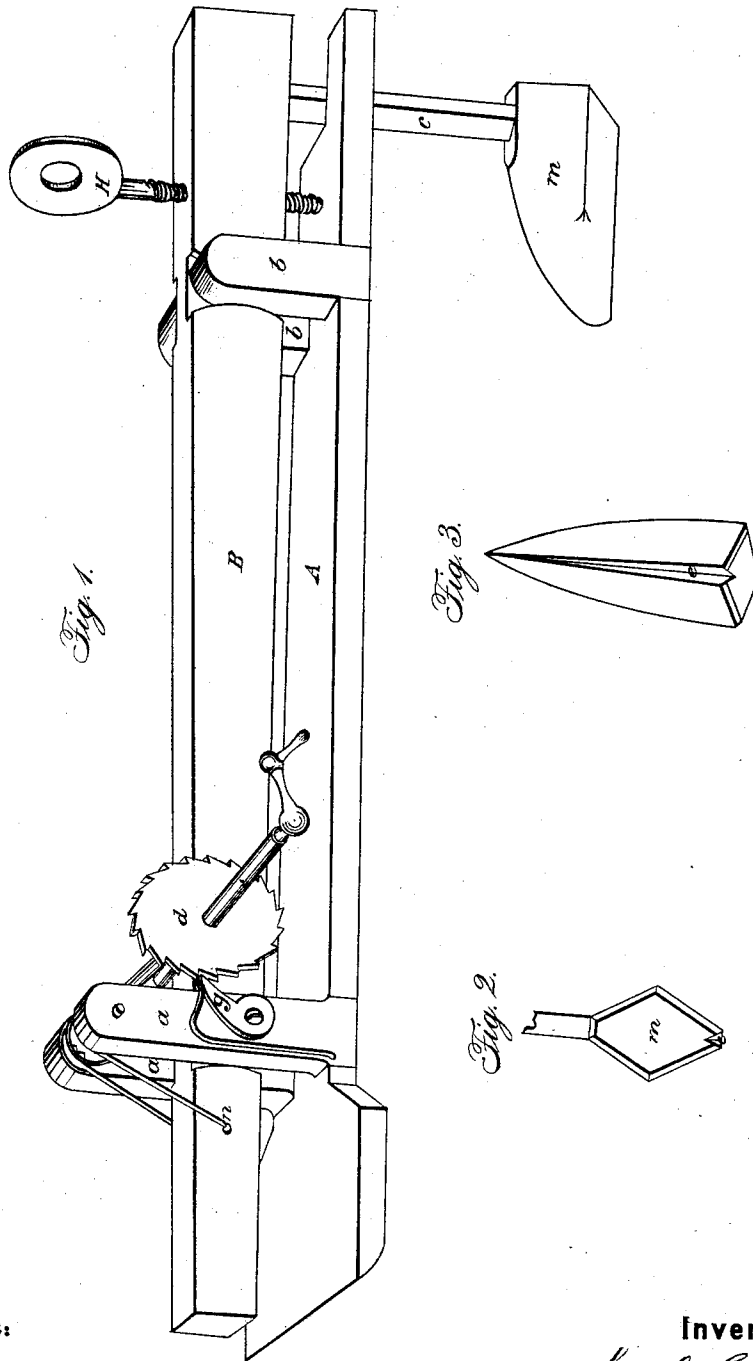


CREAMER & RICARDS.

Mole-Plow.

No. 23,452.

Patented Apr. 5, 1859.



Witnesses:

H. C. Clifton
F. A. McDowell

Inventor:

Jacob Creamer
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UNITED STATES PATENT OFFICE.

JACOB CREAMER AND THO. W. RICARDS, OF LONDON, OHIO.

IMPROVEMENT IN MOLE-PLOWS.

Specification forming part of Letters Patent No. 23,452, dated April 5, 1859.

To all whom it may concern:

Be it known that we, JACOB CREAMER and THOMAS W. RICARDS, of London, in the county of Madison and State of Ohio, have invented a new and useful Improvement in Subterranean Ditching-Machine; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

Our invention relates to the arrangement of an adjustable beam upon a sliding shoe in such manner that the mole connected therewith may be adjusted to the depth required.

Of the accompanying drawings, Figure 1 is a perspective view of our machine, showing the device for adjusting the beam, and also a side view of the mole. Fig. 2 is an end view, and Fig. 3 a bottom view, of the mole.

A is a sliding shoe, provided with the upright posts *a a b b*.

B is an adjustable beam, formed to fit between the posts *a a b b*, as represented, its forward end being provided with the ratchet-wheel *d* and shaft *s*. To the shaft *s* are attached two cords, which pass over the pulley *p* and are secured to the beam B at *n*, so that the forward end of the beam B may be elevated as required, its position being secured by means of the spring-dog *g* catching into the ratchet-wheel *d*.

H is a screw, made to work through the after end of the beam B against the upper side of the shoe A, by means of which the after end

of the beam B may be elevated or depressed as may be required to regulate the depth of the mole *m*.

c is a cutter, firmly secured to the beam B and the mole *m*.

m is a mole, made of the quadrangular form represented, its forward and upper part tapering downward and forward so as to present a cutting-edge nearly to the cutter *c*. This particular form of mole conduces to afford upward and lateral pressure. The groove *e* is formed for the purpose of relieving the ground directly under the mole from pressure as the mole is made to move along.

By means of the adjustable beam above described a ditch may be formed at a continuous equal distance from the surface of the ground, though the said surface may be rough and uneven, and the said depth may be regulated to suit the soil in which the ditch is to be formed.

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

The arrangement of the beam B, screw H, wheel *d*, and shaft *s* upon the sliding shoe *a a b b*, constructed and operating substantially as described.

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

JACOB CREAMER.
THOMAS W. RICARDS.

Witnesses:

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