mouth of the scraper and either secured directly thereto or to the rear ends of the arms 3 or 3', as shown. Hence when this main lever 11 is thrown forward the front end of the scraper will be raised above the ground to a position where it stands substantially horizontal and will carry the contents, as seen at B, or when it is thrown still farther forward the front end of the scraper will be raised still higher. If the slotted lever 6 is employed the pin 8 working in its slot 7 tends to assist this movement; but otherwise the scraper is raised by the 15 cams and chains alone.

The rear end of the scraper has laterally-projecting lugs 20 which engage guides 21 secured to the inner faces of the side bars, and the lower sides of said guides extend to the rear farther than the upper sides, so that said lugs may pass to the rear out of the guides and the rear end of the scraper can rise. The rear corners of the scraper are preferably provided with upright eyes 22 through which slide the bodies of guide-rods 23, having heads 24 at their rear ends and having their forward ends pivoted at 25 to the cams 14, by which means the scraper is accurately centered between the side bars 30 even though its contents be unevenly distributed.

While the scraper is taking up earth it will be obvious that there will be a considerable tendency to swing it to the rear on its supports, as the resistance of the ground is considerable, and this tendency is overcome by the rods 23, whose forward ends are pivoted fast to the cams 14 and whose rear ends have heads 24, which at this time stand against the rear faces of the eyes 22, thus preventing the rear end (and hence the body) of the scraper from moving farther rearward. As the front end of the scraper is raised to a carry, the turning of the cams 14 permits the rods 23 to move rearward, and this motion of the rods allows the lugs 20 to slide back in the guides 21. Then by manipulating the dumping means these lugs 20 rise off the guides, as seen in Fig. 4, and the rods 23 slip through the eyes 22 and turn around their pivots 25 until they assume the upright position shown in Fig. 1 at C.

30 is a supplemental cam fixed to the center of the main shaft 10, and journaled through this cam and one of those numbered 14 is the dumping-shaft 31, having a dumping-lever 32 secured to one end. To its other end, adjacent the cam 30, is secured a short arm 33, carrying a sheave 34, which moves adjacent the face of this cam when the lever is raised, and 35 is a chain secured beneath the main shaft 10, passing thence to the rear of the cam 30, then over the sheave, and secured at its rear end to the forward end of a rod 36 that is preferably pivoted, as at 37, to the center of the rear end of the scoop and supported

above the latter by a fork 38. By this construction when the dumping-lever is raised the short arm moves the sheave around the supplemental cam and draws on the chain, and the latter, through the rod, raises the rear end of the scraper, while its forward end turns around the pivots between its body and the arms 3. Meanwhile the lugs 20, which passed to the rear out of the guides 21 when the main lever was first moved from the position shown at A, find no obstruction to rising; and the guide-rods 23 turn on their pivots 25 and slide through the eyes 22 as the scraper is dumped, as above set forth.

Any suitable means may be employed, if desired, to hold the scraper dumped, although, as it retains this position but momentarily, such means may not be necessary or desirable. However, I have shown the scraper B as having its dumping-lever 32 provided with a thumb-lever and hook 32' that may engage an eye 39 carried by the framework at a proper point for this purpose.

When it is desired that the driver shall attend to the dumping of the scrapers, the supplemental cam and dumping devices above described may be omitted and the windlass shown in connection with scraper B substituted therefor, it being understood that there are three of these windlasses, all connected by rods with levers adjacent the seat D, or some of the scrapers may be dumped by the lever and others by the driver, as preferred, and, if desired, both dumping means may be employed, in order that any scraper may be dumped by either man, according as circumstances may necessitate.

F' is a supplemental frame supported above the framework F by risers f', as seen in Fig. 2, and in bearings on this frame is journaled a shaft 40 on which is journaled a lever 41 from which leads a rod 42 to a lever or handle 43 adjacent the seat D. On the shaft is journaled a ratchet-wheel 44 engaged by a pawl 45 on the lever and held against retrograde movement by a weighted pawl 46. On the shaft is also journaled a drum 47 capable of being moved longitudinally by a fork 48, as usual, and 49 designate clutch-teeth between one end of this drum and the adjacent face of the ratchet-wheel, whereby movement of the fork throws the drum into or out of engagement with the ratchet.

15' is a chain attached at one end to the drum and at the other end to the rear of the scraper below.

By this construction, when the clutch-members are engaged, manipulation of the lever or handle 43 works the lever 41, and the pawl 45 thereon turns the ratchet-wheel 44 and with it the drum 47, on which latter is wound the chain 15', until the scraper is dumped. After this the machine may be driven to the place of work, and movement of the fork disengages the clutch members and allows the rear end of the scraper to drop. The main

lever is then moved to further lower the front end of the scraper into operative position, as will be understood.

At the rear end of the machine the framework F has a cross-rod 80 from which is suspended by links 81 a leveling-board 82 hanging normally in a vertical plane, and linked to the extremities of this board are loops 83 sliding over pins 84 in the side bars, so as to guide and steady the movements of this board. Attached to one end of the board is a rod 85 leading to a point near the seat D, where is a pin or hook 86, and the rod here has an open handle 87, which may be drawn on to swing the board forward out of operative position, after which the open handle 87 is engaged over the pin or hook 86 to hold the leveling-board in this position when desired.

The operation of this complete machine is as follows: The team is hitched to the forward end of the framework and the driver takes his seat and drives to the scene of operations. Here another man throws one of the main levers to the rear, and thus lowers one scraper onto the ground. Then as the machine is driven forward this scraper takes up earth until it is filled, when the main lever is brought forward to raise this scraper to a carry. Other scrapers are then manipulated in the same manner, so as to take up their respective loads, the leveling-board being lowered to level off any ground from which all scrapings desired have been taken. The manual then descends from the machine, and the driver drives to the dumping-place with all scrapers full and at carry. Here he works the windlass of first one and then the other scrapers until each has been dumped of its load, and then he returns for another load. If it should happen that earth is to be scraped from one place and carried a short distance and there dumped, or that quite uneven ground is to be leveled off, the manual will ride on the machine, and himself will dump the scrapers with the dumping-levers, when desired, and yet will permit the driver alone to drive off with surplus earth in perhaps but one scraper and dump it from his seat, as above. Hence it will be clear that the employment of both dumping means on a single machine (though perhaps on different scrapers) is desirable.

Considerable change in the specific details of construction may be made without departing from the general principle of my invention.

What is claimed as new is—

1. In a road-scraper, the combination with the framework, a main shaft journaled across said framework, a handle on this shaft having thumb-lever and segment, cams fixed on the shaft, a scraper, and chains leading from the cams to the scraper; of lugs projecting laterally from the rear of the scraper, slotted guides carried by the framework and open at their tops at the rear ends, and means for

raising the rear end of the scraper, substantially as described.

2. In a road-scraper, the combination with the framework, a main shaft journaled across it, a handle for turning this shaft, cams fixed to the shaft, a scraper, and chains leading from the cams to the scraper; of supports for the rear end of the scraper, eyes rising from said rear end, guide-rods pivoted to said cams, extending through said eyes, and having headed rear ends, and means for raising the rear end of the scraper, substantially as described.

3. In a road-scraper, the combination with the framework, a main shaft journaled across it, means for turning this shaft, a scraper, cams on the shaft, and connections between the cams and the forward end of the scraper; of lugs projecting laterally from the rear end of the scraper, guides on the frame within which said lugs slide, eyes rising from the rear end of the scraper, guide-rods pivoted at their forward ends to said cams and having their bodies sliding through said eyes, heads at the rear ends of said bodies and means for raising the rear end of the scraper, as and for the purposes set forth.

4. In a road-scraper, the combination with the framework, guides secured within the side bars thereof and open at their tops at the rear ends, a scraper having laterally-projecting lugs adapted to engage said guides, and means for raising the rear end of the scraper; of a shaft across the framework, arms connected with said shaft and pivoted to the front end of the scraper so as to permit a downward and forward movement thereof, and means for raising this end of the scraper, as and for the purpose set forth.

5. In a road-scraper, the combination with the framework, a shaft across it, a scraper in rear of the shaft, arms connected with the shaft and pivoted to the front end of the scraper, and supports for its rear end; of means for raising the rear end of the scraper, a main shaft journaled across the framework, a lever on this shaft, and connections between the main shaft and front end of the scraper, as and for the purpose set forth.

6. In a road-scraper, the combination with the framework, a shaft across it, a lever secured to one end of the shaft and having a slot in its body, a scraper in rear of the shaft, arms secured to the shaft and pivoted to the front end of the scraper, and means for supporting its rear end; of a main lever pivoted to the framework, and a pin in said lever engaging the slot in the other lever, as and for the purpose set forth.

7. In a road-scraper, the combination with the framework, a shaft journaled across it, a lever secured to the shaft and having a slot in its body, a scraper in rear of the shaft, arms secured to the shaft and pivoted to the front end of the scraper, and means for supporting and raising its rear end; of a main

shaft journaled across the framework, a lever secured to this shaft and having a pin engaging the slot in said other lever, cams on the main shaft, and chains leading from the
5 cams to said arms, as and for the purpose set forth.

8. In a road-scraper, the combination with the framework, a scraper therein, means for raising and lowering the front end of the
10 scraper, a supplemental frame supported above the framework, and at the front end of the latter a driver's seat; of a shaft across the frame, a windlass on said shaft, a chain connecting the drum of the windlass with
15 the rear end of the scraper, a pawl and ratchet for turning the windlass, a clutch between the ratchet and windlass-drum, and a rod leading from the pawl to the driver's seat, as and for the purpose set forth.

20 9. In a road-scraper, the combination with the framework having a driver's seat, a supplemental frame above the main framework, and a scraper pivoted in the framework; of a shaft in the frame, a drum journaled thereon
25 and having a clutch member at one end, a chain connecting this drum with the rear of the scraper, a ratchet-wheel journaled on the

shaft and having a clutch member adjacent that on the drum, means for moving the latter to engage or disengage the clutch members, 30 a detent-pawl for the ratchet, a lever pivoted on the shaft and having a pawl, and a rod leading from the lever to the driver's seat, as and for the purpose set forth.

10. In a road-scraper, the combination with 35 the general framework, a scraper pivoted therein, a windlass above the scraper, and connections between the windlass-drum and scraper for dumping the latter when desired; of a ratchet adjacent said drum, clutch mem- 40 bers on these parts, means for engaging or disengaging said members, a detent-pawl for the ratchet, a pivoted lever having another pawl for the ratchet, and a rod leading from the lever to a remote point, as and for the 45 purpose set forth.

In testimony whereof I have hereunto subscribed my signature on this the 22d day of May, A. D. 1895.

JAMES A. TAYLOR.

Witnesses:

CHAS. S. NICHOLS,
ARTHUR L. YEAGLA.