

J. H. EDMONDSON.
Earth-Scraper.

No. 204,142.

Patented May 28, 1878.

Fig. 1

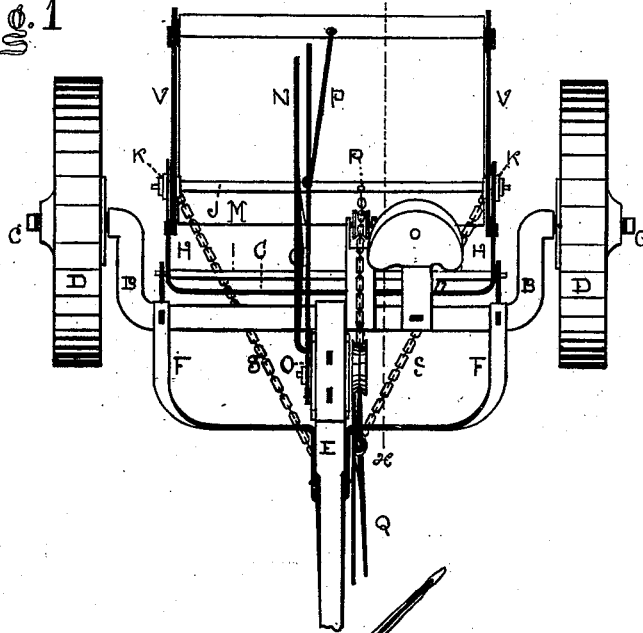


Fig. 3.

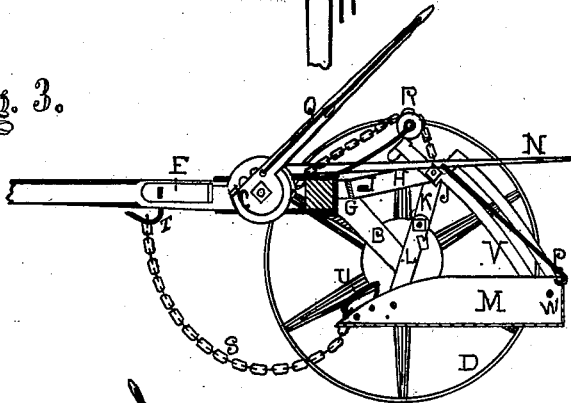
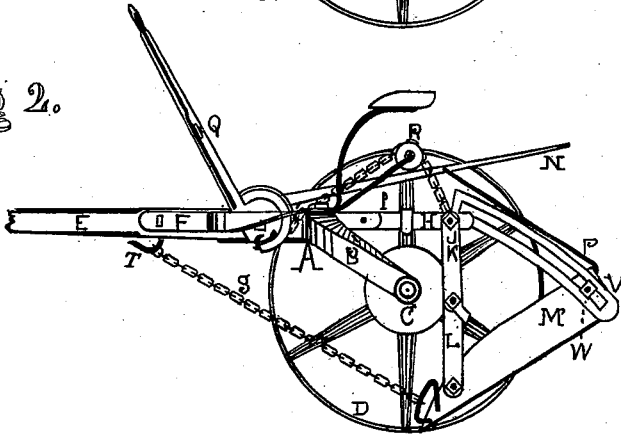


Fig. 2.



WITNESSES

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JAMES H. EDMONDSON, OF VALPARAISO, INDIANA.

IMPROVEMENT IN EARTH-SCRAPERS.

Specification forming part of Letters Patent No. **204,142**, dated May 28, 1878; application filed December 6, 1877.

To all whom it may concern:

Be it known that I, JAMES H. EDMONDSON, of Valparaiso, in the county of Porter and State of Indiana, have invented a new and useful Improvement in Earth-Scrapers, of which the following is a specification:

The object of the present invention is to improve the road-scraper patented to me on October 16, 1877, No. 196,143, so as to provide a better operative implement for excavating and grading.

The improvement consists in an axle-tree provided with arms which extend downward and backward and terminate in spindles for the wheels, in connection with the tilting-frame (shown in said patent) and a lever-connection for elevating the back or rear part of the scraper, and supporting the same when the scraper is to carry earth after it is filled. By means of this construction the plane of the main bar of the axle-tree is elevated considerably above the axle-spindles, whereby much smaller traveling wheels are employed, avoiding the liability of the upsetting of the implement when it is operated on inclined surfaces, and at the same time providing, by such construction of the axle-tree, ample room for earth to fill the scraper without coming in contact with an obstruction; and by means of the long rearward-projecting arms of the axle-tree the tilting-frame is pivoted so far forward that when it is elevated, as it is to assist in supporting the scraper when loaded, the supporting points or bearings of the rear pivot from which the scraper is suspended come on, or nearly on, a vertical line or plane with the spindles of the axle-tree, whereby the load is suspended nearly on an equilibrium, which is necessary to prevent the tongue from rising up and interfering with the team or from bearing down too heavily on the necks of the team. The tilting-frame is pivoted to the rearwardly-projecting ends of the braces which connect with the tongue, whereby provision is made against injury from a lateral strain on the parts.

In the drawings, Figure 1 is a plan or top view of an earth-scraper embodying my improvement; Fig. 2, a side elevation thereof, with the wheel removed to give a clear view of the parts. Fig. 3 shows a longitudinal sectional elevation with the scraper elevated, as

when earth is being carried from the place of excavation to the place where it is to be dumped.

A represents the axle-tree, which is provided with backward and downward projecting arms B B, which terminate in spindles C, which are supported by the wheels D. E is the tongue, which is rigidly secured to the axle-tree A in the ordinary manner, and to which is rigidly secured braces F. The opposite ends of the braces are secured to the axle-tree A, near arms B B, by ordinary bolts, and extend far enough back of the axle-tree to form a joint-connection with the tilting frame G H H I J. (Shown in the patent referred to.) The bar is G, the arms are H H. I is the forward pivot-rod, and J the rear pivot-rod.

By means of the long arms B the pivot-rod I is placed in front of the spindles C, so that when the scraper is elevated, as shown in Fig. 3, the pivot-rod J will come within, or nearly within, a vertical plane with the spindles C, and thus balance the load of earth on the scraper with reference to the wheels, tongue, and axle-tree spindles.

K L are the jointed attachments which connect the tilting frame with the scraper M, the same as in said patent. N is a spring-catch lever, pivoted to a disk, O, fastened to the tongue E, the disk having a series of holes therein, with which the end of the lever engages to secure the latter in position after it has been adjusted. This lever extends back over the scraper, and connects with a rod, P, the lower end of which fastens to the rear of scraper M. The function of this lever is to elevate the rear of scraper and, with rod P, depress it.

The lever N is supported in sustaining the load in the scraper, or its proportion of the load, by bearing on the rear pivot-rod J, as shown in Fig. 3. This is an important feature in the construction of the parts, and they should be constructed thus, or the rear part of the scraper will have no adequate support; and the connecting-rod P should have its joint fixed in lever N, close to bar J. The rod J being light is supported by the elevating-chain R, which is operated by a lever, Q, to raise the scraper M bodily, substantially as in the said patent referred to, by elevating the tilting frame, the lever being provided, in the ordi-

nary manner, with a spring-catch and semi-pulley wheel.

S is the draft-chain, fastened to the tongue E at T and to the scraper by means of loop-eyes U, which are elongated at their upper ends, so that the chain S may slide up and practically lengthen the distance between the tongue E and the cutting-edge of the scraper during the dumping process, thereby permitting the scraper to have a steeper incline than otherwise could be attained; but no claim of novelty is made to the loop-eye attachment.

When sloppy or very watery earth is to be removed I employ two curved corner-supports, V, which are slotted longitudinally, and their upper ends are hung to the pivot-rod J, so as to swing, and headed pins W, tapped into the scraper, move in the slots during the elevating of the scraper, and bear on the ends of the slots when the scraper and its contents are being moved, and prevent the corners of the scraper from tipping and spilling the contents thereof. For ordinary earth they are not needed; but they may be retained in place or removed, as desired.

To put the scraper in position to dip, bring the lever Q well to the front and elevate the lever N, as shown in Fig. 2, while the team is

moving the scraper forward. Then, to raise the scraper from the earth, bring the lever Q back, as shown at Fig. 3. This will bring the lever N, by the weight of earth in the scraper, on the rod J as a support.

To dump the earth, put the lever Q forward and elevate lever N, the same as when dipping the scraper, only when dipping the lever N is not raised so high as when dumping.

To grade or smooth off the earth with the cutting-edge of the scraper, raise both levers as much as may be required.

I claim—

1. As an improvement in road or earth scrapers, the axle-tree A, provided with the backward and downward projecting arms B, in combination with the tilting frame G H H, lever N, connecting-rod P, and scraper M, as set forth and described.

2. The tilting frame G H H, in combination with the direct-attaching braces F F, rod P, and scraper M, as shown and described.

3. Slotted and curved supports V V, combined with the tilting frame and scraper M, as specified, and for the purpose set forth.

JAMES HENRY EDMONDSON.

Witnesses:

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