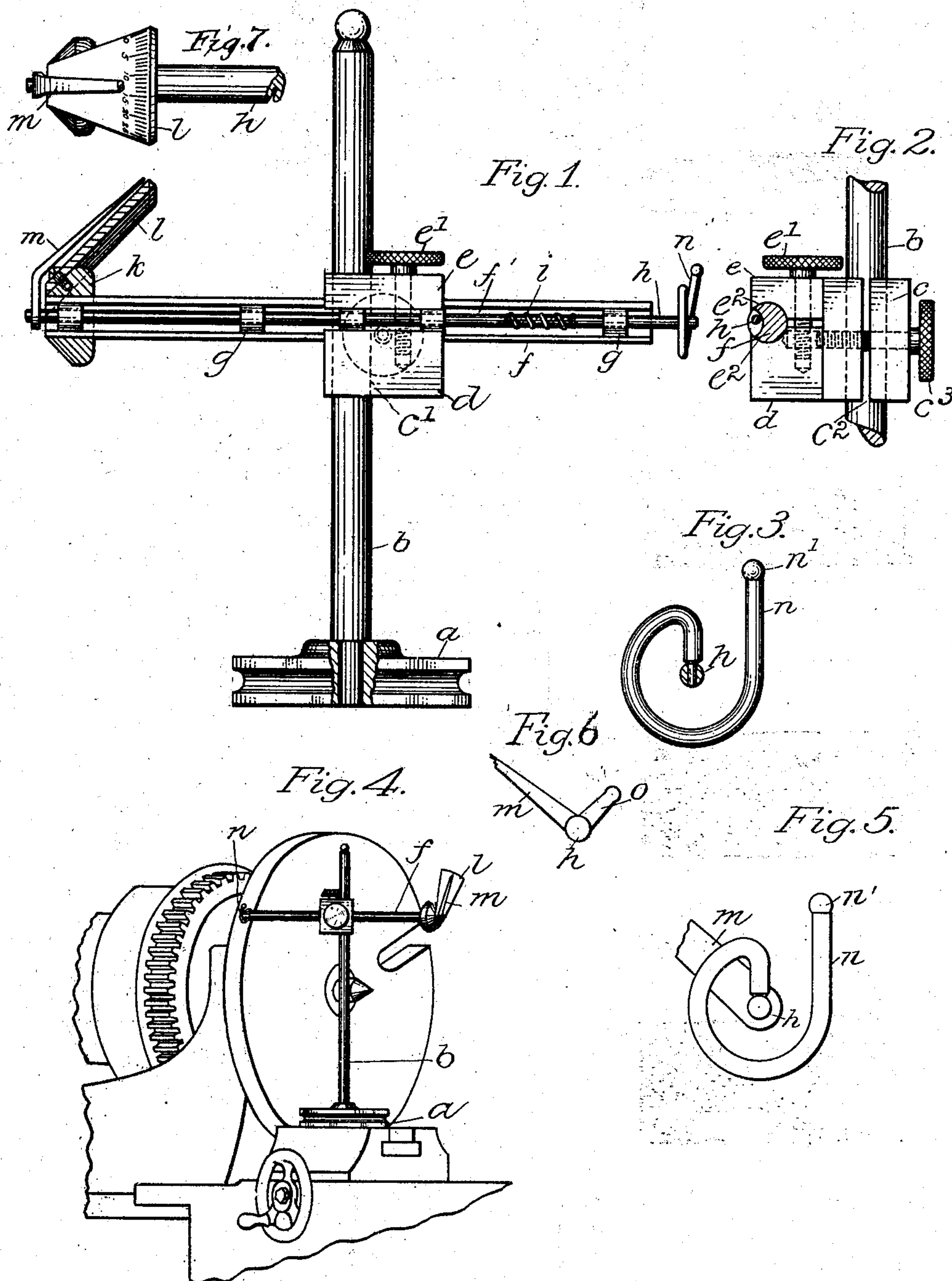


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H. J. NICHOLS.  
INDICATOR FOR LATHES, &c.  
APPLICATION FILED OCT. 10, 1904.



Witnesses:

C. F. Storrs  
L. Berkhardt,

Inventor:  
Henry J. Nichols,  
per  
Jenkins & Barker  
Attorneys.



# UNITED STATES PATENT OFFICE.

HENRY J. NICHOLS, OF SPRINGFIELD, MASSACHUSETTS.

## INDICATOR FOR LATHES, &c.

SPECIFICATION forming part of Letters Patent No. 791,283, dated May 30, 1905.

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*To all whom it may concern:*

Be it known that I, HENRY J. NICHOLS, of Springfield, in the county of Hampden, State of Massachusetts, have invented a new and Improved Indicator for Lathes and the Like, of which the following is a specification.

My invention relates more particularly to the class of devices used for truing up a piece of work in a lathe or on a planer; and the object of my invention is to provide a device of this class adapted for use in all of the different positions which may be required by the varied kinds of work to be operated upon; and a further object of the invention is to provide a device of this class in which the untrueness of a piece of work may be readily detected; and a further object of the invention is to provide a device of this class that shall be extremely simple in construction and operation, durable in its use, and of cheap construction.

A form of device in the use of which the above objects may be attained is illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of my improved indicator with parts broken away. Fig. 2 is a view in elevation of a portion of the device looking toward the end of the indicator-bar, the latter being shown in section. Fig. 3 is a detail end view of the indicator. Fig. 4 is a detail view showing one method of applying the indicator. Fig. 5 is a detail end view, on enlarged scale, of the indicator-rod with pointer attached, the latter being broken off. Fig. 6 is a detail view showing a modified form of contact-finger. Fig. 7 is a detail view of the end of the indicator-bar, showing the dial-plate in plan view.

In the accompanying drawings the letter *a* denotes a base to which is secured a post *b*, projecting upward from the base. This base and post may be constructed in any desired form and of any proper material, as metal, and of the required dimensions. A support is mounted on the post *b*, this support preferably being in the form of a block composed of three pieces *c*, *d*, and *e*. The block *c* has an opening *c'* for the reception of the post *b*, a slot *c''*, and a binding-screw *c'''* projecting through a hole and across the slot *c''*. This

binding-screw may project into a hole in the side of the block *d*, securing the part *d* to the part *c*, or the block may be otherwise secured to the part *c*. A block *e* has a hole depthwise through the same, through which a binding-screw *e'* extends for securing the blocks *d* and *e* together, and a bar-recess *e''* is located in the meeting faces of the parts *d* and *e*.

An indicator-bar *f* is located in the recess *e''*, this bar having a groove *f'*, in which are located bearings *g*. These bearings each have an opening for the reception of the indicator-rod *h*, the holes in the bearings and the bearings themselves being so located in the bar *f* that the rod *h* is eccentrically located in the bar *f*, as shown in Fig. 2 of the drawings. A spring *i* is secured one end to the rod *h* and the other to the bar *f* to hold the rod in a predetermined position.

A collar *k* is secured to the bar *f* and bears a dial *l*. An indicating hand or pointer *m* is secured to the rod *h* with its end located in position to act in connection with the graduations on the dial-plate.

To the opposite end of the bar *h* a contact-finger *n* is secured. This finger may be of any desired form and projecting from the rod *h* in any desired position. In the form shown in Fig. 3 it projects from the rod and is curved around the rod, terminating in an end *n'*. In the form shown in Fig. 5 there is simply a short finger *o* projecting radially from the rod.

The operation of the device will be obvious to one skilled in the art from the illustrations herein, the indicator being set so that the end of the contact-finger *n* rests against the work with the indicating-hand *m* pointing to zero. Any untrueness of the work will then at once be indicated by movement of the hand across the face of the dial.

While a base has been shown herein as a means of supporting the post *b*, it will be readily understood that the device may be supported in various ways. The post *b* may be secured in the ordinary tool-post of a lathe, if desired, and the construction of the blocks *c*, *d*, and *e* will allow the indicator to be placed in proper position for operation upon any piece of work.



While my invention has been shown and described herein with the indicator-rod eccentrically mounted with respect to the bar, the device so constructed finding ready application in some instances, it is to be understood that it is not essential to the invention that the indicator-rod shall be so mounted, as it finds ready adaptation and application when mounted otherwise.

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

1. In an indicator, a support, an indicator-bar mounted thereon, an indicator-rod mounted to rotate in the bar, an indicating-hand connected with the rod, and a contact-finger rigidly connected with the rod.

2. In an indicator, an indicator-rod mounted to turn on its axis, means for supporting the rod, an index-hand connected with said rod, an index appurtenant to said hand, and a contact-finger rigidly connected with said rod and removed from the index.

3. In an indicator, an indicator-rod mounted to rotate on its axis, means for supporting the rod, an index-hand secured to the rod, an index located appurtenant to the hand, and a contact-finger rigidly secured to the rod and removed from the index.

4. In an indicator, an indicator-bar, means for supporting the bar, an indicator-rod mounted to rotate in the bar, an index-hand secured to said rod, an index located appurtenant to the hand, and a contact-finger rigidly secured to the rod.

5. In an indicator, an indicator-bar containing a groove, means for supporting the bar, bearings located in said groove, an indicator-rod mounted in the bearings, an index-hand connected with the rod, an index located appurtenant to the hand, and a contact-finger connected with said rod.

6. In an indicator, an indicator-bar having a lengthwise groove, bearings located in said groove, means for supporting the bar, an indicator-rod eccentrically mounted with respect to the bar in said bearings, an indicator-hand connected with the rod, an index located appurtenant to said hand, and a contact-finger connected with the rod.

7. In an indicator, an indicator-bar having a lengthwise groove, means for supporting the bar, bearings located in said groove, an indicator-rod mounted in said bearings having turning movement on its axis and located eccentrically with respect to the bar, an index-hand secured to the rod, an index located appurtenant to the hand, and a contact-finger secured to the rod.

8. In an indicator, an indicator-bar, means for supporting the bar, an indicator-rod mounted to turn on its axis in said bar, an indicator-hand connected with the rod, an index secured to the bar appurtenant to the indicator-hand, and a contact-finger rigidly connected with said rod.

9. In an indicator, a support, a sectional block mounted on the support, an indicator-rod mounted to turn in the block, an indicator-hand connected with the rod, an index located appurtenant to the hand, and a contact-finger connected with the rod.

10. In an indicator, a support, a sectional block mounted on the support, an indicator-bar mounted to turn in the block, an indicator-rod mounted in the bar, an indicator-hand connected with the rod, an index located appurtenant to the hand, and a contact-finger connected with the rod.

11. In an indicator, a support, a sectional block having one section thereof secured to the support, sections of said block secured to the first section, an indicator-bar mounted in the sections of the block, an indicator-rod mounted in the bar, an indicator-hand connected with the rod, an index located appurtenant to the indicator-hand, and a contact-finger connected with the rod.

12. In an indicator, an indicator-bar, means for supporting the bar, an indicator-rod mounted to turn on its axis in the bar, a collar surrounding the bar, an index secured to the collar, an indicator-hand secured to the rod appurtenant to the index, and a contact-finger secured to the rod.

HENRY J. NICHOLS.

Witnesses:

HARRIET L. JENKINS,  
ARTHUR B. JENKINS.