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C. TREE
 REMOVABLE FEED NUT FOR THE CROSS-FEED
 APPARATUS OF MILLING MACHINES
 Filed Aug. 18, 1952

2,703,498

Fig. 1.

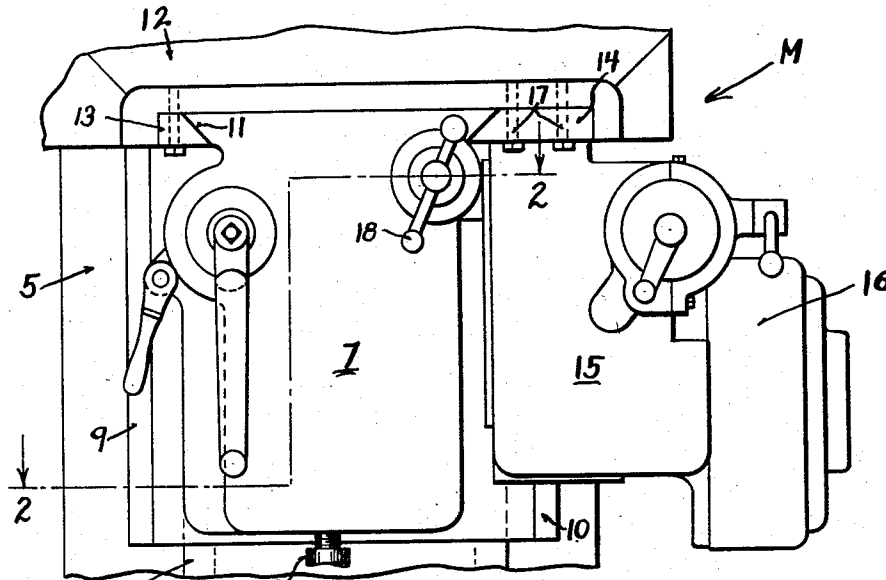


Fig. 2.

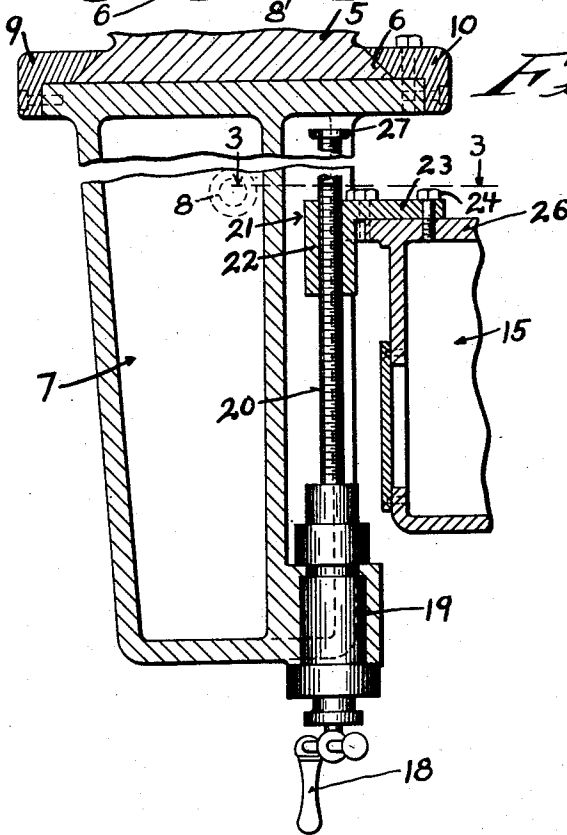
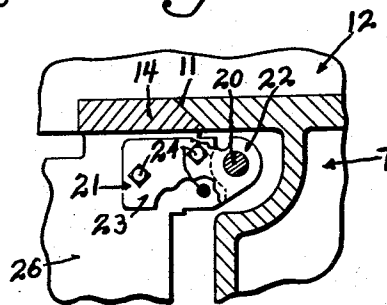


Fig. 3.



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1

2,703,498

REMOVABLE FEED NUT FOR THE CROSS-FEED
APPARATUS OF MILLING MACHINES

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Application August 18, 1952, Serial No. 304,960

1 Claim. (Cl. 74—424.8)

This invention appertains to a cross feed mechanism for the work table of a milling machine and more particularly to a removable feed nut for the cross feed apparatus of the work table support.

In a conventional type milling machine, the cross feed crank handle and adjusting screw is received in a bearing suitably supported by the milling machine knee. Heretofore, the adjusting screw passed through an internally threaded feeding mechanism or projection which was either cast solid with the cross feed support for the work table or was located on the extreme inner end thereof so that when it was desired to remove the cross feed apparatus, including its associated gear box and motor, it was also necessary to dismantle the feed screw, its crank handle, etc., and this naturally required a great deal of time and effort.

Therefore, the primary object of my invention is to provide a feed nut which is removably secured to the cross feed apparatus so that when it is desired to remove the gear box or cross feed mechanism for repairs, etc., it is only necessary to remove the bolts from the feed nut and the same can be removed from the cross feed apparatus housing without the necessity of dismantling the adjusting screw and crank mechanism from the knee.

Another object of my invention is to provide a removable feed nut having a longitudinal internally threaded barrel body portion having a laterally extending bracket portion which may be bolted, preferably to the rear wall of the cross feed housing.

A further object of the invention is to provide a simple, practical and reliable construction that is economical to manufacture, easy to assemble and positive in its operation.

With the above and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the drawings:

Figure 1 is a fragmentary front elevational view of a milling machine more particularly illustrating a knee and cross feed mechanism for the work table;

Figure 2 is a fragmentary horizontal section, taken on the line 2—2 of Figure 1, looking in the direction of the arrows and clearly showing the construction of my novel feed nut; and

Figure 3 is a fragmentary vertical section, taken on the line 3—3 of Figure 2, looking in the direction of the arrows and at the rear wall of the cross feed housing showing my removable feed nut attached thereto, certain parts being broken away to illustrate further details of construction.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter "M" generally indicates a portion of a milling machine of a type now commonly found in the trade and hence, need not be described in detail. However, the same includes a column 5, having a vertically extending dove tail guide 6 on which is slidably mounted the knee 7. The knee 7 is adjusted vertically by worm means 8 and is firmly and slidably secured to the dove tail guide 6 by means of the gibs 9 and 10. This novel gib arrangement forms no particular part of my present invention and is more fully described in my co-pending application, Serial No.

2

285,180, filed April 30, 1952 and entitled "Gib for Knee of Milling Machine."

The upper portion of the knee 7 also carries a dove tail guide 11 to which is slidably mounted the cross feed support 12 for the work table (not shown). The cross feed support 12 also carries removable gibs 13 and 14 and it is to be noted that the cross feed housing 15 also includes the gear or motor box 16 which depends from, and is carried by, one side of the cross feed support 12. The cross feed, motor and gear box housings 15 and 16 respectively, are fastened to the cross feed support 12 by means of bolts 17 and slide back and forth therewith. The cross feed hand crank 18 is carried by the knee 7 in a bearing arrangement 19 and turning of the crank 18 will turn the adjusting screw feed 20.

As previously pointed out, heretofore the feed screw 20 passes through an internally threaded feed member which was cast integral with the cross feed housing 15. In accordance with the present invention however, I provide a novel removable cross feed nut 21 which includes an elongated internally threaded barrel portion 22 through which adjusting screw 20 passes. One end of the barrel 22 has formed integral therewith, a laterally extending flat bracket 23 through which bolts 24 pass and are threadedly received in the rear wall 26 of the cross feed housing 15. The end of the feed screw 20 is flattened at 27 and forms a stop and limit for the rearward movement of the work table support 12.

It is obvious from the above, that by turning the crank handle 18 and adjusting screw 20 in one direction, the cross feed support 12 will be moved forwardly and away from the column 5 and by turning the crank handle 18 in the opposite direction, the support 12 will be moved inwardly toward the machine.

As explained, it is often times necessary to remove the cross feed housing 15 and gear box 16 for repairs and in order to allow the apparatus to be removed as a unit, it is only necessary to remove the bolts 24 from the bracket 23 and rear wall 26 of the housing 15 so that the feed nut 21 will swing free on the screw 20. The bolts 17 may then be removed and the whole cross feed unit is freed from the machine without the necessity of dismantling the feed adjusting mechanism from the bearing 19. This will save a great deal of time and labor otherwise wasted. Obviously, when it is desired to remove the feed adjusting screw or other parts of the feed mechanism from the knee 7, this may also be accomplished without the necessity of removing the entire cross feed housing 15 and its associated gear box 16 as again the feed nut 21 may be simply unbolted from the rear wall 26 of the cross feed housing 15.

Changes in detail may be made without departing from the spirit or scope of the invention, but what I claim as new is:

In combination with a cross feed mechanism for the work table of a milling machine, of the type having a vertically slidable knee carrying a cross feed support and depending cross feed housing, of a removable feed nut comprising an elongated internally threaded barrel body portion and an integral laterally extending bracket at one end of said barrel portion, said bracket being provided with apertures, and means for removably securing said bracket to the rear wall of the cross feed housing of the milling machine, said knee carrying a crank handle and adjusting screw, said adjusting screw being threadedly received in the barrel portion of said feed nut, whereby, the feed nut may be removed without the necessity of dismantling the adjusting screw and crank mechanism from the knee.

References Cited in the file of this patent

UNITED STATES PATENTS

1,565,709	Burgh	Dec. 15, 1925
1,958,424	Gebhard	May 15, 1934
2,230,716	Curtis	Feb. 4, 1941
2,620,710	Gallimore et al.	Dec. 9, 1952