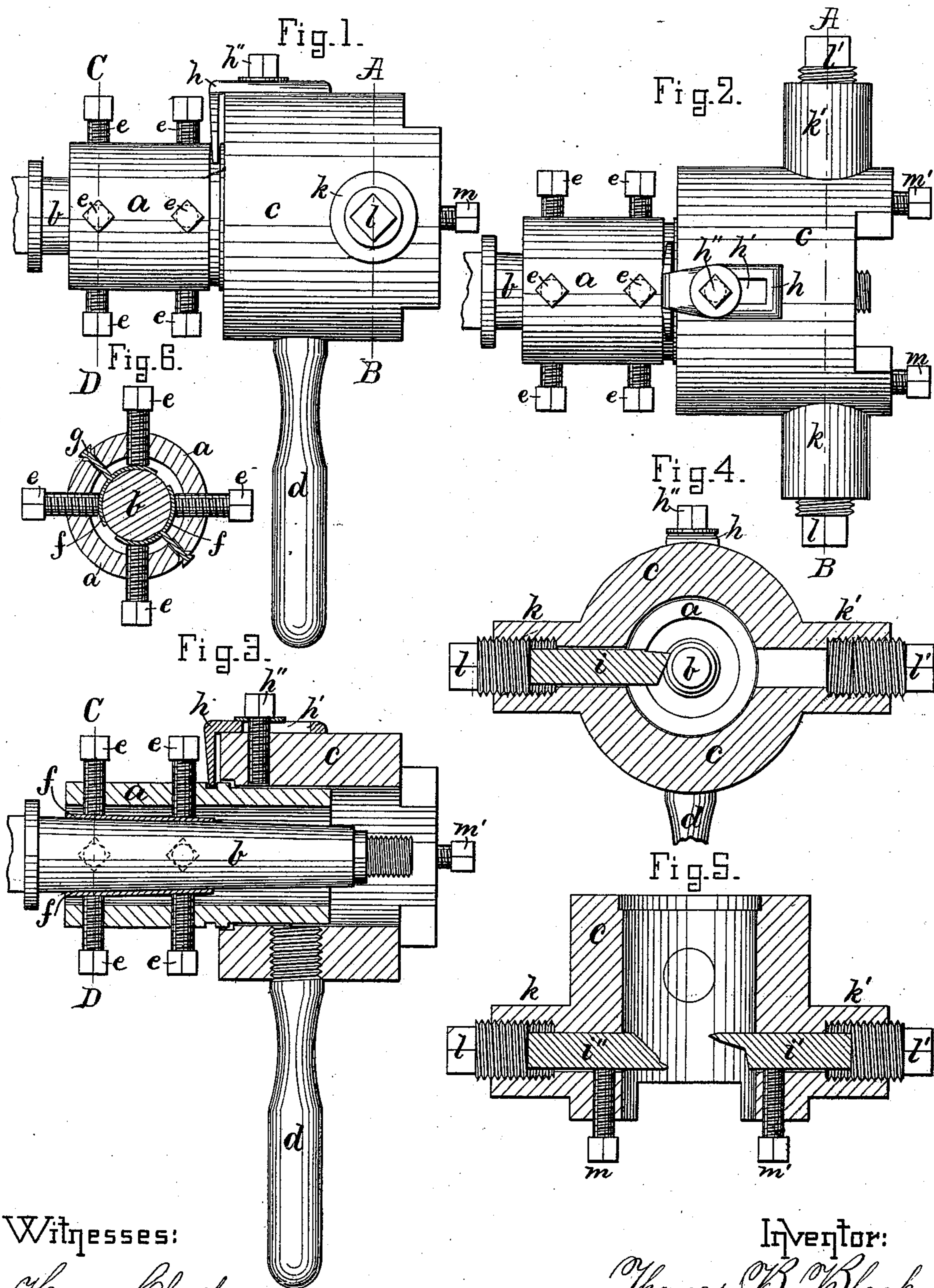


T. B. BLACK.  
Axle Turner and Screw Cutter.

No. 230,395.

Patented July 27, 1880.



Witnesses:

Henry Chadbourn.  
F. Allen.

Inventor:

Thomas B. Black  
by Alvan Andrien  
his attorney.

# UNITED STATES PATENT OFFICE.

THOMAS B. BLACK, OF STONEHAM, MASSACHUSETTS.

## AXLE-TURNER AND SCREW-CUTTER.

SPECIFICATION forming part of Letters Patent No. 230,395, dated July 27, 1880.

Application filed October 31, 1879.

*To all whom it may concern:*

Be it known that I, THOMAS B. BLACK, of Stoneham, in the county of Middlesex and State of Massachusetts, have invented certain  
5 new and useful Improvements in Axle-Turners and Screw-Cutters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable  
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to a new and useful  
15 portable tool for the purpose of turning and screw-cutting the ends of carriage-axles, as may be required when, by the wearing off of the ends of the axle-boxes, the latter, as well as the wheels thereon, become so loose as to  
20 move laterally in relation to the axles. In such cases it has been customary heretofore to place one or more washers between the end of the worn axle-box and the inner face of the nut, and in most cases to discard the old axle  
25 and replace it with a new one. These contrivances are more or less objectionable, and to obviate these difficulties is the object of my invention, by means of which, when an axle-box is worn too short, the wheel is disconnected from its axle and my improved tool located thereon in such a manner that by rotating it around its axis the axle can easily be  
30 turned down and shortened to correspond with the length of the worn axle-box; after which the screw-thread in the end of the axle is lengthened accordingly, so as to allow the face of the nut to be turned close up to the outer end of the axle-box. If so required, the projecting end of the screw-threaded part of the  
35 axle may be finally turned off by this my improved tool, as will hereinafter be more fully shown and described.

The invention is fully represented in the accompanying drawings, in which—

45 Figure 1 represents a side view, and Fig. 2 represents a plan view, of my improved turning and screw-cutting tool. Fig. 3 represents a central longitudinal section thereof. Fig. 4 represents a cross-section on the line A B,  
50 shown in Figs. 1 and 2; and Fig. 5 represents

a section of the apparatus, showing the positions of the screw-cutting and guide tools for making an increased screw-thread on the axle end. Fig. 6 is a section on the line C D, shown in Figs. 1 and 3.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

The invention is composed, mainly, of two distinct parts, namely, a stationary centering-  
60 sleeve, *a*, that is firmly secured to the axle *b*, that is to be turned or screw-threaded. The other part is the rotary tool-carrying head *c*, that surrounds the stationary sleeve *a*, and is rotated around the latter by means of manual  
65 power applied to the handle *d* thereon, as shown.

*ee* are set-screws passing through screw-threaded perforations in the sleeve *a*, by means of which the latter is secured to the axle *b*; and to prevent the latter from being defaced  
70 by the ends of such set-screws I interpose between the ends of such set-screws and the axle a pair of curved packing-plates, *ff*, as shown in Figs. 3 and 6, each of which plates  
75 is provided with a guide-pin, *g*, passing through a corresponding perforation in the shell or sleeve.

*a'* is an annular groove on the exterior of the sleeve *a*, which, in combination with the  
80 adjustable angular guide-piece *h* on the rotary head *c*, serves to prevent the latter from moving endwise during the turning off of the axle or cutting off of the end of the screw part thereof. The guide-piece *h* is provided with a  
85 slot-hole, *h'*, through which a set-screw, *h''*, passes loosely, and is screwed into the head *c*, as shown, by which arrangement the relative positions of the rotary head *c* and stationary sleeve *a* may be changed according to the  
90 amount that is to be turned or cut off from the axle. The angular guide-piece *h* is removed from the head *c* during the operation of cutting a new screw-thread in the end of the axle.

In Fig. 4 *i* represents the cutting-tool, that  
95 is made to rest in a perforation, *c'*, made in the side of the head *c*. *k* is an annular and internally screw-threaded projection on the exterior of the head *c*, which projection is provided with a pressure-screw, *l*, as shown, for  
100

the purpose of feeding the cutting-tool toward the axle in the ratio as it is turned off. *m* is a set-screw for the purpose of securing the cutting-tool in position during the operation  
 5 of turning the axle. A similar annular and internally screw-threaded projection, *k'*, with its pressure-screw *l'* and set-screw *m'*, is located opposite the tool *i'*, as shown in Figs. 4 and 5, which serves to retain and secure in position the screw-cutting tool *i'*, (shown in Fig. 5;) and in said figure *i''* represents a guide-tool, the inner point of which is intended to rest in the old screw-thread in the outer end of the axle, and to serve as a guide for the  
 10 screw-cutting tool *i'* in its rotation around the axle.

This my improved turner and screw-cutter is equally well adapted for cutting right and left hand threads, as is required for the two  
 20 opposite ends of an axle.

All that is required for the purpose of turning off a portion of the axle, or to cut off a part of the screw-threaded outer end of the axle, is to center and secure the sleeve *a* in position  
 25 on the axle, as shown in Fig. 3. The cutting-tool *i* is then secured within the rotary head *c*, in a manner as described, and the latter is gaged, by means of the guide *h* and its set-screw *h''*, in relation to the sleeve *a* according  
 30 to the amount that is to be cut off from the

axle. When this is done I remove the guide *h*, as well as the tool *i*, and insert and secure the screw-cutting tool *i'* and screw-guide *i''* in a manner as described. The tool, as well as the head *c*, is in both cases rotated around the  
 35 axle, operated upon by manual power applied to the handle *d*, as heretofore described.

I am aware of the patent granted to F. F. Gokey, February 11, 1879, No. 212,212, and I wish to state that I do not claim any device  
 40 therein shown and described; but

What I desire to secure by Letters Patent, and claim, is—

1. The herein-described turning and screw-cutting tool consisting of the stationary sleeve  
 45 *a*, set-screws *e e*, groove *a'*, guide *h*, and the rotary tool-holder *c*, with its handle *d*, as and for the purpose set forth.

2. In combination with the stationary sleeve *a* and the rotary tool-holder *c*, the set-screws  
 50 *e e*, the packing-plates *f f*, and the guide-pins *g g*, all combined and arranged substantially as and for the purpose set forth.

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

THOMAS B. BLACK.

Witnesses:

ALBAN ANDRÉN,  
 HENRY CHADBURN.