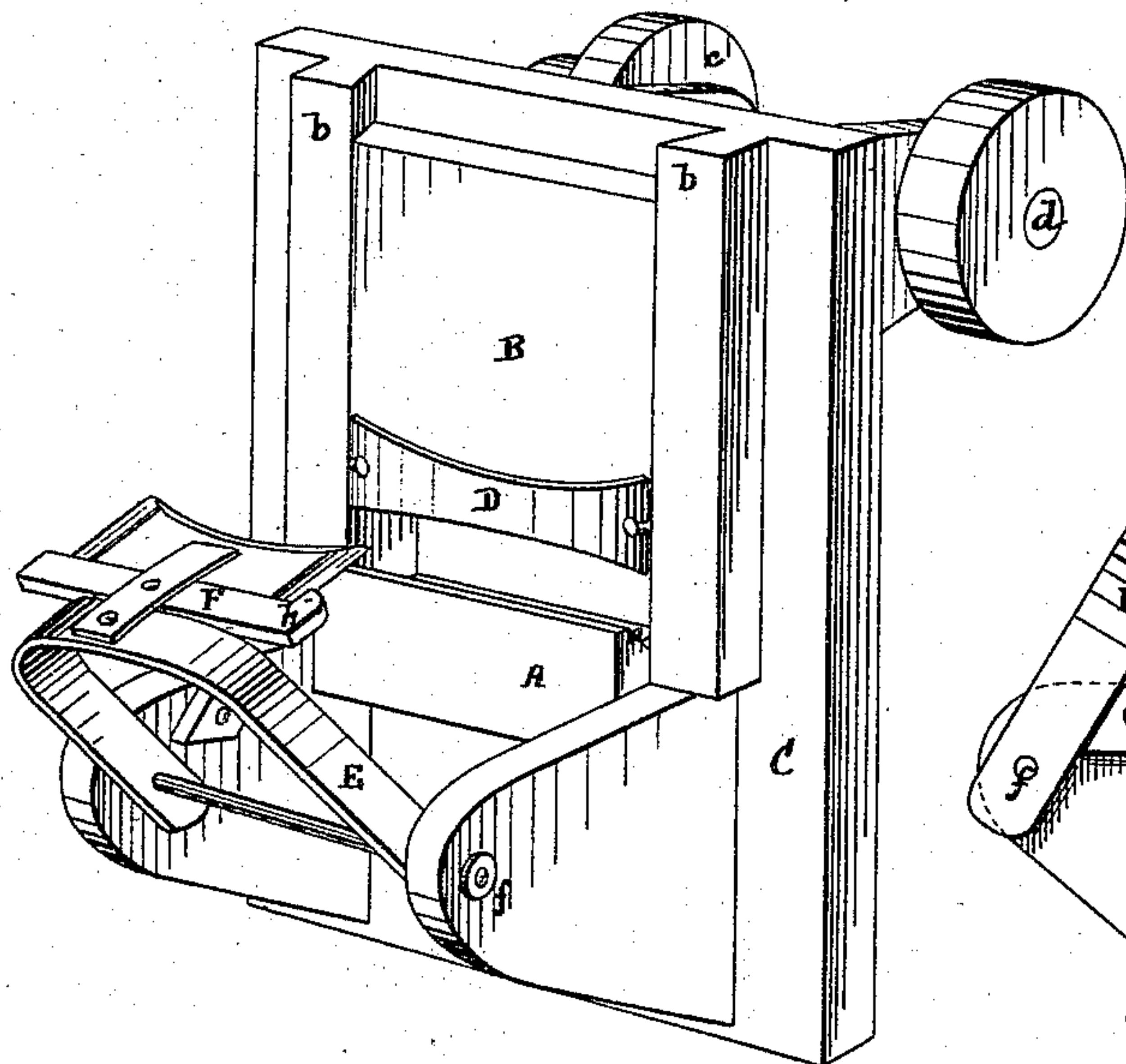


**W. N. SPRAGUE.**  
**Machines for Making Wooden Shanks for Boots**  
**and Shoes.**

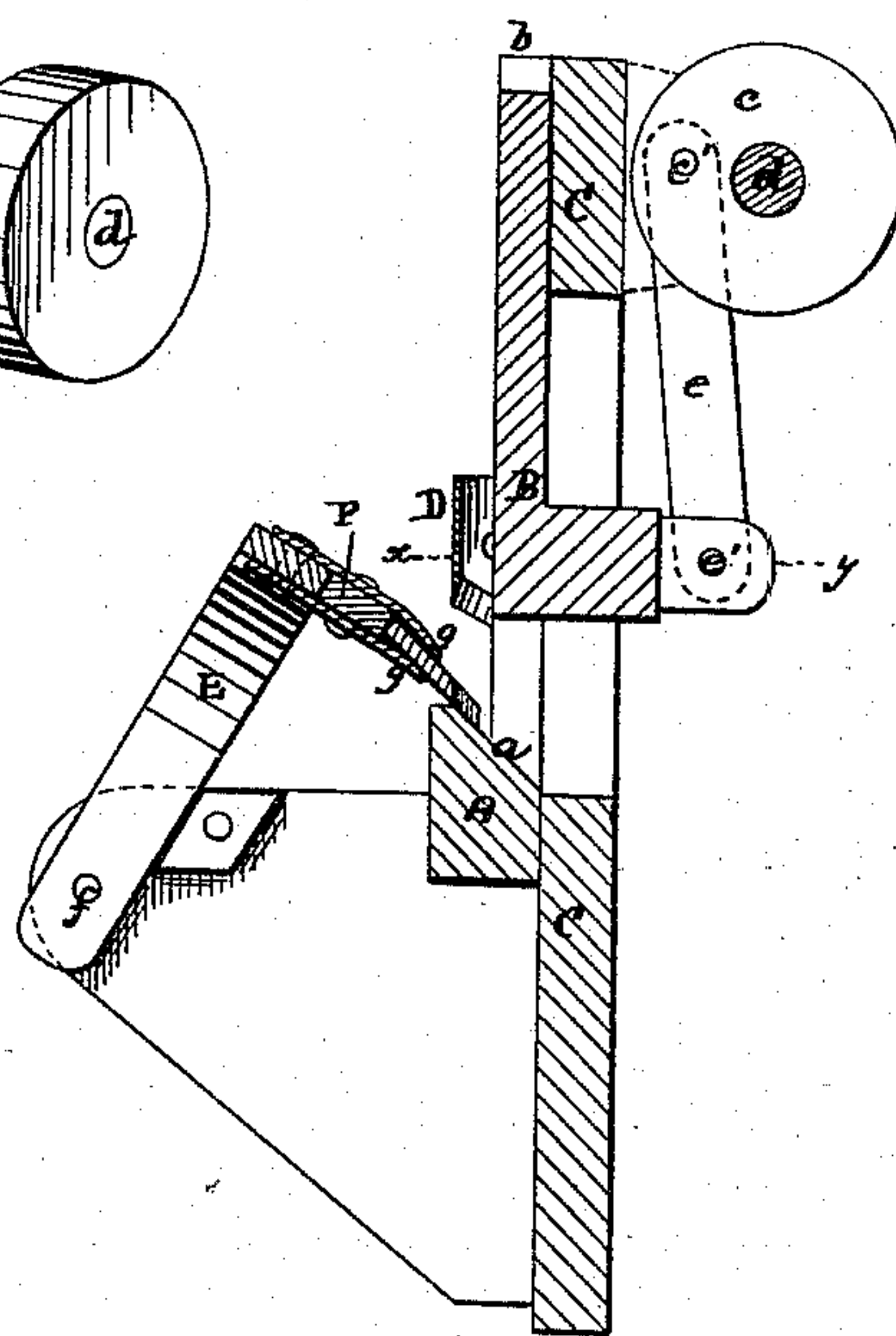
No. 157,424.

Patented Dec. 1, 1874.

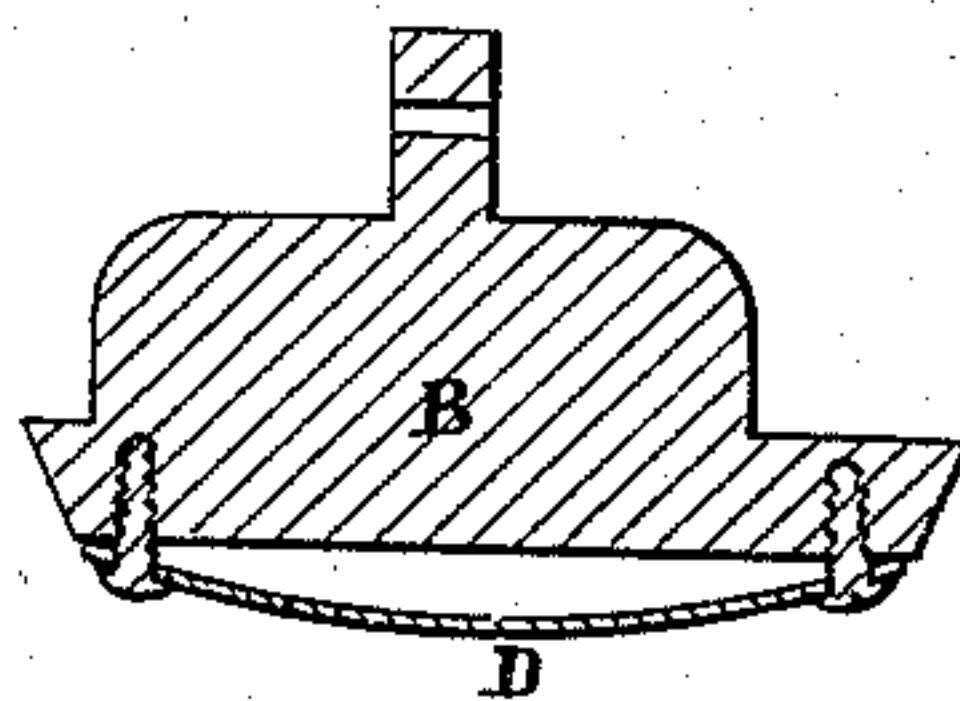
*Fig. 1.*



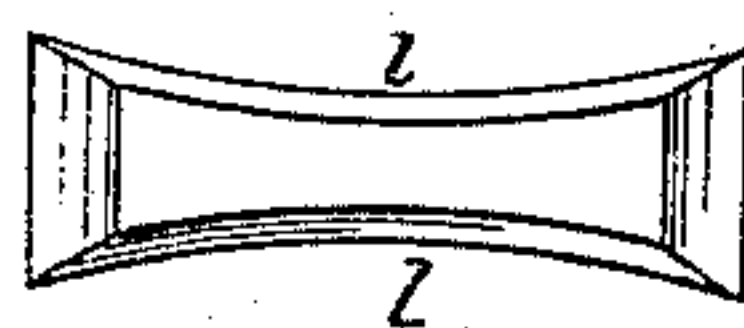
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Witnesses.*

*Evell A. Dick*  
*Wm. E. Chaffee*

*Inventor*

*Watson N. Sprague*  
*by atty. A. P. Cook*



# UNITED STATES PATENT OFFICE.

WATSON N. SPRAGUE, OF KEENE, NEW HAMPSHIRE.

IMPROVEMENT IN MACHINES FOR MAKING WOODEN SHANKS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. 157,424, dated December 1, 1874; application filed January 16, 1874.

*To all whom it may concern:*

Be it known that I, WATSON N. SPRAGUE, of Keene, Cheshire county, New Hampshire, have invented certain new and useful Improvements in Machines for Making Wooden Shanks for Boots and Shoes, of which the following is a specification:

This invention relates to machinery for giving to the edges of wooden shank-pieces the curvature and bevel requisite, in order to adapt them for the use for which they are intended. To this end I combine a slanting bed-piece, a shank-holder adapted to lay the shank-piece, which it carries on the bed, in the proper position relatively to the cutter, and a reciprocating cutter of such curvature and shape as to cut the edge of the shank-piece with the proper bevel and an inward curvature.

The manner in which my invention is or may be carried into effect will be understood by reference to the accompanying drawing, in which—

Figure 1 is a perspective view of so much of a shaping-machine as is required to illustrate my invention. Fig. 2 is a transverse vertical central section of the same. Fig. 3 is a horizontal section of the cutter and cutter-stock on line *xy*, Fig. 2. Fig. 4 is a view of a wood-shank piece shaped by means of the machine.

The piece that supports the shank during the cutting operation is represented at A. The shank is laid flat on the slanting bed *a*, which constitutes the shank-supporting bed. Opposite this slanting bed *a* is the reciprocating cutter-stock B, which moves to and from this slanting face in a plane at an angle of about forty-five degrees, more or less, to the plane of bed *a*. The stock B moves in dovetailed guides or ways *b* on main frame C, and is actuated through the instrumentality of a driving-wheel, *c*, on shaft *d*, provided with a crank or wrist-pin, *c'*, to which one end of a connecting-rod, *e*, is jointed, the other end of said rod being jointed at *e'* to the cutter-stock. Shaft *d* is driven by any suitable power. The cutter-stock carries the cutter D, consisting of a blade, convex or curved outwardly—that is to say, away from the cutter-stock—in the direction of its length, as seen in Fig. 3. Its

cutting-edge is also curvilinear in form, the curve being such that the edge is concave. The double curve thus given to the blade is that which causes the proper bevel and curved outline to be given to the longer edges *l* of the shank-piece. If the blade had only the curve shown in Fig. 3, then only the middle point of the cutting-edge, where the convexity is greatest, would come in contact with the slanting bed *a*; but the concave curvature of the edge compensates for the convexity of the body of the blade, and brings the blade in such relation to the slanting bed *a* that all portions of the cutter-edge will meet the bed at the same time.

To sustain the shank during the cutting operation, I provide for it a holder, which, in this instance, consists of a frame or yoke, E, hinged at *f* to ears or projections on the main frame C, so that it may be moved on its hinges or pivots toward and away from the slanting bed.

The yoke or vibratory frame supports a gage-piece, F, beyond which extend two elastic fingers or jaws, *g*, designed to hold the shank. The shank-piece, which, before the shaping operation, is a straight flat strip of wood with parallel sides, is placed between the spring-jaws *g* until its longer edges bear against the gage F and its end is in contact with the heel *h* of the gage.

When the wooden strip has been thus adjusted, the vibratory frame E, which, during such adjustment, has occupied the position shown in Fig. 1, is swung toward the cutting mechanism until the projecting edge of the wooden strip is laid flat upon the bed *a*. The cutter now descends and shapes the edges, cutting the bevel and curvature indicated at *l*, Fig. 4.

When one longer edge has been cut, the shank is reversed, and the other longer edge is presented to the cutter.

Different gages F may be provided for different sizes and styles of shanks, and the degree of curvature of the edge as well as the body of the cutting-blade can be varied, according to the peculiar shape and bevel required to be imparted to the shank-edge.

The beveling and trimming of the ends of

the shank can be effected with a straight knife or cutter, or in any other suitable manner.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of the slanting or inclined bed, the reciprocating cutting-blade, with its cutting-edge curved in the two directions specified, and the vibratory shank-holder, con-

structed and operating together substantially as shown and described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

WATSON N. SPRAGUE.

Witnesses:

WM. W. WEBSTER,

J. M. WEBSTER.