2 Sheets—Sheet 1.

C. BLAIR.

MANUFACTURE OF PLOW MOLD-BOARDS.

No. 189,179. Patented April 3, 1877.

Fig. 1

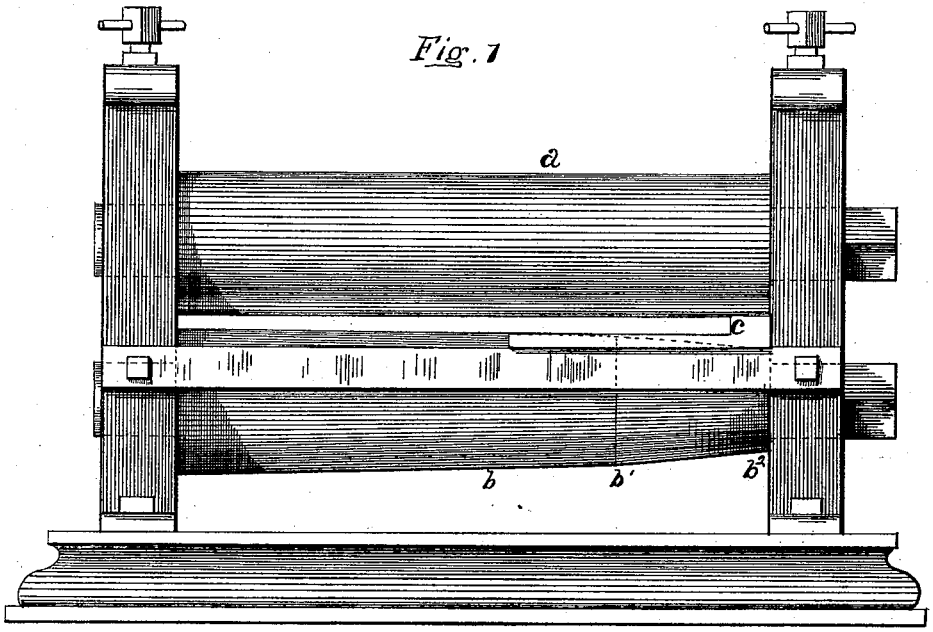
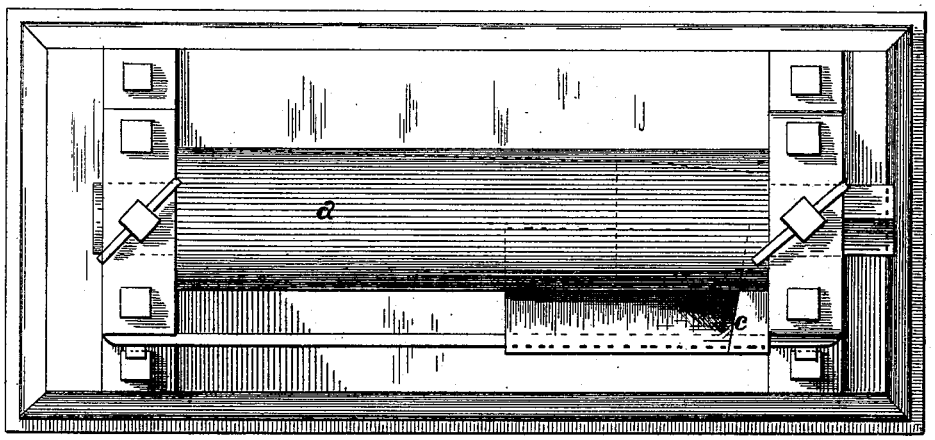


Fig. 2



Witnesses.
John Pollitt
Robt. F. Gaylord

Inventor
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By W E Simmons
atty.

2 Sheets—Sheet 2.

C. BLAIR.

MANUFACTURE OF PLOW MOLD-BOARDS.

No. 189,179. Patented April 3, 1877.

Fig. 5

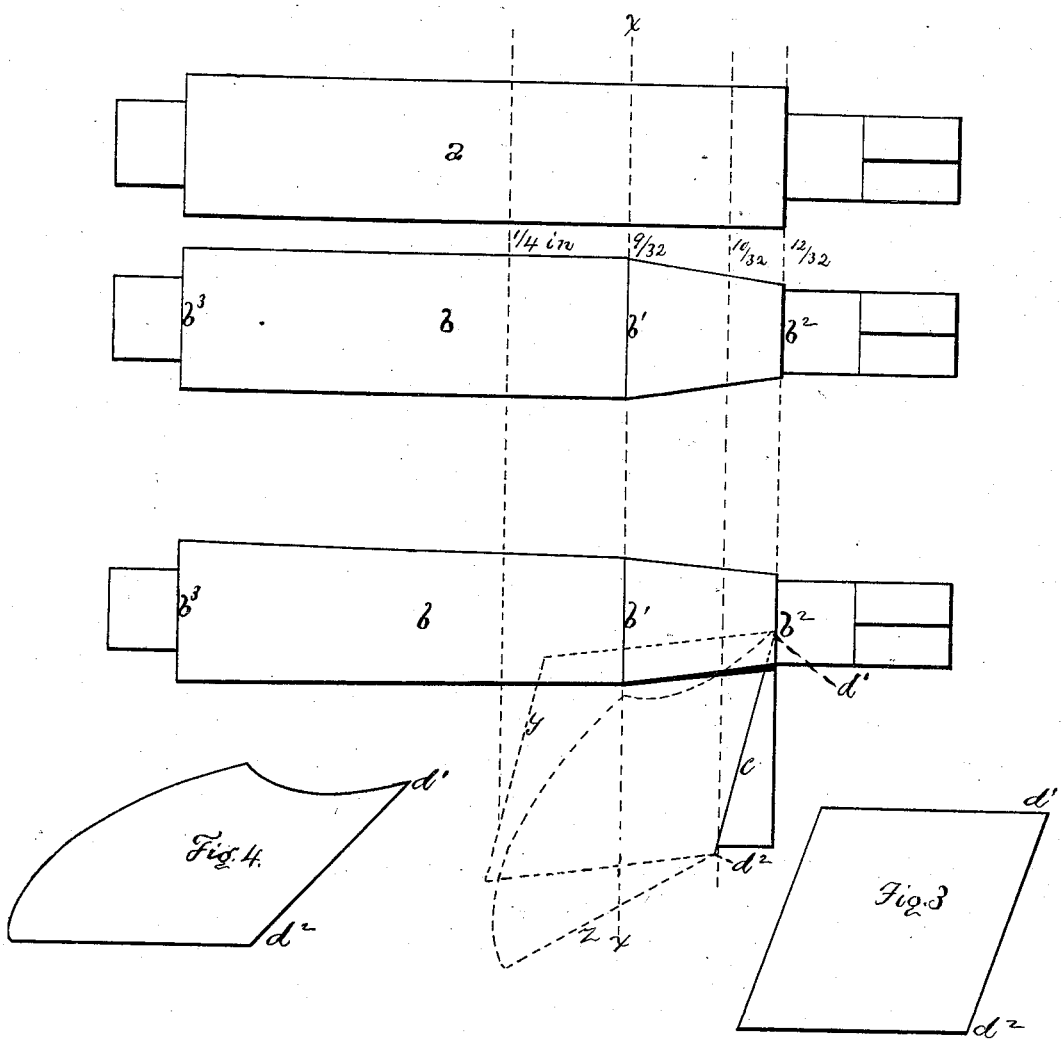

Fig. 4.

Fig. 3

WITNESSES:

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A. W. Page.

INVENTOR:

Chas. Blair

By W. E. Simonds,

Att'y.

UNITED STATES PATENT OFFICE.

CHARLES BLAIR, OF COLLINSVILLE, CONNECTICUT, ASSIGNOR TO THE COLLINS COMPANY, OF SAME PLACE.

IMPROVEMENT IN THE MANUFACTURE OF PLOW MOLD-BOARDS.

Specification forming part of Letters Patent No. **189,179**, dated April 3, 1877; application filed August 14, 1876.

To all whom it may concern:

Be it known that I, CHARLES BLAIR, of Collinsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements pertaining to the Manufacture of Mold-Boards for Plows, of which the following is a specification, reference being had to the accompanying drawings, where—

Figure 1 is a front view of the rolls and roll-guide made use of. Fig. 2 is a top view of same. Fig. 3 is a view of a blank of metal preparatory to rolling. Fig. 4 is a view of the mold-board rolled and trimmed to shape. Fig. 5 is a diagram illustrating the manner of presenting the blank to the action of the rolls. The dotted line *y* denotes the outline of the blank. The dotted line *z* denotes the outline of the trimmed and finished mold-board into which the blank is to be converted.

Plows furnished with plates made from sheet-iron and sheet-steel, notably the latter, have become a standard article in the market and on the farm. Many, if not all, of these plow-plates are made from sheets of regular and uniform thickness, as such metals are found in commerce; and since plow-plates need to be of variable thickness, giving greatest weight of metal at points of greatest wear, it becomes necessary to use some means to correspondingly shift and distribute the metal.

Whether all who have attempted to shift and distribute metal for this purpose have had the same idea as to what distribution of the metal will best accomplish the end aimed at I do not know, but I do know that my principle of distribution is novel, and that the process by which the distribution is arrived at is also novel.

The old and common method of getting increased thickness at a desired point was to weld on a backing at such point. On this old and common process an improvement was made by rolling a plate of metal between rolls, one of which was tapering or conical in part, giving an increased thickness along one side of the plate, which was then cut obliquely across into diamond-shaped sections. These plates were trimmed into mold-boards, leaving an increased thickness along that edge of the mold-board which is next the plow-standard. The line of diminution, by which I mean the line where the area of increased thickness ceases, was parallel to that edge of the mold-board which is next the standard. This method is shown in United States Patent to W. M. Watson, No. 33,672, dated November 5, 1861.

A second party rolled a plate of metal so as to have a broad line of increased thickness either along the longitudinal center of the plate or along the longitudinal edges, and then cut out the mold-board so as to leave an area of increased thickness along the edge of the mold-board which is next the standard, the line of diminution not being exactly parallel to said edge, but more nearly at right angles to the share-line, by which I mean that edge of the mold-board which is next to and meets the share. This method is shown in patent to Henry Barnes, No. 93,162, dated August 3, 1869.

A third party cut a plate of uniform and regular thickness into diamond-like sections, and rolled the sections separately between rolls, tapering or conical in part, so as to leave an area of increased thickness along the edge which is next the standard, the line of diminution almost at right angles to the share-line, and ending at the top with the ending of that edge of the mold-board which is next the standard. This method is shown in patent to J. Holmes, No. 165,581, dated July 13, 1875.

It will be observed that in all these cases the line of diminution formed no considerable angle with the edge of the mold-board which is next the standard, being in the main parallel therewith, or nearly so, and that the share-line, whether for the time being real or imaginary—that is, yet to be developed—was parallel with the line of the rolls, or nearly so. In my method of distribution the line of diminution is substantially at right angles to the line of diminution in all three of the cases specified, and my share-line is presented to the rolls nearly (somewhat less than) at a right angle to the line of the rolls.

In the drawings, the letter *a* denotes a roll, preferably the upper roll, which is regular or of the same diameter throughout. The letter *b* denotes the other roll, tapered or conical from b^1 to b^2. From b^1 to b^3 it may be regular,

or it may be slightly tapered. Whether it be so or not does not affect my invention. The letter *c* denotes the guide set or adjusted at something less than a right angle to the line of the rolls. The blank *d*, from which the mold-board is rolled, is of uniform thickness, and in semblance diamond-shaped. It is properly heated, and then presented and passed through the rolls, the share-line d^1 d^2 resting against the guide *c*. After passing through the rolls the edges of the rolled blank are trimmed off to mold-board shape. The line of diminution is the line *x*, and in the finished mold-board is substantially at right angles to the line of diminution in all three of the cases specified in stating the state of the art, effecting the distribution of metal according to an entirely different plan, attained by presenting the share-line at an entirely different angle to the line of the rolls, and afterward trimming off the plate to mold-board shape, in accordance with said angle of presentation of said share-line to said line of the rolls.

I claim as my invention—

1. An improvement in the art of making a mold-board of varying thickness from a sheet of uniform thickness, which consists in passing the diamond-shaped blank through tapered rolls, with the edge which is afterward to be the share-line at an acute (nearly right) angle to the line of rolls, as described.

2. As a new article of manufacture, a mold-board having an area of increased thickness, substantially as described, and with the line of diminution parallel, in substance, to the share-line.

CHARLES BLAIR.

Witnesses:

WM. E. SIMONDS,

ROBT. F. GAYLORD.