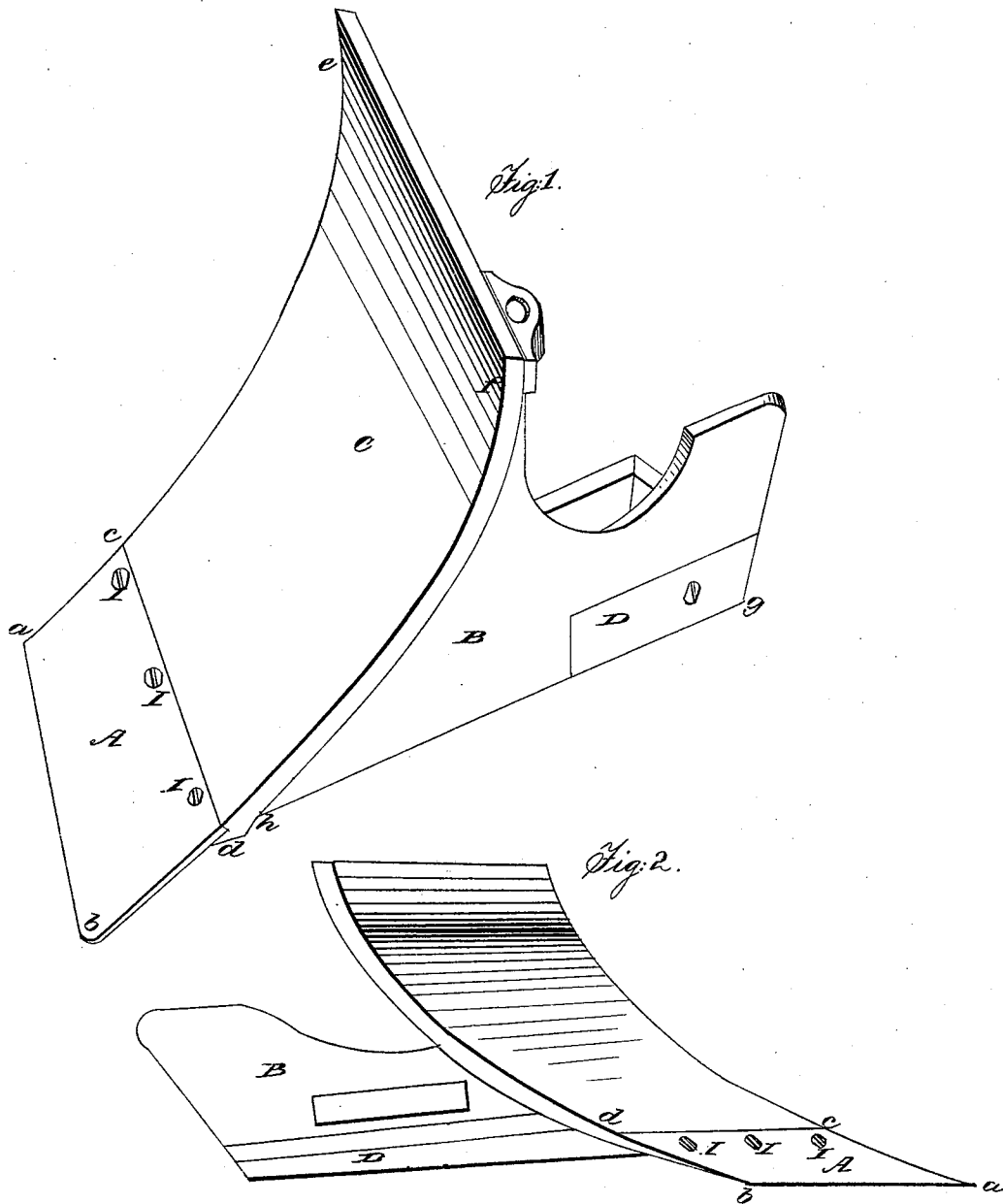


J. SMITH.

Plow.

No. 29,629.

Patented Aug. 14, 1860.



Witnesses:
J. M. Smith
J. M. Smith

Inventor:
J. M. Smith
by *[Signature]*
attorney

UNITED STATES PATENT OFFICE.

JAMES SMITH, OF NORFOLK, VIRGINIA.

IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. 29,629, dated August 14, 1860.

To all whom it may concern:

Be it known that I, JAMES SMITH, of Norfolk, in the county of Norfolk and State of Virginia, have invented a new and useful Improvement in Plows; 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, forming a part of this specification, in which—

Figure 1 represents a perspective, and Fig. 2 a side view, of the plow.

Similar letters of reference in each of the several figures indicate corresponding parts.

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

The cutter A of this plow has a straight edge, *a b*, across its whole width, and a similar straight back, *c d*, which latter fits into a recess at the lower end of a mold-board, *e*, and is fastened thereto by screws *I*. The surface of the mold-board presents a curvature of the first order, being produced by the motion of a straight line parallel to the edge of the cutter in the path of a cycloid. Thus all horizontal sections of the mold-board at different heights above the ground would present straight lines parallel to the edge of the cutter, and all vertical sections through the mold-board would present identical cycloids parallel to each other. The most rapid curvature of this cycloidal surface is on top of the mold-board at *e f*.

If the surface of a mold-board presents a double curvature, (which is usually the case,) the sod is bound to break as it moves up the surface of the mold-board. In my plow, however, the sod moves up a surface formed by the motion of a line parallel to the edge which digs the sod up, and therefore the sod in moving up my mold-board does not break, and is only gradually turned over as it arrives at the upper part of the mold-board where the curvature is more rapid. The attainment of this object is also facilitated by constructing my plow so that it rests on a broad edge in front and only on one point at the heel of the plow, so as to keep the plow steady.

In common plows, where the point is narrow, (and not equal to the whole width of the mold-board, as in my plow,) and where the under edge of the landside is nearly or quite on a line with the extremity of the point, the points will sooner wear out, (because they are smaller,) and then the plow will partially rest on the under edge of the landside, and if this wears uneven the plow will no longer be steady. In my plow, however, the under edge, *g h*, of the landside inclines from the heel *g* upward, so as to meet the mold-board at the height above the ground, where the back of the cutter is joined to the mold-board. Thus it will be understood my plow will yet rest on the heel *g* and on the cutter-edge when the cutter has been worn almost up to where it is fastened to the mold-board.

By combining all the above-described elements my plow is made to possess the advantage of wearing longer and working steadier than any other plow.

The heel of my plow is made of a separate piece, *D*, fastened to the landside *B* by a screw, or other suitable means. When the heel is worn out a new piece, *D*, may be inserted in place of the one which has been used. The rest of the landside (which in my plow is comparatively little worn) will thus be made to serve a long time.

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

The arrangement of the peculiar mold-board *C*, herein described, straight-edged point or cutter *A*, and inclined landside-bar *B*, with its removable heel-piece *D*, when the said mold-board extends down beyond the front end of the landside-bar, and the curve of the same is formed by a straight line moving parallel to the edge of the cutter in the path of a cycloid, as and for the purposes set forth.

JAS. SMITH.

Witnesses:

GOODWIN Y. ATLEE,
R. W. FENWICK.