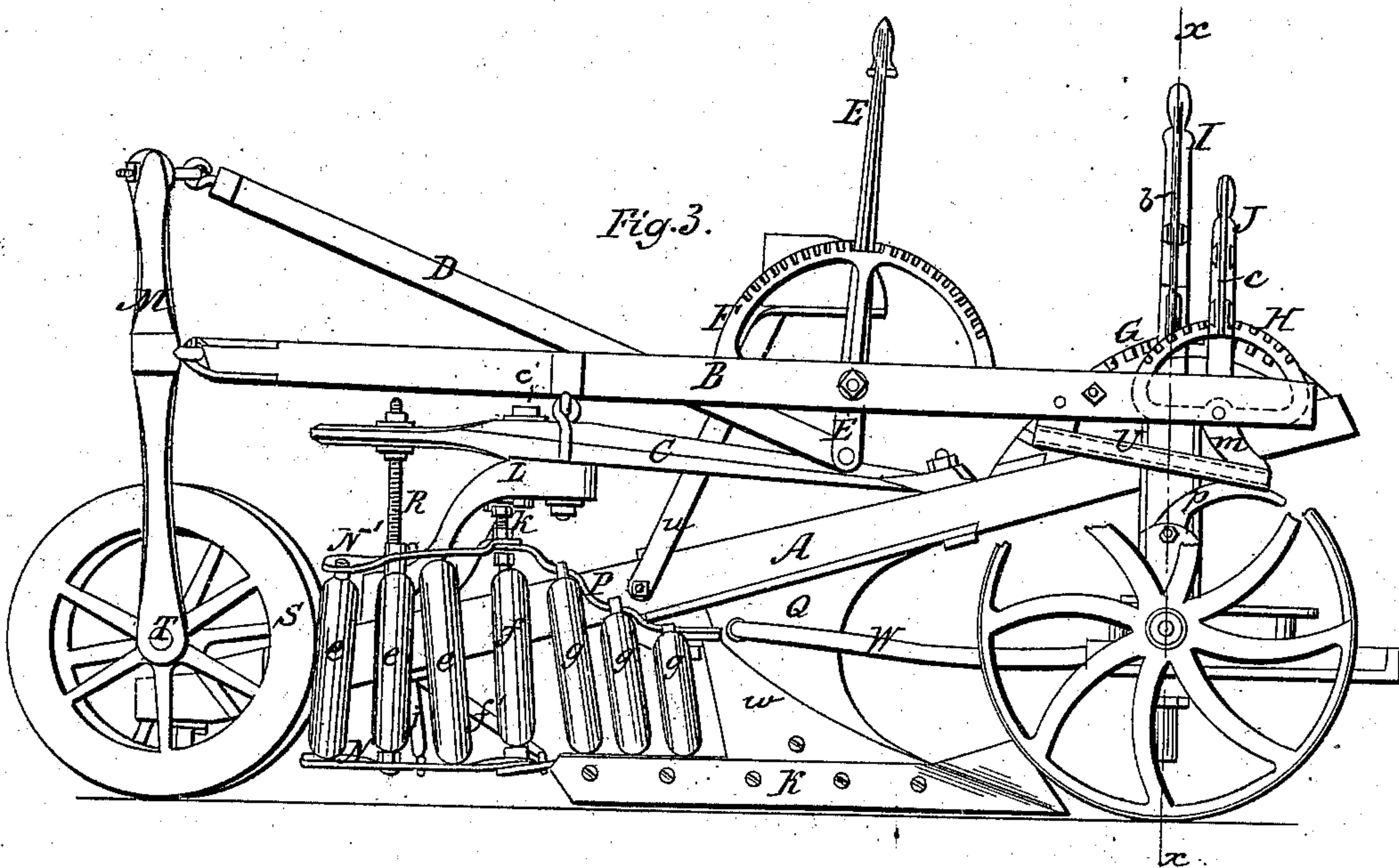
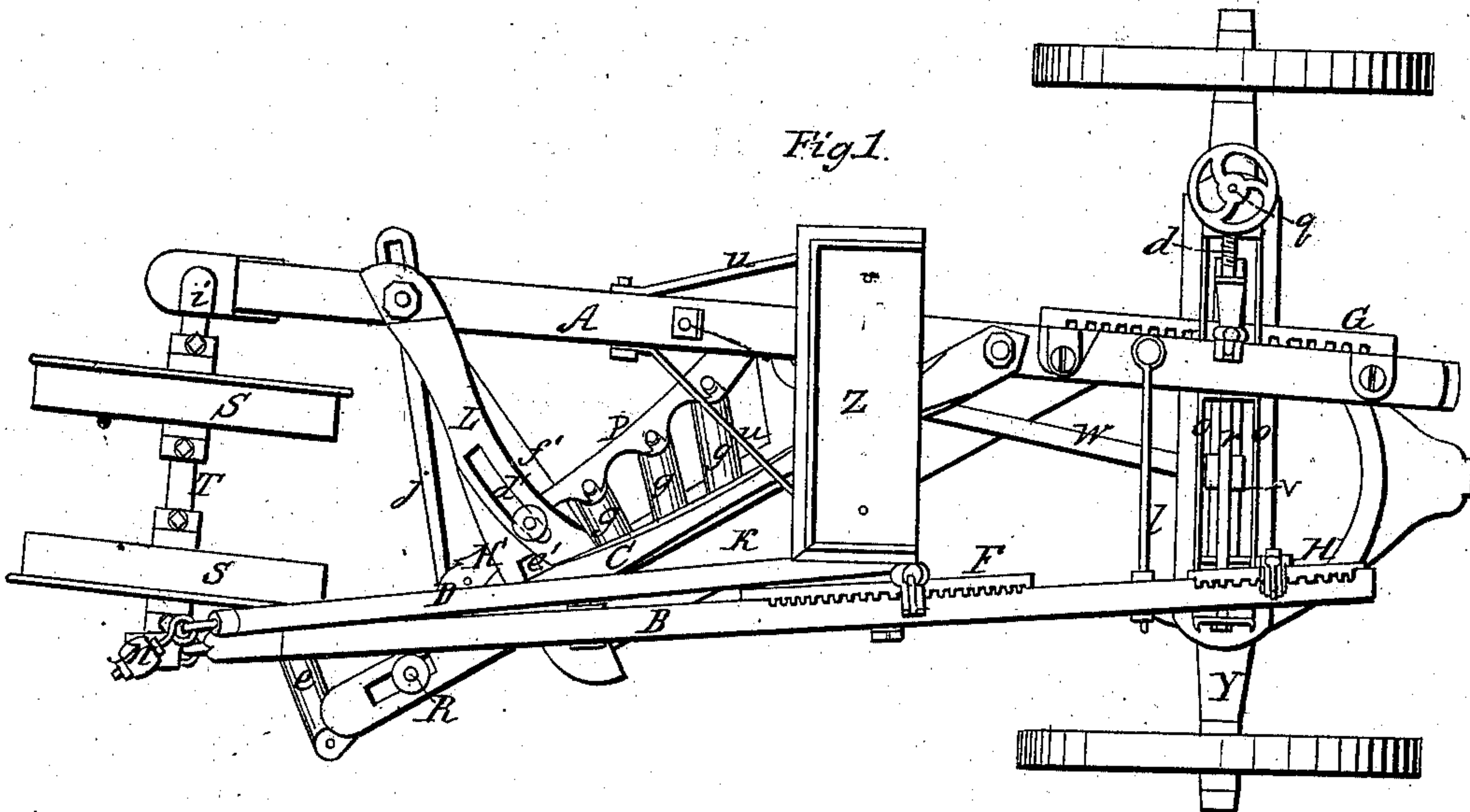


J. FRYE.
Wheel-Plow.

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Patented Mar 31, 1857.

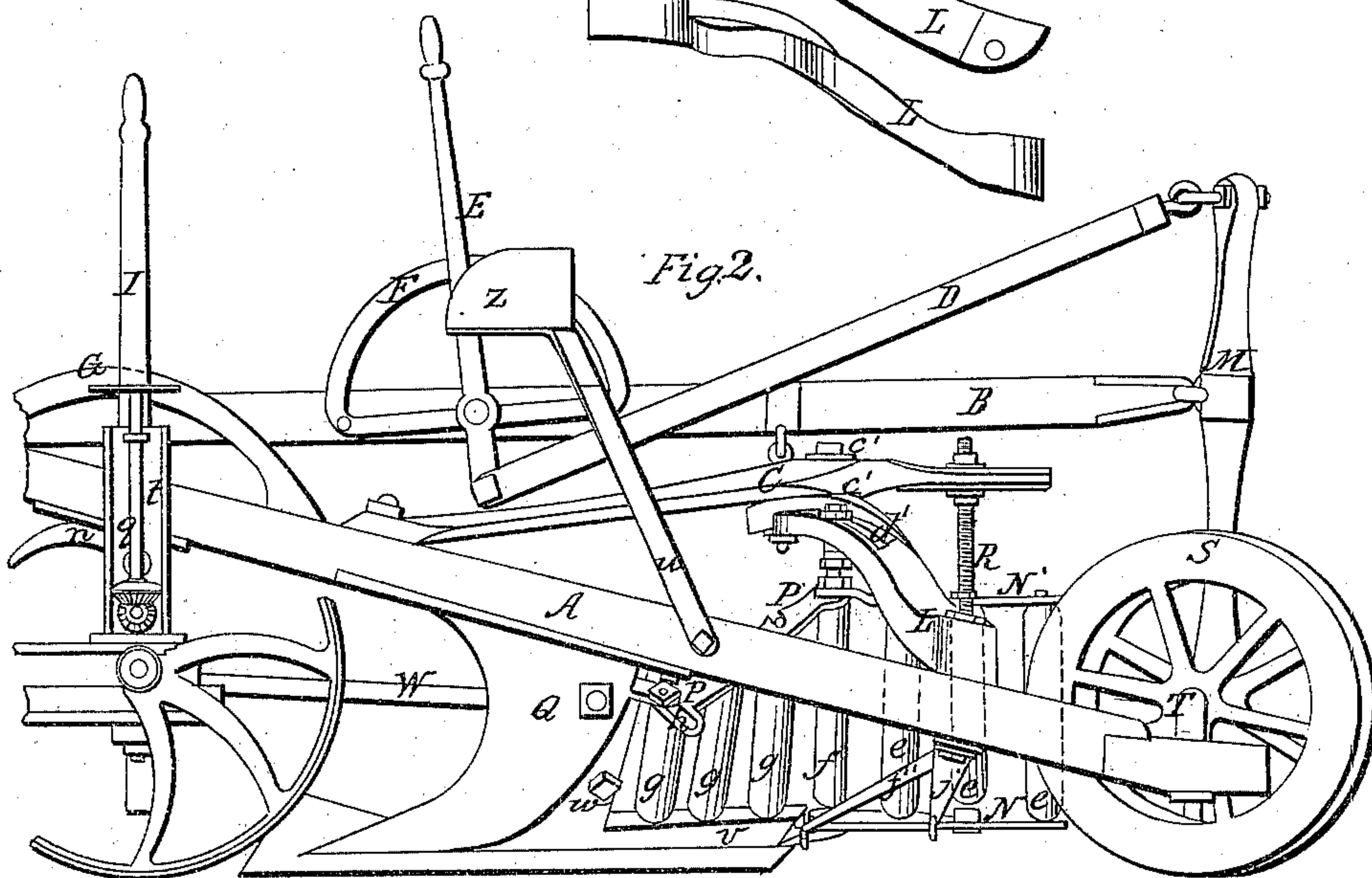
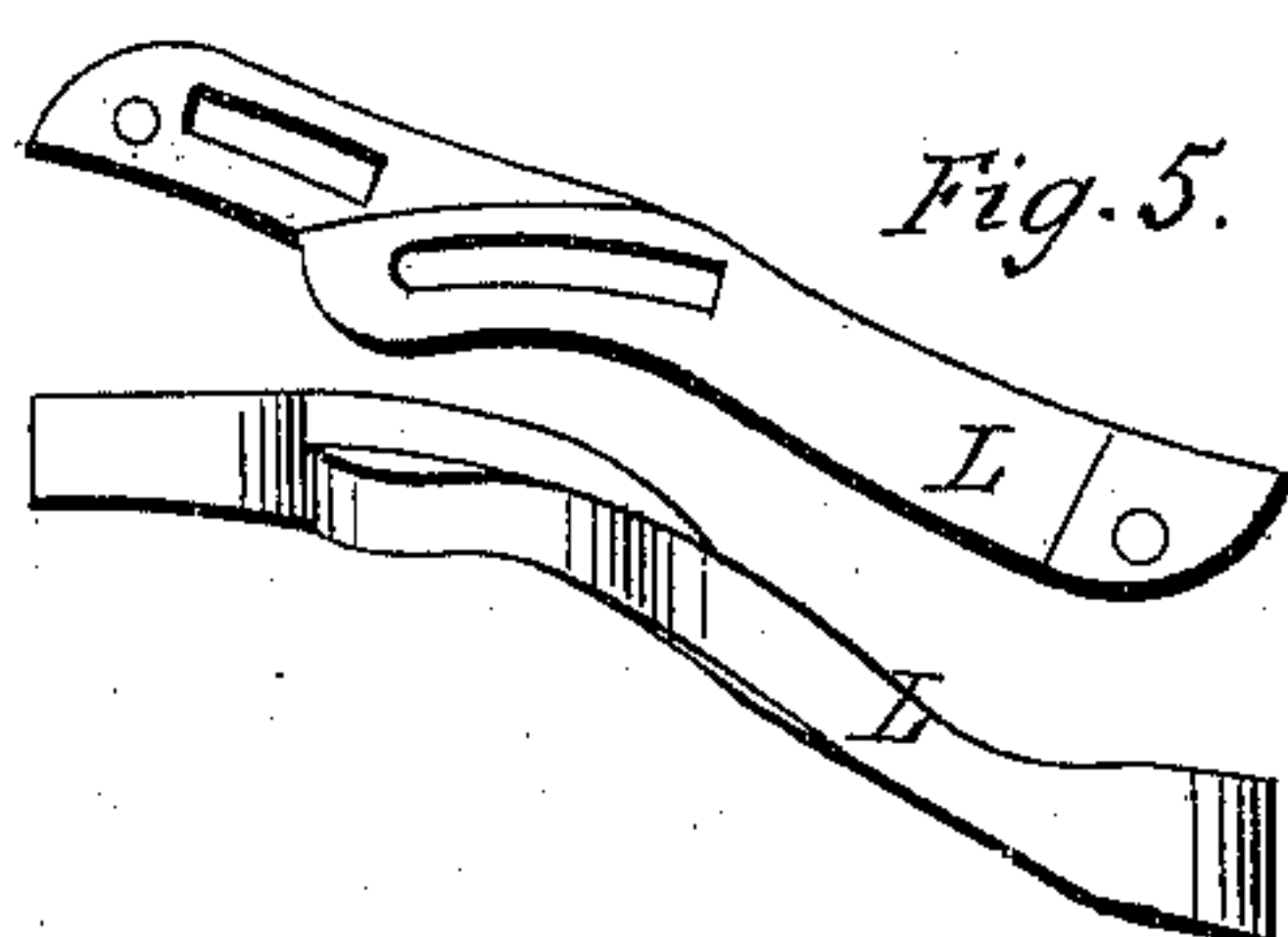
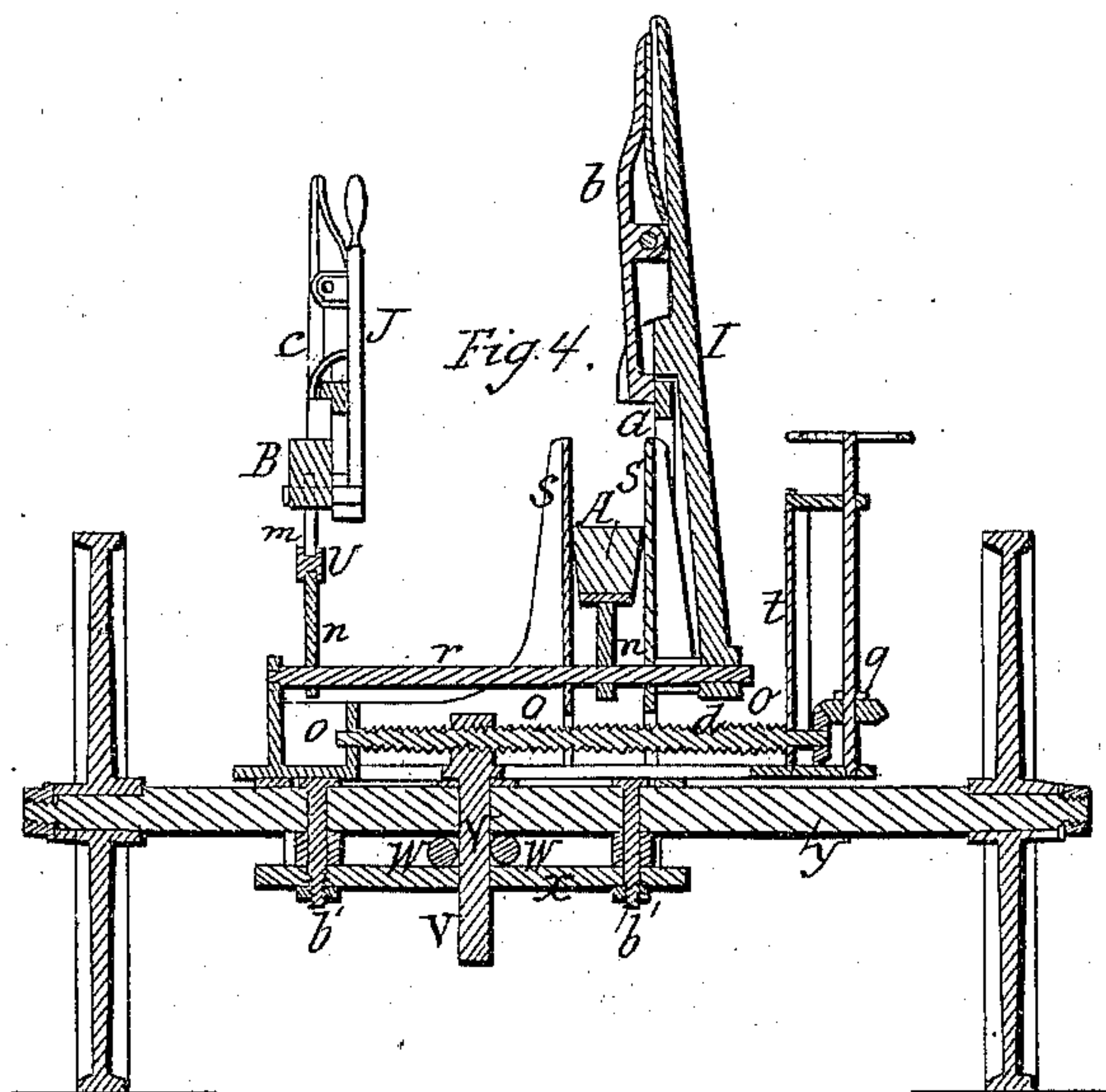


J. FRYE.

Wheel-Plow.

No. 16,913

Patented Mar 31, 1857.



UNITED STATES PATENT OFFICE.

JESSE FRYE, OF SPRINGFIELD, ILLINOIS.

IMPROVEMENT IN PRAIRIE-PLOWS.

Specification forming part of Letters Patent No. 16,913, dated March 21, 1857.

To all whom it may concern:

Be it known that I, JESSE FRYE, of Springfield, in the county of Sangamon and State of Illinois, have invented a new and Improved Prairie-Plow; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification—

Figure 1 being a top view; Figs. 2 and 3, views of opposite sides of said plow; Fig. 4, a section in the line *x x* of Fig. 3; and Fig. 5 represents a portion of the plow detached.

Similar letters indicate corresponding parts in all the figures.

The actuating portions of my improved plow are of such a shape and are so arranged in relation to the beam A that the forward end of said beam must be elevated a considerable distance above its after end, which enables the axle Y, which supports the forward end of the plow-beam, to be elevated by its wheels to such a height above the ground as will enable said axle to pass freely over all obstructions, and also prevent the choking of the plow from the accumulation of trashy matter in front of its colter. The colter Q descends from a plate whose forward end is secured to the under side of the plow-beam by the bolt *a'*; and the after end of said colter-plate is secured to the plow-beam by a bolt, which passes through a curved slot therein, of such a length that any desired position may be given to the colter. The share K is secured to a bar, *v*, which projects obliquely rearward from the colter Q. The mold-board of the plow is composed of the triangular plate *w*, and the series of adjustable rollers *g g g f* and *e e e*, whose arrangement will be hereinafter set forth. The hollow bolster O, which is combined with the axle Y, is enough shorter than said axle to allow of considerable longitudinal adjustment. The linchpin V passes through a slot in the base of the bolster, and a horizontal set-screw, *d*, passes through a screw-aperture in the head of said linchpin.

Upon the end of the set-screw *d*, which passes through an aperture in the left-hand end of the bolster, a bevel-wheel is placed, which wheel gears into a similar wheel on the vertical spindle *q*, whose lower end works in a hole in a projecting portion of the base of the bolster, and whose upper end works in an aper-

ture in an arm projecting from the standard *t*, which rises from the end of the bolster, as shown in Fig. 4. A wheel or some other suitable lever must be combined with the upper end of the spindle *q* to enable it to be turned by the operator for the purpose of moving the bolster lengthwise upon the axle-tree. The forward portion of the plow-beam A works between the guiding standards or bits *s s*, which rise from the bolster O, and the sides of said beam are sufficiently beveled to allow the beam to be partially turned within said guiding-bits. The tongue-hounds pass immediately below the axle Y, and are secured thereto and also to the bar X by means of the bolts *b' b'*, as shown in Fig. 4.

The draft-bar W is jointed to the colter Q, and thence extends forward into the space between the axle Y and the bar X, where the linchpin passes through an eye in the forward end of said draft-bar.

The forward portion of the beam A rests upon an elongated cam, *n*, projecting from the shaft *r*, which shaft passes through the bits *s s*, and through an upward projection from the right-hand end of the bolster O, as shown in Fig. 4. A hand-lever, I, is connected to the left-hand end of the cam-shaft *r* and rises above the beam A. The said lever is connected to the toothed segment G on the upper side of said beam by means of its spring-latch *b*, which is combined therewith, as represented in Fig. 4. It will therefore be perceived that the forward end of the plow-beam may be elevated or depressed, and be retained in any desired position by shifting the position of the lever I upon the toothed segment G.

The after end of the plow-beam A is supported by the axle T of the flanged wheels S S in the following manner, viz: The left-hand end of the said axle T is bent into a vertical position and passes through an aperture in a metallic box secured to the after end of the beam A, where it is retained by means of a key or a screw-nut operating below the beam, or by any other equivalent device which will permit the said vertical portion of the axle T to turn freely within the said bearing-box. The said wheels S S are placed so near to each other upon their axle that they can both run in the furrow formed by the plow.

The lower end of a standard, M, is combined with the journal on the right-hand end of the axle T, which standard, a little above the center of its height, is jointed to the after end of the auxiliary plow-beam B, whose forward end rests upon a cam, *p*, projecting from the cam-shaft *r*. The said auxiliary beam B does not rest directly upon the aforesaid cam *p*, but the said cam is received into a groove in the under side of an adjustable bearing-bar, U, whose after end is jointed to said beam in any suitable manner. A cam, *m*, working in a vertical mortise in the said auxiliary beam, and which is combined with the fulcrum-pivot of the lever J, is received into a groove in the upper side of the said jointed bearing-bar U.

A spring-latch, *c*, which is combined with the lever J and works between the teeth of the toothed segment H on the upper side of the front end of the beam B, enables said lever to be retained in any desired position opposite the face of said toothed segment, which arrangement, it will be perceived, enables the front end of said auxiliary beam to be elevated by means of the cam *m* some distance above the point it can be elevated by means of the cam *p* on the shaft *r*, which is operated through the medium of the lever I.

The auxiliary beam B is connected to the main plow-beam A by means of the rod *l*, (see Fig. 1,) which is jointed to the latter, and passes through an aperture in the former, in which it may be secured in any desired position by means of the screw-nuts thereupon, that act against opposite sides of said beam.

One end of a transverse beam, L, is secured to the upper side of the beam A, near its after end, by means of a fulcrum-bolt, and the opposite end of the said transverse beam is suspended to the auxiliary beam B by means of a swivel-joint. The bolt *a'*, which connects the forward end of upper face of the colter with the main beam A, also connects to the upper side of said beam the auxiliary beam C. Near its after end the said beam C rests upon the transverse beam L, to which it may be secured in any desired position by means of the screw-bolt *c'*, which passes through the former and then through a slot in the latter.

The pivots at the lower ends of the three rollers *g g g* work in sockets in the bar *v*, which projects from the base of the colter, and the pivots at the upper ends of said rollers work in notches in the plate P. The forward end of said plate P is jointed to a lug which projects from the rear edge of the upper portion of the colter, and at its after end an eye in the said plate P receives the spindle *k* of the central roller, *f*, as it passes upward to and through the slot *d'* in the transverse beam L, in which it may be firmly held in any desired position by means of screw-nuts working thereupon above and below the said beam. The joint-bolt which unites the forward end of the plate P with the colter passes through a curved slot, *h*, in an offset in said plate, (see Fig. 2,) which

enables the plate to be readily adjusted to any desired position.

The after end of the share-bar *v* is connected to the plow-beam A by means of the brace *f'*, which is combined with the under side of said beam by the same bolt which secures the transverse beam L to said plow-beam.

The journals of the rollers *e e e* work in apertures in the adjustable plates N N', which plates are combined with the other parts of the plow in the following manner, namely: The spindle *k* of the roller *f* passes through an eye in the forward end of each of said plates, and then passes into a socket in the after end of the share plate *v*. The lower plate, N, is connected to the plow-beam A by means of the brace *j*, which is combined with the under side of said beam by means of the same bolt which connects the transverse beam L and the brace *f'* to the said plow-beam. The said connecting-bolt passes through a longitudinal slot in the outer end of the brace *j*, which enables the position of the plate N to be adjusted to any desired position. The central roller of the three rollers *e e e*, which are combined with the said plates N N', works freely upon a spindle, R, which passes upward into and through a longitudinal slot near the after end of the beam C. The portion of said spindle which rises above the upper end of said roller has a screw-thread cut upon it, and upon which one pair of screw-nuts is placed, that act against the upper and lower side of the plate N', and another pair of nuts upon the screw portion of said spindle act against the upper and lower sides of the said beam C. It will therefore be perceived that the said method of combining the respective plates N, N', and P with each other and with the share-bar *v*, the plow-beam A, the transverse beam L, and the beam C enables the said plates to be so adjusted as to bring them into any position that may be desired to cause the rollers *e e e f* and *g g g* to act efficiently and properly as a substitute for a solid mold-board.

The standard M, which rises from the right-hand end of the axle T, has its upper extremity connected by means of the jointed bar D with the lower end of the hand-lever E, which is pivoted to the inner side of the beam B. The fulcrum-pivot of the said lever E is coincident with the axis of the toothed segment F, which is secured to the said beam B, and the said lever may be retained in any desired position by means of a spring-latch combined therewith, which takes into the teeth of said segment. It will therefore be perceived that the position of said lever E regulates the position of the axle T. The said axle may be retained in a position at right angles to the plow-beam A, or may be inclined either forward or rearward of said position, for the purpose of regulating the width of the furrow to be cut, and also for causing the wheels S S to throw the rear end of the plow into a position in harmony with the position of the front end of the

low-beam upon the forward axle. Another advantage resulting from said adjustment of the position of the axle T is that it enables the plow to be turned in a much narrower circle than it otherwise could be turned. The flanges of the wheels S S give them such a hold upon the ground that very soon after the position of their axle T is changed, when the plow is in motion, they will so change the position of the plow as to again bring said axle into a position at right angles with the line of draft.

The object of the lever J and its cam *m* is to elevate or depress the after end of the share-bar *v* above or below the plane upon which the bearing-wheels of the plow are graduated to run, which arrangement enables the first furrow formed to be of any desired depth, while the forward right-hand wheel is running upon the sward.

The seat Z for the operator, which is supported by the bars *u u*, that project from their jointed connection with the plow-beam A, is so situated as to be within convenient reach of the levers E, I, and J, and also of the hand-wheel on the spindle *g*. It will therefore be perceived that the operator can at pleasure vary the depth or the width of the furrow formed by the plow, and can also so adjust its movements as to cause it to cut in a curved line. He can also cause the share to run out of the ground whenever he may desire. Should the skeleton or roller substitute for a mold-board not work judiciously, the operator can run the plowshare out of the ground, and then so adjust the positions of the roller-bearing plates N N' P as to remedy all imperfections in the performance of said rollers.

The plate portion *w* of the mold-board of my improved plow is secured to the face of the

colter Q by means of a set-screw which passes through said plate, near its lower edge, into an aperture in said colter, and the set-screw *w'*, which passes from the rear side of said colter through an aperture therein, acts against the under surface of the said share-plate *w*, and holds it in the proper position.

When the position of the rollers *g g g* is changed the position of the plate *w* must also be so changed as to act in harmony with said rollers.

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

1. Supporting the after end of the plow-beam A upon a vertical journal at the left-hand end of the axle T, when the bearings at the opposite end of said axle are so arranged that the position thereof may be varied and adjusted substantially in the manner and for the purpose herein set forth.

2. Arranging the bearings of the rollers *e e e f* and *g g g* in such a manner that their positions may be varied and adjusted substantially in the manner and for the purpose set forth.

3. In combination with the mold-board composed principally of the series of adjustable rollers, as herein set forth, the adjustable triangular plate *w* for the purpose of making the whole conform to the position in which the furrow-slice is to be laid or turned, substantially as herein set forth.

The above specification signed and witnessed this 9th day of February, 1857.

JESSE FRYE.

Witnesses:

J. R. ANDERSON,
GEORGE W. ADAMS.