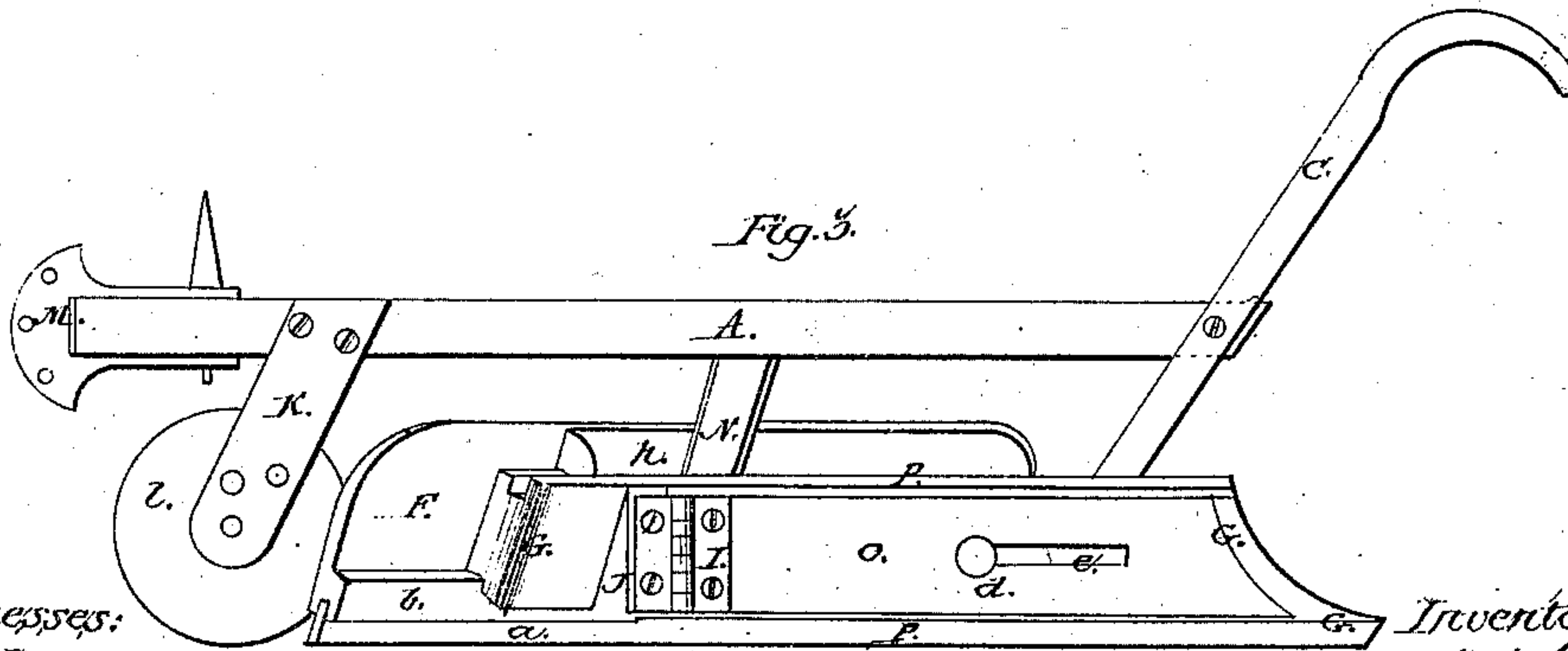
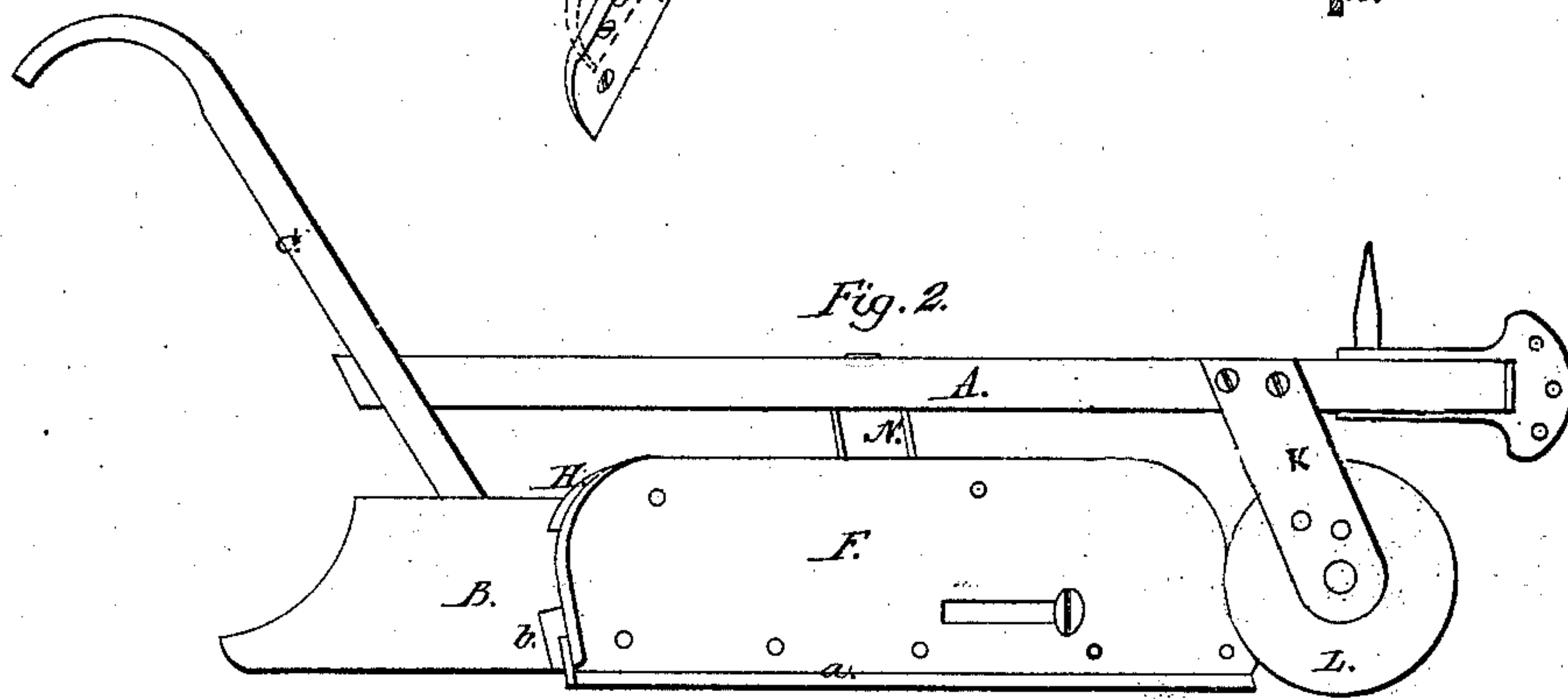
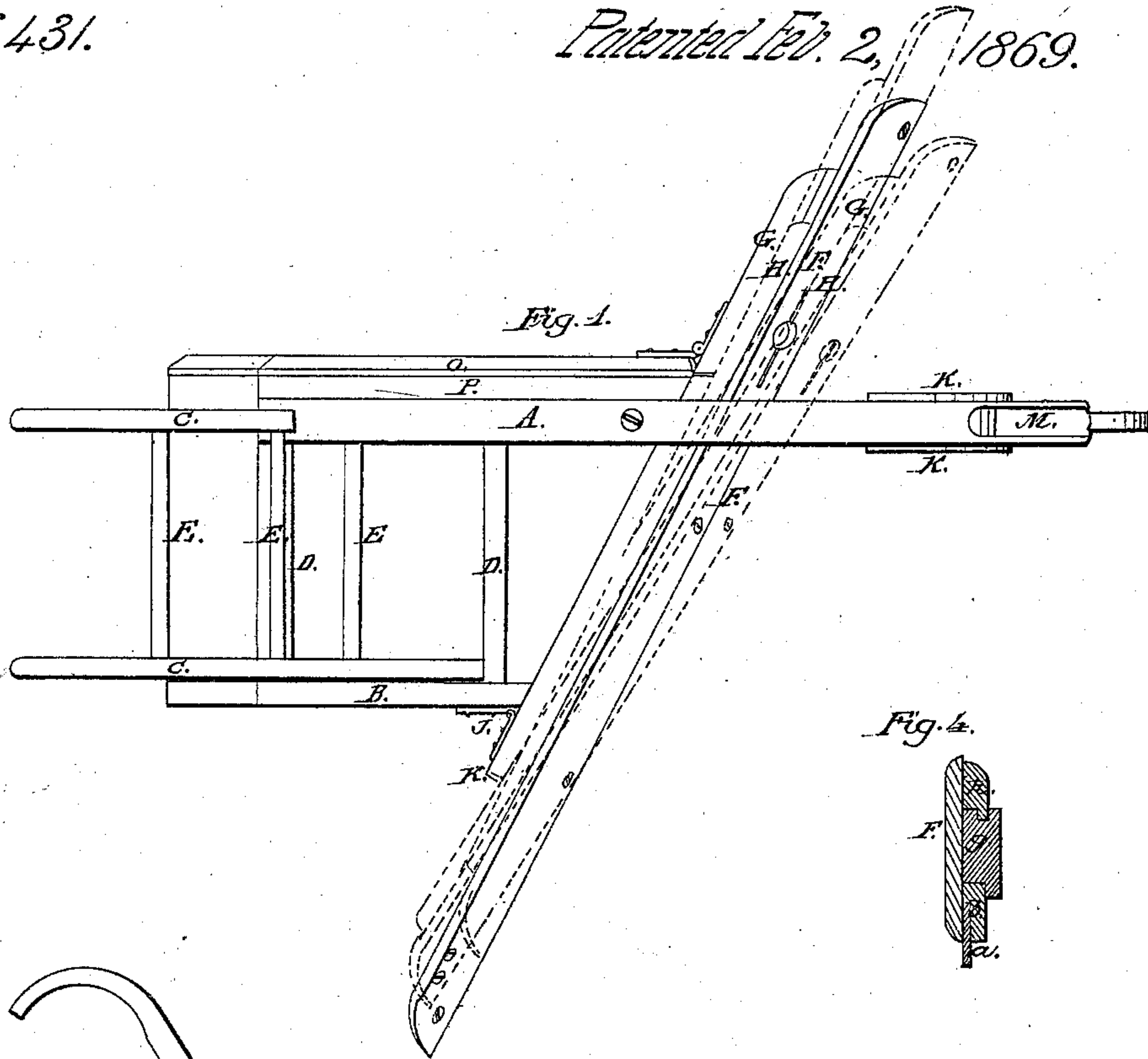



*Road Strayer.*

N<sup>o</sup> 86,431.

*Patented Feb. 2, 1869.*



Witnesses:  
E. T. B and  
John H. Ginnock

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*J. H. McDonald*  
*West St. Louis*  
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# United States Patent Office.

JAMES W. McDONALD, OF CHICAGO, ILLINOIS.

Letters Patent No. 86,431, dated February 2, 1869.

## IMPROVED ROAD-SCRAPER.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JAMES W. McDONALD, of the city of Chicago, in the county of Cook, and State of Illinois, have invented certain new and useful Improvements in Scrapers; 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 represents a top or plan view;

Figure 2, a side view of the delivery-side;

Figure 3, a view of the opposite side; and

Figure 4, a vertical section of the scraper-board and attachment.

Like letters refer to the same parts in all of the figures.

The nature of my invention consists in making a scraper, to be used by horse or other power adjustable in the angle of the scraper-board, and in the side-draught; in placing it on or attaching it to guide-runners; in a novel mode of attaching the scraper proper to the board; and in the several combinations herein-after set forth and claimed as new.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I make a frame-work, consisting of two runners, B and P, braced or tied together by the beams or cross-pieces D.

The runner P, I usually make three feet long, and the runner B, two feet long, and place them three feet apart.

To the rear end of this frame-work, I attach two handles, C, which may be made like ordinary plow-handles, as shown, and braced by the rods E.

To this frame I also attach a beam, A, by means of the post N and one of the handles, C.

This beam extends some distance forward of the frame B P D. The exact distance is not material; two and one-half feet will be sufficient.

An ordinary clevis, M, is attached to the front end, and just back of such clevis M, I attach a guide-wheel, L, by the pendants K.

I usually make the wheel L sharp-edged, so that it will hold better on a pavement, and assist in keeping the machine steady.

The runner P extends forward of B sufficiently far to give an angle of about forty degrees, with the beam D, and on the side I attach a slide, O, which is fitted into grooves or slides e, (see fig. 3,) and is held in place by the set-screw d, and made adjustable in the grooves e by means of the slot c.

To the front end of this slide O, and to the front end of runner B, the bar or beam G is hinged by the hinges I and J.

In the form of hinges shown, small triangular blocks

j and k are interposed between the hinges and beam or bar G, in order to give such beam a vertical incline. Other forms of hinges can be used, which will dispense with such interposed blocks.

The beam or bar G, for usual-sized machines, is feet long. Its upper edge is provided with a groove, l, and its lower edge with a shoulder, as shown at fig. 4. It is also cut in two, as shown at h i, fig. 1, or made in two parts, so that it will open at that point, when slide O is moved forward, to change the angle of the scraper-board, as shown by the blue lines, and thereby change the position of the scraper-board without binding on the hinges.

The vertical and longitudinal angles are adjusted by this beam, and the scraper-board F rests flat against it, and is attached thereto or supported by the projection or attachment H, which is on the back of such board, and is provided with a tongue or slide fitting into groove l, and which holds the scraper-board in place vertically.

At the lower edge of the scraper-board F, I screw on or otherwise attach a rabbeted piece, b. This piece or strip of board is cut away, so as to form a groove, in connection with board F, for the insertion of a scraper-edge, a, and not so far cut away but that, when screwed down, it will clamp and hold the scraping-edge a in place.

The upper edge of b fits into and rests against the lower projection of the beam or bar G, as shown at figs. 3 and 4.

For scraping dirt or mud, I use rubber for the scraping-edge, which is prepared with cloth or otherwise, in the usual manner. For scraping earth or snow, I insert a steel scraping-edge, so that it can be used for scraping and cleaning either paved or unpaved streets, roads, and for other purposes, where such scraper can be used; and, if desired, wood can be inserted.

When scraping the full width of the scraper, the board F, which is further secured to G by a set-screw, f, passing through the slot e into G, is placed out, as shown by the red lines, and when not scraping full width, the board is left as indicated by the black lines. It is adjustable by means of the described slot e and screw f, so that it can be set at any desired position within the limits of the slot, so as to balance the draught with the cut of the machine.

By using runners with the wheel in front, the machine is kept steady in its movements, as they act as guides, and prevent the machine from turning, although cutting or scraping at an angle.

I have found, by experiment, that in all places, except light scraping, an angle of forty degrees is best, and the scraping-board is made to rest against the frame-work at this angle, but for light scraping, the slide O may be pushed forward and increase the angle,



as shown by the blue lines, when it will discharge the dirt at the side with more rapidity, and the machine can be used full width.

Its operation will be apparent from the description.

Having thus fully described my machine,

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

1. The scraper-board F, when provided with a lateral or side adjustment and a suitable stop or fastening, substantially as and for the purposes specified.

2. The sectional beam or back-support G, in combination with the board F, when connected and operating substantially as specified.

3. The combination and arrangement of the adjustable bar or slide O, beam or supporting-bar G, and

joints or hinges I and J, with the runners P and B, for adjusting the angle of the board F, substantially as specified.

4. The combination and arrangement of the runner P, provided with a slide, O, runner B, beams D, handles C, beam A, and wheel L, with the board F and beam G, substantially as and for the purposes specified.

5. Placing the scraper F at an angle across the draught, so as to equalize the draught and make a continuous discharge at one side, substantially as shown.

JAMES W. McDONALD.

Witnesses:

L. L. BOND,

E. A. WEST.