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ADJUSTING AND ENGAGING MECHANISM

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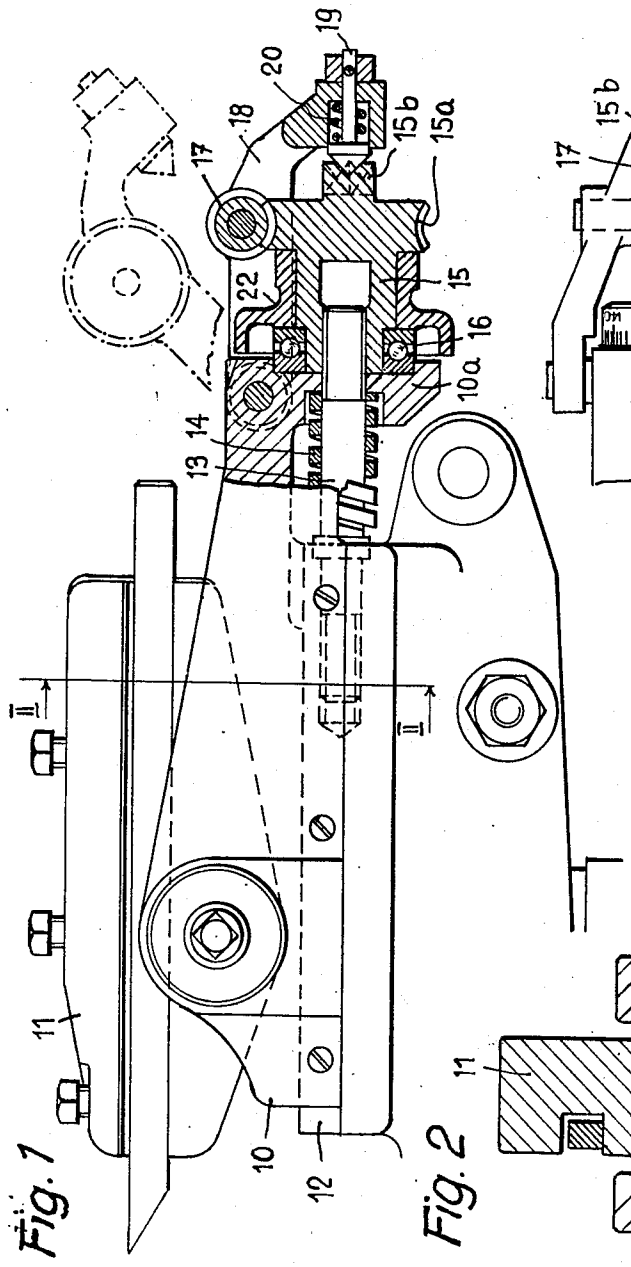


Fig. 1

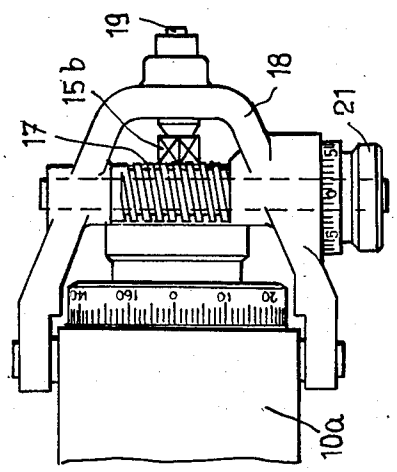


Fig. 3

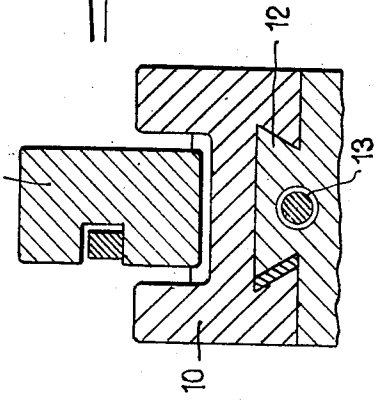


Fig. 2

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ADJUSTING AND ENGAGING MECHANISM

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2 Claims. (Cl. 74—405)

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Our invention relates to a tool holder for machine tools, in particular for automatic slicing lathes, including a support provided with means for securing the tool and pivotally mounted on a slider carried in a slideway. According to a first object of our invention, there is provided on a longitudinal threaded rod projecting from the body of said slideway, a nut or the like screwing member carrying a ball bearing through the agency of which it abuts against the slider, whereby it is possible by screwing said screwing member over the said rod to shift the slider over the slideway in antagonism with the action of a spring.

Preferably, the screwing member is rigid with a wormwheel associated with a worm revolubly held in a carrier pivotally mounted on the slider, whereby the latter may be submitted to a coarse adjustment through direct actuation of the screwing member or else to an accurate adjustment by screwing down the screwing member through the agency of the wormgear considered when the carrier therefor is rocked into its operative position.

We have illustrated by way of example in accompanying drawings a preferred embodiment of our invention. In said drawings:

Fig. 1 is a side view, partly sectional, of a tool carrier.

Fig. 2 is a cross-sectional view through line II—II of Fig. 1.

Fig. 3 is a view from above of the part of the tool carrier illustrated cross-sectionally in Fig. 1.

The tool carrier according to Figs. 1 to 5 includes a slider 10 assuming cross-sectionally the shape of a U. Between the lateral flanges of said slider 10 is pivotally secured the actual tool holder 11 assuming a shape similar to that described in the U. S. Patent No. 2,451,684 in the name of the assignee company, Usines Tornos, Fabrique de Machines Moutier S. A., at Moutier (Switzerland). The slider 10 is mounted on a slideway 12 and a longitudinal threaded rod 13, is screwed into the body of said slideway and extends through a bore provided in the rear downwardly directed portion 10*a* of the slider 10. Round said threaded rod 13 is provided a pressure spring 14 bearing on one hand on a collar provided on said rod and, on the other hand, on said rear depending portion of the slider 10, whereby the latter has a tendency to move outwardly under the action of the spring 14 considered. On the part thereof that projects beyond the slider 10, the threaded rod engages a screwing member constituted by a nut 15 on

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which is fitted a ball bearing 16 through the agency of which said screwing member 15 is adapted to urge forwardly the rear depending part 10*a* of the slider 10. Thus, when screwing down the screwing member 15, the slider 10 is shifted back in antagonism with the spring 14 while conversely an unscrewing of said member 15 allows the spring to shift the slider in the opposite direction. The screwing member 15 is rigid with a coaxial worm wheel 15*a* forming a worm gear with a worm 17 that is revolubly carried between the arms of a strap-shaped rockable carrier 18 pivotally secured to the rear end of the slider 10. In the medial part of the carrier 18 is mounted a sliding centering pin 19 submitted to the action of the spring 20 and engaging when the carrier 18 is in its lower operative position, a flaring recess provided in a cooperating central portion of the head 15*b* on the nut 15, said central head portion assuming a square shape. For this operative position of the carrier 18, the worm 17 meshes with the worm wheel 15*a* whereby a rotation of said worm 17 obtained through actuation of a knob 21, provided on an extension of its stem, provides for the screwing or unscrewing of the nut 15 through the agency of the worm gear considered. On the other hand, when the carrier 18 is raised, it is possible to screw down or to unscrew the nut 15 directly by means of a wrench that it fitted when required over the central head section 15*b*. Thus it is possible to provide for a coarse adjustment of the slider 10 by producing directly a rotation of the nut 15 through such a wrench, or else it is possible to provide for an accurate adjustment through a rotation of said nut obtained through the agency of the worm gear. The nut 15 carries a coaxial socket 22 mounted with slight friction over said nut, said socket being provided with a peripheral wide flange carrying a scale cooperating with a mark carried by the adjacent surface of the slider 10, said nut and associated parts forming an arrangement known per se in machine tools for returning to zero, whereby it is possible to read on the scale carried thereby the value of the adjustment obtained through rotation of the nut.

What we claim is:

1. In an engagement and disengagement device for a worm wheel, the combination comprising a housing, a worm wheel journaled in said housing, a nut member coaxially rigid with said worm wheel, said nut member including an axial polygonal section provided with a central depression, a worm member adapted to engage the

worm wheel, a carrier pivotally secured to the housing, said carrier pivotally carrying the worm in parallelism with its pivotal axis and including a bent portion registering with said nut member, a centering pin slidably carried by said bent portion adapted to engage said central depression in said nut when said worm member of said carrier engages said worm gear, and spring means urging said centering pin into said depression.

2. A device as in claim 1, wherein said carrier is pivotally mounted on a slider, whereby said slider may be adjusted in both coarse and fine adjustment in an automatic lathe by the adjustment of said nut member and of said worm gear.

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