

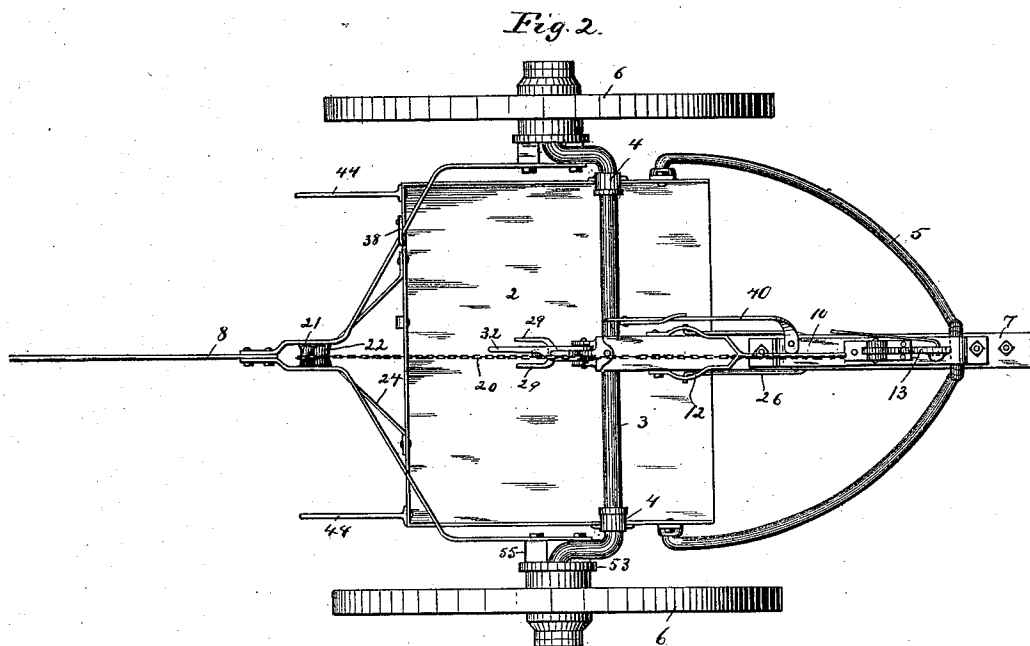
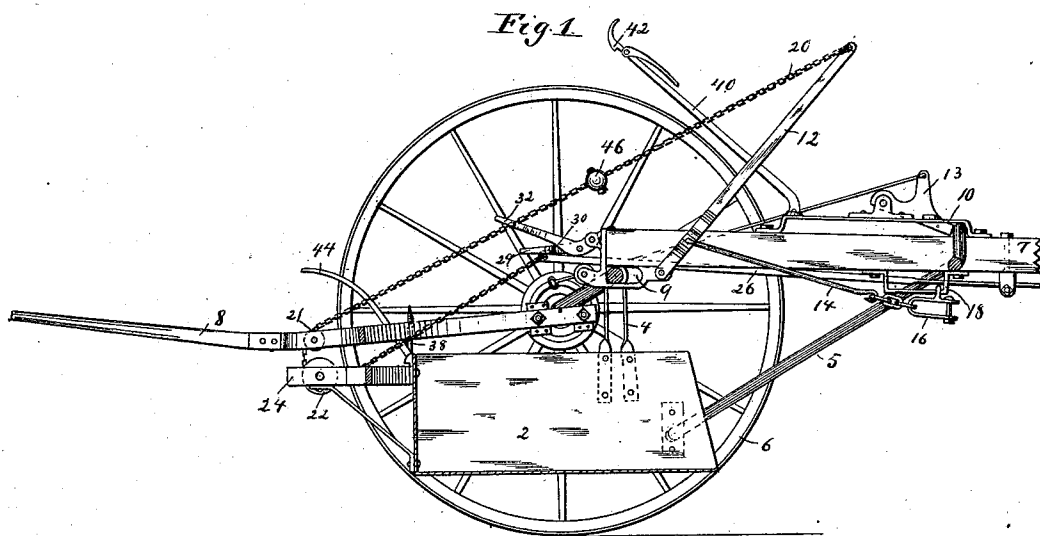
(No Model.)

3 Sheets—Sheet 1.

C. H. SAWYER.
WHEELED SCRAPER.

No. 401,907.

Patented Apr. 23, 1889.



Witnesses,

J. Jensen.
C. L. Kachtrick.

Inventor

Charles H. Sawyer.
By Paul, Sanford & Merwin atty

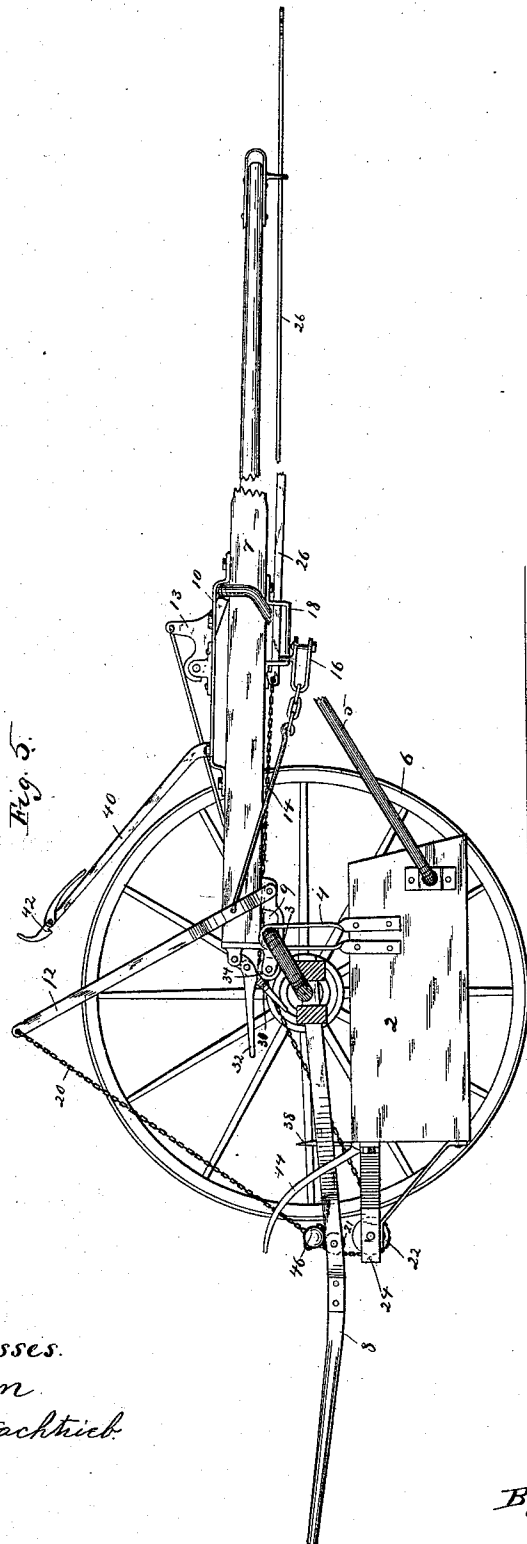
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3 Sheets—Sheet 3.

C. H. SAWYER.
WHEELED SCRAPER.

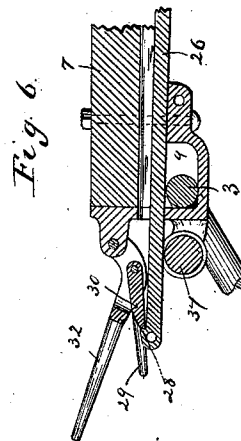
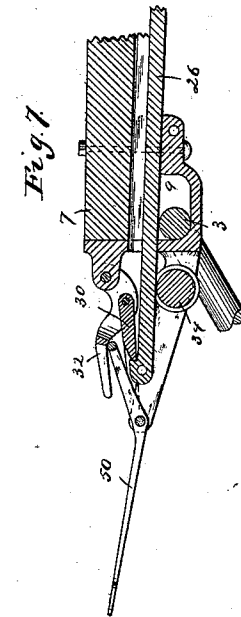
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UNITED STATES PATENT OFFICE.

CHARLES H. SAWYER, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO H. A. SMITH, OF SAME PLACE.

WHEELED SCRAPER.

SPECIFICATION forming part of Letters Patent No. 401,907, dated April 23, 1889.

Application filed June 18, 1888. Serial No. 277,491. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SAWYER, of Minneapolis, county of Hennepin, and State of Minnesota, have invented certain new and useful Improvements in Wheeled Scrapers or Self-Loading Carts, of which the following is a specification.

My invention relates to improvements in self-loading carts; and it consists, generally, in the construction and arrangement hereinafter described, and particularly pointed out in the claims.

In the drawings which form a part of this specification, Figure 1 is a longitudinal section of a cart or scraper embodying my improvement. Fig. 2 is a plan view of the same. Fig. 3 is a section showing the pan or shovel lowered in position for taking the load. Fig. 4 is a similar view showing the pan reversed. Fig. 5 is a similar view showing clearly the operation of the snatch-bar for raising the pan or shovel. Figs. 6 and 7 are details.

In the drawings, 2 represents the pan or shovel, supported upon the axle 3 by suitable hangers, 4, and provided with a bail, 5, by which the forward end of the pan may be supported or secured to the tongue. The axle 3 is provided with a crank at each end, upon which the wheels 6 are mounted. A lever, 8, with its front end forked or yoke-shaped, extends over the pan, and is secured to the axle at each of these cranks for the purpose of turning the said axle and raising or lowering the pan. The ends of the lever 8 are preferably secured to disks or sand-bands 53, rigidly attached to the axle and forming stops or abutments for the hubs of the wheels. These disks may be provided with blocks 55, interposed between them and the lever, in order to avoid the necessity of bending or forming the lever to fit the bent portion of the axle, to which it would be fastened. I do not confine myself to this construction, however, as the lever may be secured to the bent portion of the axle and operate equally well; but by the use of the blocks and the disks, as shown, I am enabled to construct a lever the ends of which are substantially straight, and in this way simplify the mechanism.

The tongue 7 is secured to the central portion of the axle 3, and at this point is pro-

vided with a suitable casting, which embraces the axle and holds it in its proper position, and is preferably provided with a slot, 9, to allow a certain amount of movement of the axle lengthwise of the tongue. A guide-bar, 10, may be located upon the tongue, and forms a recess, through which the bail 5 is allowed to slide. A stop, 13, pivoted in this guide, is arranged to fall behind the bail and hold it in its forward position. A lever, 12, is preferably pivoted upon the tongue 7, and is connected by a rod, 14, to a clevis, 16, in which the draft-elever is held. This clevis is preferably supported by a hanger, 18, secured upon the under side of the tongue, and by the operation of the lever 12 the clevis is drawn back and slides longitudinally of said hanger.

The upper extremity of the lever 12 is preferably provided with a chain, 20. This chain passes over a roller or spool, 21, journaled in the forked portion of the lever 8, thence downward over a sheave, 22, journaled in a suitable bracket, 24, on the pan or shovel 2, and from this point it is carried upward and secured to the end of the snatch-bar 26, which slides in a suitable recess formed beneath the tongue, and is carried forward and arranged to be attached to an extra team in front of the tongue. The rear end of the snatch-bar 26 is preferably provided with a catch, 28, adapted to receive a latch, 30, on the lever 32.

The lever 32 swings upon a suitable pin in a lug or projection at the rear of the tongue 7, placed over the snatch-bar and in line therewith. The said lever is preferably slotted and the latch 30 is pivoted in this slot. The lever is preferably curved, as shown in Fig. 6, in order to bring the point at which the latch is pivoted below the pivotal point of the lever when the said latch is in engagement with the snatch-bar.

A roller, 34, may be secured to the end casting of the tongue and bear upon the under side of the snatch-bar at this point. The snatch-bar passes out through the end casting of the tongue over the roller 34, and is brought in contact with the latch 30 on the lever 32. The latch and lever will be raised sufficiently to allow the end of the bar to pass, and the latch 30 will fall behind the catch 28

on the said bar. The bar will now be securely locked, and any forward strain upon the bar will be transmitted to the tongue through the latch 30 and lever 32. The position of the lever 5 and the latch is such that the forward strain on the snatch-bar only tends to draw the lever and the bar into closer engagement. The snatch-bar can at any time, however, be released by raising the lever 32 until the pivotal point of the latch 30 is thrown above the fulcrum of the lever 32, when the strain on the snatch-bar will cause the lever to be raised and the latch swung about its pivot, thus throwing it out of contact with the catch on the snatch-bar.

Horns 29 may be formed upon the latch at each side, which extend outward beyond the contact-point of the latch a sufficient distance to strike the roller 34 and prevent the latch from being drawn over said roller, and thus prevent its operating.

A suitable catch, 38, may be provided upon the back of the pan, which receives or engages the lever 8 as the lever is drawn down in contact with the said pan.

A standard, 40, provided at its end with a suitable catch, 42, and releasing-lever, is preferably secured to the tongue and projects upward and receives and holds the pan in a reversed position.

Handles 44 may be attached to the pan at the sides in the rear, in order to properly guide and adjust the pan while loading.

To load the pan, it is first lowered by releasing the lever 8 and raising it to the position shown in Fig. 3. This operation partially revolves the axle 3 and lowers the pan. The front end of the pan is held in position by the bail 5, which is locked to the tongue by the stop 13. The pan is suspended upon the same portion of the axle to which the tongue is attached, and the axle, in being lowered by the operation of the lever 8, forms a pivot or axis around which both the tongue and the suspension-link of the pan must partially revolve. If this pivotal point is fixed and common to both the tongue and the pan, the nose or front of the said pan will be drawn upward by the bail as the pan is lowered, and thus prevent the effectual working of the machine. To avoid this I provide the slot 9 in the end casting of the tongue, in which the axle is free to advance as the tongue is lowered. This compensates for the change in the angle between the tongue and the bail 5 as the pan is lowered, and enables me to hold the nose or front of the pan depressed, so that it will readily take the load.

46 is a block secured to the chain 20, which serves as a stop to limit the upward movement of the lever 8. The chain 20, attached as described, allows the lever 8 to be moved between the point where it is attached to the pan and the block 46, and the said chain, passing over the roll 21 in the said lever and the sheave 22 on the pan, acts as a support for the rear of the pan to keep it level. When

the pan is lowered, as shown in Fig. 3, in order to be loaded, the draft upon the tongue is transmitted to the pan through the bail 5, and the lever 12 will be held in its forward position by the draft upon the clevis 16, transmitted to the lever through the rod 14.

When a sufficient amount of material has been collected in the pan, the lever 32 is raised, releasing the latch from contact with the snatch-bar and allowing the said bar to be drawn forward by the team attached thereto. This movement of the snatch-bar draws the chain 20 over the pulley or sheave 22 at the back of the pan, and by means of the block 46 in contact with the lever 8 will depress the said lever until it is brought in contact with the pan, as shown in Fig. 5. The lever 12, attached to the opposite end of the chain, will be thrown backward about its pivot, drawing back the clevis 16 to the position shown in Fig. 5. The pan and tongue will be carried upward by the movement of the lever 8, and will be held in this position by the spring-catch 38. The snatch-team is now released and the draft applied to the clevis 16 for transporting the load. The draft thus applied will be first exerted through the rod 14 to the lever 12, which will be drawn forward until the sliding clevis 16 strikes the front of the yoke 18, by which it is attached to the pole. The lever 12 will then have been returned to its original position and the snatch-bar drawn back and locked to the tongue in readiness for another loading operation.

When it is desired to unload or dump the pan, the stop 13 is first removed from engagement with the bail 5. This leaves the bail free to slide backward on the tongue in the guide 10. The lever 8 is now raised without being detached from the same. It will thus carry the pan with it until it reaches the position denoted in Fig. 4. The pan is here brought in contact with the catch 42, and is held in this reversed position until released from the said catch.

I may prefer to provide a device for releasing the lever 32 from the snatch-bar. A projection may be provided upon the end casting of the tongue, extending backward a suitable distance, and in this projection a lever, 50, may be fulcrumed. This lever is preferably formed in the shape of a bell-crank, with the upper end bent inward in order to come in contact with the under side of the lever 32. By bearing down upon the outer end of this lever the inner end will raise and carry upward the lever 32 and release the latch 30 from the snatch-bar. I thus secure the operation of the lever 32 by a downward motion, which is easier to secure and exerts less strain upon the operator than by raising the lever 32 by hand. I do not confine myself to this construction of the lever 50, as any other device may be used whereby the lever 32 is thrown up by a downward pressure from the operator.

What I claim is—

1. In a machine of the class described, the combination, with the cranked axle, of the pan or shovel 2, suspended from said axle, a bail, 5, securing the front of the pan to the tongue, and a suitable casting securing the axle to the tongue, and a slot, 9, in said casting, which receives the axle, allowing it to slide in said slot, in the manner and for the purpose substantially as described.

2. In a machine of the class described, the combination, with the crank-axle, of a lever secured to said axle, a pan suspended below said axle and connected with the tongue by a suitable bail, a snatch-bar located beneath said tongue, a lever, 12, pivoted upon the tongue and connected with the draft-bar, and the chain 20, connecting the end of said lever 12 and the snatch-bar and passing over the lever 8 and connected with the end of the pan, substantially in the manner and for the purpose as described.

3. In a machine of the class described, the combination, with the crank-axle, of a lever operating said axle, a pan suspended below said axle and connected with the tongue by a suitable bail, a snatch-bar located beneath said tongue, a lever, 12, pivoted upon the tongue and connected with the draft-bar, a chain connecting the end of the lever 12 with the snatch-bar, and a block or stop secured to the chain and arranged to be brought in contact with the operating-lever and draw it downward and raise the pan, substantially as described.

4. In a machine of the class described, the combination, with the tongue, of the snatch-bar located beneath the said tongue, the lever 32, pivoted on the said tongue, and a latch, 30, pivoted in said lever and engaging said snatch-bar, in the manner and for the purpose substantially as described.

5. In a machine of the class described, the combination, with the cranked axle, of a pan suspended from said axle, a lever for operating said axle, and a chain, 20, operating to draw the lever and pan together by the draft on the snatch-bar, substantially as described.

6. In a machine of the class described, the combination, with the draft bar or evenner, of the lever 12, pivoted to the tongue and connected with the said evenner, the snatch-bar sliding on said tongue, a locking device located on said tongue and engaging said snatch-bar, and a chain connecting the end of the snatch-bar with the lever 12, in order that as the said lever is thrown forward the snatch-bar will be drawn back and brought in engagement with the locking device, in the manner and for the purpose substantially as described.

In testimony whereof I have hereunto set my hand this 31st day of May, 1888.

CHARLES H. SAWYER.

In presence of—

R. H. SANFORD,
C. NACHTRIEB.