# I. A. DUNHAM.

## EDGE PLANES.

No. 184,767. Patented Nov. 28, 1876.

Fig. 1

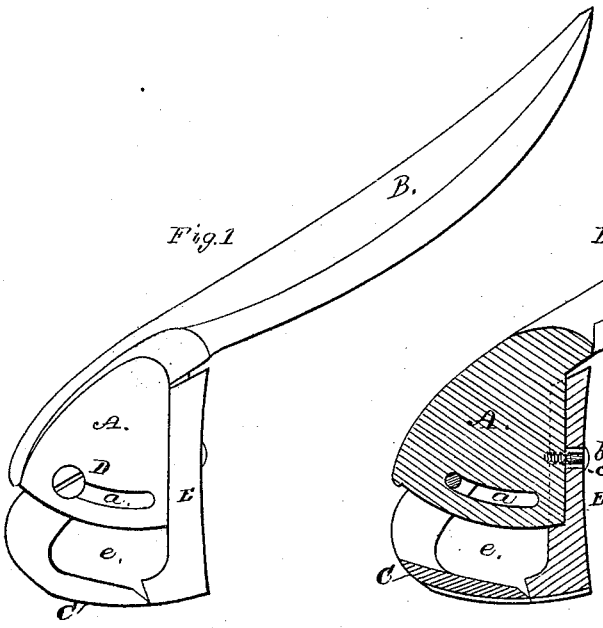



Fig. 3

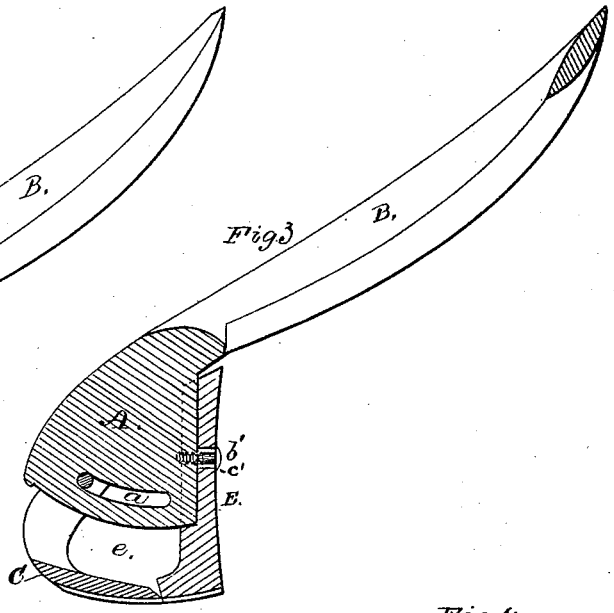



Fig. 2.

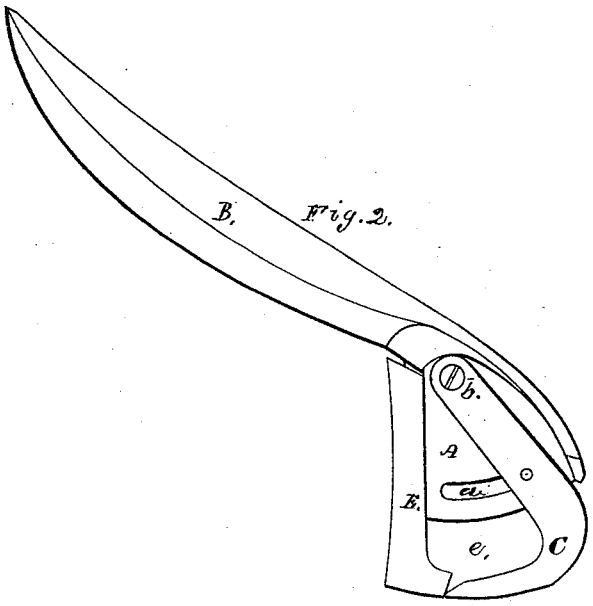
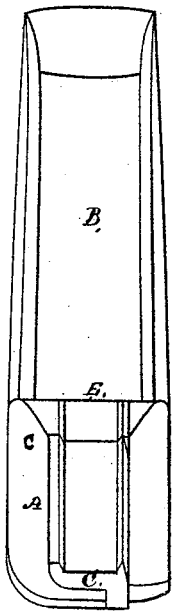



Fig 4.




Witnesses.
Geo. Gray
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# UNITED STATES PATENT OFFICE.

ISAAC A. DUNHAM, OF BROCKTON, MASSACHUSETTS.

## IMPROVEMENT IN EDGE-PLANES.

Specification forming part of Letters Patent No. **184,767**, dated November 28, 1876; application filed June 23, 1876.

*To all whom it may concern:*

Be it known that I, ISAAC A. DUNHAM, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Shoemakers' Edge-Planes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In such drawings, Figures 1 and 2 denote opposite side elevations, Fig. 3 a longitudinal section, and Fig. 4 an end elevation, of a shoemaker's edge-plane, constructed in accordance with my invention.

My invention relates to that class of devices termed "edge-molding planes," as employed by shoemakers in molding the edges of boots and shoes, in which the molding-edge or part of the implement is formed in two portions, one of which is on the cutter and the other on the guard; and my invention consists in an improved edge-plane, consisting of a stock, a guard, a handle, and a cutter, the latter being applied at its rear end to the stock by a fixed center or fulcrum pin, and provided with a set-screw, all being essentially as set forth.

In the edge-plane hereinafter explained I have sought to remedy sundry evils incident to this class of implements as heretofore constructed. Tools of this character, as ordinarily made, have had their handles arranged at, or nearly at, a right angle to the plane of the cutting-edge, so that when the tool is grasped in the hand of a workman, it has been found very difficult, if not impossible, to preserve the knife in the curved shank of a boot or shoe, so as to cause it to take out a uniform and even shaving. Another objection to the tool as ordinarily made is the great difficulty experienced by a workman in adjusting it so as to maintain the edge of the cutter and its molding-surface in due relation to the guard and its molding-surface, so that both molding-surfaces shall not only have the desired correspondence of curvature to allow such parts to have a firm bearing upon the sole to be reduced, but the cutting-edge of the cutter be so maintained as to enable a uniform and even shaving to be taken from the sole.

In the edge-plane on which my invention rests I prefer to arrange the handle at such an angle with respect to the cutting-edge that, when the handle is grasped by the operator, and he is cutting the curved portions of the sole, the arc of motion shall correspond to the easy natural movement of the wrist, such enabling the curvatures of the edge to be trimmed and molded with as much certainty and ease as the plane portions of the sole.

Another feature of my invention is the simple method by which the knife is adjusted, the same being as hereinafter described.

In the drawing, A denotes the stock of the implement, the same being made of metal, and provided with a handle, B, which I prefer to make hollow for the sake of lightness. The handle B is of a peculiar shape, as shown in the drawing, and instead of being arranged at a right angle to the cutting-edge of the knife, I arrange it an acute angle thereto, so that, when grasped in the hand of a workman, greater freedom of motion may be given to the knife, so as to enable him to cut with equal facility through the shank and curved portion of the sole-edge, as upon the plane parts thereof. With edge-planes as ordinarily constructed this cannot be done.

The stock A is cut away on both of its lateral sides, on the one side to receive one or more fingers of the operator's hand, and on the other to receive the shank of the curved knife C, which is pivoted at the rear end by a screw or pin, *b*, to the stock, as shown in Fig. 2. D is a set-screw, which extends through a curved slot, *a*, formed in the stock, and into the shank of the knife. Besides recessing the stock A on its opposite sides, as and for the purposes herein mentioned, I arrange the handle B obliquely to the stock—that is, at an obtuse angle with the front edge of the stock, or that edge to which the guard is fastened, all being substantially as shown. In most, if not all, other edge-planes the handle has been essentially in a straight line with the stock, or that edge of it to which the guard was applied.

My arrangement of the handle and stock—that is, obliquely to each other, as represented—enables the implement to be worked to

much better advantage, particularly in the shank or hollow of a sole, as any shoemaker will readily discover on trial of it.

E is the adjustable guard, the same being connected to the front face of the stock by a spline and feather connection, as shown in Fig. 3. *b'* is a set-screw, which extends through an elongated slot, *c'*, formed longitudinally in the said guard, and into the stock, the object of such arrangement being to enable the guard to be either raised or lowered in order to allow the cutter to remove the desired thickness of shaving. Both the cutter and the guard are formed with a correspondingly-curved molding-surface, the curved face of the knife or cutter being the arc of a circle whose center is the fixed pivot *b* of the cutter, the curved slot *a* in the stock being concentric with the curved molding-surface of the cutter. By this construction and arrangement of parts a large and open throat or chip passage, *e*, is formed on the implement, so that there is no liability of the same ever becoming choked, as often results with articles of this class as ordinarily made.

If we suppose the parts of the tool to have been put together, and the molding-surface of the cutter and knife to have been filed and ground to a corresponding curvature in order to adapt the tool for use, we have simply to lower the guard (by means of the screw *b'*) to obtain any desired thickness of shaving, the set-screw D enabling the cutting-edge to be brought up and maintained, as it may become worn, in due relation to the guard.

From the above it will be seen that by affixing the cutter to the stock on a fixed center, and forming the molding-surfaces of the cutter and guard, as arcs of the same circle of which the knife-pivot is the center, a novice can as readily and accurately adjust the tool for use as the most skilled mechanic, as all that is necessary after the guard has been once adjusted (to give the required thickness of shaving) is to move the cutter on its center of motion and affix the set-screw D, so as to maintain it in proper relation with the guard, as such knife may become worn.

In using my improved tool the operator grasps the handle between his thumb and fingers, bringing the ends of the two shorter fingers to rest upon the cut-away part of the stock, as shown at *c* in Figs. 1 and 4, and brings the molding-edge of the tool upon the edge of the sole, and manipulates the same in the usual manner, the peculiar method of arranging the handle with respect to the cutter enabling the tool to be used with as great ease and facility on the curve as the plane portions of the edge.

What I claim as my invention is—

1. The improved edge-plane, consisting of the stock A, guard E, handle B, and cutter C, the latter being affixed at its rear end to the stock by the fixed center or fulcrum pin *d*, and provided with the set-screw D, the whole being constructed and arranged for conjoint operation, as shown and described.

2. The stock A recessed on its opposite sides, in manner and for the purpose substantially as shown and described.

3. The stock, recessed on its opposite sides, as described, in combination with the handle, arranged obliquely to the stock, or at an obtuse angle to its front edge, all being substantially as represented.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

ISAAC A. DUNHAM.

Witnesses:
F. P. HALE,
F. C. HALE.