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2,255,885

DEVICE FOR SECURING SAWS AND OTHER APPLIANCES TO ARBORS

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Fig. 1.

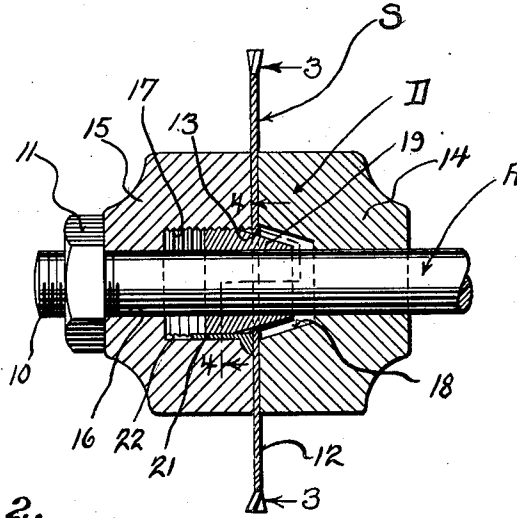


Fig. 2.

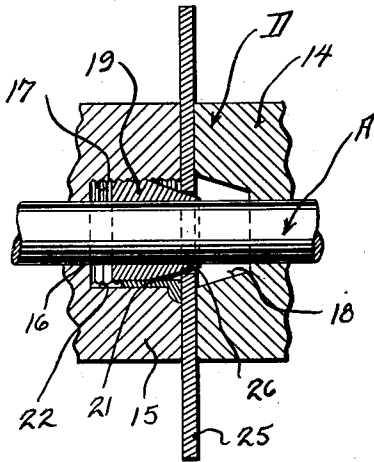


Fig. 3.

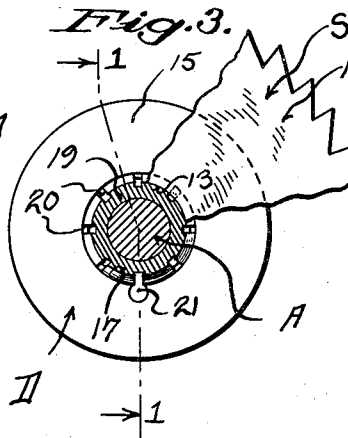


Fig. 4.

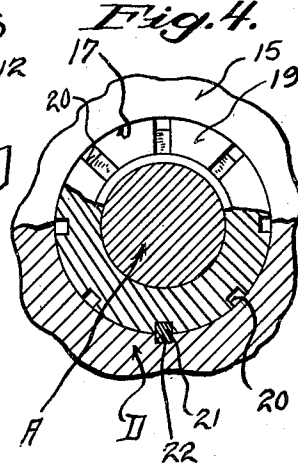
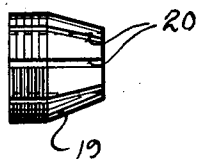


Fig. 5.



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UNITED STATES PATENT OFFICE

2,255,885

DEVICE FOR SECURING SAWS AND OTHER
APPLIANCES TO ARBORSRobert L. Herbst, Hortonville, Wis., assignor of
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Application September 5, 1939, Serial No. 293,459

1 Claim. (Cl. 143—155)

This invention appertains to novel means for securing circular saws, grinding and polishing wheels or discs, and the like upon their arbors or drive shafts.

Much difficulty has been experienced in replacing saws, discs, wheels, etc., upon arbors, in view of the fact that the center opening of such saws, discs, etc., are not always of uniform size, and, consequently, when an opening is of a larger size than a shaft, the saw or disc is liable to move off-center.

It is, therefore, one of the primary objects of my invention to provide novel means for properly centering and securing a saw, disc, or other like device upon an arbor, irrespective of the size of the center opening.

Another salient object of my invention is to provide a pair of hub blocks for engaging the opposite sides of the saw or other device to be secured to the shaft or arbor, with a retractible cone carried by one block movable into and out of the center opening of the saw or other device for snugly engaging the wall of said opening, whereby to properly support and center the saw or other device upon the arbor or shaft.

A further important object of my invention is the provision of novel means for mounting the centering cone in the hub block, whereby the cone can be readily moved into and out of the block, and whereby the cone can be held against accidental turning movement after adjustment.

A still further object of my invention is to provide a novel device of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at a small cost.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawing, in which drawing:

Figure 1 is a central section through my device, showing the same utilized for holding a saw upon an arbor, the view being taken substantially on the line 1—1 of Figure 3, looking in the direction of the arrows.

Figure 2 is a similar view, showing the device utilized for holding a disc upon the arbor having a center opening of less size than the saw shown in Figure 1.

Figure 3 is a fragmentary, sectional view taken on the line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a fragmentary, enlarged, detail, sectional view taken on the line 4—4 of Figure 1, looking in the direction of the arrows.

Figure 5 is a detail, side, elevational view of the centering cone.

Referring to the drawing in detail, wherein similar reference characters designate corresponding parts through the several views, the letter D generally indicates my improved device for properly centering and securing a circular saw S or similar device upon an arbor A. The arbor or drive shaft A can be of any preferred character or type, and the outer end of the same is threaded, as at 10, for the reception of a clamping nut 11. The saw S can also be of any preferred size or character and includes the disc-shaped body 12 having the center opening 13.

My novel device D comprises a rigid hub block 14 and a removable hub block 15. The block 14 is sweated on or otherwise rigidly secured to the arbor or shaft A, while the block 15 is freely removable from the shaft, and this block, in accordance with my invention, is formed with an axial bore 16 opening out into an enlarged, internally threaded chamber 17. This chamber 17 extends out through the inner face of the block, and the adjacent face of the block 14 around the shaft or arbor A is provided with an axial opening 18.

Adjustably mounted within the chamber 17 is the centering cone 19. The cone is movable into and out of the chamber 17, and the cone can be adjustably mounted in the chamber in any preferred way. As illustrated, the cone can be externally threaded and threaded into the chamber, as by this method a desired fine adjustment of the centering cone can be had. Any preferred means can be employed for rotating the centering cone, and the centering cone can be provided with equidistantly spaced slots 20 for the reception of a suitable tool.

After the cone 19 has been adjusted, the same can be held against accidental displacement in any preferred manner, such as by the use of a key 21. Obviously, the key 21 can be inserted in a keyway 22 formed in the wall of the chamber 17 and in one of the grooves 20.

In use of my improved device, when it is desired to replace a saw or other appliance mounted upon the arbor, the nut 11 is removed from the arbor, which will permit the rapid taking off of the block 15 and the saw. The new appliance is placed against the inner face of the block 15, and the centering cone is adjusted back and forth

according to the size of the center opening in the new appliance until the appliance snugly seats upon the cone. At this time, the block 15 and the appliance can be slid on the arbor A until the appliance butts up against the rigid face of the block 14. At this time, the nut 11 can be threaded upon the arbor and tightened into intimate engagement with the block 15. Obviously, the centering cone will extend into the chamber 18 formed in the block 14.

By the use of my novel device, the saw is properly supported, and all danger of the saw becoming off-center is eliminated.

As heretofore brought out, various appliances other than saws can be properly centered with my device, and in Figure 2 I have shown a disc 25, which can be considered as a polishing disc, and it is to be noted that the center opening 26 of this disc is of a considerably less diameter than the diameter of the opening 13 of the saw. Consequently, the centering cone 19 is moved a considerable distance back into its chamber 17, whereby the disc 25 will be properly supported.

By having my adjustable centering cone 19, it can be seen that, in effect, I can change the active diameter of the shaft or arbor A to suit the exact size of the center opening of a circular saw or other appliance.

Various changes in details can be made without departing from the spirit or the scope of my invention, but what I claim as new is:

A device for securing saws and other appliances upon arbors comprising, a rigid block adapted to be secured to the arbor, a movable block adapted to be slidably mounted upon the arbor toward and away from the first-mentioned block for clamping a saw or other appliance on the arbor, each of said blocks having axial chambers formed therein in their adjacent faces, one of said chambers being internally threaded, a centering cone threaded in said last-mentioned chamber and movable into and out of the other chamber, said cone being adapted to snugly engage the wall or center opening of a saw or other appliance, said internally threaded chamber being provided with a keyway, and said cone having a series of grooves for the reception of a tool to facilitate the turning and adjustment of the cone, the turning of the cone alining a selected groove with the keyway, a key removably fitted in the keyway and such selected groove, and means for holding the movable block in tight contact with the saw or other appliance.

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