HAWKINS & PUNTENEY.

Mole-Plow.

No. 28,667. Patented June 12, 1860.

Fig. 4.

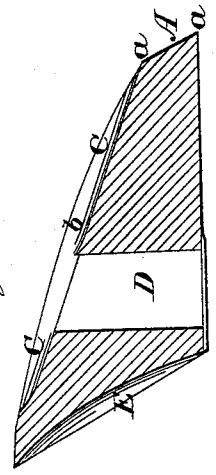


Fig. 3.

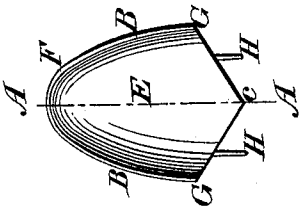


Fig. 1.

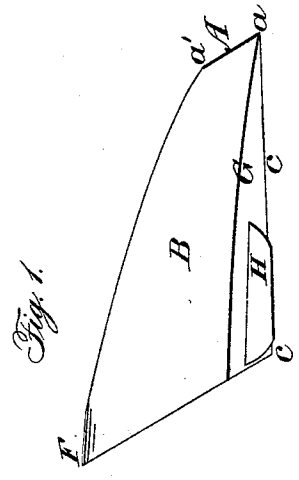
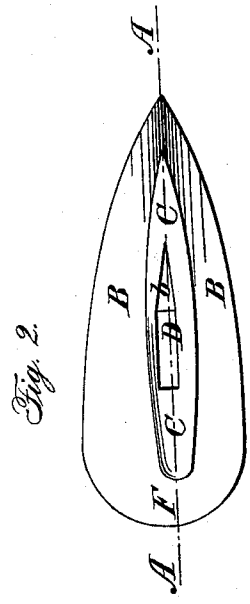


Fig. 2.



Witnesses:

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By their Atty

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A.M. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

A. B. HAWKINS AND JOHN PUNTENNEY, OF CAMERON, ILLINOIS.

IMPROVEMENT IN MOLES FOR DRAIN-PLOWS.

Specification forming part of Letters Patent No. **28,667**, dated June 12, 1860.

To all whom it may concern:

Be it known that we, A. B. HAWKINS and JOHN PUNTENNEY, both of Cameron, in the county of Warren, in the State of Illinois, have invented a new and useful Improvement in Moles for Draining-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a side view of our improved mole. Fig. 2 represents a plan or top view of the same. Fig. 3 represents a rear view of the same; and Fig. 4 represents a section on line A A, Figs. 2 and 3.

A represents the front of the mole, or that part which makes the first opening in the ground. The part A is made in the form of a sharp tapering wedge, the lower edge, *a*, being in advance of the upper edge, *a'*. The advantage of this form of the front of the mole is that if any roots happen to be in the path of the mole they are first raised by the point *a* and then cut as they are drawn up over the sharp edge of the mole from *a* to *a'*, while the earth is gradually thrown laterally by the inclined sides B B.

An opening D is made in the center of the mole for the insertion of the colter. The top of the mole is made with a groove, C, which commences at the point *a'*, and extends back behind the opening D, as shown in the drawings.

The object of the groove C is to conduct the earth back behind the colter after it has been raised by the front mole, whereby it is made to fill up the opening or cut made by the colter by being pressed up into the same by the elevated end of the mole, which is marked F.

In order to facilitate the passage of the earth from the front of the colter to the rear thereof, a wedge-like elevation is formed just in front of the opening D, as shown at *b*. This elevation *b* serves to separate the earth and give it a direction on either side of the colter, which is to be fastened in the opening D.

The bottom of the mole is made or formed with two downwardly-converging sides, G G, which meet at *c*. The inclined converging sides G G are provided with parallel fins H H, as fully shown in the drawings. By the use of the inclined sides G the bottom of the drain is made arching, whereby in case obstructions of considerable size happen to get washed into the drain from above they are supported by the sides G G, so that a space, *c*, is left for the passage of the water. Again, by the use of the parallel fins H H the mole is kept in a proper position, while at the same time the narrow cuts made by the fins or knives H H greatly increase the surface through which the water can enter the main drain. Again, by the gradual washing of the water as it runs along in the cuts made by the fins or knives H H the bottom of the drain in time assumes the form of corrugations, so that, should the top of the drain fall in, the upper ridges of the bottom of the drain support the earth and thus leave a free passage for the water in the bottom of the drain. The rear of the mole is hollowed out, as shown at E.

The moles can be used in connection with any suitable machine. The general construction of the parts of such machine being well known, the ordinary skill of the constructer will be sufficient to apply our mole.

Having described our improved mole, we do not now lay claim to any single feature separately considered; but

What we claim as our invention, and desire to secure by Letters Patent as a new article of manufacture, is—

A mole for draining-machines, constructed in the form and manner as above set forth.

AUGUTIN B. HAWKINS.
JOHN PUNTENNEY.

Witnesses:
V. G. HARBAUGH,
B. F. CORWIN.