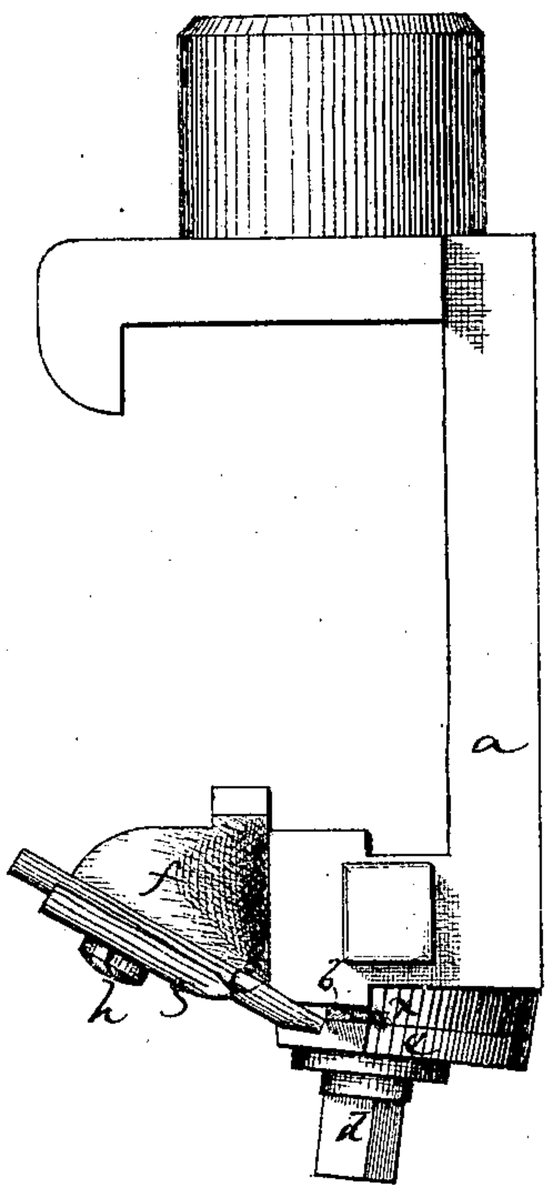
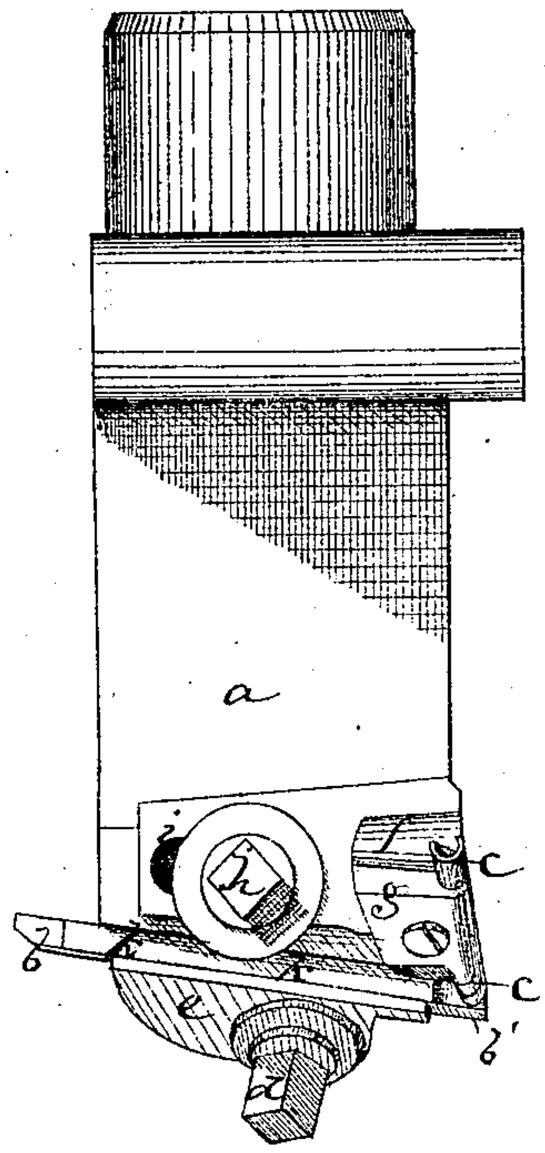
E. D. HOWARD
Sole Channelers.

No. 124,063. Patented Feb. 27, 1872.

B.



A.



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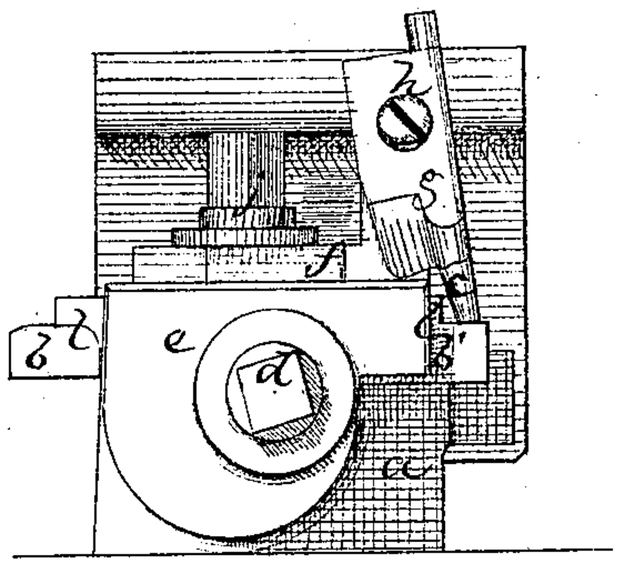
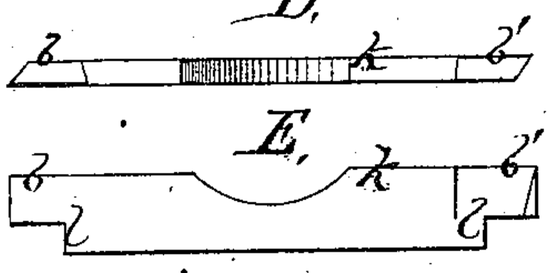


D.



E.

F.

Witnesses.
M. W. Frothingham.
S. B. Kidder.

E. D. Howard,
By his Attys.
Crosby & Gould.

124,063

UNITED STATES PATENT OFFICE.

ELIJAH D. HOWARD, OF LYNN, ASSIGNOR TO HENRY S. VROOMAN, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SOLE-CHANNELERS.

Specification forming part of Letters Patent No. 124,063, dated February 27, 1872.

To all whom it may concern:

Be it known that I, ELIJAH D. HOWARD, of Lynn, in the county of Essex and State of Massachusetts, have invented an Improvement in Channelers; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My improvement relates to the construction and arrangement of cutters for sole-channeling machines.

As ordinarily made, the straight or slit-cutting knife is on the end of a shank, the blade and shank being of the same width, and having been always made quite narrow, because of the necessary proximity of the cutting-edge of the grooving or tubular cutter to the straight cutting-edge. Now, as the knife cannot be very thick at its back, the result of this ordinary construction is that the cutter does not have the necessary strength, and is soon weakened by grinding so as to become useless. To surmount this difficulty, I make the cutter narrow at and near its point, and for a distance sufficient to receive the point of the grooving-cutter, and then widen it, the widened part being opposite to a part of the cutting-edge, and serving to impart the necessary strength to the blade.

My invention consists, primarily, in a channeler-knife having such construction; or a cutter in which the blade, at and near the point, being left narrow to permit the edge of the groover to be set in suitable proximity to the edge of the knife, is widened opposite the rest of the cutting-edge to secure the necessary strength and proportion.

The drawing represents a channeler-stock for holding a channeler-knife, and a tubular groover or cutter, with a knife embodying my invention.

A shows an end view of the stock and cutters. B is a front view thereof; C, a bottom view. D and E show a straight-edge knife or cutter, in edge and side views, respectively. F shows a McKay channeler-knife having my improvement therein.

a denotes the stock, which is to be confined to the upper arm of the channeler-machine, and has provision for attachment, to its lower part, of the two knives or cutters. *b* denotes a straight-edged channeler-knife, and *c* the grooving-knife. The straight knife is shown as secured to the under side of the stock by a clamp-plate, *e*, which is fastened by a screw, *d*, the shank of the blade setting against a shoulder, *x*, of the stock. The cutting-edge projects beyond the stock, as seen at B and C; and behind it, or against, or close to its point and back is the point of the groover *c*, the shank of which groover is confined against a stock, *f*, by a clamp-plate, *g*, held by a screw, *h*, the groover sitting in an inclined position, and sliding freely between the clamp-plate and the block (when the screw is loosened) to permit the cutting-edge to be set up as it wears away by use, and the block being adjustable by means of the screw *j* and a slot, *i*, to permit the groover to be adjusted in depth of cut and relation to the end of the channeler-knife *b*. The cutter *b* also slips edgewise freely between the clamp-plate *e* and the stock, (when the clamp is loosened,) so that its cutting-edge can be set up to the work as it wears away, and may also be adjusted in accordance with the width of channel or slit to be cut. The cutter-shank *k* is shown as made with two cutters, *b b'*, at its opposite ends, said ends being interchangeable, so that either may be used at pleasure, or one may be used after the other is worn out.

The ordinary width of the cutter-shank in common channelers is the width shown at the end of the cutter *b*, or a width somewhat less than this; but to give the desirable strength and rigidity, I widen the shank opposite the cutting-edge, as seen at *l*, thereby securing a strong back, while leaving an angle for receiving the point or cutting-edge of the groover, and bringing it to correct position relatively to the straight cutting-edge.

Instead of making the shouldered cutter on the end of a straight bar, as shown, such shouldered cutter may be on a shank joined to or projecting directly from a stock, *n*, as seen at F.

I claim—

1. A channeler-knife having a narrow cutting-end, with a widened blade extending behind the cutting-edge, substantially as shown and described.

2. The knife or bar, made with a cutting-blade at each end, when the shank is widened adjacent to each end, and is narrowed at each end, substantially as shown and described.

3. The combination of a groover and a channeler-knife, when the point of the groover sits in a notch or angle formed in the blade to receive it, substantially as shown and described.

Executed this 18th day of August, A. D. 1871.

ELIJAH D. HOWARD.

Witnesses:

CHARLES OSGOOD,

JAMES D. BLACK.