

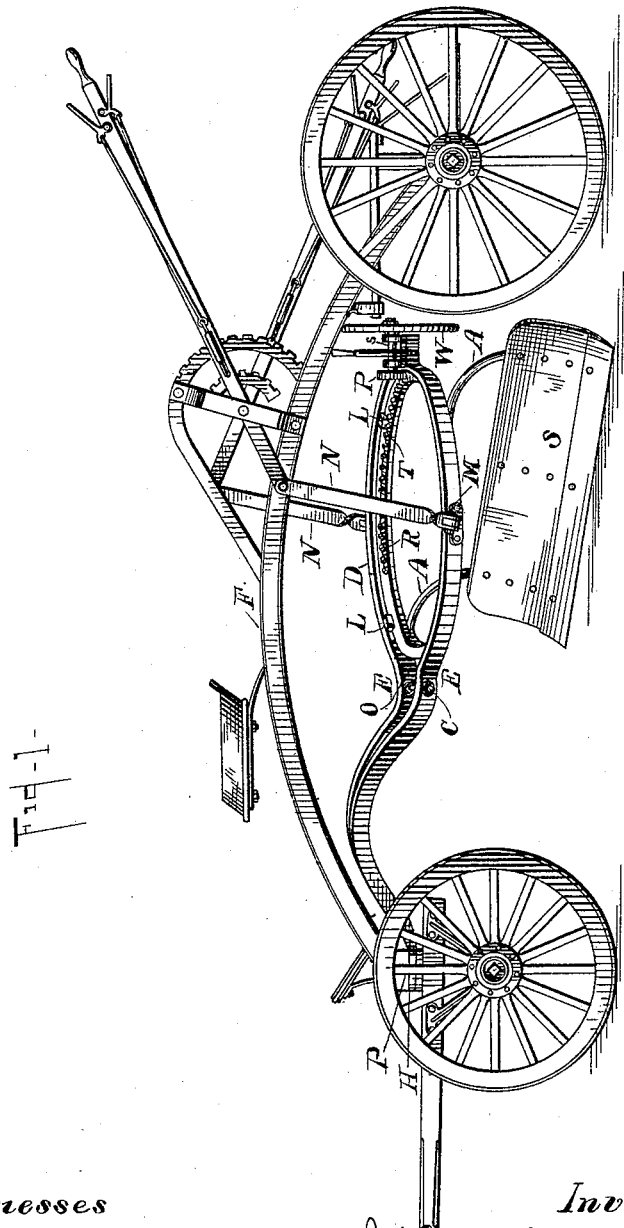
(No Model.)

2 Sheets—Sheet 1.

J. A. HOUSER.  
ROAD GRADER.

No. 454,048.

Patented June 16, 1891.



Witnesses  
W. S. Hulser  
E. M. Hulser.

Inventor  
John A. Houser  
By H. C. Hartman  
att'y.

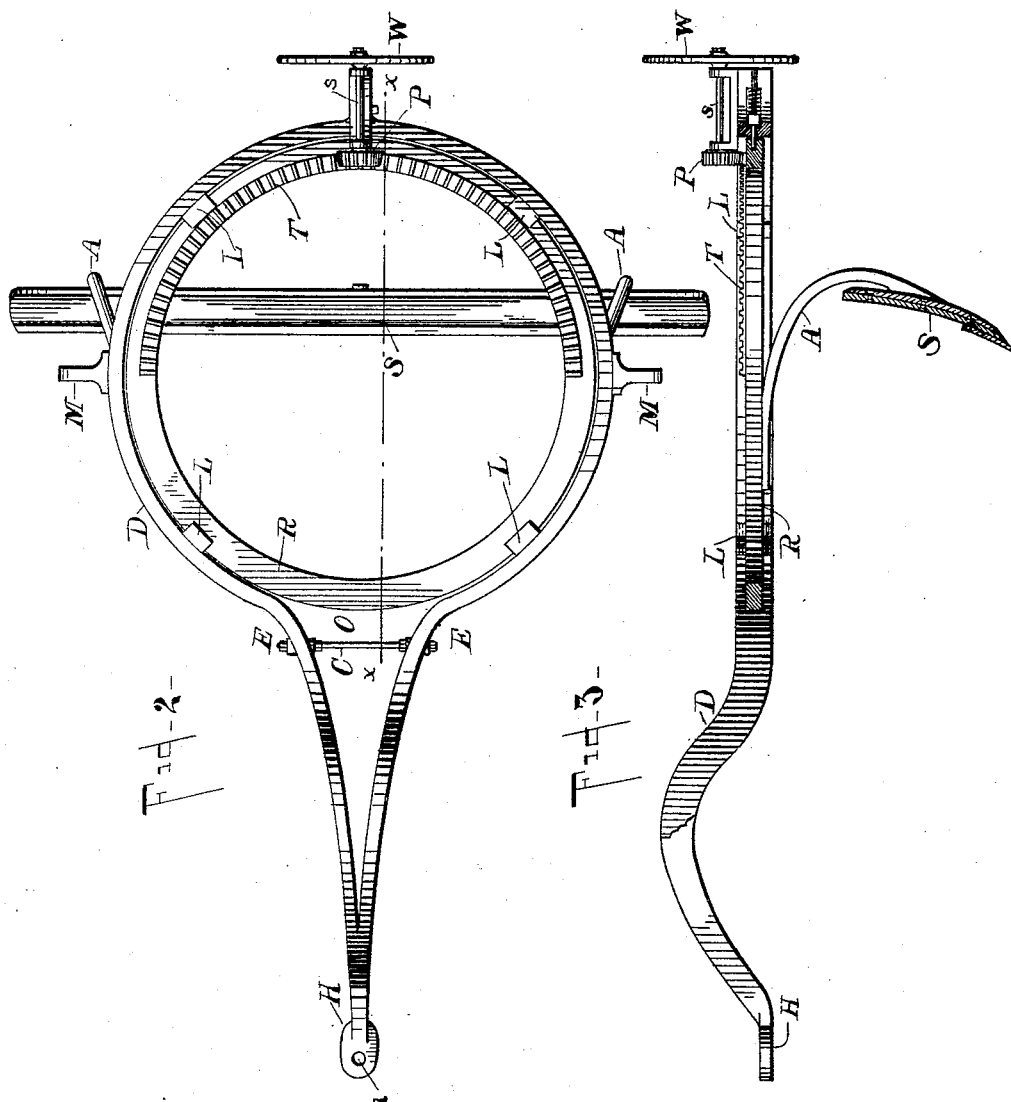
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H. C. Hartman  
By Attorney

# UNITED STATES PATENT OFFICE.

JOHN A. HOUSER, OF FORT WAYNE, INDIANA, ASSIGNOR TO THE FLEMING MANUFACTURING COMPANY, OF SAME PLACE.

## ROAD-GRADER.

SPECIFICATION forming part of Letters Patent No. 454,048, dated June 16, 1891.

Application filed August 1, 1890. Serial No. 360,687. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. HOUSER, a citizen of the United States, residing in the city of Fort Wayne, in Allen county and State of Indiana, have invented certain new and useful Improvements in Road-Graders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of road-graders in which the scraper is supported by an adjustable frame mounted upon wheels and adapted to throw the earth either to the right or left.

The objects of my invention are to simplify the construction of the scraper-supporting frame, provide means whereby a single ring may be used with said frame and clamped therein when properly adjusted, and to provide light, durable, and economical and efficient means therefor. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the device mounted on wheels. Fig. 2 is a top view of the device; and Fig. 3 is a sectional view of Fig. 2, taken on the line *xx*.

Similar letters refer to similar parts throughout the several views.

In the drawings I have not illustrated the mechanism for laterally adjusting the frame, and have shown the simplest means for vertical adjustment, because the adjusting mechanism for these purposes constitutes no part of my invention, and any suitable means therefor may be employed.

My invention consists in making the draw-bar D circular at one end and adapted to inclose and clamp a single ring R, and providing it with a clamping device, means to support the ring, and means to attach the draw-bar to the vertically-adjusting mechanism of the road-grader. The draw-bar D is made circular at one end and adapted to inclose and clamp the ring R, except at O, where the two sides E E project, as shown in Figs. 2 and 3, and terminate at the other end of the draw-bar in a solid head H, which is provided with an eye *i*, whereby it is pivoted by a pin *p* to the forward axle, or it may be connected to the axle

or tongue in any other suitable manner. This draw-bar is also provided with means to vertically support the ring R, preferably by lugs L, as shown. The ring is laterally supported by the rim of the draw-bar inclosing it. The lugs L are placed on both sides of this rim and adapted to permit the movement of the ring between them. This is the preferable construction; but other means may be used to vertically support the ring—such as flanges projecting inwardly from the circular part of the draw-bar, having the same function—and I therefore do not confine myself to the use of lugs.

The clamping device consists, preferably, of a clamping rod or bolt C, passing through the two ends E E of the draw-bar and operated by nuts, as shown in Fig. 2. It may, however, be operated by a turn-buckle or other suitable device. By this means the ring R is clamped firmly and immovably in any position it may be placed for diagonally adjusting the scraper-blade S. The effect is to make the ring and draw-bar substantially one piece, and thereby the draft is applied directly to the points of contact of the curved arms A with the ring R, the strain coming on both draw-bar and ring, giving greater solidity to the scraper-supporting frame and increased efficiency and durability combined with lightness and economy of construction. When desired to change the adjustment of the scraper-blade, the clamp is loosened to permit the ring to be revolved. This draw-bar is supported on the frame F, preferably, by projections M on either side of the circular part, to which are pivoted or hinged the two supporting-rods N, which are attached to the vertically-adjusting mechanism of the frame F, as shown in Fig. 1.

The ring R is provided with teeth T, Fig. 2, extending around a portion of its circumference, preferably upon the upper and inner side of its rim, as shown. Arms A are rigidly attached to this ring and extend downwardly curved to an attachment with the scraper-blade S, as shown in Fig. 1. This ring is revolved to throw the scraper-blade S in different diagonal positions, preferably by means of a pinion P, meshing with the teeth T, which pinion is secured to a shaft *s*, journaled in

suitable bearings attached to the draw-bar D and provided with a hand-wheel W; but I do not confine myself to this particular device for revolving the ring, as any other suitable method may be employed having the same function.

I am aware that prior to my invention scraper-blades have been attached to single rings supported by a bifurcated draw-bar and provided with means to revolve them; also that two rings have been used, one to support the other, and attached to a bifurcated draw-bar or frame-work, and I therefore do not claim such combination, broadly; but

15 What I do claim as my invention, and desire to secure by Letters Patent, is—

1. A supporting-frame for the scrapers of road-graders, consisting of a draw-bar made circular at one end and adapted to inclose a ring and clamp the same, in combination with

a ring provided with arms to connect with the scraper, means to rotate the ring, and means to clamp the draw-bar upon the ring, substantially as described.

2. In road-graders, the combination of a frame mounted on wheels and provided with vertically - adjusting mechanism with the draw-bar D, the clamping-rod C, the ring R, the lugs L, and the projections M, substantially as described.

3. In road-graders having rings to which the scraper-blade is attached, a supporting-frame for such rings, which consists of a continuous draw-bar encircling the ring, adapted to support and clamp the same, and means to clamp the draw-bar around the ring.

JOHN A. HOUSER.

Witnesses:

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