F. G. LINDGREN.

THREAD LEAD INDICATOR.

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1,297,194.

Patented Mar. 11, 1919.

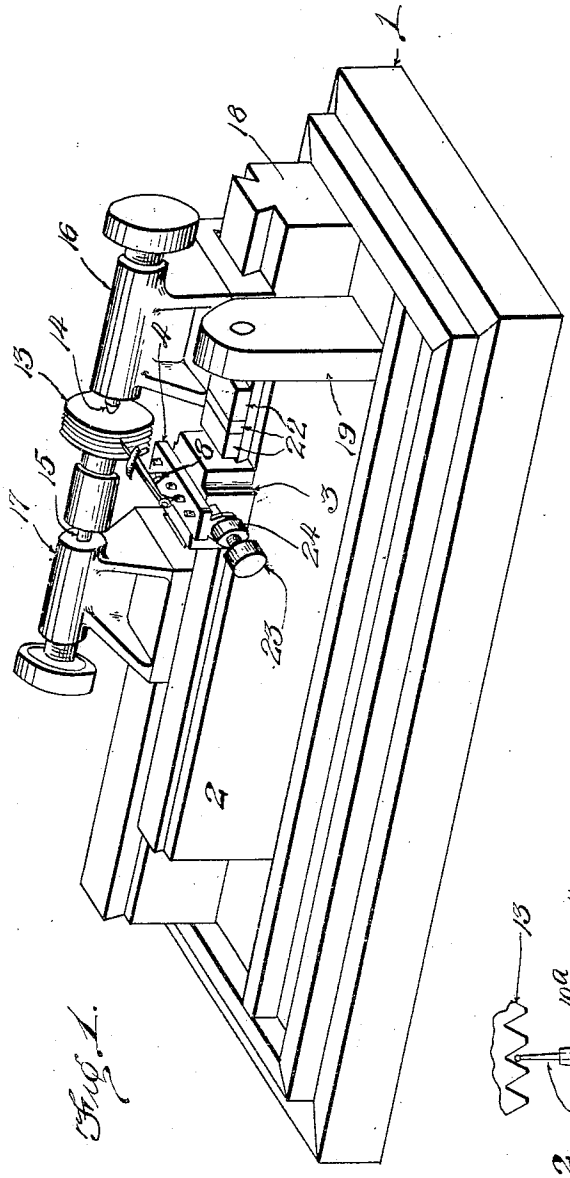


Fig. 1.

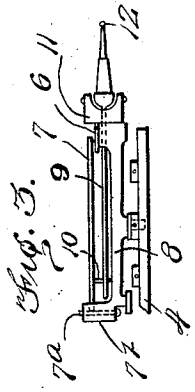


Fig. 3.

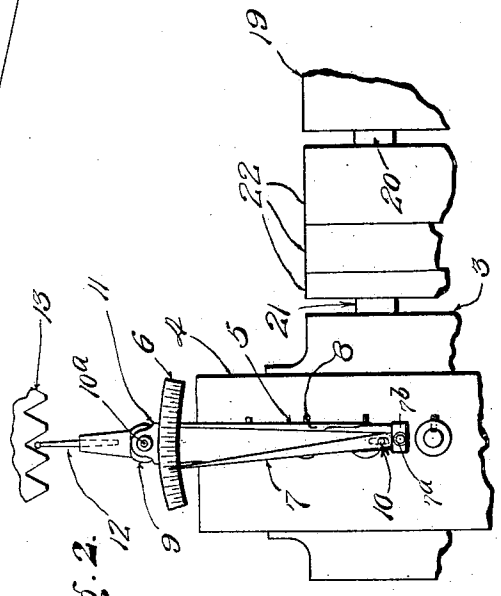


Fig. 2.

INVENTOR

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UNITED STATES PATENT OFFICE.

FRANK G. LINDGREN, OF DAYTON, OHIO, ASSIGNOR TO THE SHEFFIELD MACHINE & TOOL COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO.

THREAD-LEAD INDICATOR.

1,297,194. Specification of Letters Patent. Patented Mar. 11, 1919.

Application filed May 9, 1918. Serial No. 233,570.

To all whom it may concern:

Be it known that I, FRANK G. LINDGREN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Thread-Lead Indicators, of which the following is a specification.

This invention relates to new and useful improvements in thread lead indicators.

The principal object of the invention is to provide a thread lead indicator in which an indicator of a standard type and Johansson measuring blocks are combined and cooperate to accurately indicate the thread lead of a screw.

The preferred form of embodiment of my invention is illustrated in the accompanying drawings, of which Figure 1 is a perspective view of my improved thread lead indicator in engagement with a screw thread. Fig. 2 is a top plan view of said indicating device and Fig. 3 is a side view thereof.

Throughout the specification and drawings, similar reference characters denote corresponding parts.

In a detailed description of the preferred form of embodiment of my invention, the numeral 1 designates a base upon which rests, near its front side, a longitudinal dovetailed support 2 for a carriage 3. This carriage in turn has a dovetailed transverse groove in its top to receive a cross slide 4 which carries a curved dial 6 whose graduations the pointed end of an indicator arm 7 traverses, said indicator arm being pivotally connected at its rear end to pin 7^a in the upturned end 7^b of a horizontal member 8 supported on said cross slide. Projecting from the pivoted end of the indicator arm 7 into a slot provided in a lever arm 9 below it, is a pin 10, whereby, when the lever arm 9 is moved, as will hereinafter be described, the indicator arm 7 will be turned thereby to bring its pointed end to an indication on the dial 6 which is secured on the front end of the horizontal member 8 as shown in Fig. 3.

The lever arm 9 is pivotally secured by a pin 10^a in a front projection 11 on the horizontal member 8, the outer end of said lever arm containing a bore adapted to receive one end of a point 12 adapted to engage one side of a thread of a screw 13. The latter, or any other screw or gage whose thread leads are to be tested, is held between the center 14 of a headstock 16 and the center 15 of a tailstock 17, slidable on an elongated supporting member 18 which rests upon the base 1 adjacent the supporting member 2.

Secured to the front end of the supporting member 2 is an end piece 19 of the same width as the latter and terminating in a curved top which extends above the dovetailed portion of the supporting member. Projecting inwardly from the top portion of the end piece 19 is a stud 20, toward and in alinement with which a stud 21 projects from the carriage 3. Upon the top of the supporting member 2 between the studs 20 and 21, one or more Johansson measuring blocks 22 are adapted to be placed to cooperate with the dial 6 and indicator arm 7 for the purpose of indicating the accuracy of the thread lead of the screw being tested. By means of a screw 23 which extends through a threaded collar 24 carried by the slide 4, for engagement with the carriage 3, the point beyond which the slide can not be moved in the direction of the screw 13 may be adjustably controlled.

In operation, the indicator point 12 is placed against one side of a thread of a screw, as shown in Fig. 2. A small indicator point is used for a fine thread, and a large one for a large thread, the front end of the lever arm 9 being adapted to receive points of various sizes. A reading is then taken on the dial 6 to ascertain the graduation upon, or near which, the pointed end of the arm 7 stands. One or more blocks 22 are then placed upon, or removed from, the top of the supporting member 2 between the studs 20 and 21. After being drawn outwardly, the cross slide 4 is moved by the carriage 3 to bring the point 12 into engagement with the corresponding side of the next thread selected, depending upon the thickness of the block added or withdrawn. The cross slide 4 is then pushed inwardly to bring the indicator point into engagement with the corresponding side of the selected thread, while the blocks 22 are being firmly gripped by the studs 20 and 21, and a reading on the dial then taken. If it is found to be the same as the first reading, the thread is correct.

For example, if the lead or distance from one thread to the other is one eighth of an

inch, and a reading has been taken on one thread, an eighth inch block is then added or removed and the indicator point 12 placed against the corresponding side of the next thread, or against the corresponding side of the second thread if a fourth inch block has been added or removed. If the reading then taken on the dial is the same as the first, the thread is correct; if not, it is drunken or inaccurate.

It is thus seen that by adding or removing the blocks 22 and taking a reading on the dial 6 each time the indicator point is placed in engagement with a corresponding side of a succeeding thread, the correctness of the thread lead is accurately indicated.

Having described my invention, I claim:

1. In a thread lead indicator, the combination with a slide support of a carriage slidingly movable on the latter, an indicating device slidingly movable on the carriage, a lever arm located on said carriage for operating said indicating device, having an end portion adapted to rest against the corresponding sides of the threads of the screw to be tested, a stop on said support, and measuring blocks adapted to be placed upon the latter between said stop and said carriage, to coöperate with the latter in testing the accuracy of the thread leads of said screw.

2. In a thread lead indicator, the combination with a slide support, of a carriage laterally movable on said support, an indicating device transversely movable on said carriage toward and away from a screw to be tested, a lever arm located on said carriage for operating said indicating device, having an end portion adapted to rest against the corresponding sides of the threads of the screw, a stop on said support, and measuring blocks adapted to be placed upon the latter between said stop and the movable carriage, to coöperate with the indicating device in testing the accuracy of the thread leads of said screw.

3. In a thread lead indicator, the combination with a slide support, of a carriage laterally movable on said support, an indicating device transversely movable on said carriage toward and away from a screw to be tested, a lever arm located on said carriage for operating said indicating device, having an end portion adapted to rest against the corresponding sides of the threads of the screw, a stop on said support, a stud projecting inwardly from said stop, a second stud projecting from said carriage, toward and in alinement with the first stud, and Johansson measuring blocks adapted to be placed upon said slide support between said studs, to coöperate with the indicating device in testing the accuracy of the thread leads of the screw.

4. In a thread lead indicator, the combination with a slide support, of a carriage laterally movable on said support, an indicating device transversely movable on said carriage, a second slide support adjacent the first, a headstock and a tailstock on the latter, a screw to be tested held thereby, and toward and away from which said indicating device is movable, a lever arm located on said carriage for operating said indicating device, having an end portion adapted to rest against the corresponding sides of the threads of said screw, a stop on the first slide support, a stud projecting inwardly from said stop, a second stud projecting from said carriage, toward and in alinement with the first stud, and Johansson measuring blocks adapted to be placed upon the first slide support between said studs to coöperate with the indicating device in testing the accuracy of the thread leads of said screw.

In testimony whereof I have hereunto set my hand this 7th day of May, 1918.

FRANK G. LINDGREN.

Witness:
HOWARD S. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."