

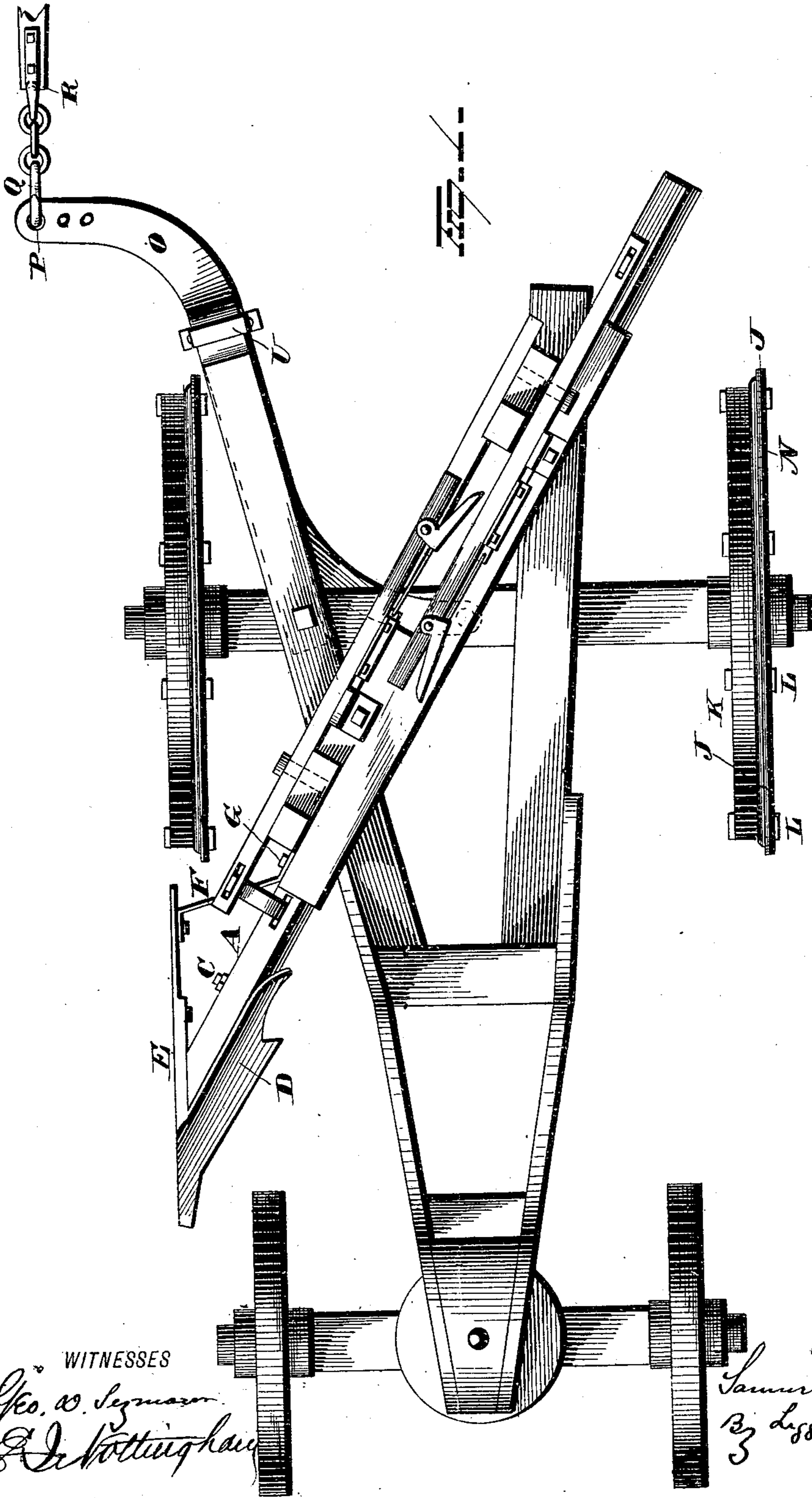
(No Model.)

2 Sheets—Sheet 1.

S. PENNOCK.
ROAD GRADER.

No. 270,693.

Patented Jan. 16, 1883.



WITNESSES
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(No Model.)

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Fig. 2.

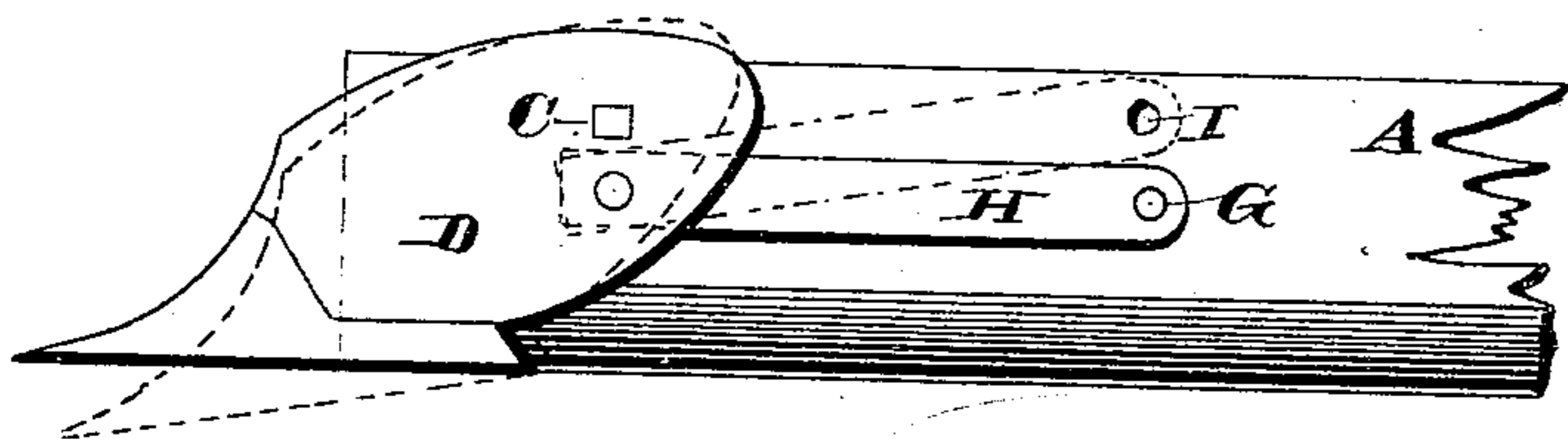


Fig. 3.

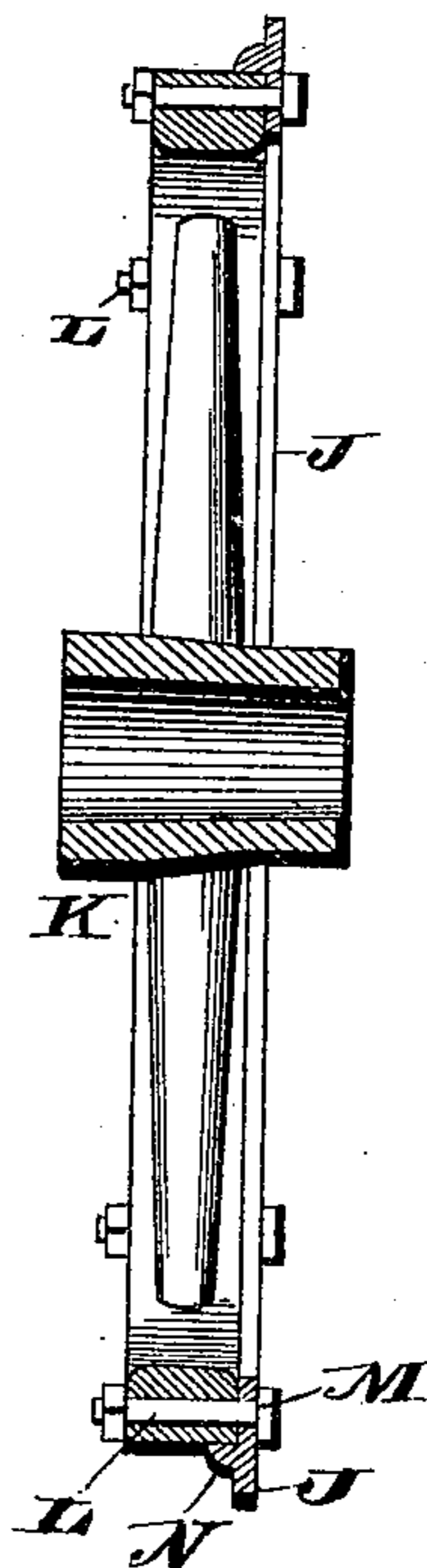
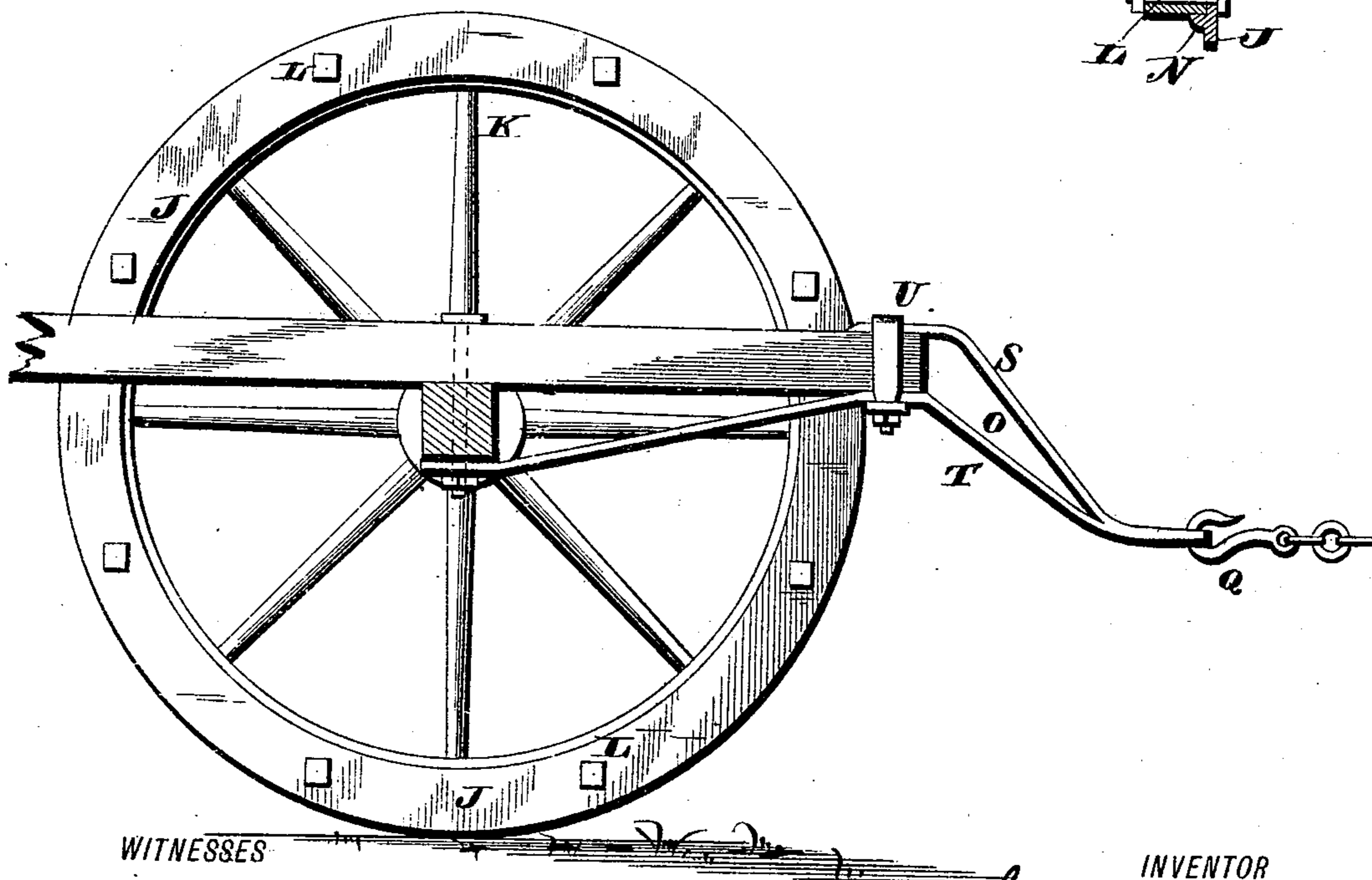


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

SAMUEL PENNOCK, OF KENNETT SQUARE, PENNSYLVANIA.

ROAD-GRADER.

SPECIFICATION forming part of Letters Patent No. 270,693, dated January 16, 1883.

Application filed September 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL PENNOCK, of Kennett Square, in the county of Chester and State of Pennsylvania, have invented certain
5 new and useful Improvements in Road-Graders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to
10 reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in road-graders, and more particularly to im-
15 proved attachments therefor, the object of the invention being to greatly increase the efficiency of this class of machines without materially adding to their cost.

With this object in view my invention con-
20 sists in a plow-point adjustably secured to the forward end of the scraper-bar by means substantially as hereinafter described and claimed; in improved removable flanges adapted to be
25 secured to the wheels of the grader, and in a plow attachment whereby an auxiliary plow may be attached to the grader in position to co-operate with the scraper-bar.

In the accompanying drawings, Figure 1 is a plan view of a road-grader embodying my
30 improved attachments. Fig. 2 is a view in side elevation of the front end of the scraper-bar and the adjustable plow-point. Fig. 3 is a view in cross-section through one of the wheels, showing the construction of the im-
35 proved flanges; and Fig. 4 is a view in side elevation of the plow attachment.

The road-grader shown in Fig. 1 of the drawings belongs to that class of machines which employ a scraper, the same being depended
40 from the machine in a position diagonal to the line of the draft. According as the said bar is arranged to deflect the matter moved by it to the right or left, the machines are called "right" or "left" handed.

45 To the forward end of the scraper-bar, which is designated in the drawings by the letter A, a plow-point of any desired construction is attached by a bolt, C, which serves the function of a fulcrum for the vertical adjustment of the
50 point, which consists in the mold-board D and the landside E, the latter being braced by a rod,

F, which is pivoted to the bar A by a bolt, G. The point of the plow is elevated or depressed, as desired, through the medium of a lever, H, rigidly secured to the mold-board. The rear
55 end of the said lever is raised or lowered to depress or elevate the point of the plow, being secured to the scraper-bar when the desired adjustment has been effected by means of the
60 rivet G, which fits any one of a series of holes, I, formed in the scraper-bar. As the rod F is rigidly secured to the landside C, it must always follow the adjustment of the lever H, both the lever and rod being secured in place
65 by the single bolt G. It should be observed that the point is set sufficiently ahead of the scraper-bar to avoid any interference therewith as it is raised and lowered. The plow-point as thus arranged is an important adjunct to
70 the machine and greatly increases its efficiency and capacity for work. In virtue of its adjustability, it can be set to loosen the earth for any depth, and when the finishing touches are being given to the road it may be thrown out of
75 action entirely.

To aid the operator in governing the machine, and to prevent it from being deflected by the scraper-bar, which, as aforesaid, performs its work in lines diagonal to the draft, and hence exerts a constant tendency to de-
80 flect the machine from side to side, removable flanges J are secured to the wheels K by bolts L. These flanges consist of iron rings constructed in any suitable manner, and provided with bolt-holes M to receive the bolts L, and
85 with ribs N, the same being formed on the inner faces of the flanges and designed to break the force of the jars which the flanges suffer in passing over rough surfaces, and which would in time, were it not for the said ribs, cut the
90 bolts L. The flanges may be secured to either of the faces of the wheels; but preferably they are arranged with regard to the position of the scraper-bar, with which they co-operate. In a
95 left-hand machine, as shown in the drawings, the flanges are disposed as represented, while in a right-hand machine their positions are reversed.

In many instances, particularly in constructing new and in repairing old and rough roads,
100 the use of a plow in conjunction with a grader has been found to be of great advantage. With

this end in view I provide the grader-frame with a plow attachment which consists of an iron fork having a curved arm, O, provided with a series of perforations, P, adapted to receive the hook Q of a chain attached to the clevis of the plow R.

The arms S and T of the fork aforesaid are secured to the rear end of one of the beams of the grader-frame by means of a clamp, U, the lower arm, T, being extended forward and curved to permit its attachment to and near the center of the rear axle of the machine.

As the chief function of the plow lies in its co-operative action with the plow attached to the scraper-bar, it should be located back of the forward end thereof. The plow is guided and manipulated by a plowman, who walks behind in the usual manner, and who can deflect it from side to side within certain limits. By changing the adjustment of the hook Q in the perforations P, the line of draft for the plow may be shifted toward or away from the grader.

A plow arranged as above affords the scraper-bar important aid and greatly relieves the plow attached to its forward end, if one be employed at that point, as herein shown.

In operation the auxiliary attached plow tears and breaks up the surface of the road and prepares it for the lighter action of the scraper-bar and its plow, which are brought into play in reducing the upheavals of the auxiliary plow as the road is retraced by the grader.

I would have it understood that I do not limit myself to the exact construction and arrangement of parts as shown and described, but that I hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. In a road-grader, a scraper-bar, a plow-point adjustably secured to the forward end of the bar, a lever rigidly attached to the plow-point and extending rearwardly therefrom, a rod attached to the landside of the plow-point, and devices to secure the rear end of the lever and rod in the desired vertical adjustment on the scraper-bar, substantially as set forth.

2. In a road-grader, a scraper-bar arranged in diagonal position to the draft, and flanges bolted to the wheels of the grader and provided with inwardly-extending ribs, substantially as set forth.

3. The combination, with a road-machine provided with a scraper-bar, of an auxiliary plow attached to the frame of the machine and located back of the forward end of the said scraper-bar.

4. The combination, with a road-machine provided with a scraper-bar having a plow attached to its forward end, of an auxiliary plow attached to the frame of the machine and located back of the forward end of the said scraper-bar.

5. The combination, with the frame of a road-machine, of a fork-shaped plow attachment, as shown and described, and means to secure said attachment to the frame of the machine, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of August, 1882.

SAMUEL PENNOCK.

Witnesses:

N. B. HAMILTON,
WILLIAM W. POLK.