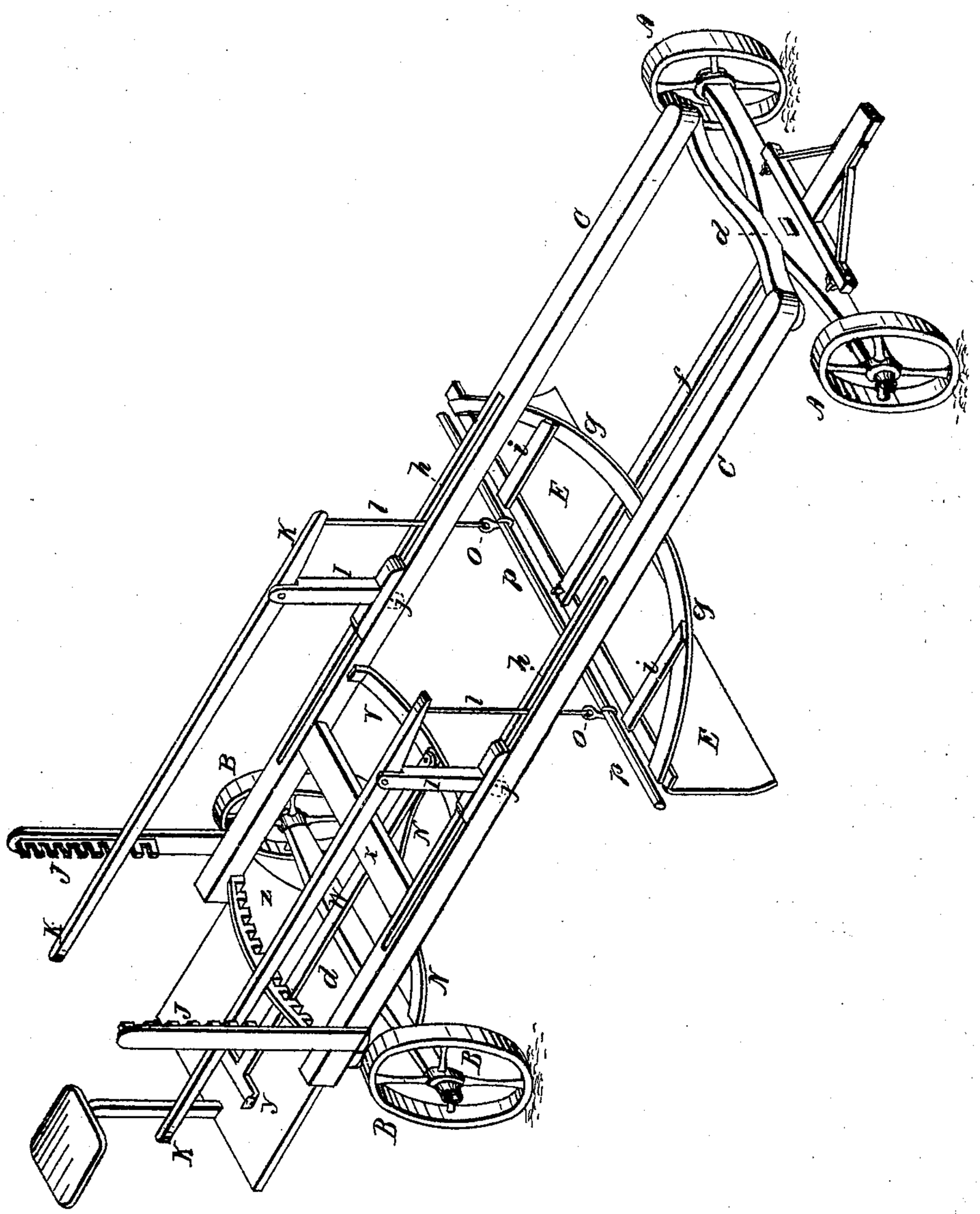
R. F. READ.

Road-Scrapers.

No. 144,925. Patented Nov. 25, 1873.



Witnesses

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ROLAND F. READ, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN ROAD-SCRAPERS.

Specification forming part of Letters Patent No. **144,925**, dated November 25, 1873; application filed September 3, 1873.

To all whom it may concern:

Be it known that I, ROLAND F. READ, of San Francisco city and county, State of California, have invented an Improved Road-Scraper; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to improvements in mounting and operating a scraper, such as will be suitable for scraping, leveling, grading, and removing loose earth, or earth previously loosened up and reduced to a fit condition by plowing.

The following description fully explains the nature and character of my improvements, reference being had to the accompanying drawings, which is a perspective view of my machine.

A represents the forward, and B the rear, wheels of my scraper-wagon, each pair of wheels being connected together by an axle, and provided with a bolster, *d*, similar to the front wheels of a wagon. These two pairs of wheels are connected by two parallel side timbers, C C, the ends of which are secured to and supported by the bolsters *d* at each side of the wagon, so that the timbers form the reaches or couplings of the wagon. The scraper E is suspended from the timbers C C in the manner hereinafter described. This scraper consists of a metal plate, which may be of any desired length. I prefer to make it somewhat longer than the width of the wagon between the wheels, so that it will scrape a furrow of from five to six feet in width. The scraper or plate is curved forward slightly toward its lower edge, as shown. This scraper is placed transversely across the wagon at some point, preferably midway, between the forward and rear pairs of wheels. A rod or bar, *f*, has one end secured to the axle-bed of the forward wheels by the ordinary king-bolt, while its opposite end is secured to the middle of the upper edge of the scraper. A semicircular plate or bar, *g*, has its opposite ends secured to the opposite upper corners of the scraper, and passes over the bar *f*, so as to bear upon it at all times, no matter at what angle the scraper may be placed. The semicircular plate is connected with the upper edge of the scraper at convenient points by braces *i i*, as shown. The timbers C C have each a vertical slot, *h*, mortised through them, which extends longitudinally nearly their entire length. A jack, I, adjustable horizontally, is placed upon each timber, and secured by a plate, *j*, which passes down through the slot or mortise, so that the jacks can be shifted independently of each other back or forth, the length of the slot, to any point desired. A lifting-lever, K, is pivoted to the upper end of the standard of each jack, the portion extending toward the front of the wagon being the short arm of the lever, while the long arm extends toward the rear. A rope, cord, or chain, *l*, connects the extremity of the short arms of these levers with the scraper below, passing down through the slots *h*, while the long arms each engage with the teeth of a vertical rack, J, upon each side of the wagon at its rear end.

Thus, it will be seen that, by depressing the long arm of the lever K, the scraper will be lifted from the ground, so as to be suspended from the short arm of the lever. When thus suspended, the position, angle, and location of the scraper can be shifted, as desired, by moving the jacks, either one or both, back or forth, along the timbers, and if it be desired to swing the scraper above the ground while the wagon is moving from place to place, the long arms can be secured in their depressed position by means of racks J.

To facilitate the shifting of the scraper from one position to another when it is suspended, the lower extremities of the cords, chains, or ropes *l* have a ring, *o*, attached to them, and these rings are secured around a rod, *p*, which extends lengthwise across the upper edge of the scraper. The rings slide loosely upon the rod, so that the scraper can also be shifted endwise.

When the scraper is working at an angle to the travel of the wagon, a side draft will be created, which requires to be counteracted. For this purpose I have constructed the rear wheels and axle with a bolster similar to that on the front wheels. A guiding-bar, *n*, extends forward and upward from the axle, so

that its forward end rests upon a transverse bar, V, which extends across, between the timbers C C, to which its ends are attached. A lever-bar, W, has its middle pivoted to a block, X, while its forward end is pivoted to the end of the guiding-bar. The opposite end of this lever extends back to a platform, Y, at the rear of the wagon, where it passes below a horizontal rack, Z, at any point along the length of which it can be secured.

The driver's seat is mounted on the platform Y, so that the end of the lever W is within easy reach of his foot.

Now, it will be readily seen that the driver can, by placing his foot upon the lever and shifting its position either to the right or left, cramp or turn the rear wheels of the wagon to an angle to the line of travel, and thus compensate for the side draft of the scraper by creating a counter draft.

A scraper-wagon constructed and operated in the above-described manner, will be especially adapted for road-making, as the scraper can be set so as to form the grade by its adjustment.

The dirt taken up by the scraper, when it is set an angle to the travel of the wagon, will be crowded to one side of the wagon in the same manner that a plowshare throws the furrow, and in road-making, by throwing the dirt to the center from two sides, the crowned roadway will be completed.

The scraper can be used for any kind of grading or scraping, and can be drawn by horse or other power.

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

1. The parallel timbers C C mounted upon wheels A B, and having the longitudinal mortise or slot *h*, in combination with the adjustable lifting-jacks I, cords or chains *l*, and scraper E, substantially as and for the purpose above described.

2. The scraper-wagon, having the braces *x* and *v*, in combination with the lever *y*, rack Z, and connection N, for the purpose of adjusting the rear wheels in reference to the scraper, as set forth.

3. The scraper E and lifting-jacks I, with their levers K, all adjustable laterally, in combination with the rack-standard J, as set forth.

In witness whereof I hereunto set my hand and seal.

ROLAND F. READ. [L. S.]

Witnesses:

JOHN L. BOONE,

C. M. RICHARDSON.