(No Model.)

# F. E. BECKWITH, Jr.

## TOOL HOLDER FOR BUTTON CUTTING MACHINES, &c.

No. 485,147. Patented Oct. 25, 1892.

Fig. 1.

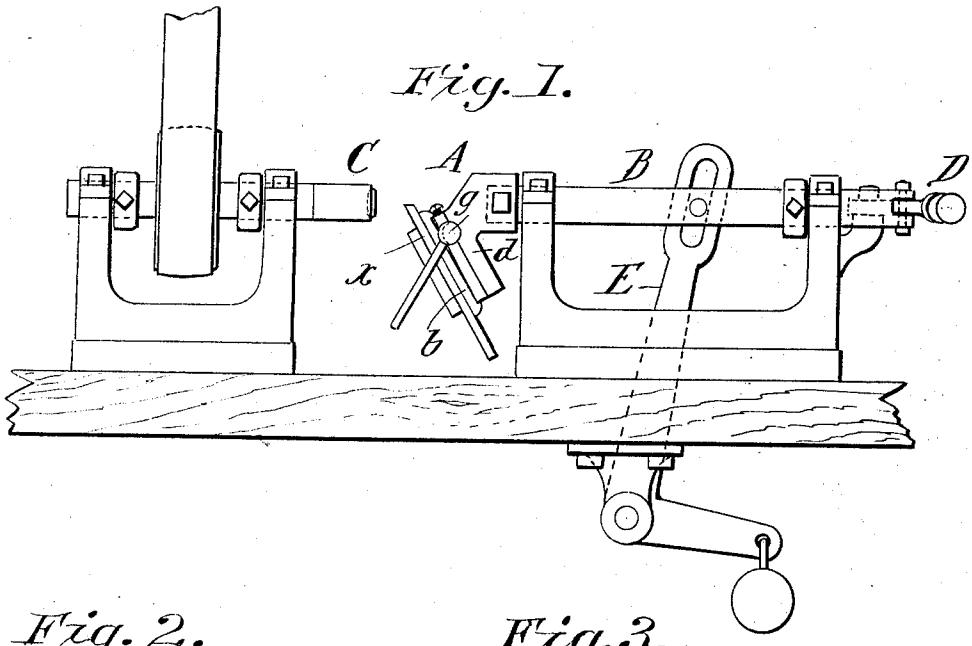



Fig. 2.

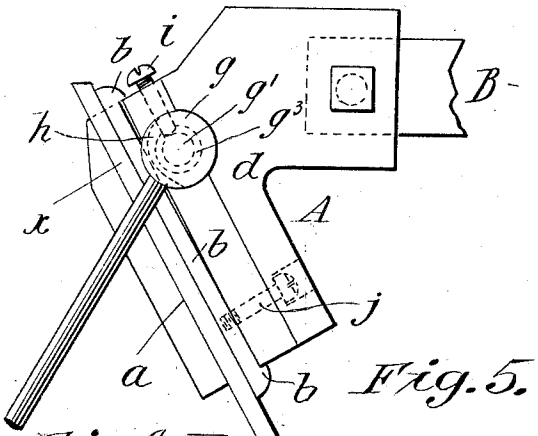



Fig. 3.

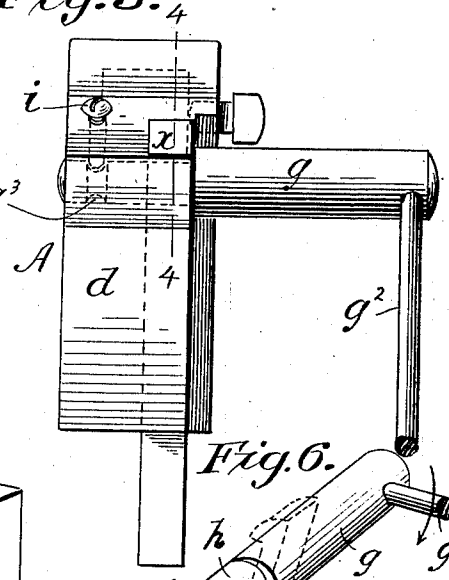



Fig. 5.

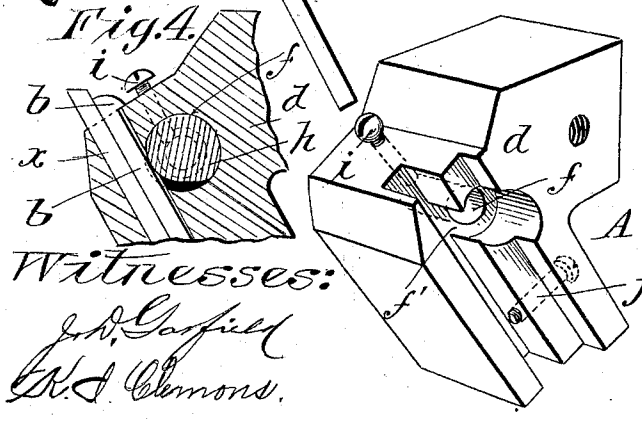
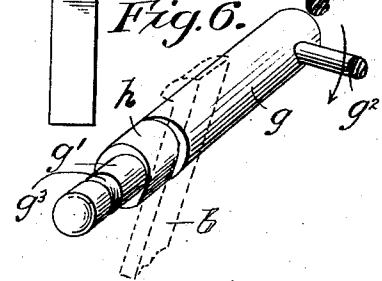



Fig. 4.

Fig. 6.

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# UNITED STATES PATENT OFFICE.

FRANCIS E. BECKWITH, JR., OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO THE NEWELL BROTHERS MANUFACTURING COMPANY, OF SAME PLACE.

## TOOL-HOLDER FOR BUTTON-CUTTING MACHINES, &c.

SPECIFICATION forming part of Letters Patent No. 485,147, dated October 25, 1892.

Application filed April 19, 1892. Serial No. 429,710. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS E. BECKWITH, Jr., a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Tool-Holders for Button-Cutting and other Machines, of which the following is a specification.

This invention, which relates to improvements in tool-holders for button-cutting and other machines, has for its object the provision of improved devices for the reception and retention of the tool, the same being capable of readily permitting the adjustment of the tool, and in general to improve the construction and increase the utility of the holder, all as will be hereinafter rendered apparent.

To these ends the invention consists in constructions and combinations of parts, as hereinafter described, and set forth in the claims.

Reference is to be had to the accompanying drawings, Figure 1 being a side elevation of a form of machine designed for cutting or turning buttons or other round objects. Fig. 2 is a side elevation, on an enlarged scale, of the tool-holder and a tool therein. Fig. 3 is an elevation of the same as seen at right angles to said view, Fig. 2. Fig. 4 is a sectional view of a part of the holder, taken on line 4 4, Fig. 3. Figs. 5 and 6 are perspective views of the parts which together constitute the improved tool-holder.

Similar letters of reference indicate corresponding parts in all of the views.

A represents a tool-holder, the same being shown as mounted upon the extremity of a reciprocatory tool-holder bar B, adapted to have movements toward and from the rotary chuck C by means of the hand-lever D and weighted retiring-lever E. This is to be understood as merely one of various manners of mounting the tool-holder.

The tool-holder body *d*, which is to be constituted by a suitably-formed block of steel or iron, has within one face thereof a groove *a*, the width of which is slightly greater than the combined thickness of the tool *x* and the gib *b*, the direction thereof being such that the tool seated in the groove therefor has its length suitably angular to the plane of rotation of the part to be turned or cut, as customary in this class of machines. The tool-holder body has transversely through it and in proximity to the said groove a bore or socket *f*, which, as seen at *f'*, is of an enlarged transverse area, which merges into the said groove, and a spindle *g* has its shank portion *g'* fitted for rotation in the said socket *f*. The spindle comprises an enlargement *h* next to the shank, which is of cam form, as clearly indicated in the drawings, and which cam-formed enlargement has its disposition within the suitably-enlarged portion of the before-mentioned socket which merges into the said groove. The spindle *g* has a suitable extent laterally from the face of the holder-body and is provided, for convenience of turning it, with the arm $g^2$. The spindle has its said shank *g'*, which is entered farthest within the socket, as aforesaid, peripherally grooved, as at $g^3$, for receiving the engagement therewith of the retaining stud or screw *i*, all whereby the spindle is freely rotatable but incapable of endwise motion. The said gib at each end is provided with an angular lug *b'*, extended oppositely from the tool *x*, to overlie and engage the tool-holder body at portions thereof next to the ends of the groove *a*, whereby any tendency for endwise movement of the gib is prevented, it being, furthermore, retained by the screw *j* passing transversely through the tool-holder body and with a screw engagement into the gib at a portion thereof near its one end. As manifest, on turning the spindle in the proper direction, the prominent portion of the cam has a confining engagement upon the gib to force it transversely of the groove, and, exerting a force to bind the tool against the opposite border of the groove, effectually holds it as one with the tool-holder. The provision of the gib is advantageous, as it constitutes a distributing medium for the binding force imparted by the cam throughout a greater area than would be the case were the gib dispensed with and the cam caused to bear directly upon the tool.

An operative device within the scope of the present invention would be constituted by the last-contemplated omission of gib and direct coacting relations of the spindle-cam with

the tool; but for the reason just above rendered evident the interposition of the gib is much preferable. The gib, being held toward its one end portion against any transversal movement by the engagement therewith of the screw *j*, has, between such point of engagement and the farther end thereof, capabilities for deflection by reason of its spring nature, so that when crowded by the cam extended areas thereof are in bind against the tool.

The employment of a tool-holder substantially such as above described is unusually advantageous, especially in a machine wherein a very hard medium is to be worked upon, for the reason that consequent upon the frequent grindings of the tool its resetting is necessitated, and this, it will be perceived, may be performed with the utmost facility and celerity.

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

1. The combination, with a holder-body having a tool-receiving groove *a* extended along and within one side thereof and the socket *f* extended transversely within the body adjacent the groove, which has an enlarged section or area *f'* that merges into the groove, as described, of a spindle *g*, having a shank fitted to turn within the base of said socket and having the cam-formed section *h*, which is within said socket enlargement, and a suitable extension whereby the spindle may be turned, and the tool *x*, adapted to be set within said groove and to have a sidewise binding pressure imparted thereto by said cam, substantially as described.

2. The combination, with a holder-body having a tool-receiving groove *a* extended along and within one side thereof and the socket *f* extended transversely within the body adjacent the groove, which has an enlarged section or area *f'* that merges into the groove, as described, of a spindle *g*, having a shank fitted to turn in the base of said socket and provided with the peripheral groove $g^3$ and having the cam-formed section *h* disposed within said socket enlargement, and a suitable extension whereby the spindle may be turned, the stud *i* penetrating the body between its sides and engaging said peripheral groove of the spindle, and the tool adapted to be set within said receiving-groove and to have a binding pressure imparted thereto by said cam, substantially as described.

3. The combination, with a holder-body having a tool-receiving groove and a socket within the body adjacent the groove, which has an enlarged section or area that merges into the groove, as described, of a spindle having a shank provided with the peripheral groove and fitted for a rotational movement and having the cam-formed section *h* disposed within said socket enlargement, and a suitable extension whereby the spindle may be turned, the stud *i* penetrating the body and engaging said peripheral groove of the spindle, and the tool adapted to be set within said receiving-groove and to have a binding pressure imparted thereto by said cam, substantially as described.

4. The combination, with a body having a tool-receiving groove *a* extended along and within one side thereof and the socket *f* extended transversely within the body adjacent the groove and having the enlarged section or area *f'*, of the spindle fitted to turn in said socket and having the cam-formed section *h* next to the groove, the tool and gib *b* within the groove, and a screw passed through a portion of the body between its sides and transversely engaging the gib near one end thereof, substantially as described.

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