Nov. 21, 1944. L. L. WILLIAMS 2,363,215

HOLDER FOR BORING BARS

Filed Dec. 18, 1942

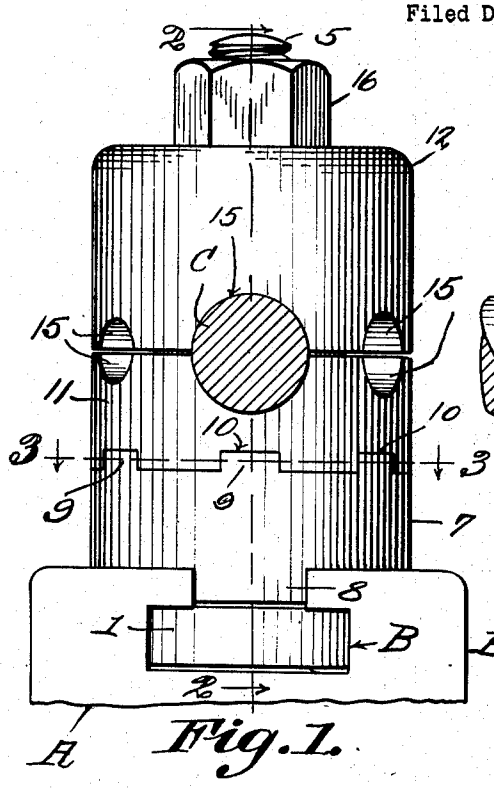


Fig. 1.

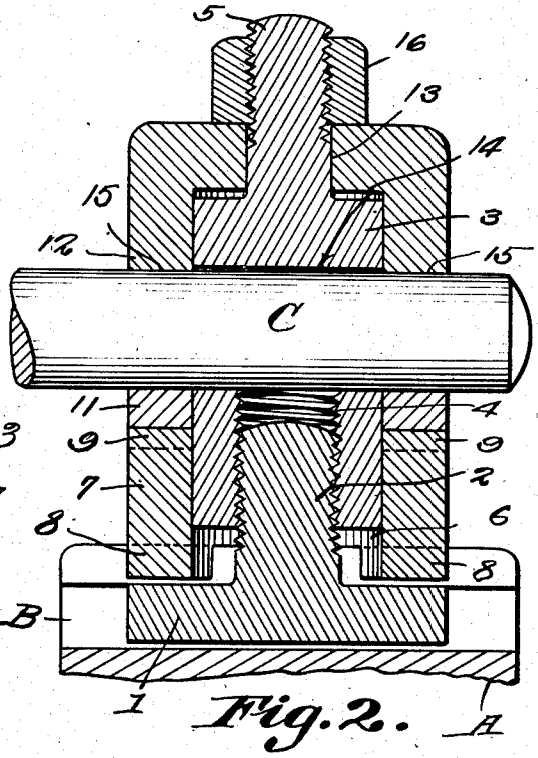


Fig. 2.

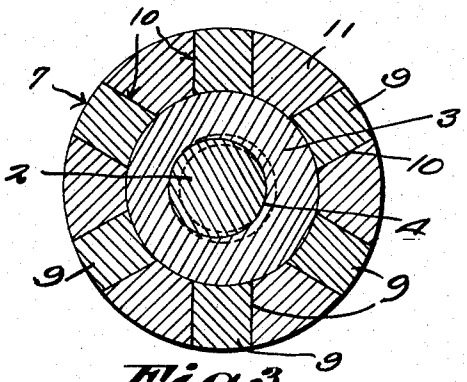


Fig. 3.

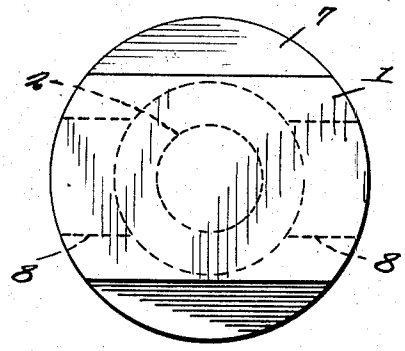


Fig. 4.

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HOLDER FOR BORING BARS

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Application December 18, 1942, Serial No. 469,491

1 Claim. (Cl. 82—37)

This invention relates to a holder designed primarily for rigidly gripping and supporting boring bars of different sizes such as used in connection with lathes.

It frequently happens that holes of different sizes must be formed in one piece of work and in order that bars of different sizes may be placed in position as needed and tightly gripped so as to prevent vibration, the present invention has been devised.

A further object is to provide a holder which is simple and compact in construction and can be readily assembled.

A further object is to provide a holder capable of tightly gripping boring bars of different diameters, holding them firmly against vibration and rotation.

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 claim, 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.

In the accompanying drawing the preferred form of the invention has been shown.

In said drawing:

Figure 1 is an elevation of the holder and a portion of the compound rest on which it is mounted, a boring bar being shown in section.

Figure 2 is a section on line 2—2, Figure 1, a portion of the boring bar being shown in elevation.

Figure 3 is a section on line 3—3, Figure 1.

Figure 4 is a bottom plan view of the holder.

Referring to the figures by characters of reference, A designates the usual compound rest of a lathe provided with a slot B such as commonly employed and the walls of which are shaped to overhang and frictionally engage an insertible key 1 provided at its center with a screw-threaded stem 2 projecting upwardly therefrom and out of the slot B.

A cylindrical core 3 has a screw-threaded bore 4 extending into one end for engagement by the stem 2 while extending from the other end of the core is a screw-threaded stem 5. The bore 4 and stems 2 and 5 are co-axial with the longitudinal center of the core.

The lower portion of the core is fitted snugly within a round opening 6 extending through the center of a base member 7 which is preferably cylindrical. This base member has opposed segmental lugs 8 proportioned to fit snugly within the upper portion of the slot B when the base is properly supported on the rest A.

The upper edge of the base 7 has regularly spaced lugs 9 extending upwardly therefrom and preferably rectangular. These lugs are adapted to fit snugly within correspondingly shaped and proportioned notches or recesses 10 formed in the lower edge of a lower clamping member 11. This member is fitted snugly upon the post 3 and cooperates with an upper clamping member 12 which is also fitted snugly about the post 3, the upper end of the member 12 being closed except for a central opening 13 of such size as to receive stem 5.

A cylindrical opening 14 is extended diametrically through the post 3 and is sufficiently large to receive a boring bar C of the maximum size to be held by the device. Formed in the upper end of the member 11 and the lower end of the member 12 are matching recesses 15. These recesses cooperate to provide circular openings of different diameters any one of which can be brought into alinement with the opening 14. A nut 16 engages stem 5 and by loosening this nut, the clamping member 12 can be lifted off of the post 3. With the boring bar C out of position in the holder, the lower clamping member 11 can be raised a sufficient distance to release it from the studs 9 and thereafter this lower clamping member can be rotated to bring into alinement with the opening 14 the recesses 15 of proper size to receive a boring bar of the size to be used. After this angular adjustment of the lower clamping member 11 has been effected, the boring bar of the selected size is inserted into the opening 14 and the selected recesses 15. The upper clamping member 12 is then lowered into position on the bar after being adjusted to bring a recess 15 of correct size into position to match each of the selected recesses 15 in the lower clamping member 11. Nut 16 is next tightened and this will cause the upper and lower clamping members to bind tightly upon the inserted boring bar and at the same time pull the key 1 upwardly so that the compound rest will be tightly gripped between this key and the lower portion of the base 7. Thus the boring bar will be held rigidly in a selected position and will not turn or vibrate. When it is desired to change to a boring bar of another size to be used on the same job, all that is necessary is to unscrew the nut 16, lift the parts 11 and 12 so that they are free to turn on post 3 and then to lower these member after an opening of the selected size has been brought

into register with the opening 14. The boring bar of the selected size is then inserted and the parts again tightened as heretofore explained.

While this tool is designed primarily for holding boring bars as described, it can also be employed advantageously on jobs requiring outside turning and facing.

Importance is attached to the fact that the parts can be assembled readily and that the adjustment can be effected rigidly. It is also important to note that any boring bar within certain limits of size, will be gripped firmly by the holder and thus held against vibration while turning.

What is claimed is:

In a boring bar holder for lathes, a key shaped to be received and held against rotation in the slot of the compound rest of a lathe, a threaded stem on the key, a post threaded on the stem and having a diametrical opening for the reception of a boring bar, a base slidably and rotatably mounted on the post, means on the base for insertion into the slot, to hold the base against rotation on the compound rest, upper and lower bar-clamping members rotatably and slidably mounted on the post, said members cooperating to provide regularly spaced openings therebetween arranged in pairs, the openings of each pair being diametrically opposed and of a size differing from the openings of the other pairs, the pairs of openings between the clamping members being shaped to receive boring bars of different diameters, means carried by the post for moving the upper clamping member toward the lower clamping member, to bind a boring bar in a selected pair of openings and cooperating, circumferentially-arranged lugs and recesses on the lower clamping member and on the base, and holding the upper clamping member against rotation with respect to the lower clamping member, said lugs and recesses, the key, and a bar which may be placed in a selected pair of openings, giving the upper clamping member an anchorage in the slot af lathe rest, against rotation.

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