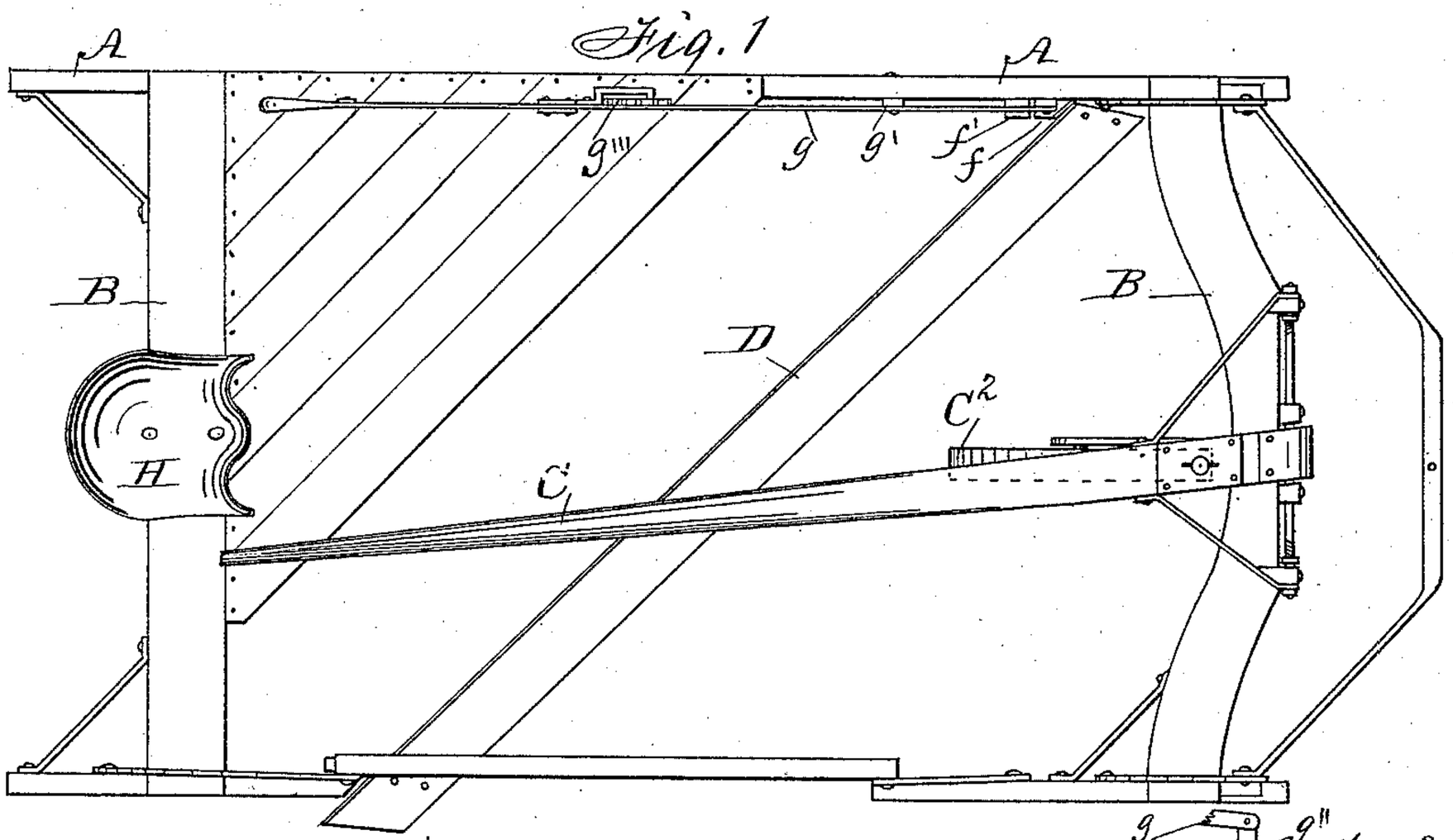
(No Model.)

J. PARMELE.

ROAD GRADING MACHINE.

No. 368,779. Patented Aug. 23, 1887.

Fig. 1



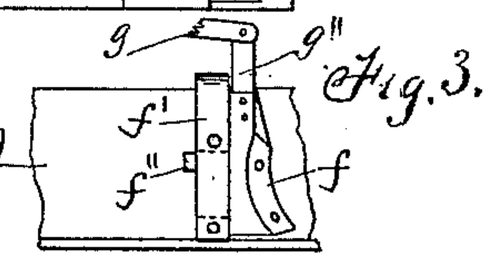


Fig. 3.

Fig. 2.

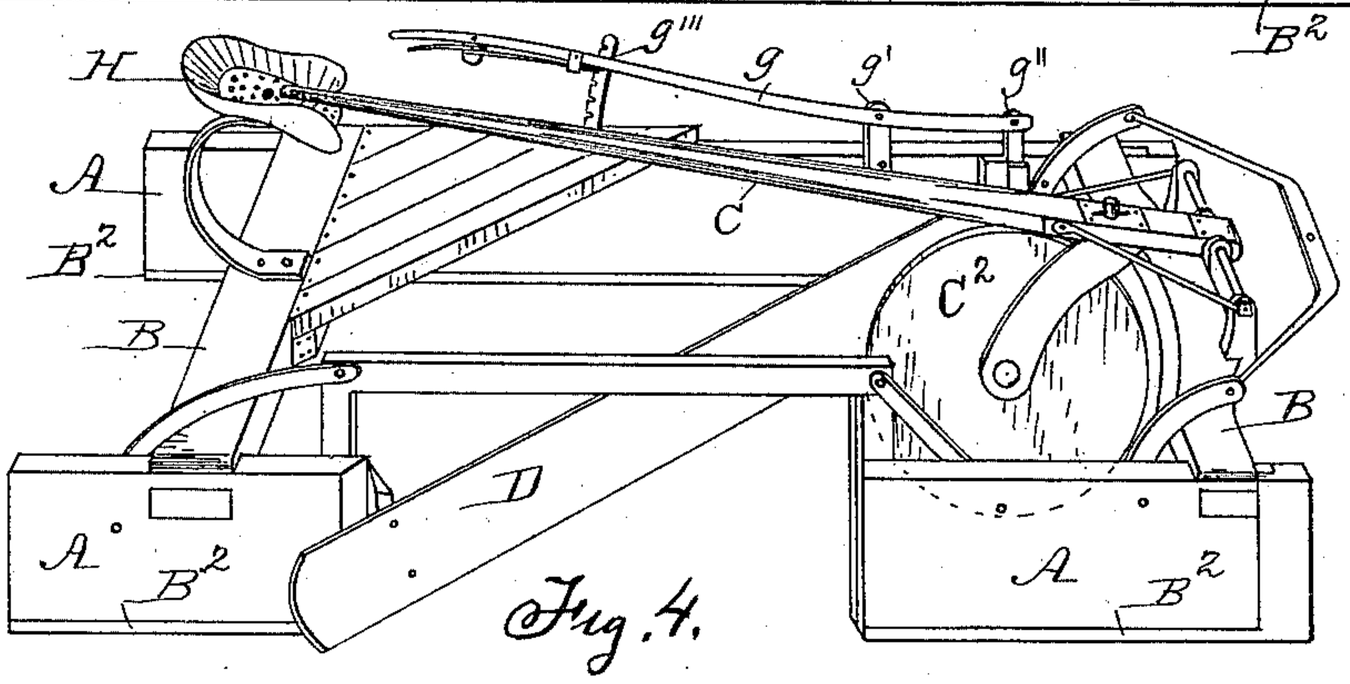


Fig. 4.

Witnesses:
C. M. Stiles
R. H. Orwig.

Inventor:
James Parmele,
By Thomas G. Orwig, Atty.

UNITED STATES PATENT OFFICE.

JAMES PARMELE, OF GRINNELL, IOWA.

ROAD-GRADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 368,779, dated August 23, 1887.

Application filed November 11, 1886. Serial No. 218,636. (No model.)

To all whom it may concern:

Be it known that I, JAMES PARMELE, a citizen of the United States of America, and a resident of Grinnell, in the county of Poweshiek and State of Iowa, have invented a new and useful Road-Grading Machine, of which the following is a specification.

My object is to provide a simple, strong, cheap, and durable machine that can be readily operated by horse-power and a driver to cut and scrape and level uneven surfaces and move surplus ground laterally from the side of a road toward its center as the machine is advanced over a road in the manner that a sled is moved.

My invention consists in the construction and combination of an adjustable scraper, a sled or carriage on runners, mechanism for raising the front end of the runners to make the scraper inoperative, and mechanism for raising and lowering the scraper to govern its depth in the ground, as hereinafter set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a top view, Fig. 2 a side view, Fig. 3 a detail view, and Fig. 4 a perspective view, of my machine.

A A are the wooden side pieces or runners of a carriage-frame. Two or more cross-pieces, B, are rigidly fixed to the runners A by means of mortises and tenons, or in any suitable way, and braced by means of rods to produce a strong and durable frame or carriage adapted to support and operate the scraper.

B^2 represents a metal sole on the bottom of each runner A, that is designed to penetrate the surface of the ground to prevent any lateral deflection of the complete machine when it is advanced to cut and scrape the surface of the ground between the runners. The runners are square at their front ends and covered with metal.

C is a lever hinged to the front cross-piece B to extend rearward.

C^2 is a caster-wheel swiveled to the lever C in such a manner that when the free end and long arm of the lever is depressed the front ends of the runners A will be elevated, as required, to make the scraper inoperative when it is desirable to advance the machine over the ground without scraping or moving any of the surface soil.

D is a scraper adjustably connected with the front end and inside surface of one of the runners A to extend diagonally through an opening in the rear or central portion of the other runner, (or an arched frame,) and adjustably suspended in said opening in such a manner that it can be readily raised or lowered in its bearings, and to change its inclination and cutting-edge relative to the runners and the surface of the ground over which it will be passed, as required, to regulate the depth of its scraping and cutting and the amount of soil to be moved.

f are metal bearings that have inclined and concave faces that fit against the back of the scraper D, to which they are clamped fast by means of bolts.

f' are slotted standards fixed to the inside faces of the runners A in such a manner that screw-bolts *f''* can be passed horizontally through the slots in the standards for the purpose of clamping the bearers *f* and scraper D fast at any point of elevation desired.

g is a lever pivoted to a post or fulcrum, *g'*, that projects vertically from the runner, as clearly shown in Figs. 2 and 4. The short arm of the lever is connected with the scraper-bearer *f* by means of a bar, *g''*, in such a manner that the front end of the scraper can be readily raised and lowered and the scraper inclined vertically from one end toward the other, at the pleasure of the operator, by means of the lever *g*.

g''' is a rack fixed to the runner A, to which the lever *g* is locked in a common way.

H is a seat attached to the rear portion of the machine to support a driver in such a position relative to the levers C and *g* that he can readily drive the horses attached to the machine, and also operate the levers and govern the scraper.

The scraper D is preferably made of steel plate, and may vary in width, length, and weight as desired.

A hitching device is attached to the front end of the machine in a common way, and horses hitched thereto in such a manner that they will drag the carriage and operate the

scraper to cut loose soil, level uneven surfaces, and move the surplus loose ground laterally, so that when the machine is advanced at the side of a road it will round up the center thereof as the machine is successively advanced on one side of a section of road and returned to the starting-point on the opposite side of the same road-section.

I claim as my invention—

1. The combination of the vertically-adjustable carriage-frame on runners A and the vertically-adjustable scraper D, and a vertically-adjustable caster-wheel for raising the front ends of the runners, and mechanism for raising and lowering the scraper, in the manner set forth, for the purposes stated.

2. A road-grading machine composed of a frame or carriage having parallel runners at its sides, and an adjustable blade, cutter, or scraper extending diagonally from the front end of one of the runners to the rear portion of the other or mating runner, mechanism for adjusting and locking the scraper to fixed bearers on the runners, and mechanism for raising and lowering the front ends of the runners and carriage-frame, substantially as set forth, for the purposes stated.

3. A carriage-frame composed of two runners, A, having an opening or arch in one of said runners, a blade or scraper, D, adjustably connected with standards fixed to the runners, a lever, C, having a caster-wheel, C^2, pivoted thereto, and a lever, *g*, connected with the front end of the scraper D, constructed and combined substantially as shown and described, to operate in the manner set forth.

JAMES PARMELE.

Witnesses:
A. WOODS,
R. M. HAINES.