A. McCALL, J. T. WATKINS & J. S. SCOTT.

Road-Scraper.

No. 160,535. Patented March 9, 1875.

Fig. 1.

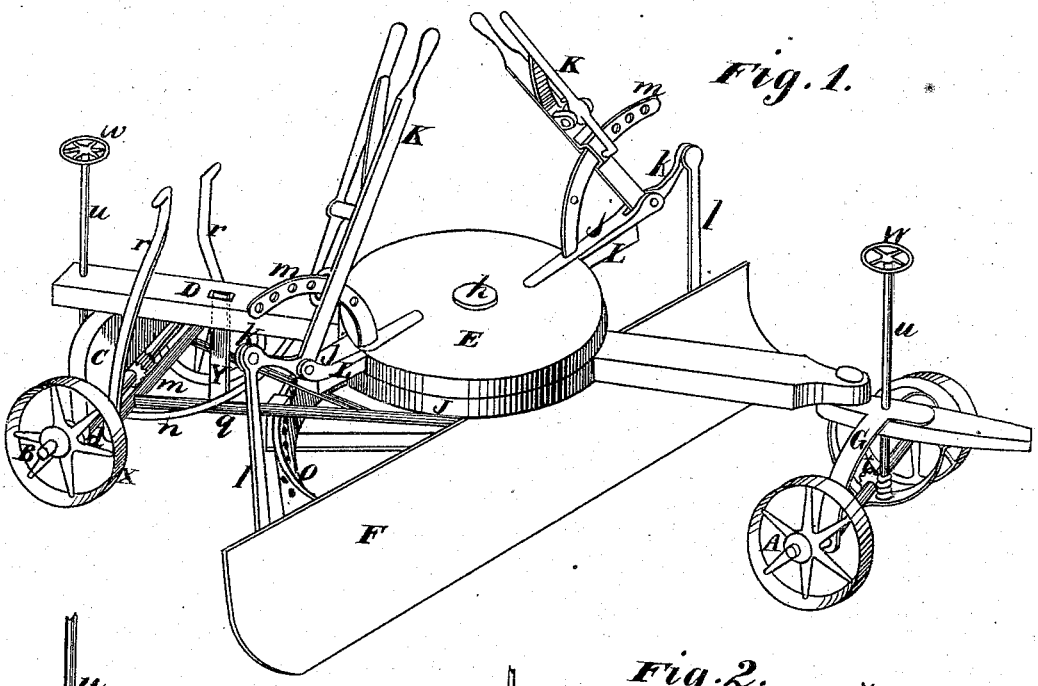


Fig. 2.

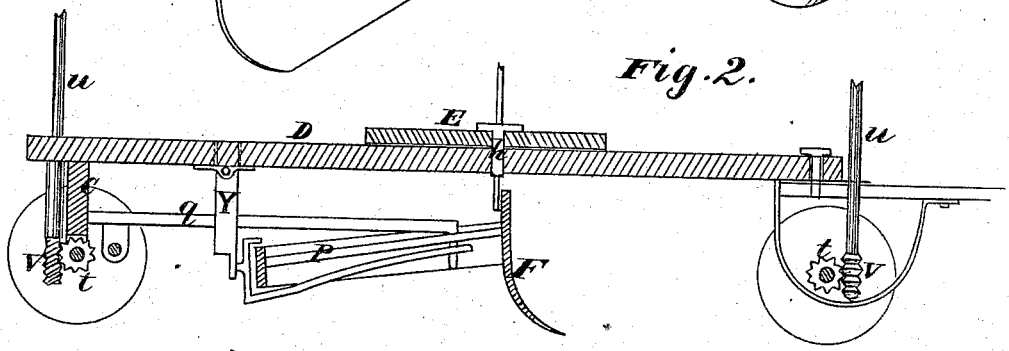


Fig. 3.

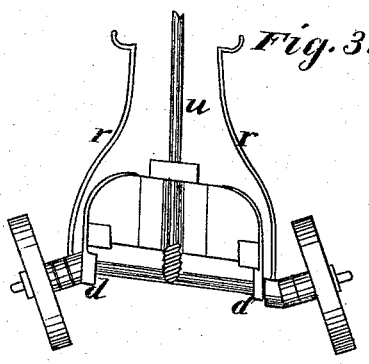
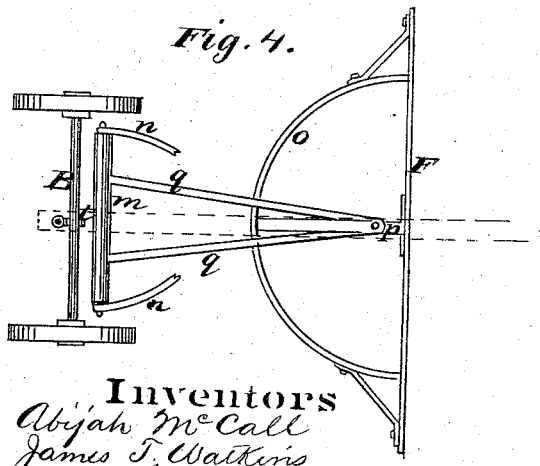


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

ABIJAH McCALL, OF SARATOGA, AND JAMES T. WATKINS AND JASPER S. SCOTT, OF SANTA CLARA, CALIFORNIA.

IMPROVEMENT IN ROAD-SCRAPERS.

Specification forming part of Letters Patent No. **160,535**, dated March 9, 1875; application filed December 17, 1874.

To all whom it may concern:

Be it known that we, ABIJAH MCCALL, of Saratoga, California, and JAMES T. WATKINS and JASPER S. SCOTT, of Santa Clara town and county, State of California, have invented an Improved Road-Scraper; and we 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 our said invention or improvement without further invention or experiment.

Our invention relates to improvements in that class of road-scrapers and plows in which the scraper or plow is suspended between two wheels or pairs of wheels, so as to stand across the line of travel at any desired angle.

In order to describe our improvements, so that others will understand their exact nature and operation, reference is had to the following description and drawing, in which—

Figure 1 is a perspective view of our scraper. Fig. 2 is a longitudinal section. Fig. 3 is an end view. Fig. 4 is a plan of a portion of the device.

A is the front and B the rear axle of a wagon. These axles are constructed as hereinafter described. A bolster, C, is secured upon the rear axle B by means of lugs *d*, through which the axle passes, so that the axle can turn in them, and upon this bolster the rear end of the coupling-beam D is secured. The front and rear axles of the wagon are connected by the single coupling-beam D. Upon this beam, at some point near its middle, we construct a turn-table, E, from which the scraper F is suspended, so that the scraper hangs below the beam, and transversely to the travel of the wagon, at any angle either right or left. The forward end of the beam D is secured to the middle of a strong metal bow, G, in the ends of which the front axle turns. The turn-table E is constructed by securing a circular plate or table, E, by a central bolt or pin, *h*, upon a circular section, J, which is secured to or formed upon the beam D. The circular plate or table E has an arm, L, extending out upon each side, and a metal plate, *j*, is secured upon each arm, so that its extremity will project beyond the end of the arms. K K are hand-levers, the lower ends of which are constructed with a short arm, *k*, in the manner of a bell-crank. The angles of these bell-cranks are hinged to the projecting end of the plate *j*, and a rod, *l*, connects the end of the short arm with the scraper F, near each end, so that the scraper will be suspended from the turn-table. This turn-table can be constructed in various ways, and be made to answer the same purpose. A curved rack, *m*, is secured to the turn-table near each lever K, so that the lever can be shifted to raise or lower the scraper at either or both ends, and fixed in any desired position in the rack. It will thus be seen that the scraper can be turned to any desired angle by merely turning the turn-table, while it can be adjusted in height by means of the levers. A strong semicircular metal plate, O, has its ends secured to the rear side of the scraper, and a bar, P, connects the middle of the semicircular plate with the middle of the scraper. Directly in front of the rear axle we secure, parallel with the axle, a rod, *m*, the ends of which are supported in braces *n*, which extend from the beam D to the lower edge of the bolster C. Rods *q q* extend forward from near each end of the rod *m*, similar to a V, so that their forward ends will unite near the scraper, and their united ends are secured to the bar P by a bolt or pin, as shown, thus providing a pushing and pivot arrangement, which acts from the rear of the machine against the middle of the scraper. The semicircular plate *o* is provided with numerous holes, and a brace, *r*, has one end secured to each end of the rod *m* outside of the braces *n*, while its opposite end is formed into a hook. When the scraper has been adjusted the hook ends of these braces are secured in a convenient hole in the plate, so as to hold the scraper rigidly in place. A rectangular bar, *y*, has one end attached to the bar behind the scraper, while its opposite end or arm passes up through a hole in the beam D, where it can be secured by a pin. By raising or lowering this bar in the beam the vertical position of the scraper can be adjusted so as to stand at any desired angle to the surface of the ground. When the scraper is set at an angle to the travel of the machine

a side draft will be created, which it is necessary to counteract. To do this we bend the journals of each axle at an angle in opposite directions, and upon the middle of each axle we secure a pinion, *t*. A rod, *u*, passes down through the pole near the front axle, and through the beam D, near the rear axle, which has a screw, V, formed on its lower end, so that the screw will engage with the pinion. A hand-wheel, W, on the upper end of the rod *u* serves to turn the rod, thus causing the screw to turn the axle. The wheels can also be mounted on independent journals, which are supported in a pivoted frame, so that when the frame is tilted the journals will stand at the desired angle. This arrangement of the wheels can also be applied to a gang-plow, in which case the land-side of the plow can be dispensed with, as the angle of the wheels will perform the same duty that the land-side usually does.

As the wheels *x* are mounted on oppositely-angular journals it is evident that they may be caused to stand at an angle, or bracing, by turning the axle until the journals stand in the same plane and at an angle opposite to the angle of the scraper, so that when the side draft comes upon the scraper the wheels will counteract it. By this means we provide a greatly-improved road-scraper or plow.

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

1. The turn-table E, with its arms I, in combination with the crank-levers K, connecting-rods *l*, racks *m*, and scraper F, substantially as and for the purpose above described.

2. The scraper F, with its perforated semicircular plate O and connecting-bar P, in combination with the rod *m*, braces *n*, and V-shaped push-bars *q q*, constructed and applied substantially as and for the purpose above described.

3. The axles A B, having oppositely-bent journals and pinions *t*, in combination with the upright shafts *u*, with screws *x'* and V, substantially as and for the purpose described.

In witness whereof we hereunto set our hands and seals.

ABIJAH McCALL. [L. S.]
JAMES T. WATKINS. [L. S.]
JASPER S. SCOTT. [L. S.]

Witnesses:
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