Sept. 25, 1951 E. C. DAILEY 2,568,952

SHAFT HOLDER

Filed March 30, 1949

Fig. 1.

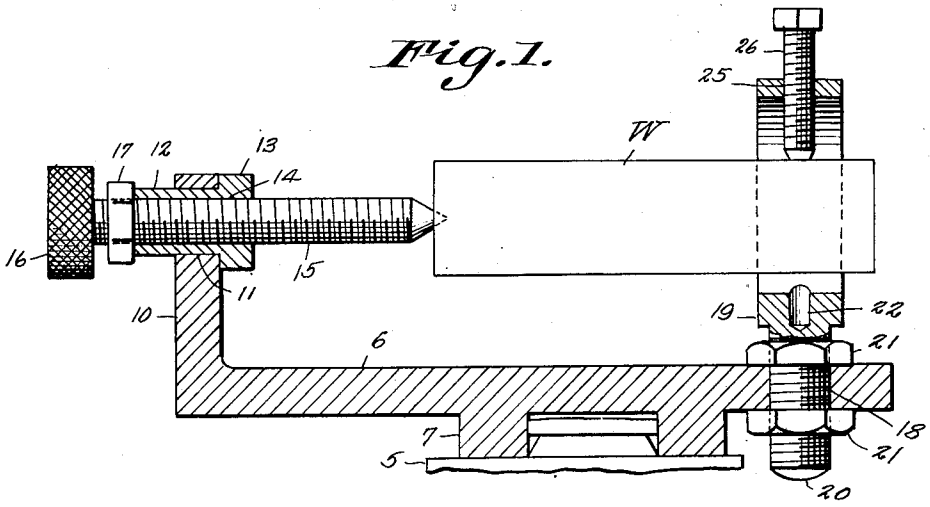


Fig. 2.

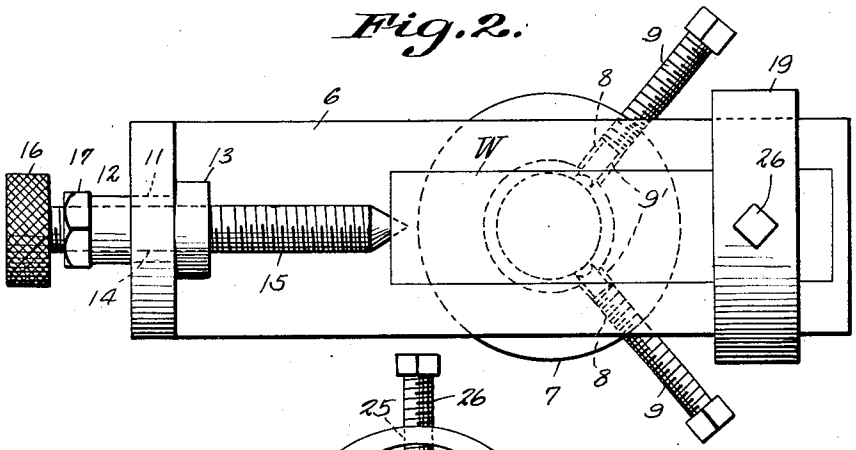


Fig. 3.

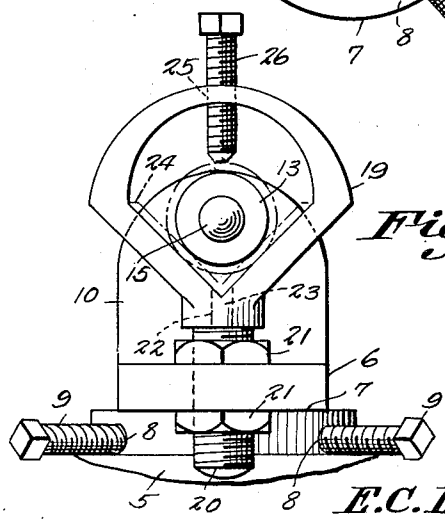
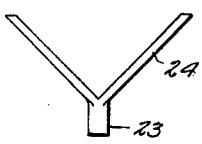


Fig. 4.



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SHAFT HOLDER

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2 Claims. (Cl. 90—59)

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This invention relates to an attachment for a metal working lathe, in the nature of a shaft holder having particular utility in the cutting of keyways in shafts.

An important object of the present invention is to provide a shaft holder of the character described that can be attached readily to a metal working lathe of conventional construction, and can be detached with equal speed and facility.

Another important object is to provide an attachment of the character stated novelly designed in a manner to permit a shaft supported thereby to be speedily and easily positioned, with complete accuracy, for the cutting of a keyway therein.

Another important object is to provide an attachment of the type stated which will have versatility in regard to the diameter of shafts capable of being supported thereby, the attachment being capable of handling various shafts of different diameters, and being readily adjustable to accommodate said shafts.

Another important object is to provide a device of the character described that can be constructed at a minimum of expense, but which will nevertheless be quite durable and will have few parts simply arranged in a manner whereby they will not readily get out of order.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings,

Fig. 1 is a longitudinal section through a shaft holder constructed in accordance with the invention.

Fig. 2 is a top plan view.

Fig. 3 is an end elevation taken from the right of Fig. 1.

Fig. 4 is an elevation of a removable spacing insert.

Referring to the drawings in detail, 5 designates the conventional cross carriage slide post of a metal working lathe, the invention being mounted removably upon said slide post.

A flat elongated base 6 is integrally formed with a depending collar 7 recessed to receive the slide post 5, and spaced circumferentially of the collar 7 are the threaded radially disposed bores 8 receiving clamping screws 9. Inserted between

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the clamping screws 9 and the slide post 5 are the gibs 9'. Thus, the base 6 is securely and removably connected to the cross carriage slide post.

It will be understood that the graduations on the cross slide are utilized for the desired angle in forming the keyways in shafts. For example, a setting of zero degrees provides for a straight keyway, while for tapered keyways any desired angle is used as a setting.

Upstanding from the base 6 is the end wall 10 integrally formed with the base, this being formed near its upper end with the opening 11 in which is press fitted the bushing 12 having at one end the collar 13, said bushing 12 being formed with the threaded bore 14 receiving the elongated pointed screw 15 that constitutes a shaft centerer. On the head of the screw 15 is fitted the turning knob 16, and lock nut 17 threaded on the centerer is adapted to be threaded against one end of the bushing 12 for the purpose of locking the centerer in selected adjusted positions to which it is threaded in the bushing.

Formed in the other end of the base 6 is the smooth walled bore or opening 18 in which is mounted for vertical adjustment the Y-post 19 having the depending threaded leg 20 extending through and vertically slidable in the opening 18. Lock nuts 21 are threaded on the leg 20 and are adapted to be tightened against opposite faces of the base 6 for the purpose of tightening the Y-post securely to the base in selected positions of vertical adjustment.

At the base of the forked portion of the Y-post 19 is formed a small recess 22 receiving stud 23 formed on a forked insert 24. Thus, the insert 24 is adapted to be removably positioned between the arms of the Y-post, for a purpose to be apparent.

In the upper end of the Y-post 19 is formed a threaded opening 25 receiving the clamping screw 26 that is adapted to be threaded downwardly against the uppermost surface of work W comprising a shaft in which a keyway is to be formed.

In use, the shaft holder is mounted upon the cross carriage slide post 5 in the manner described hereinbefore. An angle setting is made as desired. The work W is then extended through the Y-post 19 and the pointed end of the shaft centerer 15 is centered on the end of the work. The clamping screw 26 is then threaded against the work to keep it from slipping off the point of the shaft centerer during the making of further adjustments. A conventional level, not shown, is

then placed upon the work W and the Y-post 19 is vertically adjusted by operation of one of the lock nuts 21. After the work has been brought to a perfect level, both the nuts 21 are tightened as is the clamping screw 26. With this final tightening of nuts 21 and clamping screw 26, and with the final tightening of the shaft centerer 15, the shaft W will be on dead center with the head stock. The carriage is now moved up to give the desired depth of keyway, and the operation of forming the keyway can proceed.

It has been found in practice that a device constructed as illustrated and described will always provide a dead center for the work, as a result of which errors in cutting keyways with full accuracy are reduced to a minimum.

It will be understood that the insert 24 is used wherever the shaft is of a smaller diameter. The insert is simply dropped into the recess 22, as a result of which the amount of adjustments possible to accommodate shafts of different diameters is considerably increased.

What is claimed is:

1. A unitary shaft holding assembly for metal working lathes comprising an elongated flat horizontal base, an annular collar formed integrally upon the underside thereof and recessed to receive an upstanding cross carriage slide post of a metal working lathe, means on the collar for removably clamping said base upon the post, an end wall upstanding from one end of the base and formed integrally therewith, said end wall having a threaded opening, an elongated shaft centering screw threaded horizontally through said opening and adapted to be threaded against one end of a piece of work mounted above the base, a Y-post mounted for vertical adjustment in the other end of the base, means for locking the Y-post in selected positions of vertical adjustment, a removable insert adapted to be mounted upon the Y-post for accommodating the Y-post to pieces of work differing in diameter, and a clamping screw threaded through the top of the Y-post and adapted to clamp to the Y-post the other end portion of said piece of work.

2. In a shaft holder for metal working lathes a base including an upstanding end wall at one end thereof, means on the bottom of said base for removably mounting the base upon the cross carriage slide post of a metal working lathe, a centering screw threaded in said end wall and extending toward the other end of the base, a Y-post including a depending stem extending through the base at said other end of the base, means for clamping said stem to the base in selected positions of vertical adjustment of the Y-post, a clamping screw threaded in the upper end of the Y-post and threadable toward the base of the Y-post, said base of the Y-post being formed with a recess, and a removable insert for the Y-post, said insert being of Y-shaped formation and including a depending stem at the base thereof receivable in the recess of the Y-post.

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