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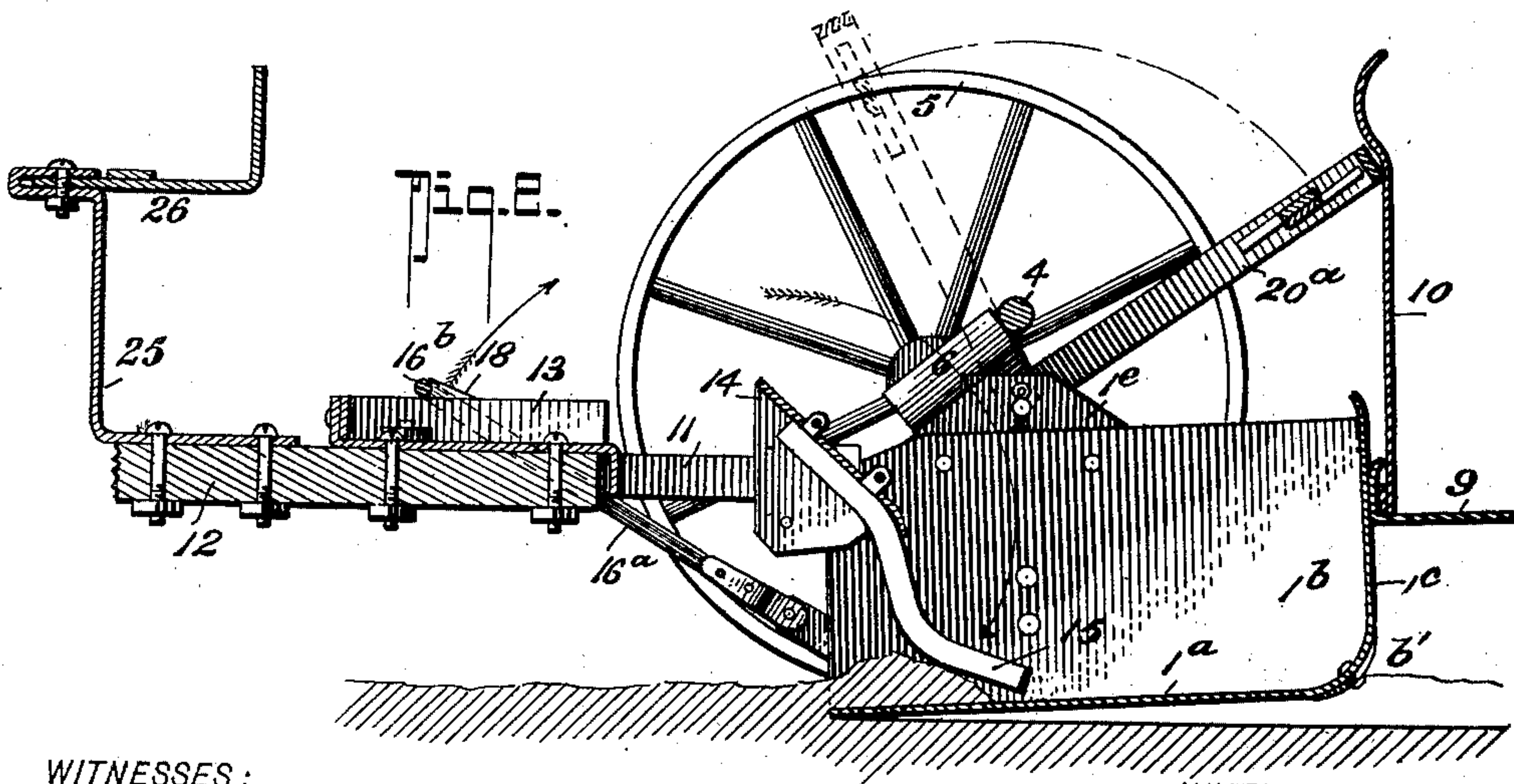
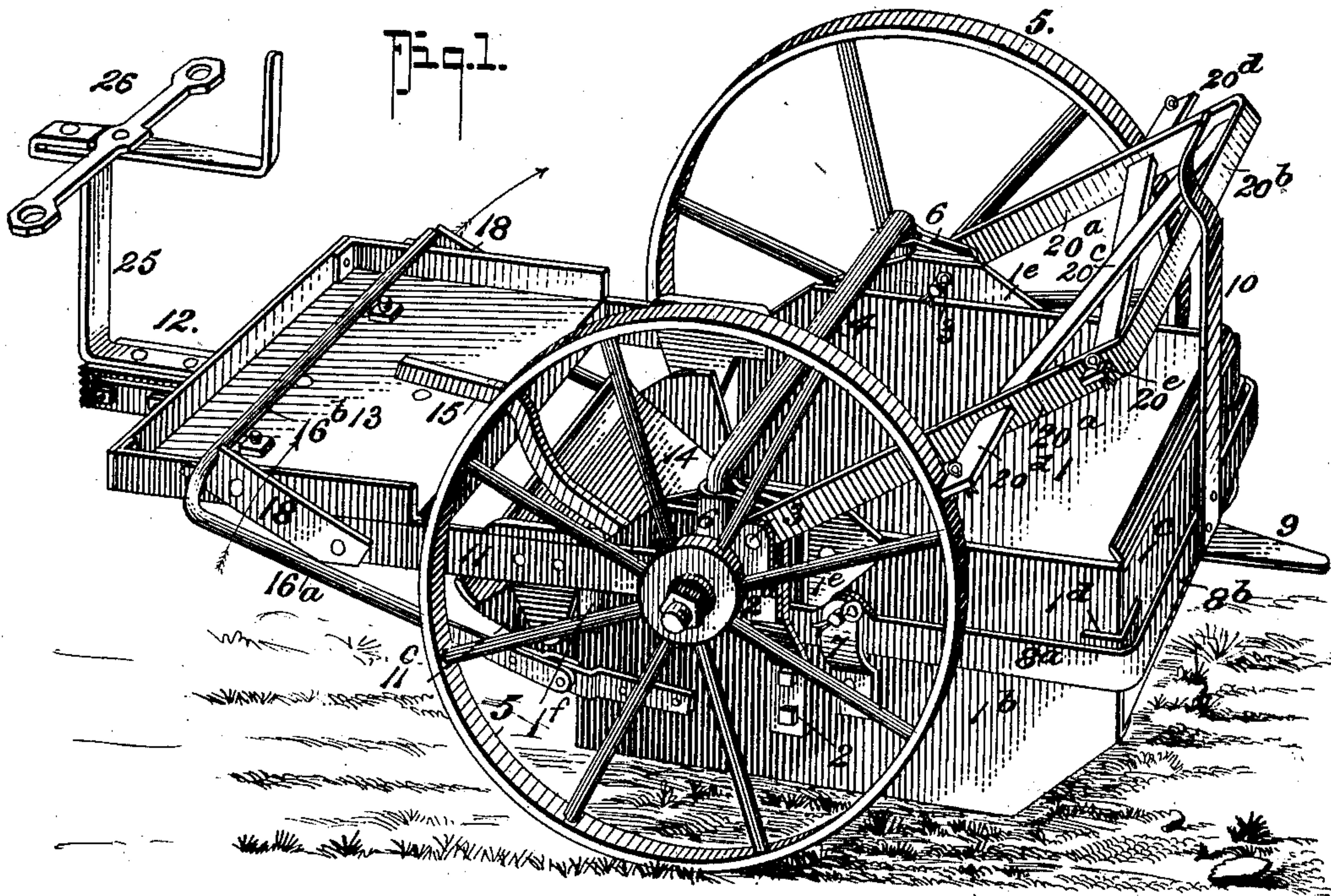
Patented June 24, 1902.

T. D. RADCLIFFE.
WHEELED SCRAPER.

(Application filed Nov. 2, 1901.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:
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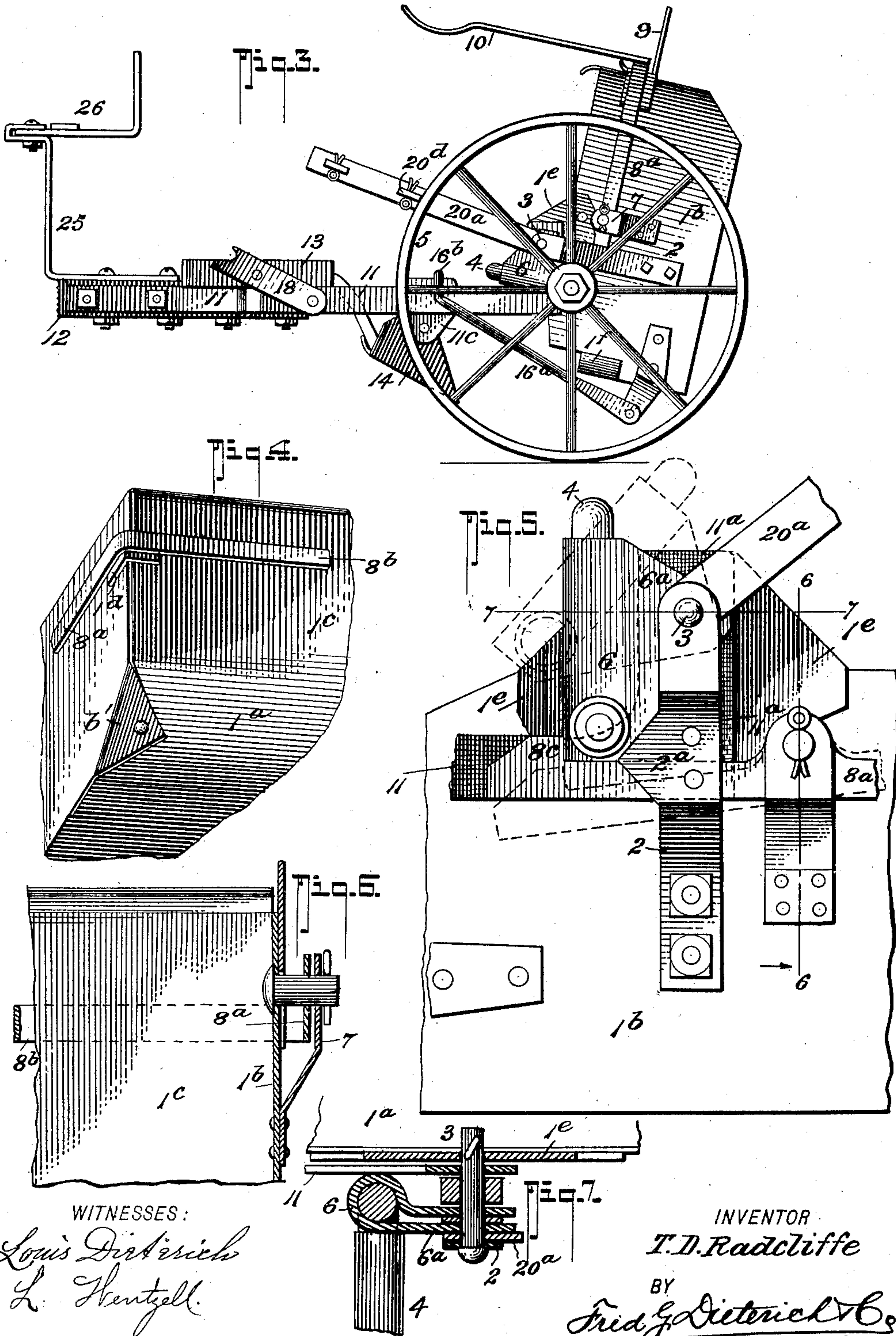
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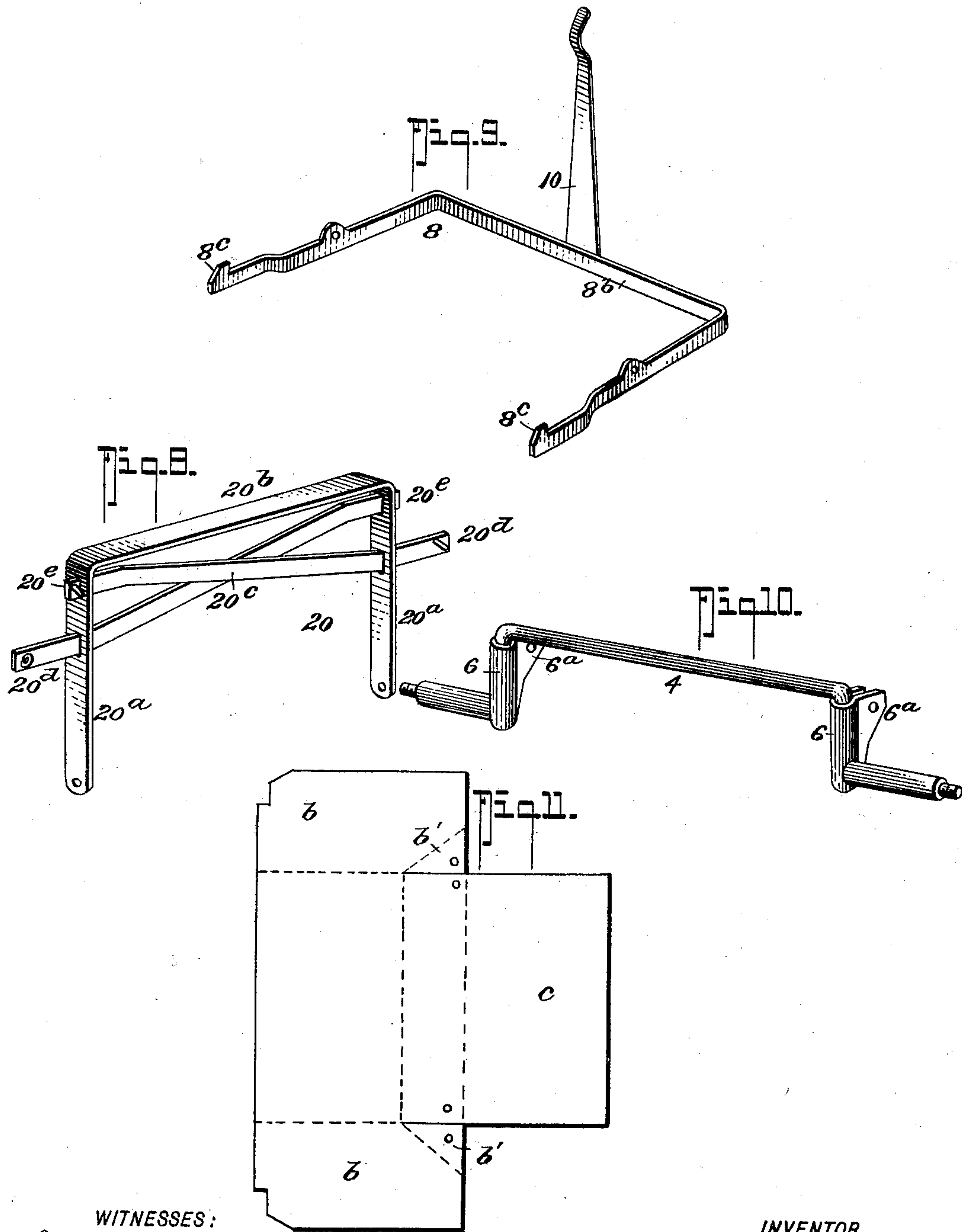
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

THOMAS D. RADCLIFFE, OF LAWRENCE, KANSAS, ASSIGNOR OF ONE-THIRD
TO CHARLES RICH METCALF, OF LAWRENCE, KANSAS.

WHEELED SCRAPER.

SPECIFICATION forming part of Letters Patent No. 703,352, dated June 24, 1902.

Application filed November 2, 1901. Serial No. 80,948. (No model.)

To all whom it may concern:

Be it known that I, THOMAS D. RADCLIFFE, residing at Lawrence, in the county of Douglas and State of Kansas, have invented a new and Improved Wheeled Scraper, of which the following is a specification.

This invention relates to improvements in earth scrapers or scoops, and primarily has for its purpose to provide a wheeled scraper of a very simple, economical, and compact nature which can be readily manipulated and which will effectively serve for its intended purposes.

In its generic nature my invention comprehends an improved construction of parts, in which is included a novel arrangement of pan or draft devices and means for supporting said devices upon a pair of supporting-wheels, that the entire weight of the pan-load is vertically supported upon the said wheels, said arrangement of parts also including the relative manner in which the pan is supported on the axle, and the operator's or driver's platform is disposed whereby the weight of the load and that of the driver will be substantially balanced upon the wheel-supports and the horses thereby relieved from supporting the weight of such driver.

My invention also includes a novel cooperative arrangement of the wheel-carrying axle, a locking latch or detent mechanism for maintaining the pan and axle in a relatively fixed position while carrying the load to the dump, and a wheel-engaging frame adapted under proper adjustment to interlock with the wheel and cause the pan to tilt or swing upon its pivotal connection, such operation being effected by the rotation of the wheels in either a forward or backward movement under such adjustment of parts.

In its more subordinate features my invention embodies certain details of construction and novel combination of parts, all of which will hereinafter be fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved wheeled scraper, the parts being in their load-conveying position. Fig. 2 is a longitudinal section of the same, the parts

being in their digging or pan-filling position. Fig. 3 is a side elevation of the same, showing the position of the parts during a dumping operation. Fig. 4 is a detail view of one of the pan-corners. Fig. 5 is a side elevation, on an enlarged scale, illustrating the connection of the arched axle, the wheel-lock frame, the draft-bar, and tongue-arm with the pan. Fig. 6 is a vertical section on the line 6 6 of Fig. 5. Fig. 7 is a horizontal section of the same on the line 7 7 of Fig. 5. Fig. 8 is a detail view of the wheel-lock frame detached. Fig. 9 is a similar view of the axle-latch frame. Fig. 10 is a perspective view of the arched axle, and Fig. 11 is a view of the blank from which the pan-body is formed.


Referring to the accompanying drawings, in which like characters indicate like parts in all the figures, 1 indicates the pan, which has the usual scoop shape and comprises the bottom 1^a, sides 1^b, and back end 1^c. In my construction the pan is made up of a single metal blank of substantially the shape shown in Fig. 10, the end *c* of the body portion when bent up, as shown best in Fig. 2, forming the back end 1^c. The ends *b* when bent up form the sides 1^b, which are made fast to the edges of back 1^b by angle-irons 1^d, the curved part *c'* of the back being braced by the inturned corners *b'* of the ends *b*, as best shown in Fig. 4.

On each side of the pan, near the forward end, is fixedly secured a bracket 2, curved outward, as at 2^a, and in line with said brackets the pan has upwardly-projecting apertured ears 1^e, and in the ear 1^e and bracket 2 at each side is mounted a stub axle or pintle 3 3, the purpose of which will presently appear.

4 designates the arched axle, the ends of which terminate in spindles 4^a to receive the supporting or carrier wheels 5 5.

Upon each vertical member 4^b of the axle is fixedly secured a triangular plate or casting 6, the apex 6^a of each of which is apertured to receive the pintles 3 3, as shown, said pintles forming the fulcrum-point on which the arched axle-bar is pivotally connected with the pan, or, in other words, the point upon which the pan is pivotally suspended from the supporting-axle, which point, as will be clearly seen by referring to Fig. 3, is

to the rear of the axis of the drive-wheels 5, such correlation of parts being provided to cause the pan to normally gravitate to its lower or digging position, as will presently
5 more fully appear.

Upon each side member of the pan and at a point rearward of the brackets 2 is a bracket 7, and on the bracket 7 is pivotally hung the forwardly-extending arms 8^a of the axle-latch frame, which has a  shape in plan view, its cross-bar 8^b being arranged to extend over the back 1^c of the pan, while the ends of its arms 8^a terminate in locking-lugs 8^c, adapted under a proper adjustment of
10 the several parts in a manner presently described to engage with the triangular members on the arched axle and hold the said axle to its vertical position and the pan lifted from the ground.

20 The cross-bar 8^b is held to seat upon the check or handle-grip 9, projected rearwardly from the pan back, and to the said bar 8^b is fixedly joined the lower end of the vertically-extending spring latch-bar 10.

25 11 11 designate what I term the "tongue-arms" or "pan-frame," the forward ends of which bend inwardly and connect with the draft-tongue 12, their rear ends being made to straddle the pan sides and terminate in
30 vertically-projecting apertured ears 11^a 11^a to engage the pintles 3 3, upon which said ears 11^a are pivotally supported.

When the pan is held raised to its load-carrying position, as shown in Fig. 1, the tongue-arms 11 are disposed in a substantially horizontal plane and are held from dropping below such plane by reason of engaging stop-lugs 1^f on the front ends of the pan, as shown.

40 The arms 11, together with the inner end of the tongue 12, serve as supports for the operator's platform 13, which is fixedly secured to said arms.

At a point just in advance of the front end of the pan the arms 11 each have a pendent
45 apertured lug 11^e, and on said lugs 11^e is pivotally hung the end-gate 14 for covering the front end of the pan when filled. The gate 14 is so hung as to gravitate to its normal closing position, it being held from swinging
50 too far down by a handle-rod 15, that engages the platform 13, as shown.

A U-shaped member 16, which I call the "pan-draft frame," has its side arms 16^a pivotally hung in the brackets 17 17, projected
55 forwardly from the front ends of the pan, near the bottom thereof. This frame 16 forms, as it were, a locking means for holding the pan locked in a proper fixed position during filling and when draft is applied, and
60 for such purpose the cross-bar 16^b of the frame 16 is made to seat (when thrown forward) in the notched draft-stubs 18, fixedly secured to the arms 11 and the operator's platform, as shown.

65 20 designates a rectangular frame comprising the parallel side bars 20^a and the cross-bar 20^b. This frame, which under certain

conditions is intended to move into a locked engagement with the carrier-wheels, is pivotally mounted on the stub-pintles 3 3, the
70 extremities of its side bars 20^a being apertured for such purpose. The frame 20 also includes members 20^c, the ends 20^d 20^e of which are adapted to be projected laterally in a plane over the wheels, adjacent the rim there-
75 of, and over the rear part of such wheels.

The frame 20 is fulcrumed on the pintles 3 to swing over the tops of the wheels 5, and the two members 20^c are disposed crosswise of each other and have a limited movement in
80 the direction of their length through the side bars 20^a, said members being so arranged that when slid outward in one direction an upper wheel-grip lug 20^d is provided and when slid in an opposite direction to provide a lower
85 grip-lug 20^e. Thus two sets of grip-lugs, a lower, 20^e, and an upper, 20^d, disposed on the same radial plane to the fulcrum-point of the frame 20, are provided.

The frame 20, which, as will clearly be no-
90 ticed by reference to Fig. 3, is fulcrumed eccentrically of the wheel-axis, and its members 20^d 20^e are relatively so arranged that when the frame 20 is swung back (which movement is limited by reason of the cross-
95 bar 20^b engaging with the spring-catch) the said members 20^d will clear the wheel-rims and allow for the free transportation of the machine without interfering with the traction-wheels, the axis of the wheel and the ful-
100 crum-points of the frame 20 being, however, relatively so disposed that by swinging the frame 20 slightly forward its members 20^d will engage with the wheel-rims and become interlocked therewith, as will presently be
105 more fully explained.

In its complete form my improved scraper has a post 25 projected from the draft-tongue, on which is mounted a rein-holder 26, such de-
110 vice being provided to enable the operator standing on the front platform to the more conveniently adjust the several parts of the scraper during the operation of loading and unloading.

Assuming the parts to be in a normal posi-
115 tion—that is, the pan elevated, as shown in Fig. 1—the wheel-lock frame at this time will be thrown back with its members 20^d clear of the wheel-rims, the draft or pan frame 11 will be swung forward, its front cross-bar engag-
120 ing the notched draft-stubs 18, and the axle-latch frame will be in a locked engagement with the triangular blocks on the arched axle, which at this time will be disposed in a vertical plane. To prepare to load, the operator
125 throws the handle-bar of end-gate over in the direction indicated by the arrow in the drawings to open up the front end of the pan. A sudden pull forward on the spring latch mem-
130 ber 8 will release the axle and the pan will gravitate to the ground. The operator now places his foot and presses on the axle, and as the scraper is drawn forward its nose or cutting edge enters the ground and cuts under as the

pan fills, the pan during this operation being held from tilting or turning over by the draft-frame 16 engaging the stubs 18. When pan is filled, the end-gate is first swung back to close over the front end of pan and with its upper grip-lugs 20° in position. The frame 20 is then swung forward to lock with the wheels, as indicated in dotted lines in Fig. 2, which in turning lift up the pan and at the same time rock the axle to a vertical position to bring the triangular blocks to interlock with the axle-latch frame 8. The appliance is now in position to convey the load, it being understood that after the pan is lifted and the axle and frame 8 are interlocked the frame 20 is again dropped back to free its members 20° from the wheel-rims. To dump the load, the draft-frame 16 is thrown back on the axle in the direction indicated in dotted lines in Fig. 1. The axle-lock frame 8 remains in a locked position during this operation. The frame 20 is now again swung forward to cause its lugs 20^d to engage the rims or treads of the wheels, as shown in Fig. 3, which causes the pan to be swung entirely over, such operation occurring by reason of axle and frame 8 remaining intact and the draft-frame 16 being freed from the lugs 18. During dumping the members 20^d remain in contact with the wheel-treads. To right the pan, it is only necessary to back the team a little to rotate the wheels backwardly to return frame 20, and with it the pan, to the normal position.


From the foregoing description, taken in connection with the accompanying drawings, it is thought the advantages of my invention will be readily apparent to those skilled in the art to which it appertains. A single operator can easily manipulate the pan, and as the adjustments for setting the pan to its loading or unloading position can be effected from the operator's platform very little time is lost in the minutia of loading and unloading.

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 arched axle and the wheels mounted on the ends thereof; of a pan pivotally hung on the axle eccentrically to the axis of the wheels, a latch-frame on the pan, adapted to automatically interlock with the axle to hold the pan to its upright position, and means for holding the pan from tilting over when it is set to its digging position and released from a locked engagement with the axle, for the purposes specified.

2. A wheeled scraper, comprising a wheeled supporting-axle, a pan pivotally supported on such frame for slight longitudinal movement, a locking means carried on the pan adapted to automatically interlock with the supporting-axle to hold the pan in an upright posi-

tion, said frame having a releasing or tripping handle, and a tilting frame carried on the pan, adapted to be swung in the plane of rotation of the wheel-rims and interlock with such rims on the forward rotation of the wheels, for the purposes specified.

3. The combination with the wheeled and arched axle, said axle having rearwardly-extending apertured ears; of the pan or scoop, said pan having laterally-projecting pintles 3, with which the apertured axle-ears engage, a swinging frame fulcrumed on the pintles 3, said frame having members adapted when the frame is swung forward to engage with and grip the wheel-treads, a -shaped frame pivotally mounted on the pan to swing in a vertical plane, its outer extremities terminating in locking-lugs adapted to engage the wheel-axle and hold same, together with the pan, in an upright position, and means for holding the pan from tilting when dropped to its digging position, as set forth.

4. The combination with the arched wheel-carrying axle, the pan pivotally suspended from the axle, an automatically-operating locking means carried on the pan for engaging the axle to hold the pan to its upright position, the pan-frame, the platform mounted on said frame, said frame having stud members 18; the draft-frame 16, and the wheel-engaging frame 20, all being arranged substantially as shown and for the purposes described.

5. The combination with the arched wheel-carrying axle, the pan pivotally suspended therefrom, the pan-frame pivotally joined at the rear end to the pan, its forward end connecting with the draft-tongue, the pan-locking devices for engaging the axle, the platform mounted on the pivoted pan-frame, the gravity-closing end-gate, pivotally supported on the pan-frame, the draft-frame 16, lugs 18, and the frame 20, all being arranged substantially as shown and described.

6. The combination with the arched wheel-carrying axle, the pan pivotally suspended from the axle, an automatically-operating locking means carried on the pan for engaging the axle to hold the pan to its upright position, the pan-frame, the platform mounted on said frame, said frame having stud members 18, the draft-frame 16, and the wheel-engaging frame 20, said frame 20, including the transversely-disposed crossed members, said members having movement in their longitudinal direction, and their ends terminating in wheel-engaging grips 20^d 20°, all being arranged substantially as shown and for the purposes described.

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Witnesses:

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