

945,453.

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UNITED STATES PATENT OFFICE.

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MECHANISM FOR ACTUATING CROSS-SLIDES.

945,453.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BENGT M. W. HANSON, a citizen of Sweden, having declared my intention of becoming a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Mechanism for Actuating Cross-Slides, of which the following is a specification.

This invention relates to turning-lathes, and more especially to that class of machines, in which a "compound" rest is employed for carrying the tool, and it has for one of its objects the provision of improved mechanism for temporarily withdrawing the tool from the work through the movement of the tool-carrying slide without in any way altering the precision-adjustment of the slide-positioning means.

In the drawings, in which similar characters denote similar parts, Figure 1 is a fractional cross-section of a lathe-bed and its accessory slides. Fig. 2 is a section of the compound rest, on line 2, of Fig. 1, and Fig. 3 is a horizontal section on line 3, of Fig. 1.

The particular purpose of my present invention may be readily understood in connection with, for instance, screw-cutting lathes, in which the cutting-tool is in engagement with the work when the slide travels in one direction, but is withdrawn therefrom during the return-travel of the slide, this withdrawal being ordinarily accomplished by a corresponding movement of the slide-adjusting screw, precisionized position of the tool relative to the work being consequently destroyed. In the present invention, the cross-slide, which carries the tool, is shiftable bodily and with its adjusting devices undisturbed, for a predetermined amount, and may be brought back to its original position instantly and without requiring any close attention of the operator.

Referring to the drawings, the lathe-bed 10 is provided with guideways, such as 11, on which the carriage or main slide rest 12 is mounted for movement by any suitable mechanism. Carried by the rest 12, and movable on ways 13 thereof, is a cross-slide 14 upon which the tool 15 is secured by means of the tool-post 16 adjustable in a shoe 16' held in the slide 14.

The cross-slide 14 is provided at its front end with a bearing-plate 17 for a screw 18, which is in engagement with a nut 19 (carried by the main slide-rest 12 for sliding movement) and whereby the cross-slide 14 may be adjusted to any precisionized position through the assistance of a micrometer-annulus 20, the graduations of which are coöperative with an index-mark on the plate 17.

In order to carry out the purpose of the present invention, as above stated, means are provided for reciprocating the nut 19, and with it the screw 18 and the cross-slide 14 controlled thereby, these means comprising a hand-operated lever, the "inward" position of which is limited, and will cause the nut 19 always to assume the same identical position. The nut 19 constitutes a shiftable member, and is preferably made in the shape of a rectangular block fitted to slide in a recess 21 of the rest 12, and provided with a vertically-disposed slot 22 which is adapted to receive a roller 23 journaled on a pin 24 eccentrically located relatively to and at the end of a spindle 25. The latter is journaled in one side of the rest 12, and has at its outer end a handle 26, whereby it may be rocked or oscillated sufficiently to retract the nut-block 19 for any desired amount within the throw-capacity of the pin 24, while the forward position thereof is limited by a stop-screw 27 playing in an arcuate groove 28 of the spindle 25, this forward position being such as to bring the pin 24 to a "dead center" relative to the movement of the nut and thus avoid any tendency of accidental displacement. Consequently it will be seen that the movement of the handle 26 toward the front of the machine, will result in shifting the nut 19, and with it the screw 18, which by virtue of a collar 18' will move the cross-slide 14, and, consequently, withdraw the cutting-tool 15 from the work, the position illustrated in Fig. 1, being at "half-throw", while on the other hand, the opposite movement of the handle 26 to the limit thereof, will result in returning the cross-slide to its original and predetermined position, therefore, in a like manner re-positioning the tool relatively to the work.

It should be understood that any changes in the organization or in the mechanical construction of my improved device may be made without in any way affecting the spirit

of my invention, and that the latter is not confined to the particular form of mechanism shown and above described.

Having thus described my invention, what I claim is—

1. The combination, with a lathe-rest, and a tool-slide movable thereon, of a block connected to the tool slide, and carried by said rest and having a slot; an eccentric-stud journaled in said rest and entering said slot; means for limiting the movement of the stud; and means for variably positioning said slide relatively to said block.
2. The combination, with a lathe-rest having a recess, of a tool-slide movable on the

rest; a nut having a vertical slot, and movable in and guided by the walls of said recess; a screw for positioning said slide relatively to said nut; a spindle journaled in one side of the rest, and having an eccentrically-disposed pin entering said slot, means for oscillating said spindle; and means for limiting such oscillation.

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

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Witnesses:

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