No. 611,254. Patented Sept. 27, 1898.

A. R. JACKSON.

TOOL FOR FACING CASTINGS.

(Application filed Feb. 21, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

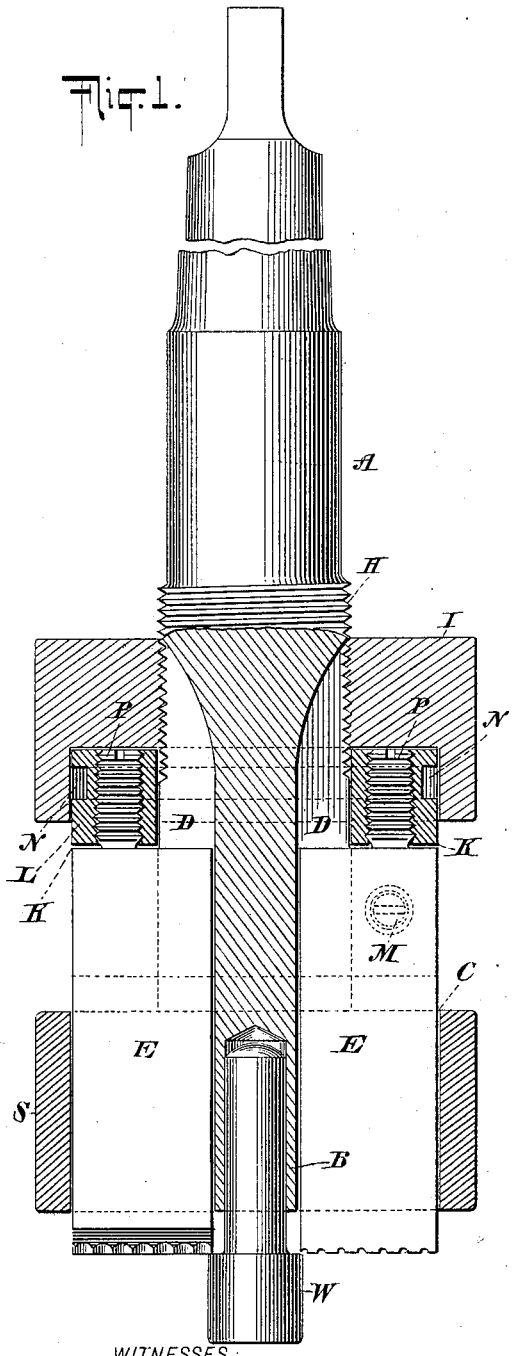

Fig. 2.

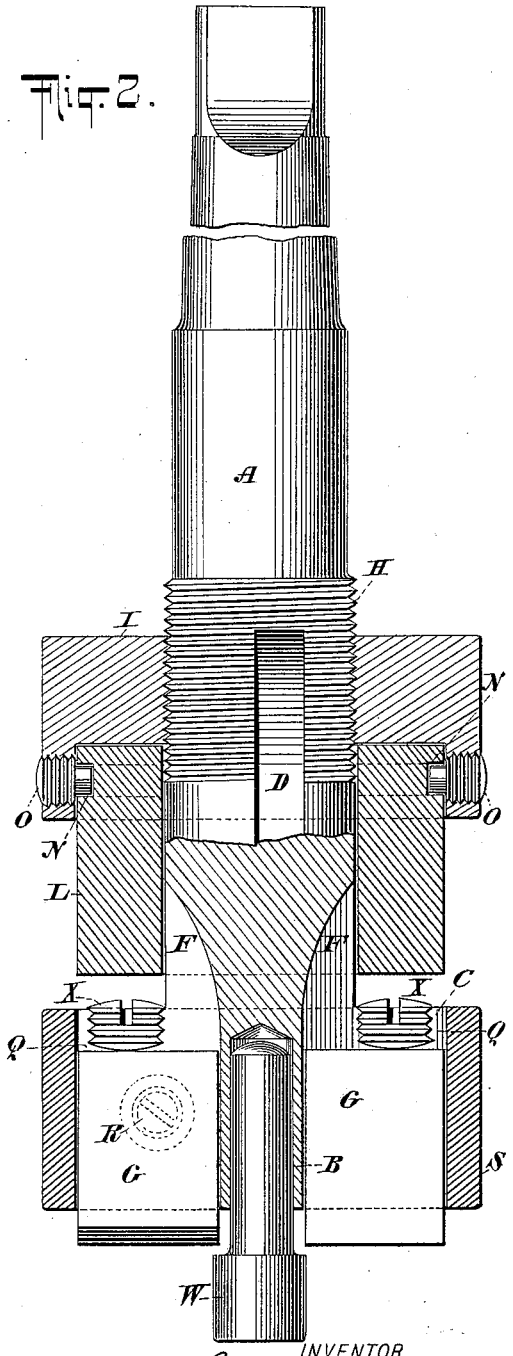

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Fig. 4.

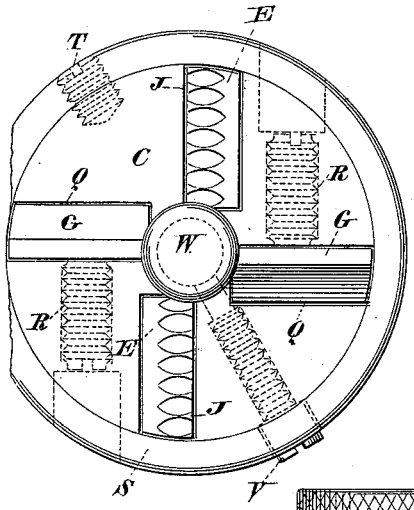


Fig. 5.

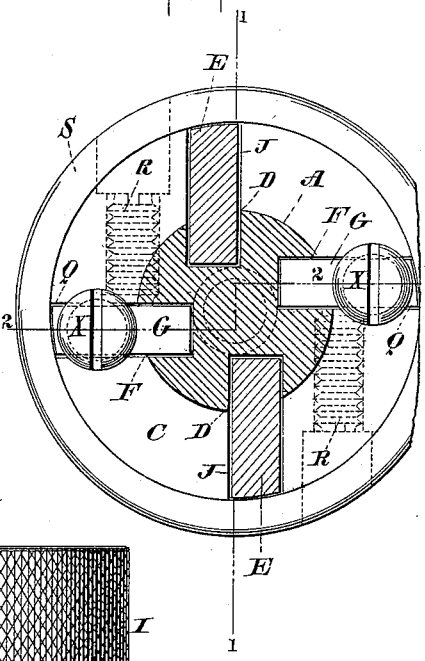
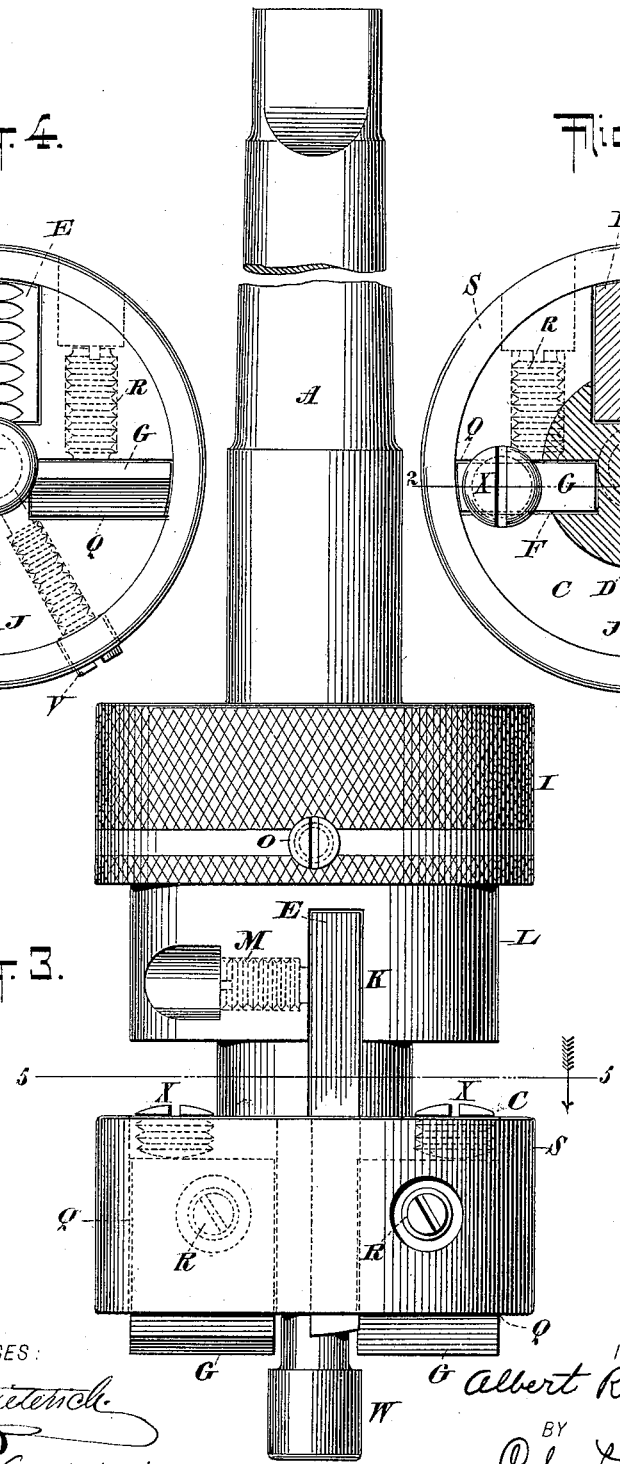


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALBERT R. JACKSON, OF BOUND BROOK, NEW JERSEY.

TOOL FOR FACING CASTINGS.

SPECIFICATION forming part of Letters Patent No. 611,254, dated September 27, 1898.

Application filed February 21, 1898. Serial No. 671,004. (No model.)

To all whom it may concern:

Be it known that I, ALBERT R. JACKSON, a citizen of the United States, and a resident of Bound Brook, in the county of Somerset and State of New Jersey, have invented certain new and useful Improvements in Tools for Facing Castings, of which the following is a specification.

The invention relates to improvements in facing-tools for use in facing castings, and comprises a main body portion by which the tool may be connected with a press, lathe, or other machine, a pair of roughing-blades connected with means by which they may be adjusted vertically upon the body of the tool, and a pair of finishing-blades which act upon the casting to be treated after the roughing-blades have performed their work and been moved from the casting. The roughing-blades move in grooves formed in the tool and are adjustable by means of a revoluble nut and sliding collar, to the latter of which said blades are directly connected. The finishing-blades are held within grooves formed in a head at the lower end of the main body of the tool, and both said finishing-blades and said roughing-blades are provided with means for their adjustment to compensate for such wear as may take place upon their cutting edges. The lower end of the tool proper is provided with a pilot whose exposed head will enter the recess or interior of the casting to be treated and will revolve therein during the revoluble motion of the main tool.

The invention is intended for the treatment of castings of all kinds, and hence is not limited to any special character of castings to be acted upon by it.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical longitudinal section of a tool constructed in accordance with and embodying the invention, the section being on the dotted line 1 1 of Fig. 5 and illustrating in side elevation the roughing-blades. Fig. 2 is a like section of same on the dotted line 2 2 of Fig. 5 and illustrating in side elevation the finishing-blades. Fig. 3 is a side elevation of the tool. Fig. 4 is a bottom view of same, and Fig. 5 is a horizontal section of same on the dotted line 5 5 of Fig. 3.

In the drawings, A designates the main body of the tool, whose upper end is adapted for a connection with a drill-press or other means for imparting a revolving motion to the tool and whose lower end is formed with the vertical aperture B and enlarged head C. The sides of the body A of the tool are formed with the vertical grooves D D to receive the inner edges of the roughing-blades E E and with the shorter vertical grooves F F to receive the inner edges of the finishing-blades G G. The body A of the tool is also formed with the male screw-thread H to receive the internally-threaded knurled nut I, which is adapted to have a free movement upon the male thread H and is utilized for adjusting the roughing-blades E E. The roughing-blades E E are set within the grooves D D aforesaid and pass downward through the grooves J J, formed in the lower head C of the tool, and the upper portions of said roughing-blades E E enter grooves K, formed in the collar L, wherein they are secured by means of screws M M, which pass transversely through said collar, as shown by the dotted lines in Fig. 1, and engage the faces of said roughing-blades E E. The collar L is mounted to slide freely upon the body A and by its longitudinal sliding motion to regulate the position of the lower edges of the roughing-blades E E. The upper portion of the collar L is set within the knurled nut I and contains the annular groove N, which receives the points of the screws O O, by which during the revolving motion of the nut I the collar L and the blades E E are given their longitudinal motion. The annular groove N freely receives the points of the screws O, and thus there will be no tendency on the part of the nut I to force the collar L axially. The nut I has a revoluble motion; but the collar L and blades E E have simply a direct reciprocating motion which they receive from the nut I. During the employment of the tool after the blades have been set the entire tool revolves, the parts all revolving together; but during the adjustment of the roughing-blades E E the nut I revolves upon the threads H of the body A. Above the slots K, formed in the collar L to receive the upper ends of the roughing-blades E E, are

provided the set-screws P P, whose lower ends are in contact with the upper edges of the roughing-blades E E and which may be utilized for adjusting said blades downward as their lower edges become worn.

The finishing-blades G G are confined within the grooves F, formed in the body A of the tool, and within the grooves Q, formed in the enlarged head C, and said finishing-blades are retained in said grooves by means of the transverse screws R R, which pass through said head and engage the faces of said blades. The head C has upon it the band or collar S, which closes the outer edges of the grooves Q and also the outer edges of the grooves J and therefore aids in retaining both the finishing-blades G and roughing-blades E in position. The collar S will be secured upon the head C by means of a screw T and also by means of the screw V, by which the pilot W is detachably secured within the recess B provided at the lower end of the main body of the tool. The grooves Q extend entirely through the head C, and at the upper side of said head are provided the adjusting-screws X, whose lower ends bear upon the upper edges of the finishing-blades G G and which are utilized to adjust said blades downward as their lower edges become worn. The screws X X engage the opposite walls of the upper ends of the grooves Q Q, as shown in Fig. 5, and their sole purpose is to enable the adjustment of the finishing-blades G G within the grooves F Q.

The pilot W has its stem within the recess B, as shown in Figs. 1 and 2, and at its lower end is provided with an enlarged head which in use will enter the casting to be operated upon. The pilot W is detachably held within the recess B by means of the screw V, and will vary in size, in so far as its head is concerned, in accordance with the character of the work operated upon. It is intended that the head of the pilot W shall snugly fit and turn within the aperture in the casting being treated, the said head passing entirely within the casting, so that the edges of the casting surrounding the aperture therein may be brought into contact with first the roughing-blades E E and then the finishing-blades G G.

In the employment of the invention the upper end of the body A of the tool will be connected with a drill-press, lathe, or other machine adapted to set the tool in motion, and by means of the nut I the lower ends of the roughing-blades E E will be moved downward until their edges are below the lower edges of the finishing-blades G G, in order that they may do the rough portion of the work in the treatment of the casting. The roughing-blades E E being in position, with their lower edges below the lower edges of the finishing-blades G G, the head of the pilot W will enter the customary aperture or recess in the casting, and the tool being set in motion the lower edges of the roughing-blades will directly act upon the casting. After the casting has been sufficiently acted upon by the roughing-blades E E the latter by means of the nut I will be elevated, so as to withdraw their lower edges above the lower edges of the finishing-blades G G, and thereupon the finishing-blades G G will be permitted to act upon the casting and complete the finishing of the same, the casting being left with a smooth face.

The finishing-blades G G are stationary in the head C, except that they may be adjusted downward by the screws X X from time to time when wear upon the lower edges of the said blades renders their adjustment necessary, while the roughing-blades E E are not only capable of adjustment by means of the screws P P, but are capable of vertical movement by means of the nut I, and thus the roughing-blades E E may be conveniently moved downward, so that their lower edges will fall below the lower edges of the finishing-blades and then after they have completed their work be again elevated, so as to leave the lower edges of the finishing-blades below them in position to act upon and complete the facing of the casting.

The facing-tool made the subject of this application has been shown and described in a vertical position, in which position it has been employed by me upon a drill-press; but this tool is equally operative when in a horizontal position, and hence the invention is not limited to any position in which the tool may be placed for use. Nor is the invention confined to the facing of any particular castings, since said tool is intended for general use in the facing of castings.

The invention is not limited specifically in every instance to the use of two roughing-blades and two finishing-blades, since for some work or for some purposes it may be desired to use more or less than two blades of each character.

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

1. The tool comprising the main body, the head at the lower end thereof, and the blade fixed in said head, combined with the collar freely fitting upon said body and adapted to have a direct longitudinal movement thereon, the blade fixed in said collar and extending through said head, the threaded nut engaging the thread on said body, and means connecting said nut and collar to compel the latter to travel longitudinally with said nut but without rotating; substantially as set forth.

2. The tool comprising the main body, the head at the lower end thereof, and the blades fixed in said head and projecting therefrom at opposite sides of the center of the tool, combined with the collar movable longitudinally on said body, the blades fixed in said collar and extending through said head intermediate the said blades fixed therein, and the threaded nut engaging a male thread on said body and connected with said collar for mov-

ing the latter and its blades longitudinally but without rotating the same; substantially as set forth.

3. The tool comprising the main body, the head at the lower end thereof, and the blade fixed in said head, combined with the collar movable longitudinally on said body, the blade fixed in said collar and extending through said head, the nut for imparting longitudinal motion to said collar and the blade carried thereby, but without rotating the same and the pilot at the end of said tool to enter the casting to be acted on by said blades; substantially as set forth.

4. The tool comprising the main body, the head at the lower end thereof, and the blade fixed in said head, combined with the collar freely fitting said body, the blade fixed in said collar and extending through said head, the screw passing longitudinally through said collar and engaging the upper end of the blade carried thereby for adjusting said blade, the nut having the interior thread in engagement with the exterior thread on said body, and means connecting said nut and collar so as to compel said collar and its blade to follow said nut in a longitudinal direction but without rotating; substantially as set forth.

5. The tool comprising the main body, the head at the lower end of said body, the blade fixed in a groove formed in said head, the transverse screw passing through said head to engage said blade, and the band or collar exterior to said head and closing the outer edges of the grooves therein, combined with the movable collar on said body, the blade carried thereby and extending downward through a groove formed in said head, a transverse screw extending into said movable collar to secure the blade therein, and the threaded nut engaging said body and movable collar for adjusting the latter and its blade; substantially as set forth.

6. The tool comprising the main body, the head at the lower end of said body, the blade fixed in a groove formed in said head, the transverse screw passing through said head to engage said blade, and the band or collar exterior to said head and closing the outer edges of the grooves therein, combined with the movable collar on said body, the blade carried thereby and extending downward through a groove formed in said head, a transverse screw extending into said movable collar to secure the blade therein, the threaded nut engaging said body and movable collar for adjusting the latter and its blade, and the pilot set in a recess in the lower end of the tool and having the exposed central head to enter the opening in the casting to be acted on; substantially as set forth.

7. The tool comprising the main body portion having the vertical grooves and provided with the head at its lower end, said head being also grooved in line with the grooves in said body, combined with the blades secured in the grooves formed in said head and having their inner edges within the grooves formed in said body, the collar movable upon said body, the blades secured to said collar and extending downward through the grooves in said body and in said head, and the nut engaging said body and connected with said collar to effect the adjustment of the latter and the blades carried by it; substantially as set forth.

8. The tool comprising the main body having the male thread above its lower end and at its lower end the head, combined with the blades secured in said head, the collar movable upon said body and having the annular groove N, the blades secured to and carried by said collar and extending downward through said head, and the nut internally threaded to engage the aforesaid male thread on said body and provided with the screws entering said annular groove in said collar; substantially as set forth.

9. The tool comprising the main body, the head at the lower end of said body, the blades fixed in said head and projecting therefrom at opposite sides of the center of the tool, the transverse screws by which said blades are secured in position, and the vertical screws bearing upon the upper edges of said blades for their downward adjustment, combined with the collar movable upon said body, the blades secured in said collar, the transverse screws securing the blades in said collar, the vertical screws at the top of said collar and bearing upon the upper edges of the blades therein for adjusting the latter, and the internally-threaded nut engaging a male thread upon said body and connected with said collar for imparting to the latter longitudinal motion; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 19th day of February, A. D. 1898.

ALBERT R. JACKSON.

Witnesses:
CHAS. C. GILL,
E. JOS. BELKNAP.