(No Model.)

# A. HARPOLD.

## WHEELED ROAD SCRAPER.

No. 458,455. Patented Aug. 25, 1891.

Fig. 1.

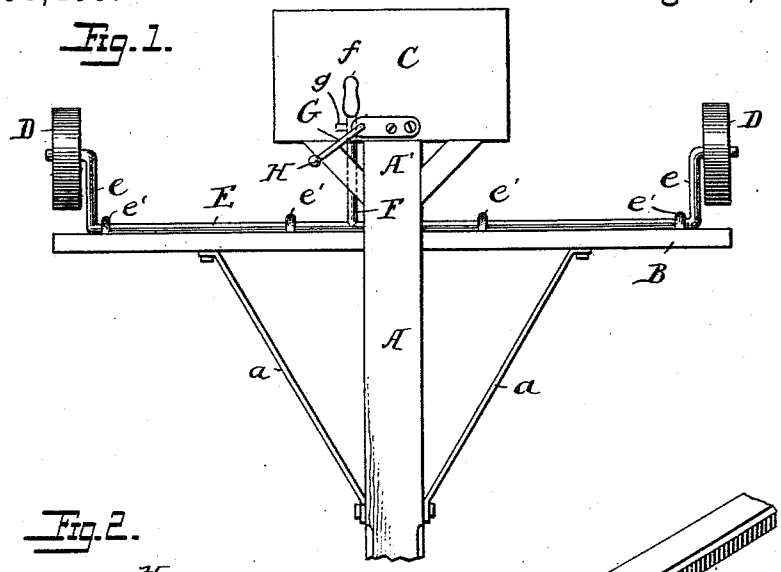



Fig. 2.

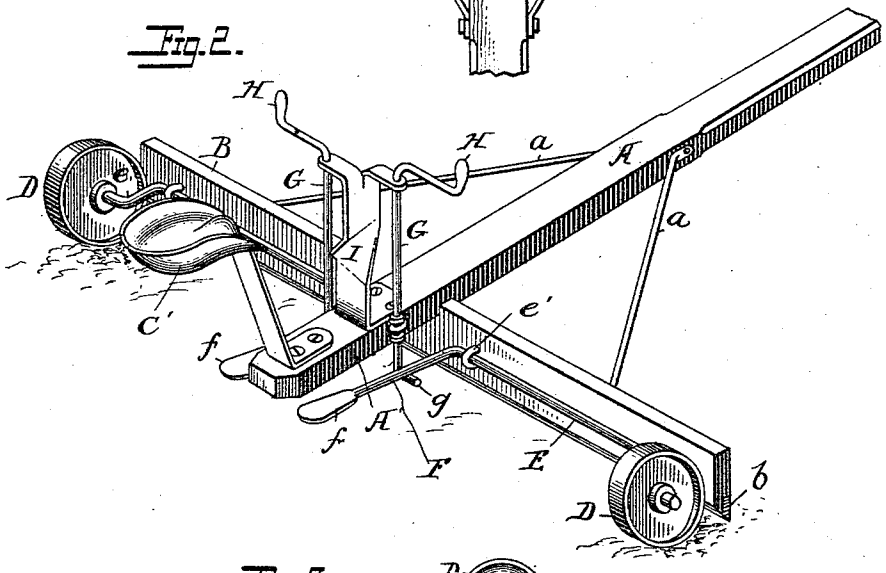
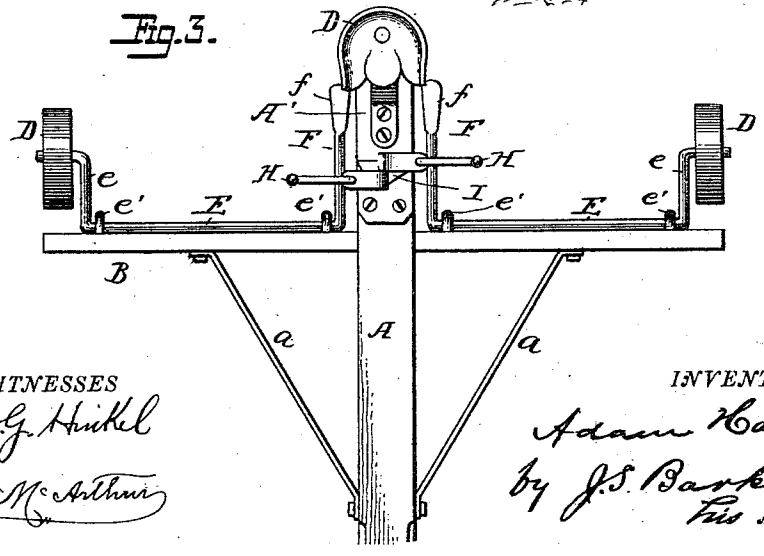



Fig. 3.




WITNESSES

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

ADAM HARPOLD, OF COLTON, CALIFORNIA, ASSIGNOR OF ONE-HALF TO THOMAS M. MORAN AND GEORGE L. HUTCHINSON, OF SAME PLACE.

## WHEELED ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 458,455, dated August 25, 1891.

Application filed January 7, 1891. Serial No. 377,009. (No model.)

*To all whom it may concern:*

Be it known that I, ADAM HARPOLD, a citizen of the United States, residing at Colton, in the county of San Bernardino and State of California, have invented certain new and useful Improvements in Wheeled Road-Scrapers, of which the following is a specification.

This invention relates to road-scrapers or grading-machines; and it consists in providing a machine of this class with a scraping-blade, a seat or platform for the driver, wheels which may be forced against the ground in order to raise the scraper-blade and so discharge the load gathered thereby, and foot-operated devices arranged adjacent to the driver's seat or platform and connected with the wheels, so that the latter may be worked by the driver without his having to stop the team, leave his seat or platform, or in any wise use his hands, and thus relinquish to a greater or less degree his control over the team.

It further consists in details of construction whereby the main object of the invention is the better carried out, as will be hereinafter pointed out.

In the drawings, Figure 1 is a plan view of one form of the invention; Fig. 2, a perspective view, as seen from the rear, of a scraper having the invention in somewhat different form applied thereto; Fig. 3, a top view of the machine shown in Fig. 2.

A designates the draft-pole or tongue of the scraper, which is intended to be drawn by two horses, and B the scraper-blade, which extends transversely across the tongue either at right angles or somewhat inclined thereto, as may be preferred. The blade has a steel edge *b*, as is usual, and is braced by the rods *a*. The tongue A extends rearward beyond the scraper-blade to constitute a support A′ for the driver, which support may be expanded to form a platform C, as shown in Fig. 1, upon which the driver may stand, or be provided with a seat C′, as shown in Figs. 2 and 3.

D D are the wheels mounted upon cranks *e e* of a shaft or shafts E at or near the ends of the blade and preferably in rear thereof. The shaft or shafts E are secured to the rear face of the scraper-blade and are arranged to rock in the clips or bearings *e′*. When a single shaft or axle E is employed for the two wheels, as shown in Fig. 1, it is provided at or near the middle with a crank-arm F, which extends under or adjacent to the platform C and is provided with a pedal or foot-piece *f*, arranged in convenient position for the driver to operate by his foot, so that by throwing his weight upon the arm F he can rock the shaft E and thus cause the wheels to bear upon the ground and the scraper-blade to be raised. The preferred construction, however, is that shown in Figs. 2 and 3, wherein each wheel has a separate crank shaft or axle E.

Each shaft is provided at its inner end—that is, near the middle of the blade B—with a crank-arm F, which is provided with a pedal or foot-piece *f*, situated in such position that the operator while seated upon the seat C′ may easily reach it. By this construction the operator is enabled to elevate one side of the scraper-blade at a time, and thus cause the load to be dumped on one side or the other, as may be desired; or, by pressing upon both pedals at the same time, to rock both shafts and elevate the entire blade at once, as is done in the construction shown in Fig. 1. It will be observed that the arms *e* and F are so arranged that the wheels D and the foot-pieces *f* move simultaneously in the same vertical directions, so that the operator has only to throw his weight upon one of the foot-pieces in order to elevate the blade, no lifting or sidewise movements being required, which movements must be performed by hand, and hence to a certain degree diminish the driver's control over his team.

In connection with the crank shaft or axle E and the arm F thereof it is advantageous to employ a stop to limit the extent to which the arm F shall be thrown down, so that it shall not pass out of the reach and control of the operator. Such a stop is formed by the rod G, provided with a head or arm *g*, arranged in the path of the arm F, so that when the arm F has been depressed far enough to cause the blade to be raised to dump the load such arm will come in contact with the stop *g* and be arrested thereby.

As it sometimes happens that it is desirable to raise the blade to an unusual height, the stop head or arm is made so that it can be moved out of the way of the arm F, and while this may be accomplished in various ways that shown is believed to be the most simple and effective. It consists in arranging the rod G vertically and in providing it with a crank arm or handle H, by which it may be turned on its longitudinal axis, so as to carry the head or arm *g* to one side of the crank-arm F. When the rod G is so turned, the arm F may be pressed down until the foot-piece *f* comes in contact with the ground. In moving the scraper from place it is usually supported entirely upon the wheels D, and in order to hold the wheels permanently in engagement with the ground the same stops *g* are made use of, the arms F, however, in this case resting below the stop arms or heads and bearing upward against them. This position of parts is secured by first turning the rods G so that the arms F may be forced down past the arms *g*, and then while the arms F are in this depressed position turning the rods G so as to bring the stop-arms *g* over the arms F. The rods G are extended upward in front of the driver and have their upper ends supported in a bracket or standard I, rising from the part A′ of the draft-tongue or pole.

A scraper having the invention described applied to it can be used continuously—that is, it is not necessary to stop the scraper in order to dump the accumulated load, and at the same time it permits the operator to ride, thus reducing his labor while adding his weight to that of the machine, which can be made correspondingly lighter. By arranging the wheels D in rear of the blade they are brought into contact with the surface of the ground which has been smoothed by the blade when they are depressed to dump the load, and thus they travel more smoothly and easily than they would were they in front of or at the sides of the blade, and by mounting the wheels inside of the ends of the blade it is also possible to operate the scraper close to an object like a curbstone without interference from the wheels.

I claim—

1. A scraper or grading-machine having a scraping-blade, a riding-support for the operator, and a shaft or axle connected with the blade and having a crank-arm carrying a wheel and another arm extending in the same direction as the said crank-arm and provided with a foot-piece arranged adjacent to the riding-support, whereby the operator may by his foot force the wheel against the ground and thereby elevate the blade, substantially as described.

2. A scraper or grading-machine having a scraping-blade, a draft-tongue with a driver's support situated in rear of the blade, a wheel mounted on a cranked axle secured to the rear face of the blade, and an arm also extending rearward from the axle to a point adjacent to the driver's support and adapted to be depressed by him in order to force the wheel against the ground, substantially as shown and described.

3. A scraper or grading-machine having a scraping-blade, a draft-tongue with a driver's seat in rear of the blade, and the wheels mounted on the two separate cranked axles, each of which axles has an arm, one on either side of the driver's seat, provided with a foot-piece, substantially as shown and described.

4. In a scraper or grading-machine, the combination of the blade, a riding-support for the operator, a wheel mounted on a cranked axle, an arm projecting from the said axle and having a foot-piece adjacent to the said support, which on being pressed upon by the operator forces the wheel against the ground and raises the blade, and a stop situated below and in the path of the said arm, substantially as set forth.

5. In a scraper or grading-machine, the combination of the blade, a wheel mounted on a cranked axle adapted to be forced against the ground to elevate the blade, an arm projecting from the axle, and a stop device consisting of a rod provided with an arm or head adapted to be moved into and out of the path of the arm and with an operating-handle, substantially as shown and described.

6. In a scraper or grading-machine, the combination of the blade, a wheel mounted on a cranked axle adapted to be forced against the ground to elevate the blade, an arm projecting from the axle, and a movable stop arranged to be moved into and out of the path of the arm and serving when in the path of the arm to limit its movement when moved to force the wheel against the ground and to limit its movement in its opposite direction and hold the wheel depressed when the arm has been thrown to the opposite side of the stop, substantially as shown and described.

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

ADAM HARPOLD.

Witnesses:
E. D. ROBERTS,
S. WEATHERSHOLT.