

No. 773,640.

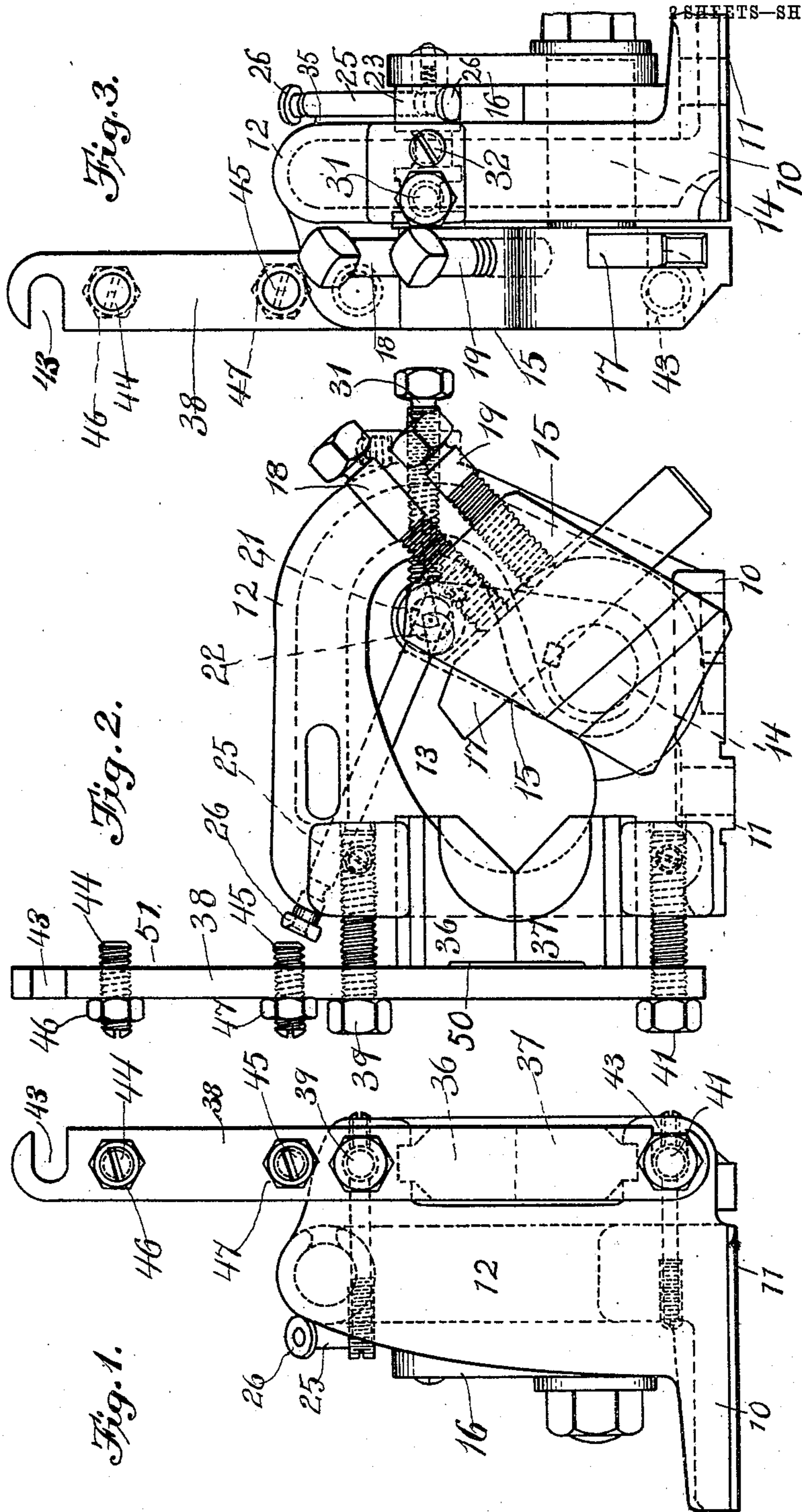
PATENTED NOV. 1, 1904.

J. HARTNESS.  
TURNING TOOL.

APPLICATION FILED FEB. 18, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



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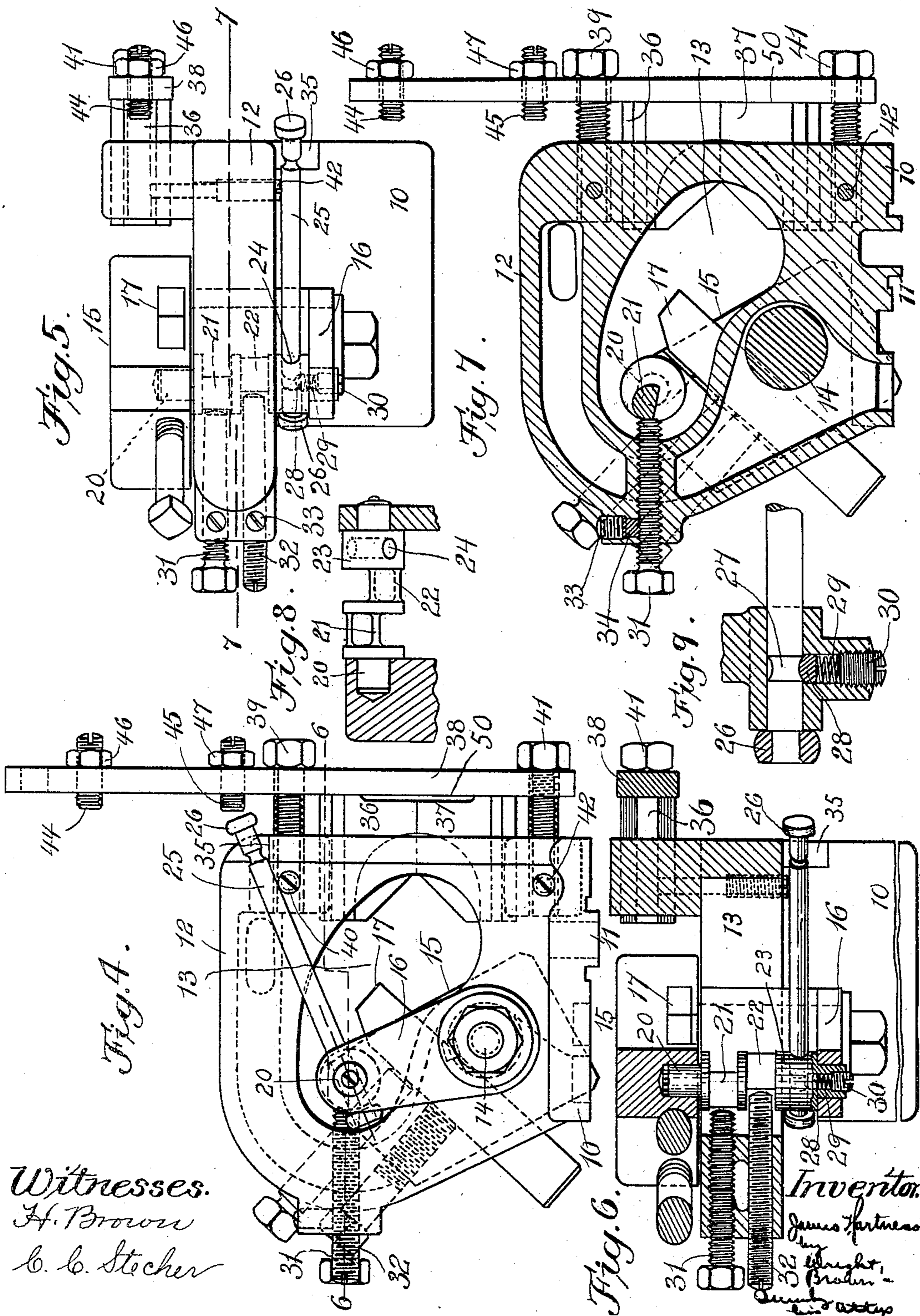
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2 SHEETS—SHEET 2.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JAMES HARTNESS, OF SPRINGFIELD, VERMONT.

## TURNING-TOOL.

SPECIFICATION forming part of Letters Patent No. 773,640, dated November 1, 1904.

Application filed February 18, 1904. Serial No. 194,171. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES HARTNESS, of Springfield, in the county of Windsor and State of Vermont, have invented certain new and useful Improvements in Turning-Tools, of which the following is a specification.

This application has relation to tool-holders of the character of that illustrated and described in Letters Patent No. 672,399, granted to me April 16, 1901.

The object of the invention is to provide certain improvements upon said tool-holder in consequence of which the cutter or tool may be expeditiously adjusted to either of several predetermined points and the back-rest may be similarly adjusted.

In turning bar-stock it is frequently desirable to reduce the work to two different diameters at different points along its length, and in that event it becomes necessary to either employ two tools upon the turret or else to stop the operation of the lathe long enough to secure a careful adjustment of the tool after one diameter of the work has been turned. According to the present invention, however, the tool-holder is so formed that after one portion of the work has been turned to the desired diameter both the tool and the back-rest may be quickly adjusted to predetermined points without the necessity of adjusting set-screws, but by simply bringing into play other abutments which have been previously adjusted for the desired positions of the tool and back-rest.

Referring to the accompanying drawings, Figure 1 represents in side elevation a tool embodying the invention. Fig. 2 represents a front elevation of the same. Fig. 3 represents a view of the other side of the tool. Fig. 4 represents a rear elevation. Fig. 5 represents a plan view of the tool-holder. Fig. 6 represents a section on the line 6 6 of Fig. 4. Fig. 7 represents a section on the line 7 7 of Fig. 5. Fig. 8 represents in detail the double-throw cam which effects the multiple adjustment of the tool-carrier. Fig. 9 shows in detail the sliding handle which is mounted in the end of the double-throw cam.

Referring to the drawings, the tool-holder comprises a base 10, which is laterally pro-

jected or flanged to provide a firm foundation. It is formed with tongues and grooves on its bottom, as at 11, and is provided with suitable means (not shown) whereby it may be secured to a flat lathe-turret. Rising from the base is a frame 12, slotted, as at 13, for the reception of the work and to permit the proper movements of the tool and back-rest. The frame may be formed for attachment to any form of lathe-turret or could be an integral part of a turret-casting. In the frame is journaled a shaft 14, to which is attached the tool-carrier 15 and also an arm 16; these two parts lying respectively in the front and rear of the frame.

The tool-carrier is grooved or slotted for the reception of the tool 17, the latter being secured in place by set-screws 18 19, passed into the top of the carrier. In the upper end of the tool-carrier and in the arm 16 there is journaled a shaft 20, which is formed with a cam which is duplex in form and which consists in the present case of two members 21 and 22. The two members project in opposite directions from the axis of the shaft, for a purpose to be described. The shaft is enlarged at 23 and is formed with an aperture 24 for the reception of a handle 25, the enlargement being close to the arm 26, so that the handle 25 lies between the arm and the frame 12, where it is convenient of access to the operator. The said handle is provided at its ends with knobs or heads 26 and near the said knobs with peripheral grooves 27. The end of the shaft 20 has a block 28, which is pressed by a spring 29 against the handle. The block and spring are placed in an aperture in the end of the shaft and held against dislocation by a screw 30. The handle may be moved lengthwise, so that either end projects from the arm and is yieldingly held in either of the positions to which it is adjusted by the spring-pressed block 28.

Screwed into the front side of the standard 12 are two set-screws 31 32, placed side by side and each adapted to be rigidly secured after adjustment by a set-screw 33 and a block 34, whose end is grooved to fit the threads of the screw. The two screws 31 32 constitute stops or abutments for the shaft 20, the end

of the screw 31 being in line with the cam member 21 and the end of the screw 32 being in line with the cam member 22. This construction and arrangement of the parts provides for a semirotation of the shaft 21, so that the duplex cam will selectively engage one abutment or the other and determine the exact location of the tool 17 with relation to the work.

In order that the shaft may be stopped when it has completed a semirotation, the standard or upright 12 has a projection 35, upon which the end of the handle may rest. After work has been done by the tool in the position to cut the greater diameter of the work and it be desired to adjust the tool to bring its point nearer to the axis of the work the handle 25 is moved longitudinally to cause it to project in the opposite direction from the shaft 20, and the handle is then rocked forward until its projecting end rests upon the projection or stop 35. This rotation of the shaft causes the cam member—as 21, for instance—first resting against the end of one of the screws (that at 31) to leave it and the other cam member, 22, to engage the other screw, 32, and thus adjust and hold the tool at another predetermined position.

In order to provide a simple adjustment for the back-rest, the following mechanism is provided: The back-rest consists of two vertically-arranged plates 36 37, arranged one above the other and adapted to slide in grooves formed in the frame 12. The rear ends of the plates are adapted to bear against stops or abutments brought selectively into active position to properly locate them with relation to the work.

38 represents a member which is pivoted at a point intermediate of its ends upon a screw 39, screwed into the rear side of the frame 12 near the top thereof. This screw is adapted to be held after adjustment by a set-screw 40. Near the bottom of the upright there is a screw 41, which is parallel to that at 39 and which is similarly held after adjustment by a set-screw 42. The member 38 is provided at its ends with notches or sockets 43 43, so that it may be swung about the screw 39, so as to cause either end to engage the screw 41 and take under the head thereof and also to selectively locate abutments in active relation to the back-rest. One of the abutments consists of one end, 50, of said member, and since said member as a whole may be adjusted toward and from the work-axes or in the lines of movement of the back-rest by adjusting the screws 39 and 41 the said abutment may therefore be said to be adjustable. The other abutment consists of the other end, 51, of said member and the two adjustable set-screws 44 45, which are secured after adjustment by lock-nuts 46 47. The set-screws 44 45 are so arranged that when the said member is swung about its pivot either the end 50 or the screws

44 45 may be brought into alinement with the ends of the back-rests of the plates 36 37 to hold the back-rest in either of several predetermined locations with respect to the work-axis and the cutter or tool.

It will be understood that although but a single embodiment of the invention has been illustrated and described I do not limit myself to the particular forms in which the several instrumentalities are shown, for the invention is capable of embodiment in a variety of other forms for accomplishing its purposes and results.

The selective engagement of the several abutments by the tool-locating cam and by the back-rest, respectively, is an essential feature of the invention, since by means of the improvements thus described it is apparent that a greater range of work may be accomplished by the mechanism than heretofore possible without the necessity of the operator being compelled to stop the machine after each cut to carefully and accurately adjust each part.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. A tool-holder comprising the following elements, to wit, a support, a tool-carrier movable relatively thereto, in combination with separated independent abutments on one element, and a rotatable cam on the other element adapted to selectively engage said abutments separately, and hold the tool-carrier in different predetermined positions.

2. A tool-holder comprising the following elements, to wit, a support, a tool-carrier movable relatively thereto, in combination with separated independently-adjustable abutments on one element, and a rotatable cam journaled on the other element for separately and selectively engaging the said abutments and thus effecting a multiple adjustment of the said carrier.

3. A tool-holder comprising the following elements, to wit, a support, a tool-carrier pivoted thereon, separated independent adjustable abutments for controlling the position of the tool-carrier, and a rotatable cam adapted to selectively engage any one of said abutments.

4. A tool-holder comprising the following elements, to wit, a support, a tool-carrier pivoted on said support, in combination with independent abutments on one element, a rotatable cam journaled on the other element, and adapted to selectively engage said abutments, and a handle connected to said cam for rotating it.

5. A tool-holder comprising the following elements, to wit, a support, a tool-carrier movable relatively thereto, in combination with independently-adjustable abutments on one

element, a rotatable cam journaled on the other element, for separately and selectively engaging said abutments, a longitudinally-movable handle passed transversely through  
 5 said cam to effect its rotation, and a stop for limiting the rotary movement of the handle.

6. A tool-holder comprising the following elements, to wit, a support, a tool-carrier movable relatively thereto, in combination with  
 10 independently-adjustable screws on one element, and a shaft on the other element arranged across the ends of said screws and having separate cam members for separately engaging the ends of said screws and thereby  
 15 effecting a multiple adjustment of the said tool-carrier.

7. In a tool-holder, a back-rest, a support, and a member on said support for resisting the thrust of the back-rest, said member having  
 20 independent abutments for said back-rest and being bodily movable relatively to said support to bring said abutments separately into active correlation with the said back-rest.

8. In a tool-holder, a support, a back-rest  
 25 movable on said support, a movable member on said support for resisting the thrust of the back-rest, and having independent abutments for said back-rest, movable relatively to said support to bring either of said abutments into  
 30 active correlation with said back-rest, and means for securing said members to said support in the desired position.

9. In a tool-holder, a support, a back-rest movable on said support, a movable member  
 35 on said support for resisting the thrust of the back-rest and having independent abutments

for said back-rest, means for bodily adjusting said member in the lines of movement of the back-rest, and means for securing said member to present either of said abutments to the  
 40 work-rest.

10. In a tool-holder, a support, a back-rest movable on said support, a movable member for resisting the thrust of the back-rest and having independent abutments for said back-  
 45 rest, a pivot on the support for said member, and means for holding said member in different positions to which it is swung about said pivot, so as to present the several abutments to the back-rest.

11. In a tool-holder, a support, a back-rest movable on said support, a double-ended member pivoted to said support, and having independent abutments for engaging the back-rest,  
 50 and means on the support with which either end of the member may be engaged to resist the thrust of the back-rest.

12. In a tool-holder, a support, a back-rest movable on said support, a double-ended member pivoted to said support, and having independent abutments for engaging the back-rest,  
 60 means on the support with which either end of the member may be engaged, and provisions for adjusting said member along the lines of movement of said back-rest.

In testimony whereof I have affixed my signature in presence of two witnesses.

JAMES HARTNESS.

Witnesses:

D. S. BROWNELL,  
 A. N. HOWE.