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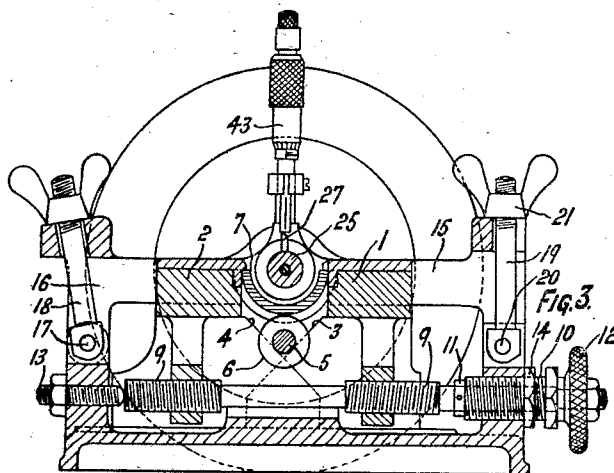
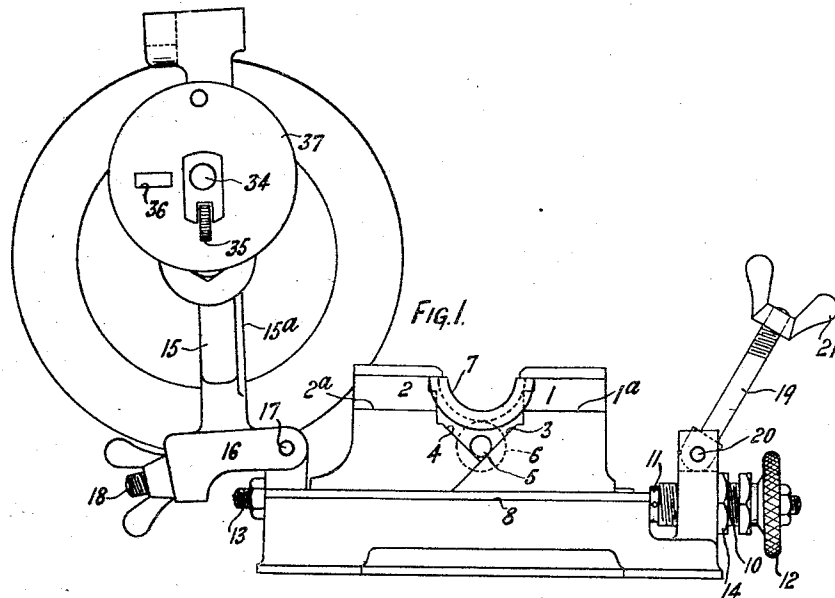
E. F. ROBERTSON ET AL

1,558,045

WORKHOLDER AND TOOL MOUNTING FOR USE IN FINISHING BEARINGS

Filed Sept. 5, 1924

4 Sheets-Sheet 1



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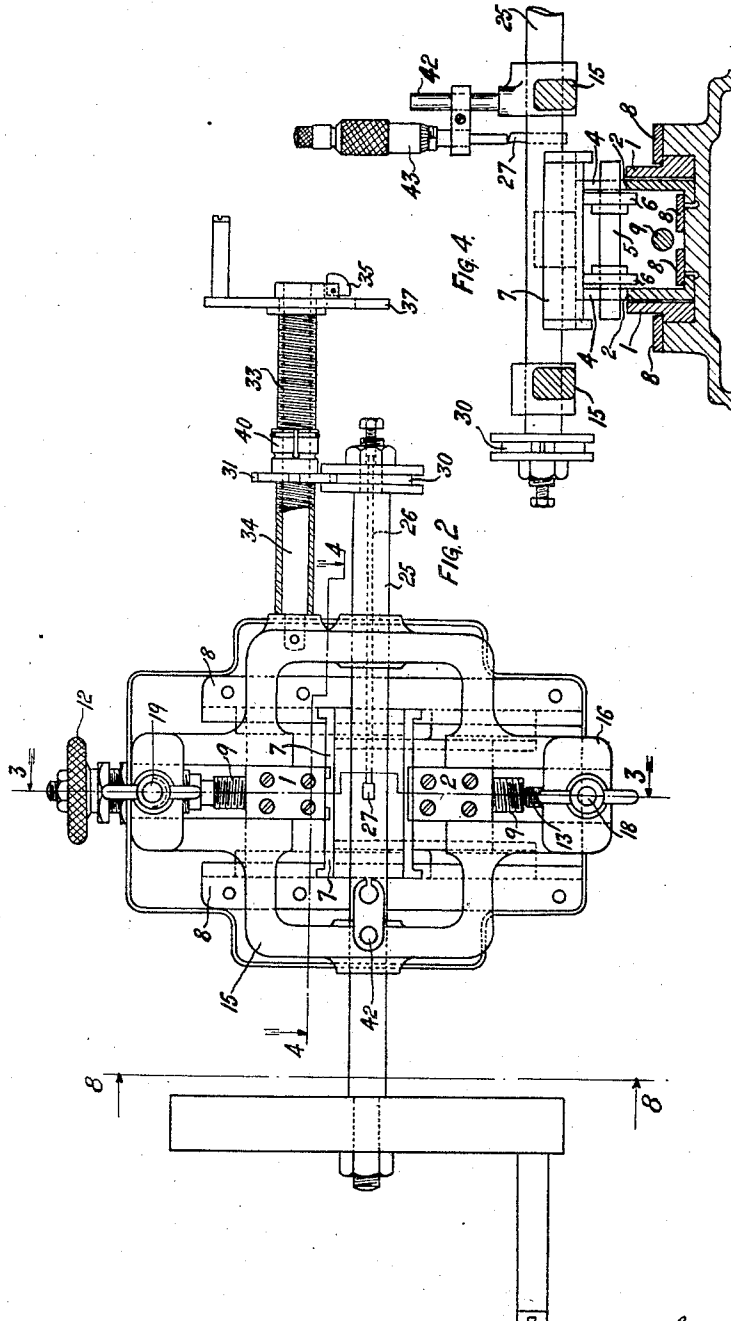
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WORKHOLDER AND TOOL MOUNTING FOR USE IN FINISHING BEARINGS

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4 Sheets-Sheet 2



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WORKHOLDER AND TOOL MOUNTING FOR USE IN FINISHING BEARINGS

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4 Sheets-Sheet 3

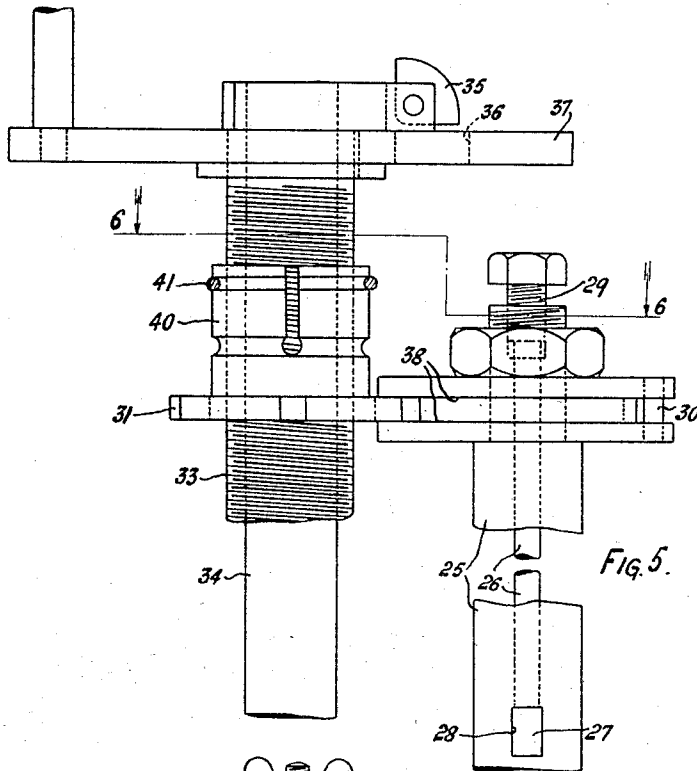


FIG. 5.

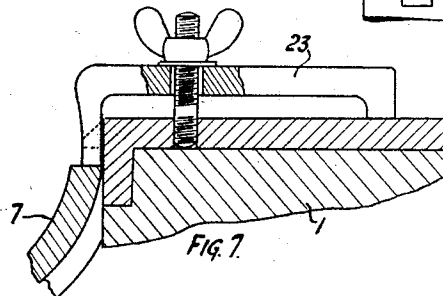


FIG. 7.

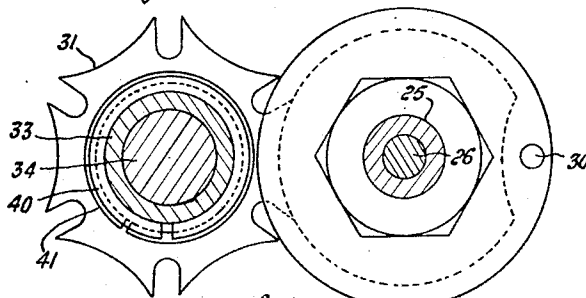


FIG. 6.

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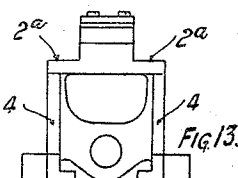
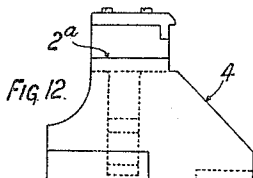
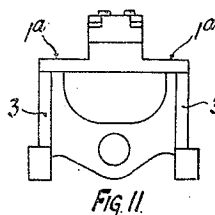
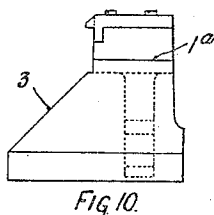
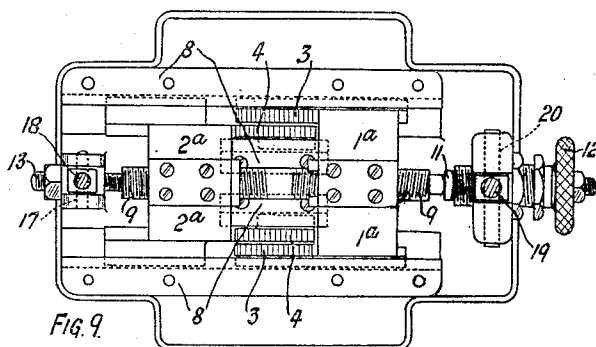
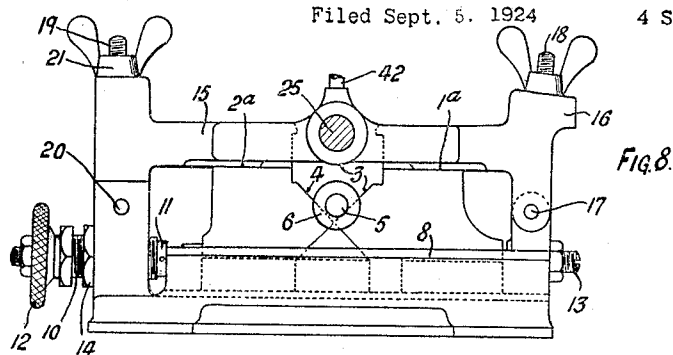
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WORKHOLDER AND TOOL MOUNTING FOR USE IN FINISHING BEARINGS

Filed Sept. 5, 1924

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE.

EDWARD F. ROBERTSON, OF GLASGOW, AND JOHN H. FRASER, OF GREENOCK,
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WORKHOLDER AND TOOL MOUNTING FOR USE IN FINISHING BEARINGS.

Application filed September 5, 1924. Serial No. 736,019.

To all whom it may concern:

Be it known that we, EDWARD FREDERICK ROBERTSON and JOHN HAGGART FRASER, subjects of the King of Great Britain, and residing at Glasgow, Scotland, and Greenock, Scotland, respectively, have invented a certain new and useful Improvement in Workholders and Tool Mountings for Use in Finishing Bearings, of which the following is a specification.

The subject of this invention is an improved work holding device and tool-mounting for use in finishing bearings including a clamp having jaws movable relatively to one another along the bed of the device and an overhead frame pivotally connected to the bed and carrying the tool-holding spindle.

In the accompanying drawings Fig. 1 is an end elevation of a preferred construction according to the invention showing the overhead frame in raised position, Fig. 2 a plan in which a bearing is shown clamped in position, Fig. 3 a section on the line 3—3 of Fig. 2, Fig. 4 a section on the line 4—4 of Fig. 2, Fig. 5 a detail view of the feed mechanism, Fig. 6 a section on the line 6—6 of Fig. 5, and Fig. 7 a detail view of one jaw showing an adjustable pressure block. Fig. 8 is a section on the line 8—8 of Fig. 2 with the bearing removed; Fig. 9 is a plan with the overhead frame removed; Figs. 10 and 11 are elevations at right angles to one another of one of the jaws, and Figs. 12 and 13 are similar views of the other jaw.

The device shown includes relatively slidable jaws, 1, 2, having wedge faces 3, 4, presenting between them a V-shaped figure at the apex of which is a roller in the form of a short shaft member 5 integral with discs 6 adapted to engage the under surface of the bearing 7.

The jaws are constrained by guide members 8 which prevent tilting of the jaws, so that the inclination of the wedge surfaces is invariable.

The spindle 9 having screw-threads of opposite hand for effecting relative reciprocating movement of the jaws 1, 2, is lengthwise adjustable so as to permit the cutting of off-set bearings. The spindle 9 is journaled at one end in a sleeve 10 of which the inner end abuts against a collar 11 on the spindle 9. At the opposite end the

spindle abuts against a threaded pintle 13. The sleeve 10 is in screw-threaded relationship with the bed of the device and is engaged by a lock nut 14, the arrangement being such that the sleeve 10 and therewith the spindle 9 are axially shiftable, the pintle 13 being adjustable correspondingly.

The overhead frame 15 has at one end rigid arms 16 apertured for passage of a pin 17 forming a fulcrum transverse to the axis of the spindle 9, on which pin 17 the frame 15 is free to swing, a swing bolt member 18 also carried on the pin 17 being provided with an adjusting nut bearing on the frame 15 for taking up possible play.

The faces 15^a on the frame 15 are adapted to bear on faces 1^a, 2^a of the jaws 1, 2 so as to hold the latter firmly in position.

At the end of the frame 15 opposite the arm 16 is a bifurcation engageable by a swing bolt 19 fulcrumed on a pin 20 and fitted with an adjusting nut 21 adapted to bear on the frame 15.

Fitted to the jaw 1 is an adjustable pressure block 23 which can be caused to press against one edge of the bearing in case the periphery of the latter should extend over an arc somewhat less than a semi-circle. There is thus ensured effective contact of the bearing with the opposite jaw 2 and with the discs 6.

The tool-holding spindle 25 carried by the frame 15 is bored axially to receive a locking pin 26 entered from one end of the spindle and engageable with the cutting tool 27, which passes through a diametral slot 28 in the spindle 25, a plug 29 threaded into the other end of the spindle 25 serving to secure the locking pin 26 when the tool 27 is adjusted.

On the tool-holding spindle 25 is mounted a striker 30 engageable with a Geneva wheel 31 formed as a nut engaging a threaded sleeve 33 revolubly mounted on a stationary spindle 34 parallel to the tool-holding spindle 25. The sleeve 33 is adapted to be fixed to or released from the spindle 34 by means of a tumbler 35 pivoted to a lug on the spindle 34 and engageable with a slot 36 on a crank disc 37 secured to the sleeve 33. Assuming that the sleeve 33 is held stationary, then on rotation of the tool-holding spindle 25 the Geneva wheel 31 is moved helically step by step, the endwise com-

ponent of its movement being transmitted to the spindle 25 by the shoulders 38 on the striker wheel.

For ensuring that the friction between the stationary spindle 34 and the sleeve 33 when released will be less than the friction between the Geneva wheel 31 and the sleeve 33, the boss of the wheel 31 is formed with a split skirt 40 engaged by a spring ring 41.

Carried by a post 42 on the frame 15 is a micrometer gauge 43 of which the spindle may be brought into register with the cutting tool so as to measure the depth of cut.

We claim:—

1. A work-holding device and tool-mounting of the type referred to, comprising, in combination, a bed, jaws movable relatively to one another along said bed, a tool-spindle-carrying frame having at one end rigid arms, said frame adapted to clamp the jaws, a fulcrum pin fitted to the bed transverse to the path of movement of the jaws, said pin engaging said arms, permitting the frame to swing on said pin, a swing-bolt also carried on said pin with means to bear on said end of the frame, a swing bolt pivoted to said bed and engageable with the opposite end of said frame, and a nut fitted to said bolt and adapted to bear on said frame.

2. A work-holding device and tool-mounting of the type referred to, comprising, in combination, a bed, jaws movable relatively to one another along said bed, an adjustable pressure block fitted to one of said jaws, a tool-spindle-carrying frame having at one end rigid arms pivoted to said bed, on an axis transverse to the path of movement of said jaws, said frame adapted to clamp said

jaws, a swing bolt pivoted to said bed and engageable with the opposite end of said frame, and a nut fitted to said bolt and adapted to bear on said frame.

3. A work-holding device and tool-mounting of the type referred to, comprising, in combination, a bed, jaws slidable on said bed, a spindle having screw-threads of opposite hand engaging said jaws for effecting relative reciprocating movement of said jaws by rotation of said spindle, said spindle formed with a collar, a sleeve on said spindle threaded into said bed and engageable with said collar, a pintle threaded into said bed and engageable with one end of said spindle, a jaw-clamping frame having at one end arms pivoted to said bed on an axis transverse to the path of movement of said jaws, a swing bolt fitted to said bed and engageable with the opposite end of said frame, and means fitted to said bolt and adapted to bear on said frame.

4. A work-holding device and tool mounting of the type referred to, comprising, in combination, a bed, jaws movable relatively to one another along said bed, a rotatable screw-threaded spindle for effecting relative movement of said jaws, said spindle being endwise adjustable, a jaw-clamping frame pivoted to said bed on an axis transverse to the path of movement of said jaws and a tool-holding spindle aligned with the space between the jaws.

In testimony whereof we have signed our names to this specification.

EDWARD F. ROBERTSON.
JOHN H. FRASER.