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TOOL FOR APPLYING AND REMOVING THREADED CYLINDER LOCKS

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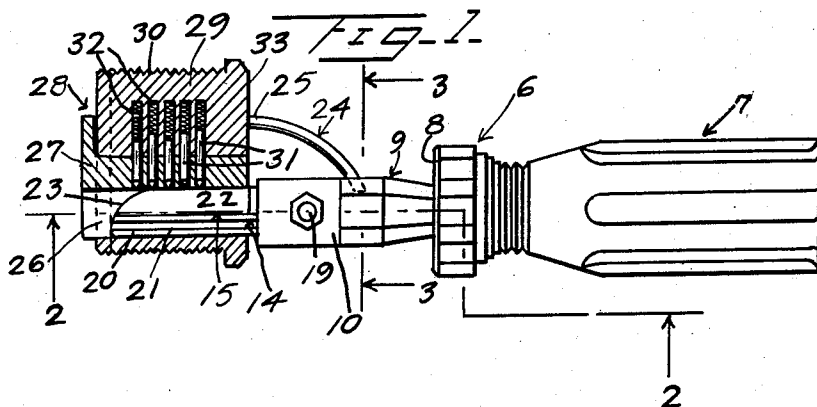
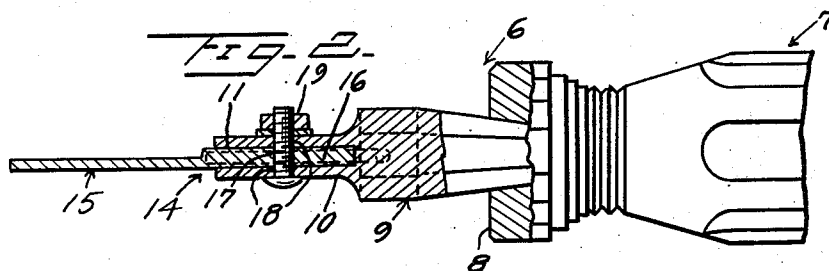
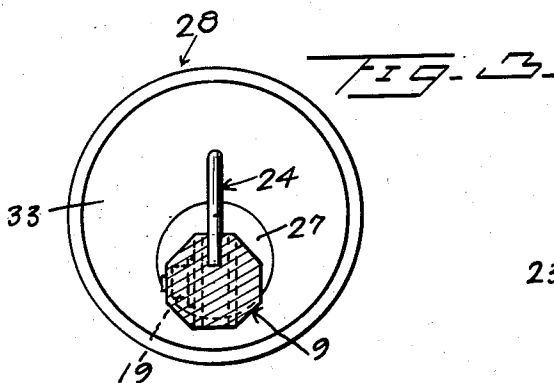
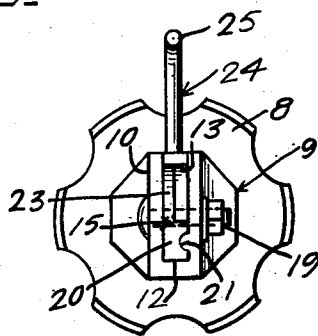


FIG. 4

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1

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TOOL FOR APPLYING AND REMOVING THREADED CYLINDER LOCKS

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2 Claims. (Cl. 81—3)

This invention relates to a tool of simple construction especially designed to facilitate installation and removal of threaded cylinder locks and to enable such operations to be accomplished without marring the face of the lock or damaging the keyway.

More specifically, it is an aim of the present invention to provide a tool having a blade adapted to fit the keyway of the lock and including a part for engaging the face of the casing at a point remote from said tool blade so that a direct thrust is exerted axially against the lock during installation to prevent damage to the threads.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view of the tool shown applied to a conventional cylinder lock, with the lock shown in section;

Figure 2 is a longitudinal sectional view, partly in elevation and on an enlarged scale, of a portion of the tool, taken substantially along the line 2—2 of Figure 1;

Figure 3 is an enlarged cross sectional view, taken substantially along a plane as indicated by the line 3—3 of Figure 1, and

Figure 4 is an end elevational view looking toward the blade end of the tool.

Referring more specifically to the drawing, the tool for applying and removing threaded cylinder locks is designated generally 6 and includes a handle 7. The handle 7 is of the screw driver type and includes an inner end 8. A shank 9 is anchored in the handle 7 and projects from the inner end 8 thereof and is disposed substantially axially of said handle.

The shank 9 has an outer free end 10 of reduced width which is recessed to provide an elongated slot or socket 11 which has a closed inner end, as seen in Figure 2, and an open outer end, as seen in Figures 2 and 4. Said slot or socket 11 is preferably closed along its bottom, as seen at 12 in Figure 4 and is preferably open along its top edge, as seen at 13.

The tool 6 includes a blade 14 having a bit end 15 and a shank end 16. The shank end 16 is of a proper size and shape to fit snugly in the slot or socket 11 and is provided with an opening 17 which aligns with openings 18 of the restricted shank portion 10, when the blade shank 16 is seated in the socket 11. Said blade shank 16 is detachably secured immovably in the socket 11 by a nut and bolt fastening 19, the bolt of which extends through the openings 17 and 18.

The bit portion 15 of the blade has a bottom edge portion 20 extending from end-to-end thereof which may be provided with grooves 21 on one or both sides thereof. The bit portion 15 also includes an upper edge portion of reduced thickness relative to said bottom edge portion 20. Said upper edge portion 22 is rounded at its forward end as seen at 23 to form a cam surface.

One end of a rigid rod 24 is anchored in the shank 9, behind and adjacent said restricted forward shank portion 10. The rod 24 is longitudinally curved and extends upwardly and forwardly from its anchored end and has an opposite free end 25 which is disposed slightly beyond the forward end of the shank portion 10 and located substantially thereabove.

2

A plurality of blades 14, having identical shank portions 16, will be interchangeably used as a part of the tool 6. The bit portions 15 of the different blades will differ, primarily as to the arrangement of the grooves 21 in the portions 20 thereof, to fit keyways of different cylinder locks.

The bit 15 of the tool 6 is shown in Figure 1 fully inserted in the keyway 26 of the cylinder 27 of a conventional cylinder lock 28, the periphery of the casing 29 of which is threaded as seen at 30. As the bit 15 is advanced into the keyway 26, the tumblers 31 are displaced upwardly by the cam edge 23 into the driver bores 32 of the lock casing 29 and are held, thus disposed, by the upper edge of the bit portion 22, so that the cylinder 27 is nonrotatably disposed in the casing 29. The bit 15 is advanced into the keyway 26 until the rod end 25 abuts the face 33 of the lock case 29 above the cylinder 27 and on the opposite side of the axis of the lock 28 to the blade 14. Accordingly, when installing the lock 28 with the tool 6, pressure is exerted against the lock on the opposite sides of the axis thereof so that a direct thrust is imparted to the lock by the tool during installation. Consequently, there will be no tendency to damage the threads 30, during installation of the lock, even when expansion rings are used with the lock. It will also be apparent that there will be no movement of the tool 6 relative to the lock 28 during installation or removal of the lock so that the face 33 of the lock will not be marred. The bit 15 of the blade 14, used as a part of the tool 6 in applying or removing any particular cylinder lock, is cut to correctly fit the keyway 26 of the particular lock so that no damage to the keyway or to the tumblers will be caused by installation or removal of the lock.

As clearly illustrated in Figure 1, the bit 15 is made sufficiently short so that the bit portion 22 could not be cut to produce a key from the blade 14 which could be used to operate the lock.

Various modifications and changes are contemplated and may be resorted to, without departing from the function or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A cylinder lock installing and removing tool comprising a handle having an inner end, a shank having one end anchored in said handle, said shank projecting from the inner end of the handle, a blade rigidly connected to said shank and having a bit portion forming a substantially straight extension of the outer end of the shank, said bit portion being of a cross sectional shape adapted to fit slidably in the keyway of a cylinder lock, and a rigid rod having one end anchored in said shank and an opposite free end disposed slightly beyond the outer end of said shank and spaced from said blade, said free end of the rod being adapted to abut a portion of the face of the lock casing at a point located on the opposite side of the axis of the lock from said blade when the bit portion is disposed in the keyway.

2. A tool for installing and removing locks as in claim 1, said bit portion including an upper edge, located nearer the free end of said rod than the remainder of the bit portion, adapted to engage and displace the lock tumblers into engagement with the driver bores of the lock casing, when the bit portion is inserted into the keyway, to prevent rotation of the lock cylinder in the casing when the tool is applied.

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