

UNITED STATES PATENT OFFICE.

CLINTON FOSTER, OF PRAIRIE CITY, ILLINOIS.

IMPROVEMENT IN ROAD-GRADING MACHINES.

Specification forming part of Letters Patent No. 42,183, dated April 5, 1864.

To all whom it may concern :

Be it known that I, CLINTON FOSTER, of Prairie City, in the county of McDonough and State of Illinois, have invented a new and Improved Grading-Machine for Repairing Roads and for Similar Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a transverse vertical section of my invention, taken in the line *xx*, Fig. 2; Fig. 2, a plan or top view of the same; Fig. 3, a detached perspective view of a portion of the same; Fig. 4, a detached inverted plan of the cap of the dirt-conveying wheel pertaining to the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the employment or use of a rotating self-adjusting wheel provided with self-dumping buckets and attached to a frame or truck which has a plow connected with it, all being arranged in such a manner that as the machine is drawn along the buckets of the wheel will, as the latter rotates, consecutively receive the earth thrown up by the plow and convey it around and discharge it at the desired point.

To enable those skilled in the art to fully understand and construe my invention, I will proceed to describe it.

A represents a framing, which may be of rectangular form and placed on a truck or mounted on wheels in any proper way. To one side of this framing A there is attached by a hinge, B, a bar, C, having an upright pin or shaft, D, secured to its back end. On this pin or shaft D there is fitted loosely a hub, *a*, of a wheel, E, the arms *b* of which are attached to the hub *a*, and extend out beyond the rim or felly *c* a certain distance, as shown in Fig. 2.

To the part of each arm *b* which extends out beyond the rim or felly *c* there is secured by joints *d* a bucket, F, which are formed of flat metal plates cut in segment form, and having a lip or flange, *e*, turned up at their outer edges, as shown clearly in Fig. 1. Each bucket F is connected by a chain, *f*, to the end of a crank, *g*, which is at the end of a rod, G. These rods G are fitted radially on the wheel E, in bearings or guides *h*, and at the inner end of each rod G there is a crank, *i*,

the position of the latter being at right angles to the cranks *g*. The cranks *i* are over the upper surface of a ring, *j*, which encompasses the hub *a*.

H is a cap, which is secured on the upper part of the pin or shaft D, and has a groove, *k*, made concentrically in its under surface, in which the cranks *i* at the inner ends of the rods G work. This cap H keeps the cranks *i* down nearly in a horizontal position and the cranks *g* in an elevated state, so that the buckets F will be kept up in the same plane with the wheel E. In the under side of the cap H, in groove *k*, there is made a recess, *l*, (see Figs. 1 and 4,) which allows the cranks *i* to rise or turn up as they reach it, and consequently allow the buckets F to drop or swing down, so that they may discharge their load beyond or at the outer side of the bar C, the buckets being elevated or raised as the cranks *i* pass out from said recess *l*.

I represents a plow, which may be of the usual form for turning a furrow-slice. The beam *m* of this plow is attached by a horizontal pin, *n*, to a bar, J, the front end of which is attached by a pin, *o*, to the framing A. The front part of the plow-beam *m* is connected to an upright, K, the upper end of which is fitted upon the front end of a lever, L, the latter having its fulcrum *p* in an upright, M, on the framing, and extending back beyond the plow I, as shown in Fig. 3.

The plow I is by the side of the wheel E, and as the machine is drawn along, the plow throws the earth upon the buckets F. The wheel E has an inclined position, the side nearest the plow resting upon the ground, and consequently being rotated under the draft movement of the machine. The loaded buckets carry the earth around to the elevated side of the wheel, at which point the cranks *i* consecutively enter the recess *l* in the cap H, and allow the buckets to drop so that they may discharge their load, the buckets assuming their proper position as the cranks *i* pass out from the recess *l*. The wheel E, in consequence of being attached to the hinged bar C, is allowed to adjust itself to the inequalities of the surface of the ground over which it may pass, and when it is designed to have the wheel E in a horizontal position, the bar C having a lever, N, attached to it for this purpose. The plow I may also be raised out

of the ground, when necessary, by actuating the lever L.

By this invention it will be seen that the earth may be plowed up at one side of a road and deposited at its center, and by operating in this manner at both sides of a road the latter may be graded in a perfect manner.

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

1. The rotating, adjustable, and inclined wheel E, provided with self-discharging buckets F, in combination with a plow, I, said parts being attached to a framing, A, and all arranged to operate substantially as and for the purpose herein set forth.

2. Giving the wheel E its self-adjusting

movement by attaching the same to a bar, C, connected to the framing A, by means of a hinge, B, substantially as herein described.

3. Giving the buckets F of the wheel E a self-discharging movement by attaching them to the arms *b* of the wheel by means of hinges or joints *d*, and connecting the buckets by chains F, or their equivalents, to cranks *f*, at the outer end of said rods G, the inner ends being provided with cranks *i*, over which a cap, H, provided with a groove, *k*, and recess *l*, is fitted, substantially as herein set forth.

CLINTON FOSTER.

Witnesses:

CLEMIE RUSSELL,
FLORA M. FOSTER.