(No Model.) 2 Sheets—Sheet 1.

W. E. KILBORN.

WHEELED EARTH SCRAPER.

No. 422,531. Patented Mar. 4, 1890.

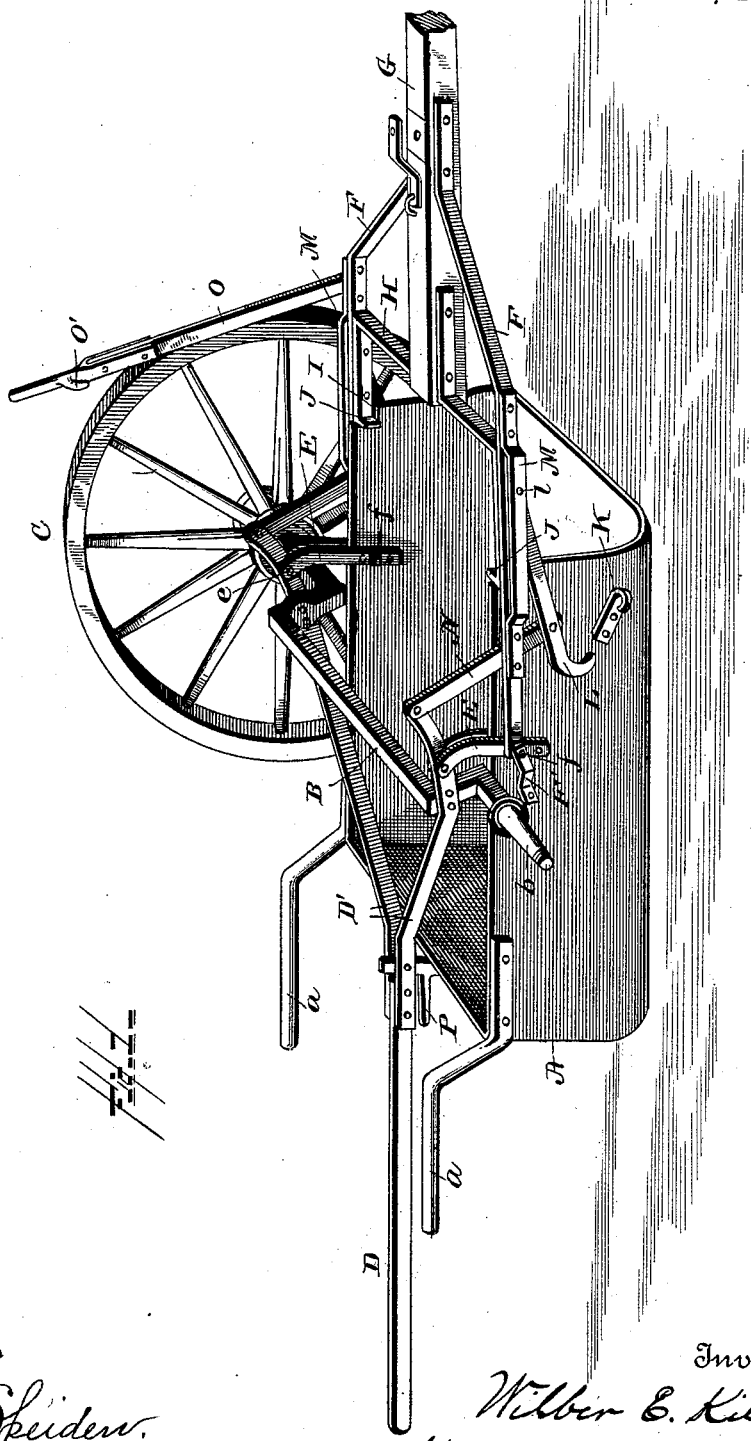

Fig. 1.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

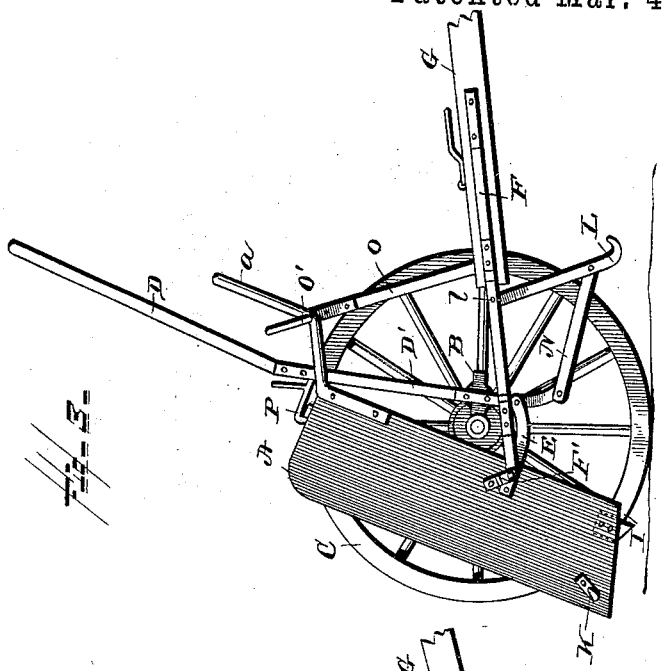
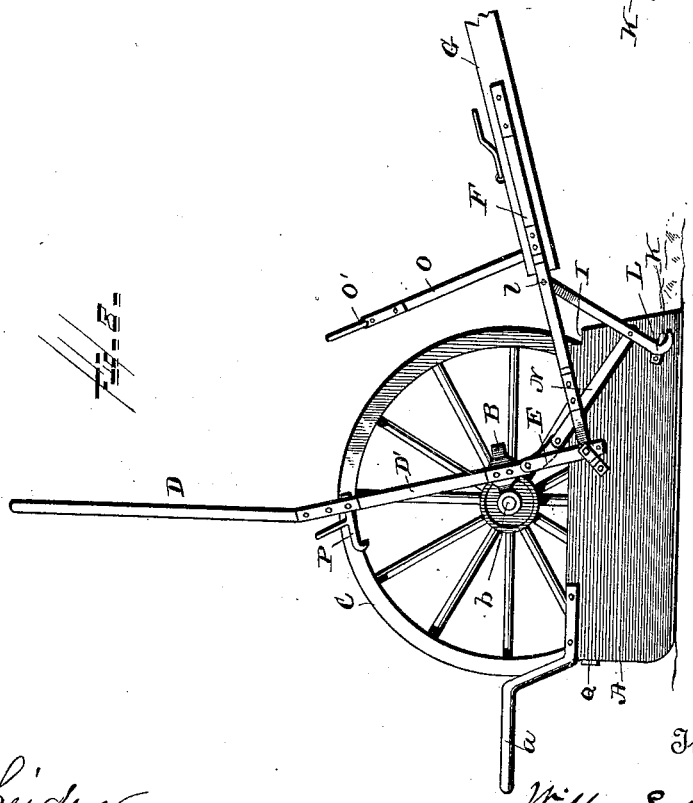


Fig. 2.



Witnesses

Albert Speiden

W. T. Ragan

Inventor,

Wilber E. Kilborn

By his Attorney,

Wm Hunter Myers

UNITED STATES PATENT OFFICE.

WILBER E. KILBORN, OF SIDNEY, OHIO, ASSIGNOR OF ONE-HALF TO WILLIAM H. C. GOODE, OF SAME PLACE.

WHEELED EARTH-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 422,531, dated March 4, 1890.

Application filed November 29, 1889. Serial No. 331,938. (No model.)

To all whom it may concern:

Be it known that I, WILBER E. KILBORN, a citizen of the United States of America, residing at Sidney, in the county of Shelby and State of Ohio, have invented certain new and useful Improvements in Wheeled Earth-Scrapers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in that class of wheeled earth-scrapers in which the scraper box or bowl is lowered and raised by rocking the axle, and thereby changing the plane of the axle upon which the wheels are mounted, such a scraper being shown particularly in Patents Nos. 318,721 and 367,388 granted to W. H. C. Goode.

The novel features of my invention are, first, pivoting the lever-bars to the standards in rear of a vertical line drawn from the points of attachment of the standards to the scraper box or bowl, thereby bringing these pivotal points nearer to the axle than heretofore, and thus securing increased lever-power in turning the axle to raise the box or bowl when filled with earth; second, the provision of means for preventing the backward tilting of the scraper box or bowl, and also for steadying it while conveying its load to the dump, and, third, curving the forward ends of the lever-bars, so that while the hook-links may be pivoted to them at sufficient distance from the pivots of said bars to prevent contact with the standards the ends of the bars will not strike on the upper edges of the scraper box or bowl when the lever is thrown upward to lower said box or bowl.

Figure 1 of the drawings is a perspective view of a wheeled scraper embodying my improvements, with the box or bowl elevated as when filled, one of the wheels being removed for clear illustration. Fig. 2 is a side elevation of the same with the box or bowl down in position to fill. Fig. 3 is also a side elevation of the same with the box or bowl in position to dump.

In the accompanying drawings, A represents the scraper box or bowl provided with side handles *a*.

B is the axle, having right-angularly-bent ends to form spindles *b* for the wheels C.

D is the lever, to whose forward end are rigidly secured the lever-bars D′, which are also rigidly secured to the sides of the axle, as shown.

E are the standards, to which the scraper box or bowl is hung, each consisting, preferably, of two pieces of bar-iron, one piece being placed on the inside and the other piece on the outside of the box or bowl, and firmly bolted thereto at their lower ends, as shown, their upper ends extending far enough above the box or bowl to receive the lever-bars between them, which are pivoted to the standards at *e*. It is essential that these standards be secured to the box or bowl forward of its middle portion, (and far enough forward to avoid interfering with the free turning of the cranked portions of the axle,) so that the heavier portion will be in rear of the standards; otherwise the loaded box or bowl would tip forward and dump, especially when only partly full and the greater part of the load in the forward portion; and heretofore the points of the pivotal attachment of the lever-bars to the standards have been located in a direct vertical line with the points of attachment of the standards to the scraper box or bowl, and consequently at a considerable distance from the points of attachment of those bars to the axle. Now the nearer the points of pivotal attachment of the lever-bars to the standards are brought to the axle the easier the latter can be turned and a given load be raised by the lever. Therefore, instead of pivoting the lever-bars to the standards directly above the points of attachment of the standards to the box or bowl, as heretofore, I pivot them to the standards in rear of a vertical line drawn from said points, which I accomplish by either curving the standards E, as shown in Figs. 1 and 3, or by securing the standards to the box or bowl in a rearwardly-inclined position, as seen in Fig. 2.

F are the draft-bars, whose forward ends are rigidly secured to the tongue G, while their rear ends are each pivoted on a bolt *f*, passed through the side of the scraper box or bowl and through the standard E, and F′ are holdback-straps, each bolted at one end to the box or bowl, its other end being passed over a bolt *f*, outside of the draft-bar, and secured thereon by a nut, these straps serving to counteract the leverage on the bolts.

H are the tongue-braces bolted to the tongue and riveted to the inner sides of the draft-bars, as shown.

In order to prevent the loaded scraper box or bowl from tilting backward while being raised from the position shown in Fig. 2 to that shown in Fig. 1, I cut out a rectangular piece from the top of each of its sides at the front end, as seen in Figs. 1 and 2, to form shoulders I, and provide the tongue-braces H with inwardly-projecting lugs J, for engagement with said shoulders, as clearly shown; or instead of cutting out these pieces to form the shoulders I may form them by attaching projecting pieces to the upper front portion of the sides of the scraper box or bowl, as seen in Fig. 3. It will be evident that as the tongue-braces are rigidly secured to the draft-bars the lugs may be formed on or secured to the latter without departing from my invention, as it is only essential that they be carried by the draft-bars. By placing these shoulders and lugs the greatest practicable distance from the pivots of the draft-bars any little variation in the construction of the shoulders or of the draft-bars will not materially affect the hanging of the scraper box or bowl, whereas if the shoulders were placed near those pivots any slight variation of the above-mentioned parts would prevent the scraper from working satisfactorily, it being understood that in making scrapers in duplicate parts there is always a slight difference in the irons or in the distance of the holes, &c., and when nice adjustment is required, as is the case when the shoulders are near the pivotal points of the draft-bars, there is sure to be trouble from this source when the parts to be put together are selected at random. Furthermore, these shoulders afford no lodgment for dirt to obstruct the free working of the parts, as is the case when supports for the draft-bars are secured to the sides of the box or bowl near said pivotal points.

The scraper box or bowl is prevented from dumping while loading by the following mechanism: To each side of the box or bowl, at the forward end, is secured a hook-catch K, with which hooks L, pivoted at *l* in loops M on the draft-bars, are made to engage when the box or bowl is lowered. These hooks are operated by means of hook-links N, pivoted at their lower ends to the hooks and at their upper ends to the lever-bars. Heretofore this latter connection has been made in the same plane as the points of attachment of the lever-bars to the axle and to the standards, from which it resulted that in order to prevent the hook-links from coming into contact with the standards the lever-bars had to extend so far beyond the latter that they would strike against the top of the box or bowl as the lever was thrown upward. I avoid this objection by changing the plane of this connection, and I change that plane by giving the forward ends of the lever-bars an upward curve, as shown. By this means, while I still preserve the proper throw of the links, I so shorten the radius of the ends of the lever-bars that they may pass freely over the box or bowl.

O is a standard rising vertically from one of the draft-bars and provided near its upper end with a spring-hook O′ for engagement with one of the handles *a* when the scraper box or bowl is dumped, as seen in Fig. 3.

P is the lever-hook pivoted between the rear ends of the lever-bars and designed to engage with a cleat Q, secured to the back of the box or bowl.

The drawings reveal the operation of the machine, and therefore description is unnecessary.

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

1. The combination, with the scraper box or bowl and the cranked axle, of the standards secured to the sides of the box or bowl, and the lever-bars secured directly to the axle and pivoted to the standards in rear of a vertical line drawn from the point of attachment of said standards to the box or bowl, substantially as described, and for the purpose set forth.

2. The combination, with the scraper box or bowl and the cranked axle, of the rearwardly-curved standards secured to the sides of the box or bowl, and the lever-bars secured to the axle and pivoted in the upper curved ends of said standards, substantially as described, and for the purpose set forth.

3. The combination, with the scraper box or bowl having shoulders at its forward end, and the tongue, of the draft-bars secured to and extending in rear of the tongue and pivoted to the sides of the box or bowl on an approximate level with the tongue, the said draft-bars carrying lugs arranged to rest on said shoulders when the box or bowl is in its elevated position, for the purposes set forth.

4. The combination, with the scraper box or bowl having shoulders cut in its sides at the forward end, of the draft-bars and the tongue-braces, the latter being secured to said bars and having inwardly-projecting lugs for engagement with said shoulders when the box or bowl is in its elevated position, substantially as described.

5. The combination, with the scraper box or bowl, the standards secured thereto, the

cranked axle, and the pivoted hook, of the lever-bars secured to the axle pivoted in the standards and having an upward curve at their forward ends, and the hook-links pivoted at their lower ends to the hooks and at their upper ends to the forward ends of the lever-bars, for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILBER E. KILBORN.

Witnesses:
GEO. B. TOLAND,
N. YOAKAM.