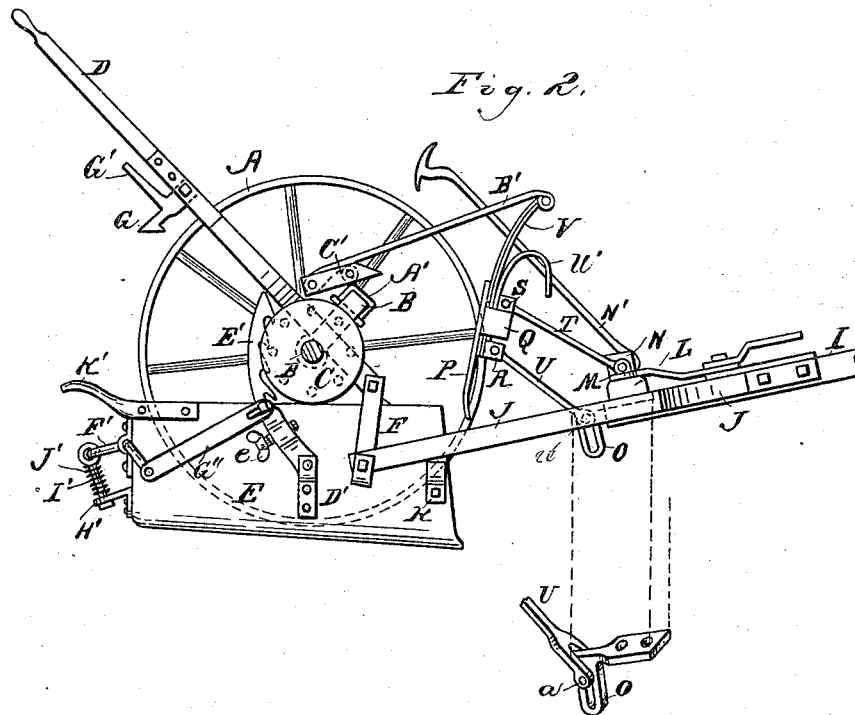
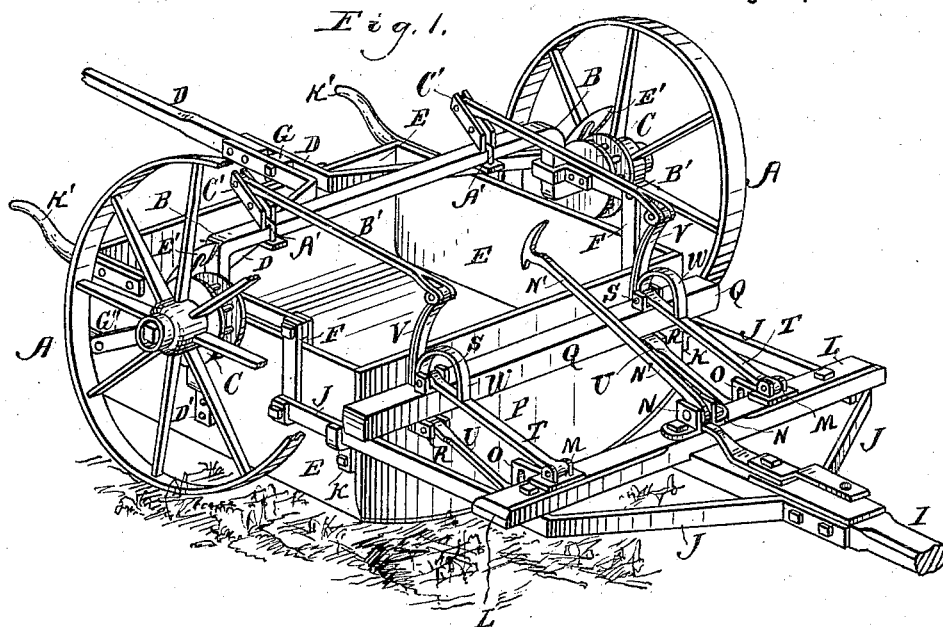


S. BECKWITH.
WHEELED ROAD SCRAPER.

No. 301,081.

Patented July 1, 1884.



Witnesses.
Henry Frankfurter
J. C. Frankfurter

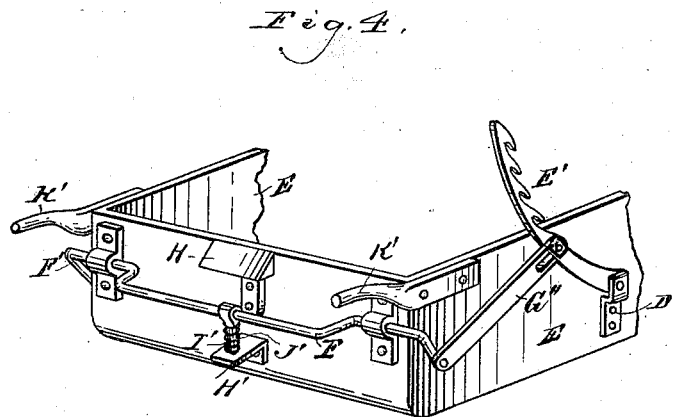
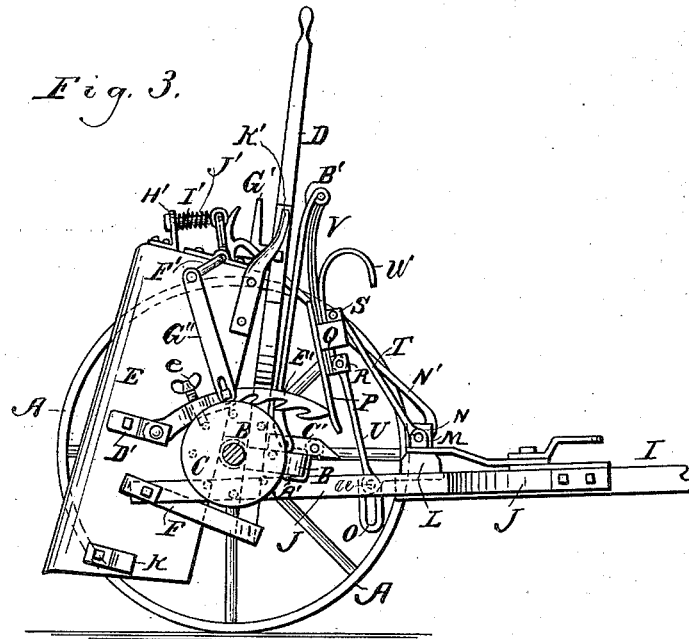
Inventor.
Samuel Beckwith,
per Gridley & Co.
his Attorneys.

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UNITED STATES PATENT OFFICE.

SAMUEL BECKWITH, OF MOUNT PLEASANT, IOWA, ASSIGNOR TO THE
WESTERN WHEEL SCRAPER COMPANY, OF SAME PLACE.

WHEELED ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 301,081, dated July 1, 1884.

Application filed February 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL BECKWITH, a citizen of the United States of America, residing at Mount Pleasant, in the county of Henry and State of Iowa, have invented certain new and useful Improvements in Wheeled Road-Scrapers, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1, Sheet 1, is a perspective view of a wheeled road-scraper embodying my improvements, representing the scoop in its raised position. Fig. 2, Sheet 1, is a side view of the scraper, representing the scoop in its lowered position. Fig. 3, Sheet 2, is a like representation, showing the scoop in position for dumping the load, and representing one wheel as removed, so as more clearly to show some of the working parts or mechanism; and Fig. 4, Sheet 2, is a detail, in perspective, of the rear portion of the scoop, showing also certain parts of the mechanism applied thereto.

Like letters of reference indicate like parts.

A A represent the carriage-wheels, and B is a wheel-axle, on which said wheels are loosely mounted. This axle is arched or crank shaped between the wheels, and the crank portion or axle proper is higher than the spindles or portions on which the wheels turn, as is clearly indicated in Fig. 1.

C C are trundle-wheels rigidly attached to the inner ends of the wheel-hubs or turning therewith, and practically being a part thereof.

D is a forked lever, the diverging arms of which are rigidly attached to the vertical parts of the axle B, and then extend forward parallelly, as shown.

E is the box, scoop, or scraper, and F F are hangers jointed at their upper ends to the forward ends of the lever D, and at their lower ends to the forward part of the sides of the scoop.

G is a depending hook pivoted to the rearward part of the lever D, and provided with a lever or handle, G'; and H is a catch attached to the rear end of the box E, and arranged for engagement by the said hook when the said lever is in a horizontal position.

I is the draft tongue or pole, and J J are draft-bars rigidly attached to the tongue at their forward ends, and jointed at their rear ends to the lower ends of the outer hanger-bars, F F.

K K are rests or bearings applied to the forward corners of the box E, and located underneath and for contact with the bars J J when the lever D is arranged horizontally.

L is a cross bar or brace for the tongue I and bars J J.

M M and N N are lugs or ears on the bar L, and O O are slotted pendants applied to the under side of the bar L.

N' is a hook jointed at its lower end to the lugs N N, and beveled, as shown, at its upper end.

P is the gate, which, when closed, constitutes the forward end of the box E.

Q is a cross-bar applied to the outside of the gate P, and the ends of this bar rest on the bars J J when the gate is closed, as shown in Fig. 1.

R R are lugs or ears on the gate P, and S S are lugs or ears on the bar Q.

T T are spring-brace arms jointed at their rear ends to the lugs S S, and at their forward ends to the lugs M M.

U U are also brace-arms jointed at their rear ends to the lugs R R, and forked at their forward ends to receive the vertical parts of the pendants O O; and a a are bolts or pins passing through the said forked ends and through the slots in the said pendants, as is clearly shown in the detail subjoined to Fig. 2, and forming a part thereof.

V V are spring-leaves attached at their lower ends to the gate P, and projecting some way above it, the projecting part being curved or bent forward somewhat, as shown.

W W are springs, also applied at their lower ends to the said gate, and their upper portions are bent over forward in semicircular form, their upper ends resting on the brace-arms T T when the scoop is raised, as represented in Fig. 1.

A' A' are clips on the crank portion of the shaft B.

B' B' are connecting arms or braces hinged at their forward ends to the upper ends of the

springs V V, and at their rear ends to links or bars, C' C', jointed at their lower ends to the said clips.

D' D' are ears on the sides of the scoop E, and E' E' are toothed or serrated curved lifters jointed at their lower ends to the ears or lugs D' D'.

e e are set-screws in the said lifters.

F' is a crank shaft or lever turning in bearings on the rear end of the scoop, and G' G' are connecting-arms connecting the lifters E' E' and the ends of the shaft F' pivotally, or being jointed thereto.

H' is an angle-plate applied to the rear end of the scoop, and I' is a limiting-bolt having an eye in its upper end, through which eye the shaft F' passes freely, and the said bolt passes freely through the plate H' and is headed on its lower end.

J' is an open spiral spring around and supporting the bolt I'.

K' K' are handles on the rear corners of the scoop.

The operation of the parts now described is as follows: When the lever D is arranged horizontally and the hook G engages the catch H, the box or scoop E will be suspended horizontally some way above the ground, and the gate P will be closed, as represented in Fig. 1. To lower the scoop, detach the hook G from its catch and raise the rear end of the lever D. The crank portion of the axle B will thus be thrown forward, and the forward ends of the forked portions of the said lever will be lowered. The scoop will then descend to the ground, moving downward chiefly by reason of its gravity, and occupy the position represented in Fig. 2. The gate, however, will be raised and moved somewhat forward, for the reason that the forward movement of the crank portion of the axle B will carry the arms B' B' forward, and hence the upper ends of the springs V V will be pushed or pressed forward; but they will also be drawn upward, for the reason that the braces T T and U U are hinged higher at their rear ends than at their forward ends, and also because the forward ends of the springs W W, by resting with a spring-pressure on the braces T T, tend to give an upward initiatory or starting movement to the gate. The gate-operating mechanism operates somewhat as a toggle, as will be perceived. The scoop is now ready for work, and will, as it is drawn along, scrape up the dirt until filled or receiving its maximum load. To aid in raising the scoop, depress the crank F', so as to throw the pawls E' E' into engagement with the trundles C C, which, as will be perceived, perform the function of ratchets. This engagement will cause the scoop to be raised as the scraper is drawn along; but by the time the hook G engages its catch the screws e e will be engaged by or come in contact with the trundles or ratchets C C, and, owing to the location of those screws with respect to the teeth of the pawls E' E', those teeth will be carried or

pushed from their engagement with the said trundles, and the spring J' will then draw the said pawls back to their original positions, and retain them there until the crank F' is again depressed to throw them forward, for the purpose set forth. This operation, as will be perceived, will close the gate against the forward part of the load, and as the gate is in connection with yielding springs it will yield to stones or other obstructions it may strike in being closed. The gate, in being closed as described, is drawn down in a nearly vertical direction with ample power to accomplish its work, moving rearward somewhat as it descends, and moving simultaneously with the upward movement of the scoop, thereby effectually closing the forward end of the scoop when it has its maximum load. To dump the load after the scoop has been raised to the position shown in Fig. 1, the scoop is tilted by means of the lever D without disengaging the hook G from its catch, and the parts will then occupy the position shown in Fig. 3. When the scoop is tilted to the position shown in Fig. 3, the hook N' will engage its catch and retain the scoop in that position until the said hook is unhooked. The scraper may be drawn along empty while it is in the position shown in Fig. 3, but may easily be returned to the position shown in Fig. 1, either the lever D or the handles K' K', or both, being seized for that purpose.

It will be perceived from the foregoing description and from reference to the drawings that the scraper is well adapted to the purpose for which it is intended, and that the position of the scoop may be controlled with facility. It may also be stated that the screws e e may be set so as to release the pawls E' E' sooner or later, as may be desired, or as may be necessary to adapt the mechanism to different scoops.

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

1. A road-scraper in which are combined the crank-axle B, having draft-wheels thereon, the lever D, rigidly attached to the said axle, the tilting scoop or box E, supported by means of links or pivoted arms depending from the said lever, the end-gate P, the jointed braces T and U, the slotted pendants O O, the connecting-arms B' B', and the links or bars C' C', substantially as and for the purposes specified.

2. The combination, in a road-scraper, of a scoop having a removable end-gate, P, the crank-axle B, the lever D, suspending the said scoop and attached rigidly to the said axle, the springs W and V, applied to the said gate, the arms B' B', linked to the said axle and jointed to the springs V V, and the braces T and U, hinged to the said gate and to the draft-gear, substantially as and for the purposes specified.

3. The combination, in a road-scraper having a tilting scoop, of the draft-wheels, the lifting-wheels C C, the serrated lifting-arms E' E',

the set-screws *e e*, applied to the said arms, and means for throwing the said arms in and out of gear with the said lifting-wheels, substantially as and for the purposes specified.

5 4. The combination, in a road-scraper having a tilting scoop, of the draft-wheels, the lifting-wheels *C C*, the serrated lifting-arms *E' E'*, and the yielding crank *F'*, linked to the said arms, substantially as and for the purposes specified.

10 5. The combination, in a road-scraper having a scoop operating in conjunction with a crank-shaped wheel-axle, of the detachable

end-gate *P*, the springs *V V*, the arms *B' B'*, linked to the said axle and jointed to the said 15 springs, the links *C' C'*, and the braces *T* and *U*, hinged to the said gate and to the draft-gear, whereby the said gate is closed by a downward and rearward movement simultaneously with the raising of the scoop, substantially as and for the purposes specified. 20

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Witnesses:

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C. H. SMITH.