

Dec. 13, 1960

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ARRANGEMENT FOR POSITIONING THE TOOL-HOLDER
ON THE TRANSVERSE SLIDE OF A LATHE OR
THE LIKE MACHINE TOOL
Filed March 24, 1958

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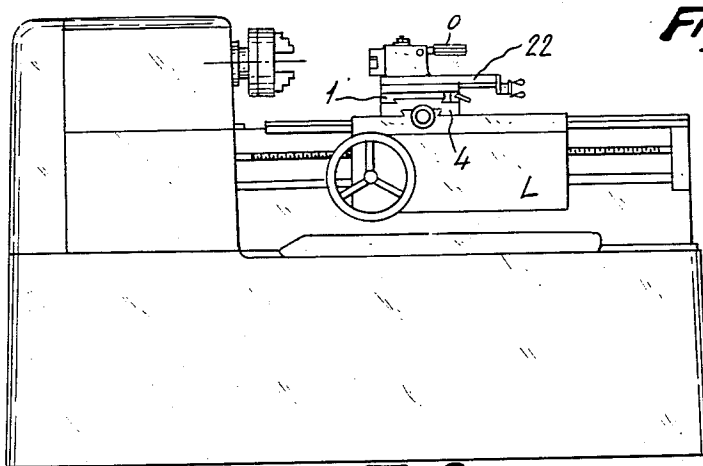


Fig. 1

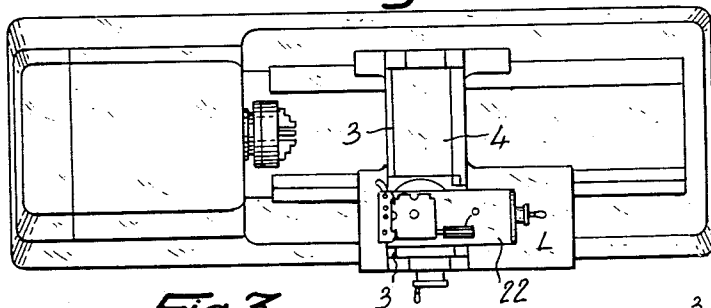


Fig. 2

Fig. 7

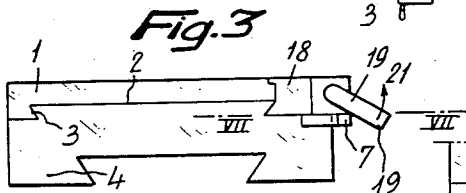
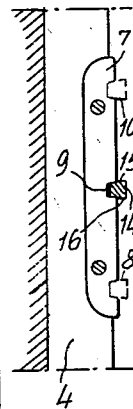


Fig. 3

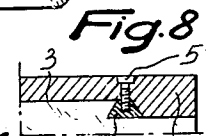


Fig. 8

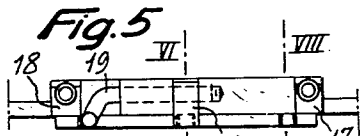


Fig. 5

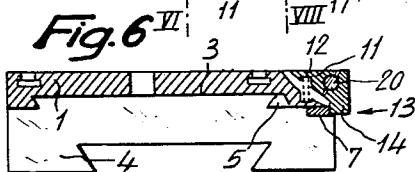


Fig. 6

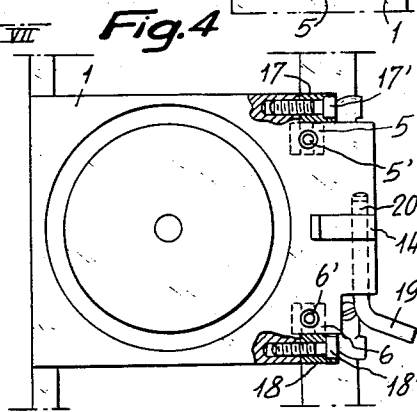


Fig. 4

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ARRANGEMENT FOR POSITIONING THE TOOL-HOLDER ON THE TRANSVERSE SLIDE OF A LATHE OR THE LIKE MACHINE TOOL

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Filed Mar. 24, 1958, Ser. No. 723,367

Claims priority, application France Apr. 11, 1957

3 Claims. (Cl. 29—1)

My invention has for its object an arrangement for positioning the tool-holder on the transverse slide of a lathe or the like machine tool, said arrangement allowing the easy removal and change of the shoe forming part of the tool-holder together with its rapid and accurate positioning. This is obtained according to my invention by fitting said shoe removably over the upper section of the transverse slide, its sliding on the latter being performed along dove-tailed slideways extending throughout the depth of the slide in the direction of movement of the latter.

According to a preferred embodiment of my invention, a bolt carried by the shoe and pivoting transversely with reference to the latter may engage selectively through a projection rigid therewith one of the notches provided in the corresponding edge of the transverse slide of the machine tool.

I have illustrated by way of example in Figs. 1 to 8 a preferred embodiment of my invention, given by way of a mere exemplification without this forming any limitation of the scope of the said invention as defined in the accompanying claims. In said drawings:

Fig. 1 is an elevational view of a lathe the transverse slide of which is provided with a transverse shoe designed in accordance with my invention.

Fig. 2 is a view from above the same lathe.

Fig. 3 is an end view of the transverse shoe and of the transverse slide considered separately.

Fig. 4 is a view from above of the same shoe.

Fig. 5 is a view of the shoe and slide as seen from the right hand side of Fig. 3.

Fig. 6 is a vertical view partly sectional through line VI—VI of Fig. 5.

Fig. 7 is a sectional detail view through line VII—VII of Fig. 3.

Fig. 8 is a partial sectional view through line VIII—VIII of Fig. 5.

The arrangement according to my invention includes a shoe 1 carrying a support 22 forming the actual tool-holder, said shoe 1 being adapted to be fitted over the transverse slide 4 which is driven in its turn longitudinally by the main carriage L so as to give the tool O the desired movement.

The fitting of the shoe 1 is ensured by a female dove-tailed surface 2 provided on its lower side and engaged by the male dove-tailed surface 3 on the transverse slide 4. This dove-tailed surface 3 extends throughout the length of the slide so as to allow the positioning of the shoe at any desired point of the latter whereby an accurate position may be given to the rear or front tool-holder carried by said shoe. To obtain a sliding without any play of the dove-tailed section 2 of the shoe over the male dove-tailed section 3 of the transverse slide, I resort as illustrated in Figs 6 and 8 to elements 5 and 6 cut in the shoe across the female dove-tailed surface 2, said elements forming wedges secured through screws 5'

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and 6' which ensure their accurate positioning in accurate engagement with the male dove-tailed section.

On the other hand, the transverse slide 4 is rigid with a longitudinal plate 7 illustrated separately in Fig. 7 and provided with notches 8, 9 and 10 along its outer edge extending in parallelism with the direction of the dove-tailed section, i.e. in parallelism with the movement of the slider 4. These notches are adapted to be engaged selectively by the projection 14 on the bolt 11 fitted on the shoe as illustrated in Fig. 6, said bolt 11 being adapted to rock slightly in a transverse direction with reference to the shoe together with a spindle 20 parallel with the direction of the slideways and extending outwardly so as to form a handle 19. The pivoting movement of said handle and consequently of the spindle produces, when the handle is raised in the direction of the arrow 21 (Fig. 3) a corresponding pivotal movement of the bolt 11 which provides for the release of the projection 14 and allows a sliding of the shoe over the transverse slide in parallelism with its dove-tailed surface. It should be remarked furthermore that the transverse surfaces 15 and 16 of the projection 14 rigid with the bolt 11 are bevelled so as to match the shape of any of the notches 8, 9 and 10. A spring 12 fitted between cooperating recesses formed in the surfaces facing each other in the shoe 1 and the bolt 11 acts in the direction of the arrow 13 (Fig. 6) so as to urge and hold the bolt in the position illustrated for which the projection 14 thereon engages the longitudinal plate 7 and ensures the perfect rigid securing of the bolt on the plate and consequently of the shoe 1 on the slide 4.

Lastly, the straps 17 and 18 forming independent sections of the shoe body engaging the dove-tailed section of the slide 4 at the opposite ends of the rectilinear part of the shoe, are secured by the screws 17' and 18' which serve furthermore for securing in an auxiliary manner the shoe through the agency of said straps over the transverse slide in the selected operative position illustrated.

It is thus apparent that it is an easy matter after releasing the screws 17' and 18', and after urging the bolt projection 14 away from the plate 7 to shift the shoe longitudinally into another selected position and to remove it when desired in particular with a view to replacing it by another shoe carrying a different tool-holder support 22.

What I claim is:

1. A clamping device for a shoe slidably moving over a support along a dovetailed slideway comprising an elongated strip rigid with the support extending in parallelism with the slideway and provided along its outer edge parallel with the slideway with a plurality of spaced notches opening outwardly of the strip, a bolt extending throughout the length of the shoe and rockably carried thereby around an axis parallel with the slideway adjacent the outer edge of the shoe facing the elongated strip, a projection rigid with the bolt perpendicular thereto and facing the outer edge of the rigid strip, a spring carried by the shoe and urging the bolt into a rocking movement to make the projection on the bolt move in a plane perpendicular to the slideway towards the outer edge of the elongated strip and engage selectively a notch in said strip whenever the sliding of the shoe has brought said projection into transverse registry with said notch.

2. In combination with a tool-holder, the provision of a removable-shoe rigidly carrying the tool-holder, a support over which the shoe is shiftable along a dovetailed slideway, said support being provided along an edge parallel with the slideway with a plurality of spaced notches opening outwardly of the strip, a bolt rockably

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carried by the shoe and the length of which corresponds substantially with that of said shoe, said bolt being adapted to rock slightly around an axis parallel with the slideway and at a small distance from last-mentioned edge, a projection radially rigid with the bolt and engageable selectively in one of the notches in the said edge to define the accurate position of the shoe with reference to the support and elastic means fitted between the bolt and the shoe to rock said bolt towards the notched edge of the support and to make the projection thereon enter the notch registering therewith.

3. In combination with a tool-holder, the provision of a removable shoe rigidly carrying the tool-holder, a support over which the shoe is shiftable along a dovetailed slideway, a small independent plate secured to the support in parallelism with the slideway and provided along an outer edge parallel with the latter with a plurality of spaced notches opening outwardly of the strip, a bolt rockably carried by the shoe, the length of which corresponds substantially to that of said shoe and adapted to rock slightly around an axis parallel with the slideway and at a small distance from last-mentioned edge, a projection radially rigid with the bolt and engageable selectively in one of the notches in the said edge to define the accurate position of the shoe with reference to the support and a spring between the bolt and the shoe and acting in a direction perpendicular

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to the direction of the slideway to rock said bolt in a plane perpendicular to the slideway towards the notched edge of the support and to make the projection thereon enter the notch registering therewith, and a handle fitted on one outer end of the bolt for controlling the angular position of the latter against the action of the spring.

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