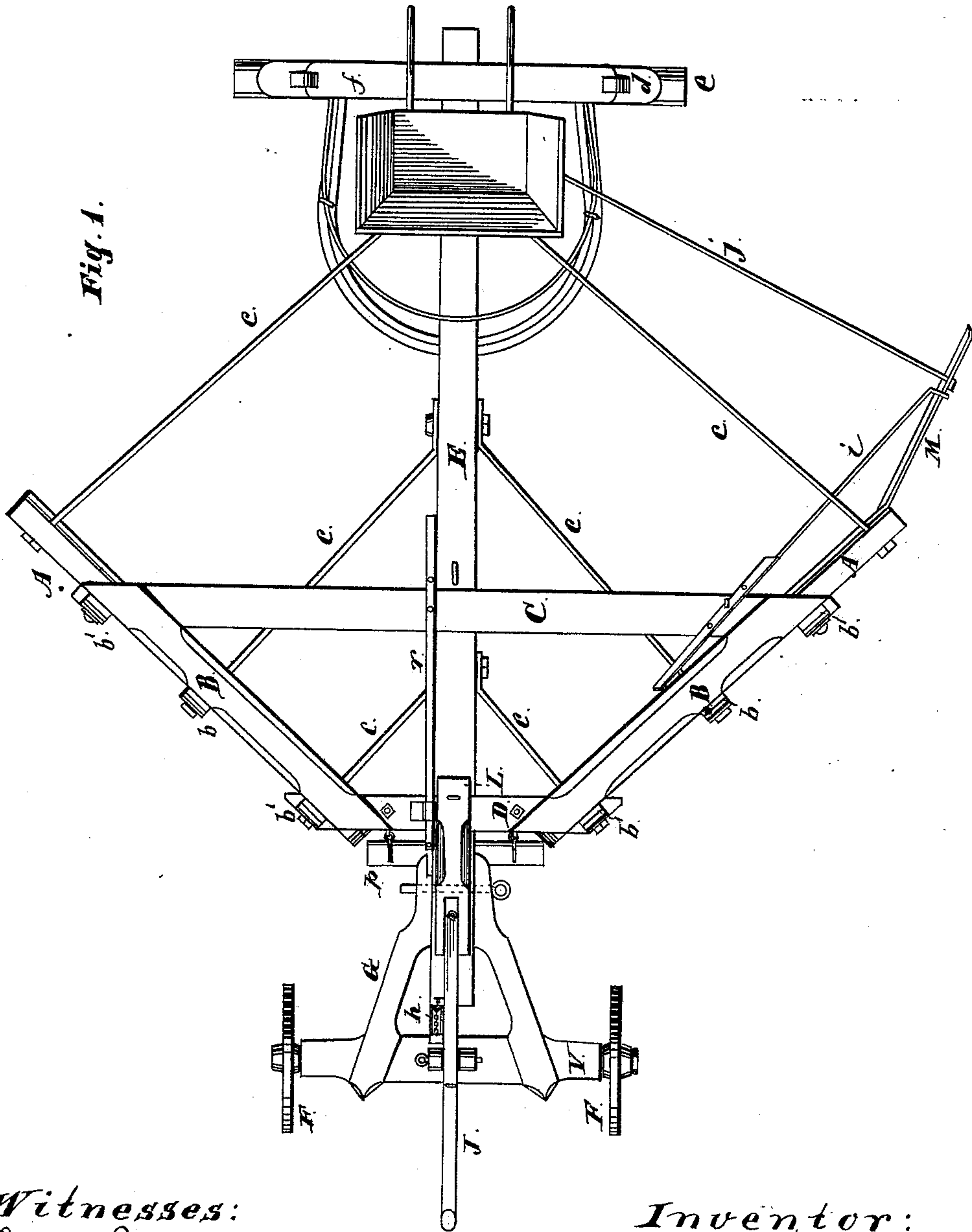


S. S. MORGAN.
Road Scraper and Grader.

No. 218,130.

Patented Aug. 5, 1879.



Witnesses:
O. W. Bond.
H. L. Burns.

Inventor:
Sidney S. Morgan
By West & Bond Attys.

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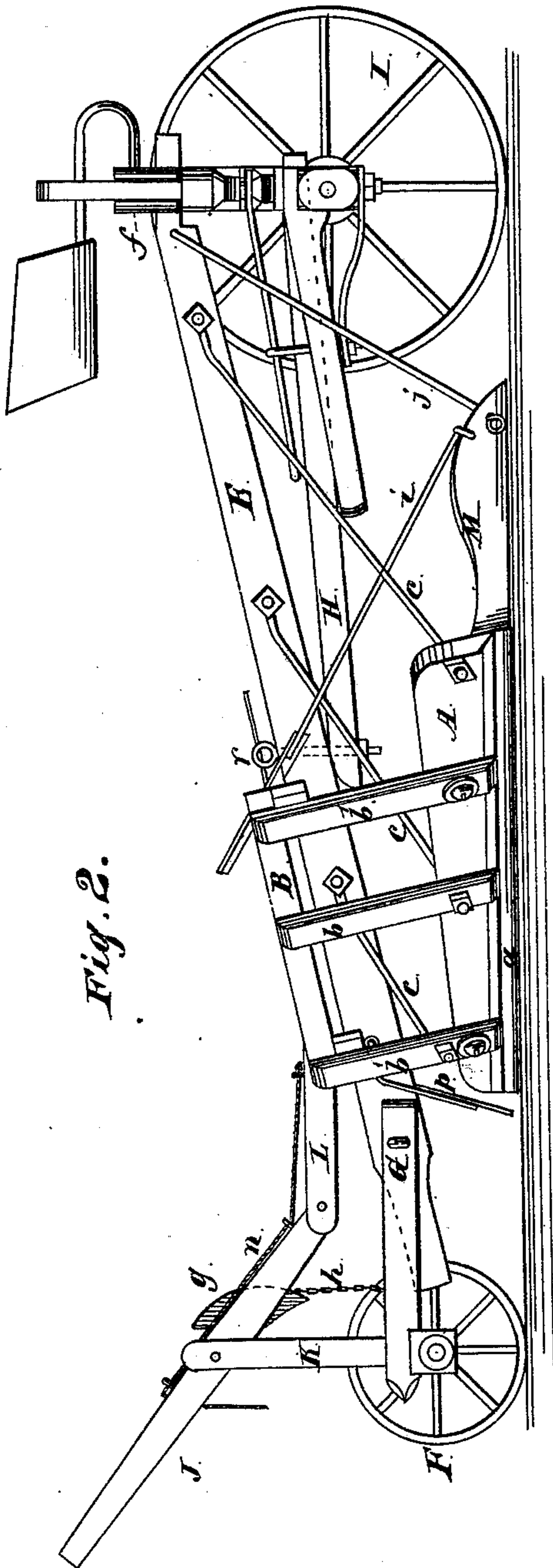


Fig. 2.

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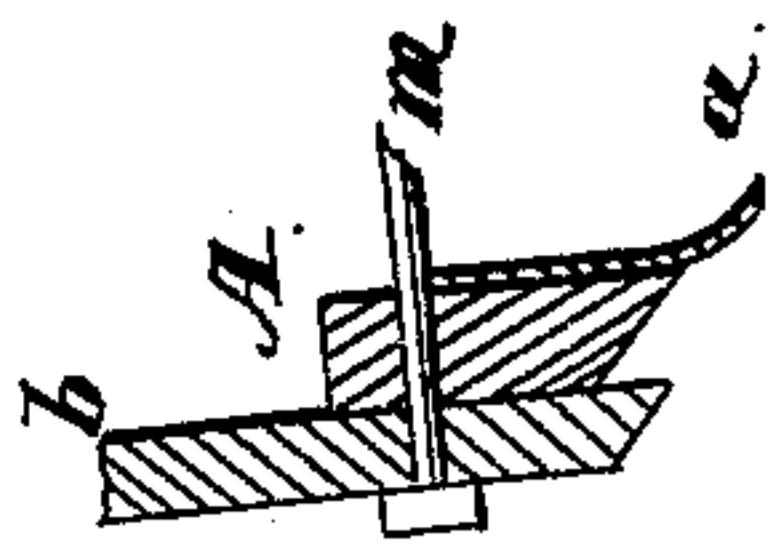


Fig. 5.

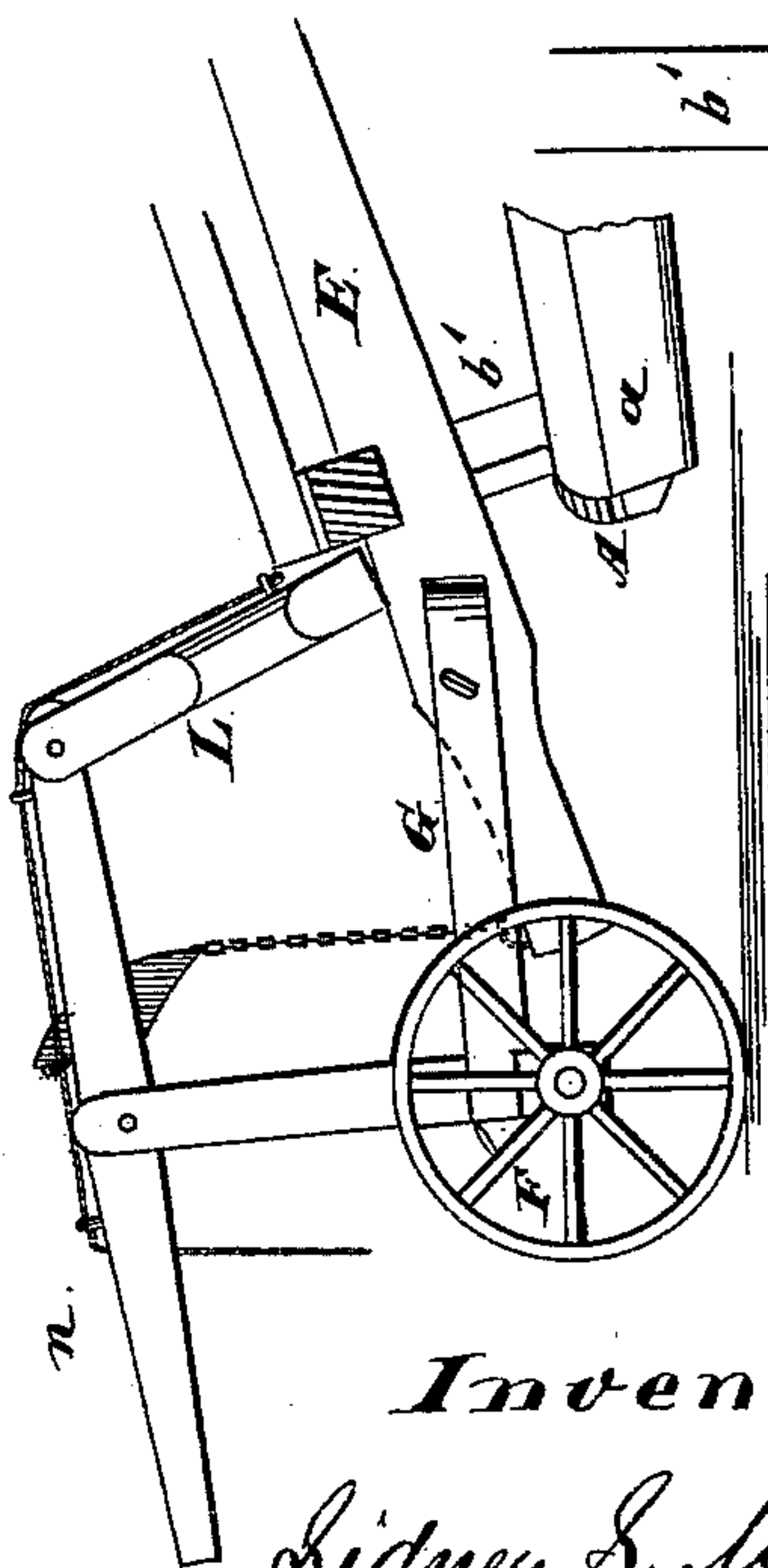
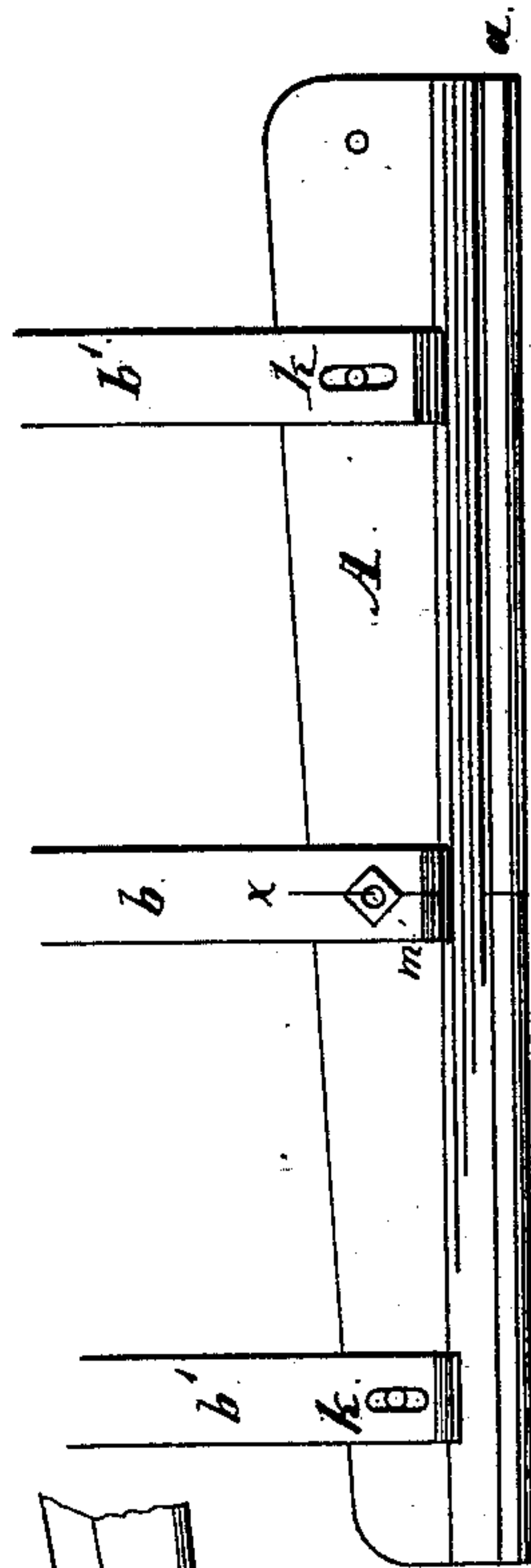


Fig. 3.

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Fig. 4.



UNITED STATES PATENT OFFICE.

SIDNEY S. MORGAN, OF ODELL, ILLINOIS.

IMPROVEMENT IN ROAD SCRAPER AND GRADER.

Specification forming part of Letters Patent No. **218,130**, dated August 5, 1879; application filed November 18, 1878.

To all whom it may concern:

Be it known that I, SIDNEY S. MORGAN, of Odell, Livingston county, State of Illinois, have invented new and useful Improvements in Road Scraper and Grader, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan; Fig. 2, a side elevation; Figs. 3, 4, and 5, details, Fig. 3 showing the scraper elevated from the ground, Fig. 4 showing a side elevation of one scraper with the nuts which secure it to the outer arms removed, Fig. 5 a section at *x* of Fig. 4.

My invention relates to a road scraper and grader adapted to be used in repairing common roadways, and especially designed to be used in filling ruts and holes, and at the same time level or make smooth the whole roadway.

In the drawings, A A represent two scraper-boards, the rear ends of which are a little distance apart. They stand at an angle of a little more than ninety degrees relatively to each other; but I do not limit myself to this angle.

a is a metal facing and cutter secured to each scraper A. It is curved forward at the bottom, as shown in Fig. 5. This form adds efficiency to the scraper or grader, and enables it to cut a slice from the surface of the ground.

b b' are short standards, to which the scrapers A A are bolted. B are bars bolted to the upper ends of the standards *b b'*. C D are cross-pieces, secured, respectively, to the front and rear ends of the bars B. E is a strong central bar, to which the cross-bars C D are permanently secured.

c are draft-rods, one end of each of which is secured to the scraper-boards A, the other to bar E.

F are small wheels on an axle, V; and G are hounds, which are pivoted to the central bar, E. The front end of bar E rests upon the bolster of the front wheels.

H is a draft-bar, the rear end of which is connected with bar E, and the forward end is connected to an axle, *e*, by means of a king-bolt.

The wheels I, in Fig. 2, and parts connected therewith are intended to represent the front wheels and parts used therewith of an ordi-

nary lumber-wagon, except that a piece, *f*, is used above the bolster and a driver's seat has been added.

J is a lever, pivoted to a standard, K, supported on the axle V. *g* is a curved block on lever J, to which one end of the chain *h* is secured, the other end being connected with the rear end of bar E.

L is a swinging post or support, the upper end of which is pivoted to the inner end or short arm of the lever J. This post L, when the scrapers are on the ground, performs no function, its lower end being swung forward, so as not to bear directly upon the bar E; but when the scrapers have been sufficiently raised from the ground by the lever J this post L will swing into a perpendicular position by gravity, with its lower end over the rear end of the bar E, and by lowering the scrapers a little this lower end of the post will come in contact with and rest upon the rear end of E, and will support the inner end of the lever J, thereby making the connection between the bar E and the rear truck a rigid, or nearly rigid, one, and holding the scrapers off the ground, as shown in Fig. 3. To lower the scrapers again they must be first raised a little, to free the post L, when the operator, by means of the cord *n*, can draw the lower end of the post forward, so as to allow the pivotal connection to operate and permit the scrapers to be lowered to the ground.

M is an extension of one of the scrapers. It is made of metal, or of wood faced with metal, and is pivoted to the scraper, so that it can be turned up when not wanted or let down for use, as shown in Fig. 2.

i is a rod, one end of which is pivoted to or loosely connected with the extension M, near its outer end. The other end is flattened and provided with a series of holes adapted to engage with a pin on the bar C, for the purpose of adjusting the extension M to any desired position or holding it out of use entirely.

j is a rod, connected at one end loosely to the extension M, and at the other end to bar E, to support the extension M and hold it in place when in use. *k k* are elongated slots in the two outer bars or standards, *b'*, through which the bolts which secure the scrapers A to these two outer standards pass, which ar-

rangement enables the operator to adjust the position of the scrapers A as the inclination of the roadway may require, the scrapers A turning on the central bolt, *m*. (See Fig. 5.)

An extension-piece, *M*, can be used with either one or with both of the scrapers A A.

In use the scraper is drawn along lengthwise of the roadway, commencing on one side, and as far from the center as may be desired. As the scraper is drawn along the dirt gathered will be carried to the center of the scraper, except that which is deposited in holes, and will pass out at the rear through the opening between the two parts A A, in a continuous line. When the scraper passes along the road the second time it must be brought nearer to the center of the highway, and so that the open space between the parts A A will be over the ruts along the road. Thus the earth gathered at first, as well as that gathered at the second passage, will be deposited in the ruts and holes.

Where the roadway is uneven a part of the dirt gathered will pass under the scrapers and be left in the depressions.

The scraper can be drawn along upon one side of the road and back upon the other side. It will usually be sufficient to drive over the road twice in each direction; but this depends on the condition of the road and width of the scraper. The scraper may be wide enough to act upon about ten feet in width at each passage.

The scraper should be operated by two persons, one to drive the team, the other to follow the scraper, and, by means of the lever J and devices connected therewith, to raise the scraper from the ground when passing over bridges, culverts, or ordinary obstructions.

The ordinary means for closing the opening at the rear end of the scrapers by a gate, *p*, may be used, if desired, which gate swings outward, as usual, being hinged to the bars B or cross-bar D, and is held closed by the en-

gagement of a pin on the bar C with holes in the lever *r*, secured to the gate.

The gate *p* can be operated, through the lever *r*, by the driver or an operator on the rear of the machine.

By means of the gate a quantity of earth can be accumulated between the two scrapers, and then, by opening the gate at the proper time, this earth can be deposited in any desired place—for example, in large holes in the roadway. In fact, when the device which holds the gate closed is released, the pressure of the earth against the gate will open it.

If desired, the whole scraper can be raised, either gradually or abruptly, when the gate is opened, for the purpose of distributing the accumulated earth over a wider space.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. A road scraper and grader consisting of two scrapers placed at an angle with each other, with an opening between them for the passage of dirt, and connected and supported by cross-bars C D and draft-rods *c*, in combination with a single central bar, E, pivoted at the rear to the hounds of a truck, and adapted to be connected in front to the front wheels of a wagon, all constructed and operating substantially as and for the purposes specified.

2. A road scraper and grader constructed as described, and connected at the rear to a truck, in combination with the lever J, chain *h*, and swinging arm L, substantially as and for the purposes set forth.

3. In a road-scraper constructed as described, the two parts or scrapers A A, pivoted upon a central bar, *b*, and combined with the slotted bars *b'*, whereby said scrapers are made adjustable, substantially as and for the purposes specified.

SIDNEY S. MORGAN.

Witnesses:

M. E. WRIGHT,
E. DEBRIAE.