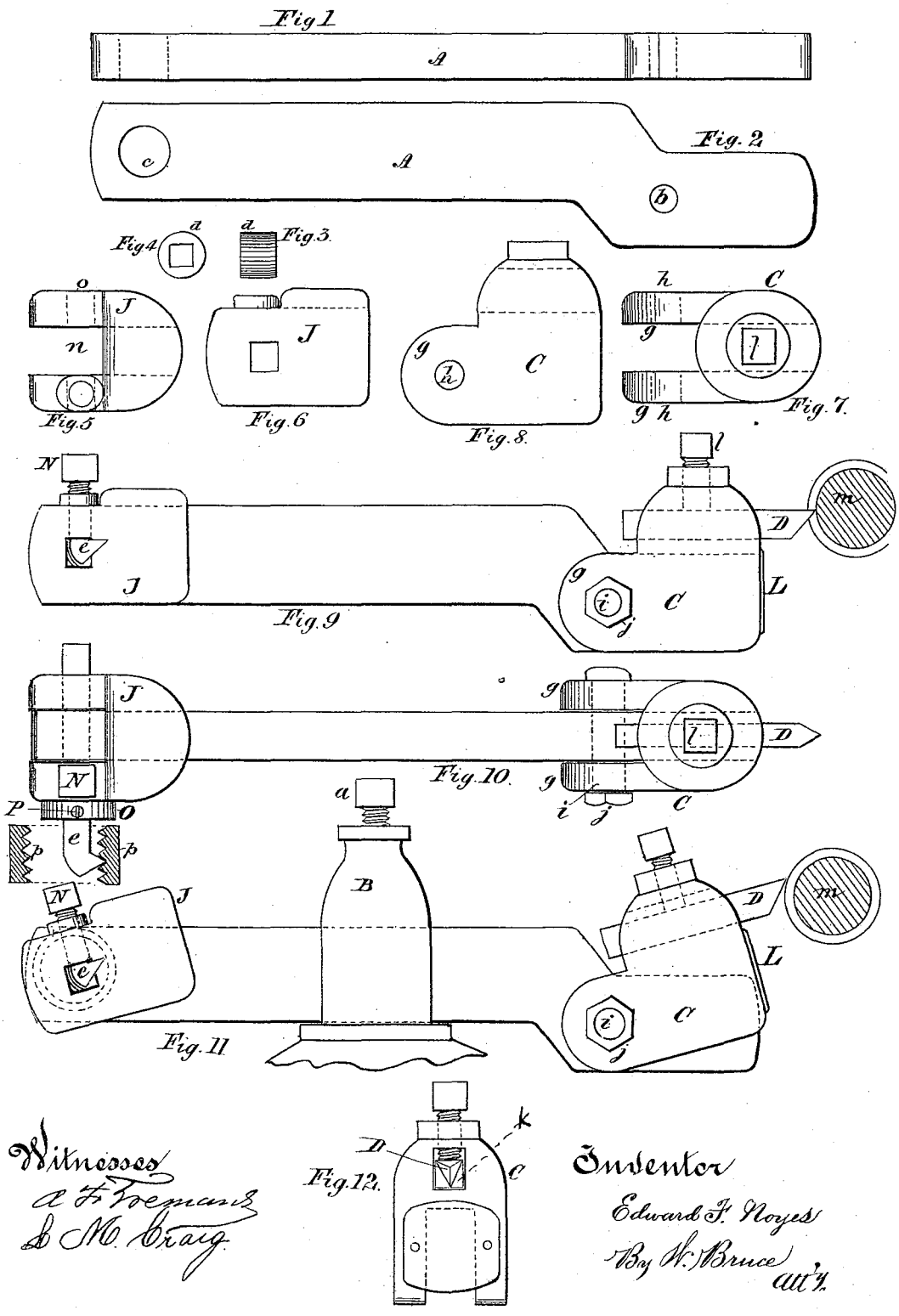
(No Model.)

E. F. NOYES.

COMPOUND TOOL HOLDER.

No. 328,707. Patented Oct. 20, 1885.



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COMPOUND TOOL-HOLDER.

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Application filed July 20, 1885. Serial No. 172,149. (No model.)

To all whom it may concern:

Be it known that I, EDWARD FINCH NOYES, of the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Dominion of Canada, accountant, have invented a certain new and useful Compound Tool-Holder; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

The invention relates to a very simple but handy and convenient combination screw-cutting tool-holder for cutting screws in lathes, which is calculated to facilitate the operation of screw-cutting, either on the outside or inside, and save much time and trouble.

It consists in a steel bar or shank, (secured in a tool-post of a lathe,) and having at one end a pivoted tool-box for holding the tool for cutting a screw-thread on the outside, and at the opposite end is pivoted another tool-box for holding a tool for inside screw-cutting. Each tool-box, being pivoted, swings back sufficiently to remove the tool from the cut when the lathe is reversed after each cut is completed, and drops down again with the tool in proper position at the beginning of a new cut.

By reference to the drawings forming part of this specification it will be seen that Figure 1 represents a top view of the steel bar or shank. Fig. 2 is a side view of the same. Fig. 3 is a side view of bushing. Fig. 4 is an end view of same. Fig. 5 is a top view of pivoted tool-box for holding inside screw-cutting tool. Fig. 6 is a side elevation of same. Fig. 7 is a top view of pivoted tool-box for holding outside screw-cutting tool. Fig. 8 is a side elevation of same. Fig. 9 represents a side view of the tool-holder, with the parts all put together and the tool in position for cutting an outside screw-thread. Fig. 10 is a top view of the same, showing the tool at the opposite end in the act of cutting an inside thread. Fig. 11 represents a side elevation of the device, with the two pivoted tool-boxes, with their respective tools, thrown upward and back in the position they assume when the lathe is reversed after each cut is completed. Fig. 12 is a front view of right tool-holder.

A, Figs. 1 and 2, is the bar or shank of the device, formed of steel, and made to be secured in a tool-post, B, of a lathe and fastened by a screw, *a*. The said shank is provided with an opening, *b*, at one end, and a larger one, *c*, at the other. *d* is a round bushing with a square opening made to fit in the said opening *c* of the shank A, through which the inside cutting-tool, *e*, passes.

C is the front tool-box, for holding the tool D for cutting outside threads on screws, and provided with jaws *g g*, which straddle the outer end of the shank A, and a pin-hole, *h*, which corresponds to the opening *b* of the shank A. A pivot-pin, *i*, is made to pass through said openings *h h b*, which pivots and secures the said box and shank together, and which is secured by a nut, *j*. The upper part of box C has a horizontal opening, *k*, through it, into which is placed the outside cutting-tool, D, secured in place by a set-screw, *l*.

Fig. 9 represents the outside screw-cutting tool, D, in the position for cutting a thread on a bolt, *m*, and Fig. 11 represents the position of the same tool and tool-box thrown back on reversing the lathe, to remain in that position until the tool gets back to the proper place for another cut, when it drops back to the horizontal position, as in Fig. 9, for a new cut, and so on until the outside screw-threads are finished. This requires no special attention of the operator, except to feed one way for direct cut, and the device enables a perfectly even amount of cut to be taken each time without any danger of getting in too far, as is often the case with a fixed tool, caused by slide-rest having to be worked both ways.

J is the loose tool box or holder, pivoted at the opposite end of the shank A, and having a slot, *n*, cut through it to straddle the end of said shank. *o* is an opening cut in it, through which the inside cutting-tool, *e*, passes, which pivots the said holder J to the shank A.

The tool *e* may be formed of square or round steel, and when square it passes through the bushing *d*, which is formed square on the inside, and let into the opening *c* in the shank A. If round steel is used, no bushing is required, the object in using the bushing being only to obtain a steady support when square steel is used.

N is a set-screw, made to pass through one side of the box J, and impinge on the said tool *e* to secure it firmly in position for cutting.

Fig. 10 represents the said tool in position for cutting the inside screw-threads, *p* indicating section of a tube, having a screw-thread on its inner surface.

Fig. 9 represents the position of the tool *e* and swinging tool-holder J when cutting a screw-thread on the inside, the holder lying parallel with the shank A and the tool *e* in the position shown. As soon as the lathe is reversed the thread, by turning the reverse way, elevates the point of the tool and box J, as shown at Fig. 11, the tool thus traveling back just lightly touching the top of the thread without any forward feed from slide-rest being required to free from cut, the slide-rest only requiring to be worked the one way—viz., to feed the tool back for cut. The said tool-box J, as soon as the tool is free from cut, drops back in its original position, as in Fig. 9, by its own weight, to be in readiness for a new cut, all that is necessary being to feed it back the required distance.

O is a movable collar fitting around the tool *e* on the outside of the tool-box J, and P is a set-screw made to pass through it and impinge on the said tool *e* to hold it as a distance-gage for inside threads, or as a gage when removed for grinding or other purpose, to enable it to be replaced exactly in its former position in the tool-box.

L is a small plate riveted to the front of the tool-holder C to prevent chips or dirt from getting between the tool-box and bar, which would prevent the tool-holder from bedding firmly on the bar.

The advantages of my device may be briefly enumerated as follows: Saving of time in operating, the tool not having to be withdrawn from cut at end of travel. Saving of steel on account of small quantity required. Stubb or other fine class of steel can be used, making finer and more durable tools. Freedom from spring. This more particularly applies to outside head-tool. Less liability of breaking point of tool by withdrawing same at end of cut. Ability to quickly remove tool from holder to sharpen without having to adjust to cut of thread when replaced. Outside threads can be cut square up to shoulder, all that is required being to swing tool-holder a little in tool-post, and the tool to be ground accordingly, no long tools standing a distance away from holder being necessary. No forging is required except to turn point of inside tool.

Having thus described my device and its advantages, what I claim as my invention is—

The compound tool-holder comprising a shank having at one end a hinged box adapted to hold a tool parallel with the shank, and at the opposite end a hinged box adapted to hold a tool transversely to the length of the shank, substantially as described.

Dated at Hamilton, Ontario, this 10th day of July, A. D. 1885.

EDWARD FINCH NOYES.

In presence of—

JAS. HUTCHISON,

WM. BRUCE.