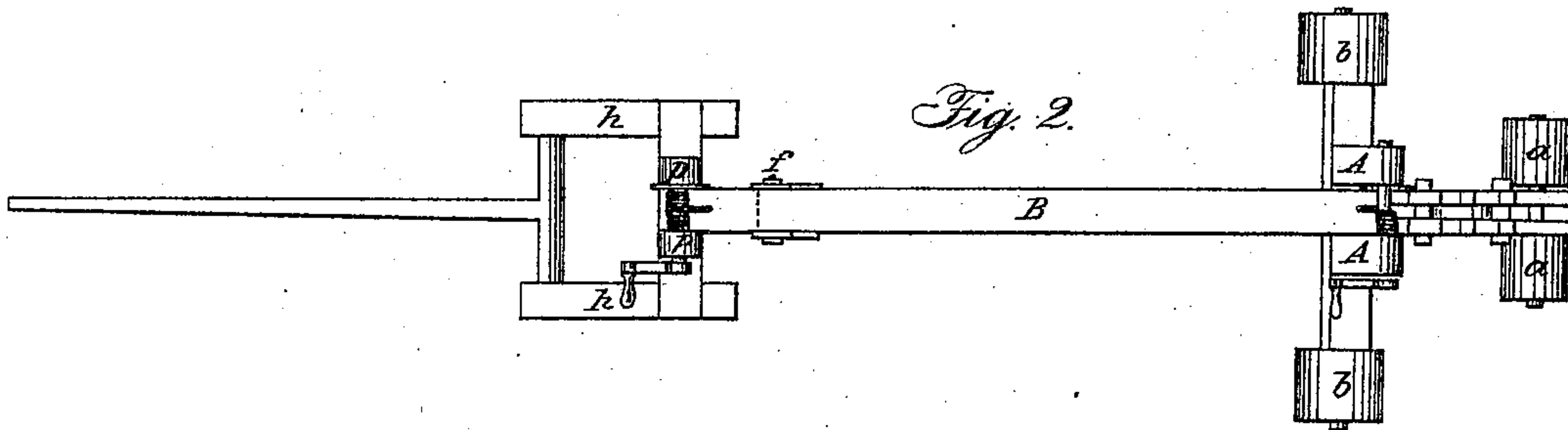
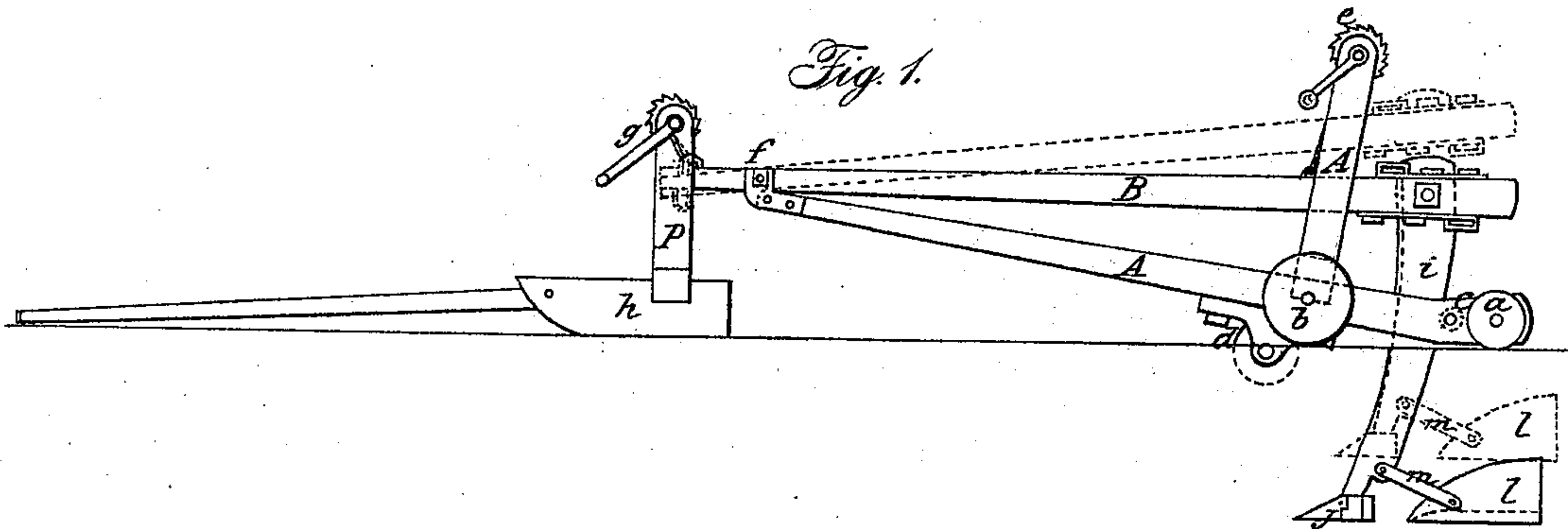


ROLAND & FORBIS.

Mole Plow.

No. 23,745.

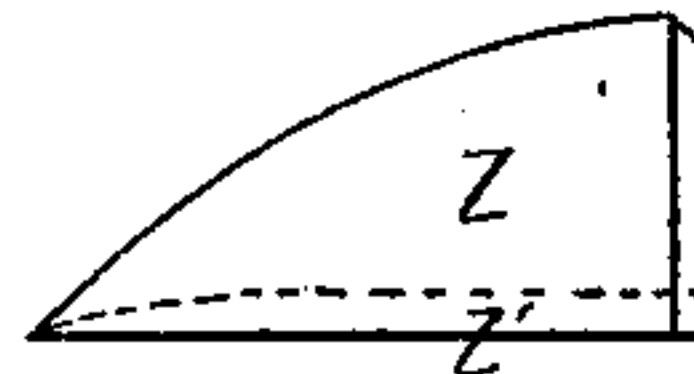
Patented Apr. 19, 1859.



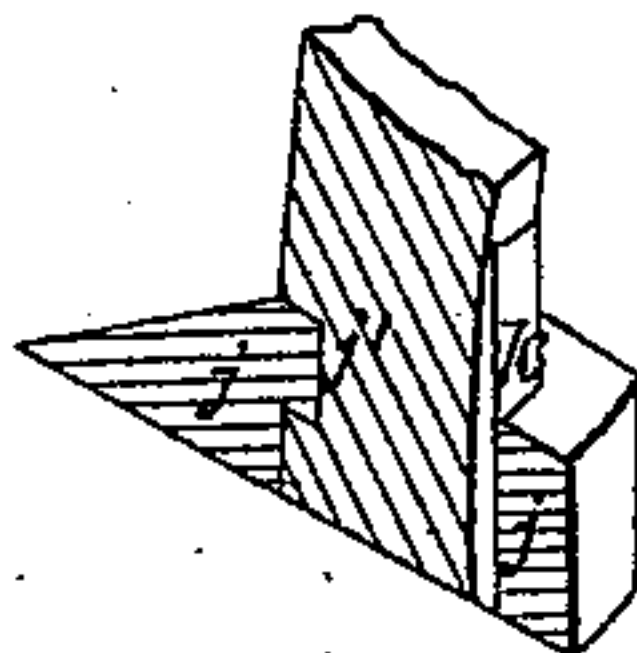
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses:

*H. Eblifon*  
*Charles L. Fisher*

Inventor:

*H. W. Roland*  
*E. Forbis*

# UNITED STATES PATENT OFFICE.

H. W. ROLAND AND E. FORBIS, OF NEWPORT, OHIO, ASSIGNORS TO  
THEMSELVES AND WASHINGTON WITHROW.

## IMPROVEMENT IN MOLE-PLOW.

Specification forming part of Letters Patent No. 23,745, dated April 19, 1859.

*To all whom it may concern:*

Be it known that we, H. W. ROLAND and E. FORBIS, of Newport, in the county of Madison and State of Ohio, have invented a new and useful Improvement in Draining-Plows; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, made to form a part of this specification.

Our invention relates to certain improvements in draining-plows, described, specified, and represented as follows:

By reference to the accompanying drawings, Figure 1 is a side elevation of our improved plow, showing its parts arranged in working position. Fig. 2 is a plan taken from the top of the plow, showing specially the arrangement of its supporting and regulating trucks. Fig. 3 is an end view, and Fig. 4 a side view, of the adjustable mole. Fig. 5 is a sectional view of the foot attached to the cutter, showing the peculiar manner of its fastening.

A is a supporting-carriage, provided with the supporting friction-rollers *a a*, regulating-trucks *b b*, friction-rest *c*, and rotating cutter *d*, and also with a windlass, *e*, and pivoted to the beam B at *f*.

B is a working-beam, its after end being adjustable vertically by means of the windlass *e*, and its forward end also adjustable vertically by means of the windlass *g* of the draft-posts *p*, which are attached to and form part of the sliding supports *h h*.

*i* is a colter, made to pass through the beam B, and bolted thereto in such manner as to allow to it a slight longitudinal play or vibration, and extending downward in a curved arc the common center of which is the pivoted point

at *f*, through the carriage A to the foot *j*. The lower part of the colter is made of a peculiar form, as shown in Fig. 5, to fit the step *j'* in the foot *j*, and is there firmly secured by means of the key *k*.

*l* is an adjustable mole, attached to the colter *i* by means of the clevis *m* in such manner as to allow easy vertical motion to the point of the mole *l*. The mole *l* is formed with a triangular groove, *l'*, is conical shaped at its heel, as shown in Fig. 3, and tapering downward and forward to its point, as shown in Fig. 4.

C is a friction-rest, arranged to afford bearing to the colter, thus preventing strain upon the beam B, and also to facilitate the adjustment of the beam.

B is a rotary cutter, arranged in such manner as to cut and open the surface of the ground for the passage of the colter *i*.

*b b* are regulating-trucks, arranged in such manner as to prevent the plow from lateral inclination, and to afford support to it when the nature of the soil is such that the supporting friction-rollers sink too deeply into it.

What we claim as our invention, and desire to secure by Letters Patent, is—

Pivoting the carriage A to the beam B near its forward end, as represented, and in combination therewith the curved colter *i*, pivoted to the beam B, and friction-rest *c*, all arranged and operating in the manner herein set forth.

In testimony of which invention we have hereunto set our hands.

H. W. ROLAND.  
E. FORBIS.

Witnesses:

H. E. CLIFTON,  
F. A. McDOWELL.