

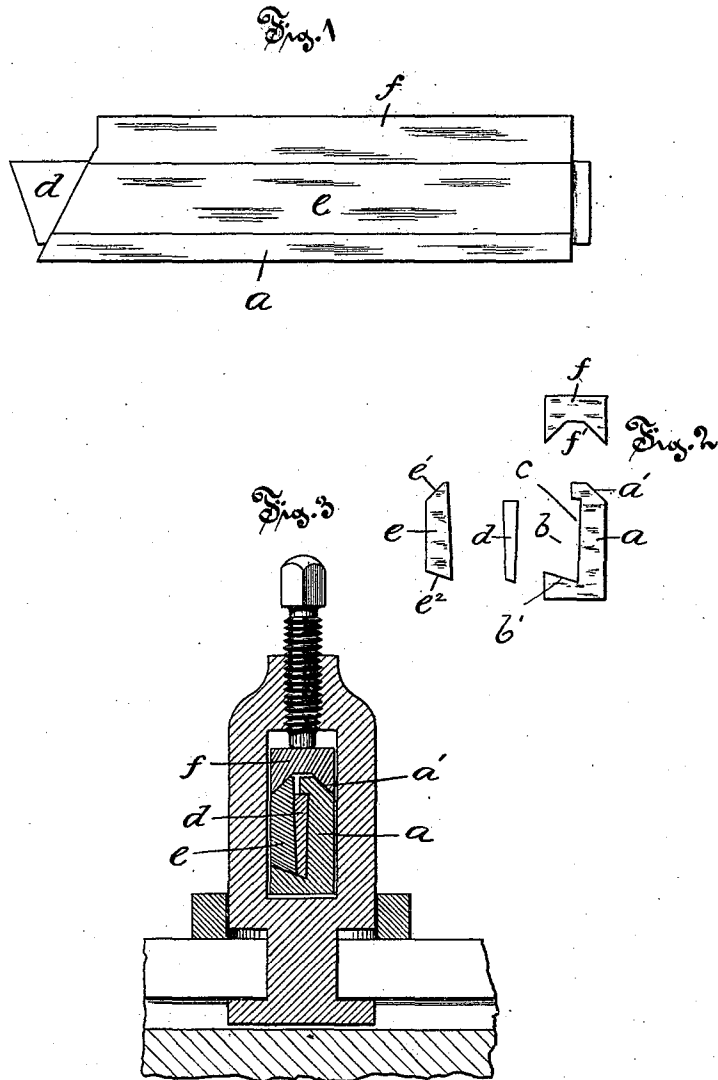
(No Model.)

B. S. WOODWARD.

TOOL HOLDER.

No. 355,367.

Patented Jan. 4, 1887.



Witnesses
W. M. Parkman
E. J. Dimock.

Inventor
Benjamin S. Woodward,
By Simonds & Burdett,
Attys.

UNITED STATES PATENT OFFICE.

BENJAMIN S. WOODWARD, OF HARTFORD, CONNECTICUT, ASSIGNOR TO
WOODWARD & ROGERS, OF SAME PLACE.

TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 355,367, dated January 4, 1887.

Application filed December 12, 1883. Serial No. 114,278. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN S. WOODWARD, of Hartford, Hartford county, State of Connecticut, have invented certain new and useful Improvements in Tool-Holders, of which the following is a full, clear, and exact description, whereby any person skilled in the art can make and use the same.

My within-described improvement relates to the class of holders especially adapted for holding cutting-off and screw-cutting tools or blades; and the object of my improvement is to provide a tool of this class that shall be free from the defects of prior devices that become bent, set, and otherwise rendered of little service after short use; and to this end my improvement consists in the combination of a stock or body part of \perp shape, with a mortise or recess adapted to hold a blade along its upper and lower edges therein, a removable side piece with beveled upper and lower edges, and a cap-piece having a channel with inward-beveled edges adapted to fit upon the beveled upper edges of the body part and side part, so that by downward pressure upon this cap the blade will be clamped laterally in the socket, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a side view of my improved holder with the several parts in position and holding the blade. Fig. 2 is a detail end view of the same parts separated to clearly show their construction. Fig. 3 is a detail view in vertical section through a tool-post of a lathe, showing the manner of holding the tool in place for using.

In the accompanying drawings, the letter a denotes the stock or body of the tool-holder, that has an upper chamfered edge, a' , and on the upper side of the lower part of the base a bevel, b' , bounding the space into which the blade d and side piece, e , are adapted to fit. Along the inner face of the stock or body, adjacent to this beveled surface b' , is formed the tool-socket c , and the tool d , that consists of a thin blade of tool-steel, is so shaped as to fit closely within the socket, the lower edge of the blade being beveled to fit the beveled surface b' , while the upper edge of the blade fits snugly under the projecting wall forming the upper

limit of the socket c . This blade d is, however, greater in thickness than the socket is in depth, so that a space is at all times left between the inner side of the side piece, e , and the body part a along the upper edge of the blade, as may be seen in Fig. 3.

When the stock a , blade d , and side piece, e , are fitted together, the surfaces on opposite sides are substantially parallel, while the upper edges are chamfered or beveled, and on this upper edge the cap f is fitted, having a longitudinal channel, f' , with sloping edges, that fit upon the stock and side piece, when the latter are in place to hold a tool, in such manner that when downward pressure is applied to the cap-piece the side parts of the holder are compressed sidewise upon the tool or blade in the socket c .

The bottom of the channel f' is narrower than the distance between the upper edges of the bevels a' and e' when the parts are held together, the object of this construction being to prevent this cap-piece f from pushing downward directly upon the top of the stock a in such manner as to bring any vertical pressure upon the blade while it is held in the body. This holder, when the several parts are assembled to hold a tool, is of substantially rectangular outline in cross-section, so as to fit readily into the tool-post, as shown in Fig. 1. From this, however, the peculiar method of operation of the several parts of the holder under the pressure of the clamp-screw of the post may be clearly understood, the downward pressure of the cap causing the angular surface of the several parts to slide on each other as they lie at a sharp angle with the direction of that pressure, and this sliding motion is inward, so that the side part or clamp-plate e and the stock a are pressed together sidewise along the whole length of the blade.

At no time can the under side of the cap-plate be brought into contact with the upper edge of the body, so as to bend the body out of shape and distort the socket c , any set or distortion due to the downward pressure being borne by the cap-piece alone. The blade d is held in place in the socket by contact of its upper and lower edges, so as to resist any tendency to tip the blade edgewise, while the sidewise motion

or spring of the blade is resisted by the operation of the several parts already described, the stock and side piece.

It is in this latter feature that my improvement 5
 5 departs from prior devices of this class. Such prior devices which most nearly resemble my improved holder have in every instance the body so formed that the downward pressure of the binding-screw tends to bend the part 10
 10 in which is formed the upper wall of the tool-holding socket.

It has been found of such devices that a use for a short time bends the holder in the direction of its length, so as to distort the tool-holding 15
 15 socket and prevent the proper contact of the upper edge of the blade with the upper wall of the socket in some instances, while in others the socket is so contracted that the blade has to be driven into and out of it in addition 20
 20 to this twisting of the socket. My improved device is free from such faults, as an extended use has shown.

I claim as my invention—

1. In a tool-holder, in combination with the

J-shaped body *a*, having the beveled surface 25
b' and edge *a'* and blade-socket *c*, a blade, *d*, fitting within the socket on three sides, the side piece, *e*, with the beveled edges *e'* *e''*, the cap-plate *f*, with the channel *f'*, with a space between the bottom of the channel and the top of 30
 30 the tool-holding body, in which the socket is formed, and the means, substantially as shown, whereby the parts are clamped together in use, all substantially as described.

2. In a tool-holder, in combination, the several 35
 35 body parts *a*, *e*, and *f*, with the beveled meeting faces, the part *a* having the tool-socket *c*, with walls in contact with the blade upon its upper and lower edges and one side, and the cap-piece *f* projecting over the upper 40
 40 edge of the tool-holding part, whereby downward pressure of the clamping-screw is converted into sidewise pressure only upon the blade, all substantially as described.

BENJAMIN S. WOODWARD.

Witnesses:

CHAS. L. BURDETT,

E. F. DIMOCK.