

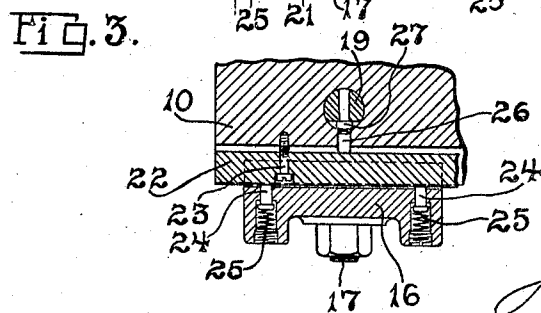
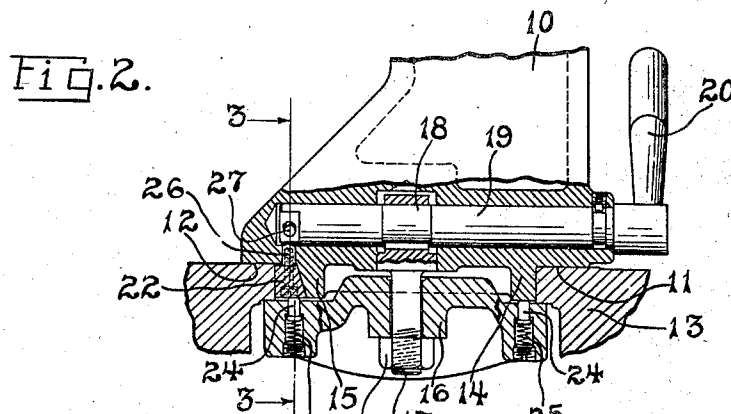
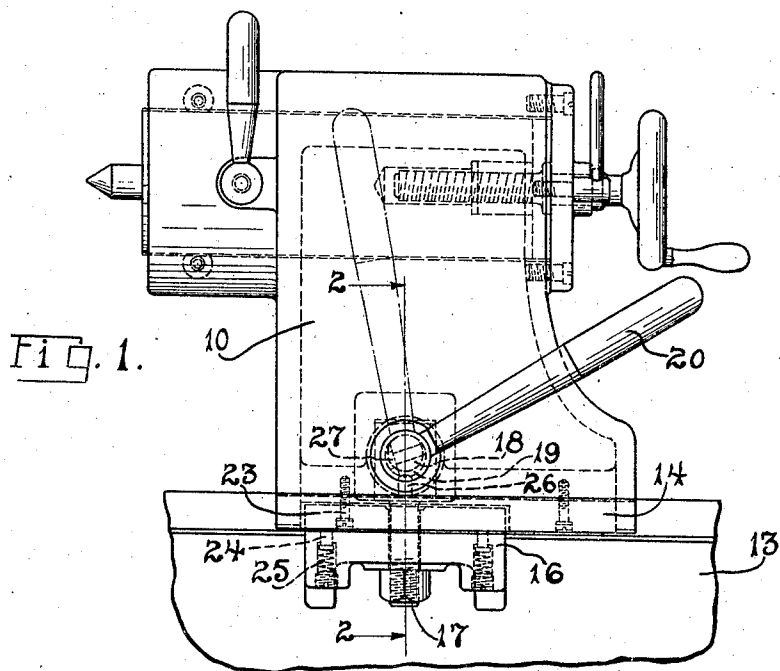
Feb. 1, 1927.

1,616,136

E. A. MOYER

TAILSTOCK CLAMP

Filed April 1, 1925



INVENTOR
E. A. Moyer
BY
Joseph F. Schofield
ATTORNEY

Patented Feb. 1, 1927.

1,616,136

UNITED STATES PATENT OFFICE.

EDWARD A. MOYER, OF WEST HARTFORD, CONNECTICUT, ASSIGNOR TO PRATT & WHITNEY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TAILSTOCK CLAMP.

Application filed April 1, 1925. Serial No. 19,992.

This invention relates to tailstocks and particularly to a tailstock clamping mechanism enabling the tailstock to be quickly and accurately clamped in adjusted position.

5 An object of the present invention is to provide a tailstock clamping mechanism which will first force the tailstock laterally against one of the ways of the machine on which it may be mounted and then will rigidly clamp the tailstock in any position along the bed of the machine while retained in that lateral position.

One feature which enables me to accomplish the above named object is that a wedge member is provided between a surface of the tailstock and a vertical surface of the ways of the machine, means being provided to force this wedge member into operative position as the tailstock is being clamped.

20 Another feature which is advantageous is that this wedge member is spring operated to advance it to its operative position when the clamping member for the tailstock is moved to clamping position.

25 Another object of the invention is to provide positive means for withdrawing the wedge member from operative position when the tailstock is unclamped so that the tailstock may be readily adjusted along the bed of the machine.

30 With these and other objects in view, my invention consists in the features of construction and operation set forth in the following specification and illustrated in the accompanying drawing.

35 In the accompanying drawing annexed hereto and forming a part of this specification, I have shown my invention embodied in a tailstock usable for lathes, thread milling machines, etc., but it will be understood that the invention can be otherwise embodied and that the drawings are not to be construed as defining or limiting the scope of the invention, the claims appended to this specification being relied upon for that purpose.

In the drawing:

40 Figure 1 is a side elevation of a complete tailstock showing the improved clamping mechanism associated therewith.

Fig. 2 is a sectional elevation of the tailstock and its clamping mechanism taken upon line 2—2 of Fig. 1, and

45 Fig. 3 is a sectional view of the wedge member and operating mechanism therefor

taken upon line 3—3 of Fig. 2 with the parts in unclamped position.

In the above mentioned drawing I have shown but one embodiment of the invention which is now deemed preferable, but it is to be understood that changes and modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

Briefly and in its broadest aspect my invention comprises the following principal parts: first, a tailstock slidably mounted upon ways provided on a machine; second, a clamping block adapted to engage below surfaces of the ways; third, an eccentric and bolt for moving the clamping block to its clamping and unclamping position; fourth, a lever for operating the eccentric; fifth, a wedge member positioned between a part of the tailstock depending below the ways and a surface of one of the ways; sixth, a plunger normally forcing the wedge block toward its operative position; and seventh, means on the shaft carrying the eccentric for positively withdrawing the wedge member from operative position when the clamping block is moved to unclamping position.

Referring more in detail to the figures of the drawing, I provide a tailstock 10 which may be of any conventional or usual type movably mounted upon ways 11 and 12 formed on the bed 13 of a machine shown fragmentarily in Fig. 1. The tailstock 10 is provided with a depending projection 14 extending longitudinally of the tailstock and adapted to engage against the vertical wall of one of the ways 11. Another projection 15 extending longitudinally which is slightly beveled upon one side and spaced from the opposite way is also provided. Below the tailstock 10 is a clamping plate 16 of usual or conventional form adapted at its opposite ends to engage the lower surfaces of the ways 11 and 12. An adjustable bolt 17 passing through the clamping plate 16 has its upper end, which is in the form of an eye, engaged by an eccentric 18 formed on a transversely extending shaft 19. By means of a lever 20 at one end of this shaft 19, the eccentric 18 may be oscillated to clamp or unclamp the clamping plate 16. Adjustments of the bolt 17 may be made by setting up a nut 21 on its lower threaded end.

Within the space between the forward projection 15 on the tailstock 10 and a ver-

110

tical wall of the ways 12 on the machine is provided a wedge shaped member 22 loosely held to the tailstock 10 by small screws 23. These screws 23 permit limited vertical adjustment of the wedge member 22. In order to raise the wedge member 22 into its operative position, plungers 24 are inserted within the clamping plate 16 and held upwardly by coil springs 25 provided in suitable recesses. Oscillation, therefore, of the lever 20 to raise the clamping plate 16 to its clamping position will cause the plungers 24 to raise the wedge member 22, and, due to its beveled surface, this movement of the wedge member 22 will force the tailstock 10 against the rear vertical surface of the ways 11. Unclamping and lowering the clamping block 16 will separate the plungers 24 from the lower surface of the wedge member 22 so that it may be withdrawn from its operative position.

In order to positively withdraw the wedge member 22 from its operative position, a small plunger 26 is provided within the tailstock 10, its lower end being adapted to bear against the upper surface of the wedge member 22. The upper end of this plunger 26 is adapted to contact with a head 27 positioned as shown in Figs. 2 and 3 upon the forward end of the eccentric operating shaft 19. The position of this small head 27 is such that oscillation of the shaft 19 to unclamp the clamping block 16 will force the head 27 against the upper surface of the plunger or pin 26 and thus positively force the wedge member 22 out of its operative position so that the tailstock 10 will be completely unclamped and released from the ways 11 and 12 so that it may be adjusted longitudinally along the ways.

From the above description it will be seen that in first raising the clamping plate 16 to its clamping position the wedge member 22 is forced upwardly to its operative position, thus forcing the tailstock 10 against the rear ways 11. The plungers 24 are thus retracted within their recesses during the remainder of the clamping operation and will retain the wedge member in its upper and operative position. The tailstock 10 therefore, whenever it is being clamped along the ways, will be first forced laterally in the same direction against one of the ways, thus always accurately positioning it laterally and simultaneously positively clamping it in that adjusted position.

What I claim is:

1. A tailstock clamp comprising in combination, a tailstock, a clamping plate, means to clamp said plate against ways of a machine, a wedge member adapted to engage a projection on said tailstock and a wall of one of the ways to force said tailstock laterally, and means to advance said wedge member into operative position when said plate is moved to clamping position.

2. A tailstock clamp comprising in combination, a tailstock, a clamping plate, an eccentric for clamping said plate against ways of a machine, a wedge member adapted to force said tailstock laterally against a way, resilient means to advance said wedge member into operative position when said plate is moved to clamping position, and positive means to withdraw said wedge member.

3. A tailstock clamp comprising in combination, a tailstock, a clamping plate, an eccentric for clamping said plate against ways of a machine, a wedge member adapted to force said tailstock laterally against a way, resilient means carried by the clamping plate to advance said wedge member into operative position when said plate is moved to clamping position, and positive means to withdraw said wedge member.

4. A tailstock clamp comprising in combination, a tailstock, a clamping plate, an eccentric for clamping and unclamping said plate, a lever for actuating said eccentric, a wedge member loosely supported on the tailstock, means to move said wedge member to operative position when said plate is moved to clamping position, and means actuated by said lever to withdraw said wedge member from operative position when the plate is unclamped.

5. A tailstock clamp comprising in combination, a tailstock, a clamping plate, an eccentric for clamping and unclamping said plate, a lever for actuating said eccentric, a wedge member loosely supported on the tailstock, means to move said wedge member to operative position when said plate is moved to clamping position, and a plunger engaging said wedge member and actuated by said lever to withdraw said wedge member from operative position when the plate is unclamped.

In testimony whereof, I hereto affix my signature.

EDWARD A. MOYER.