

No. 876,675.

PATENTED JAN. 14, 1908.

J. J. ALBRECHT.
COMBINATION TOOL.
APPLICATION FILED AUG. 27, 1907.

Fig. 2.

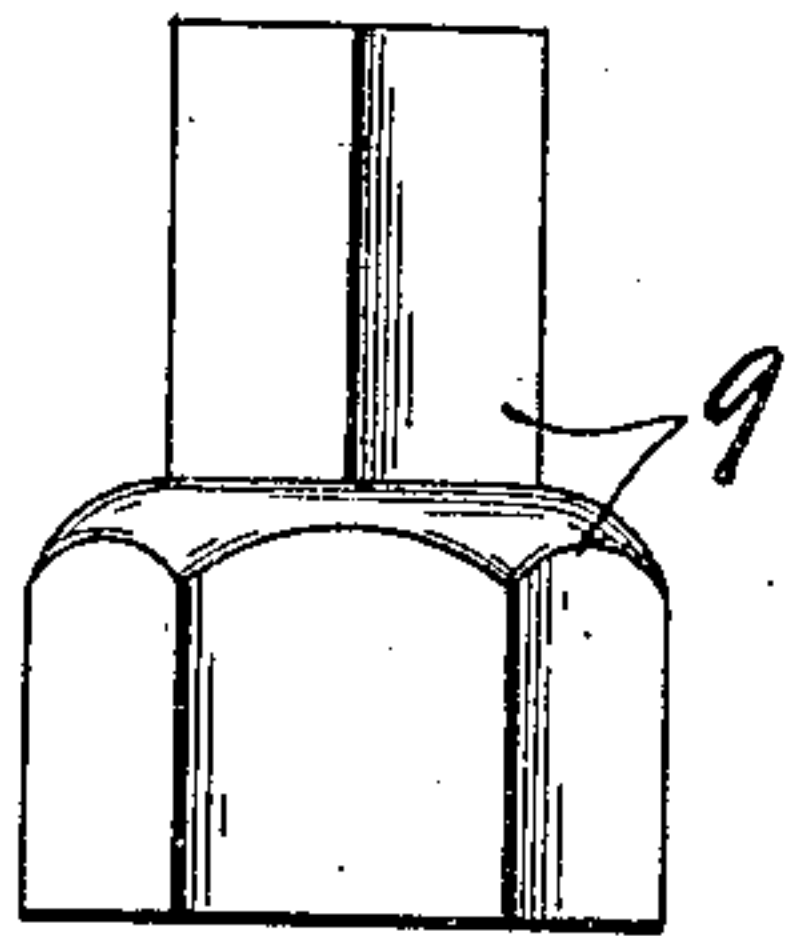


Fig. 1.

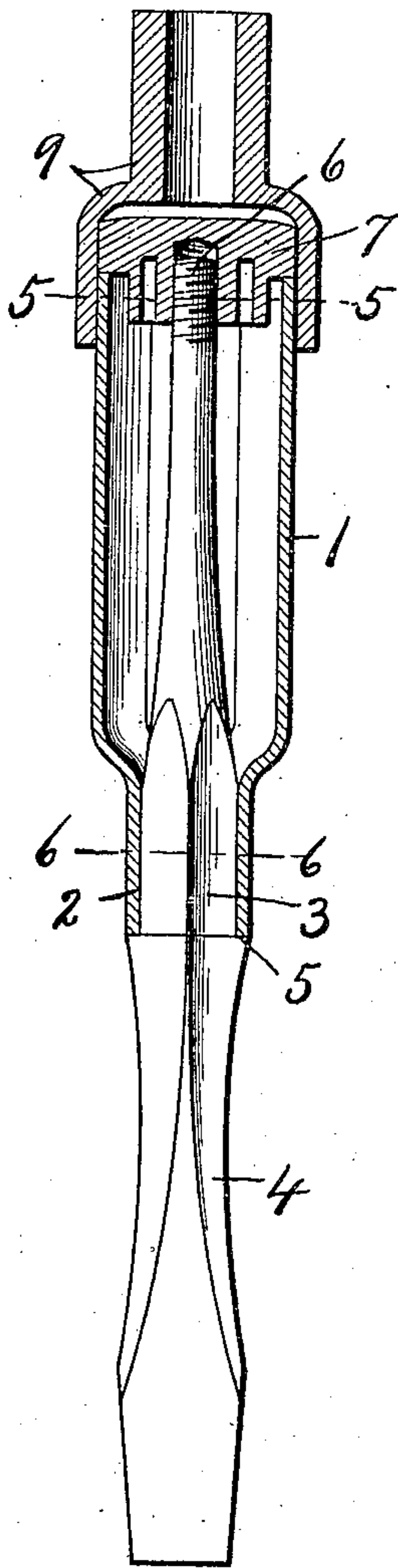


Fig. 4.

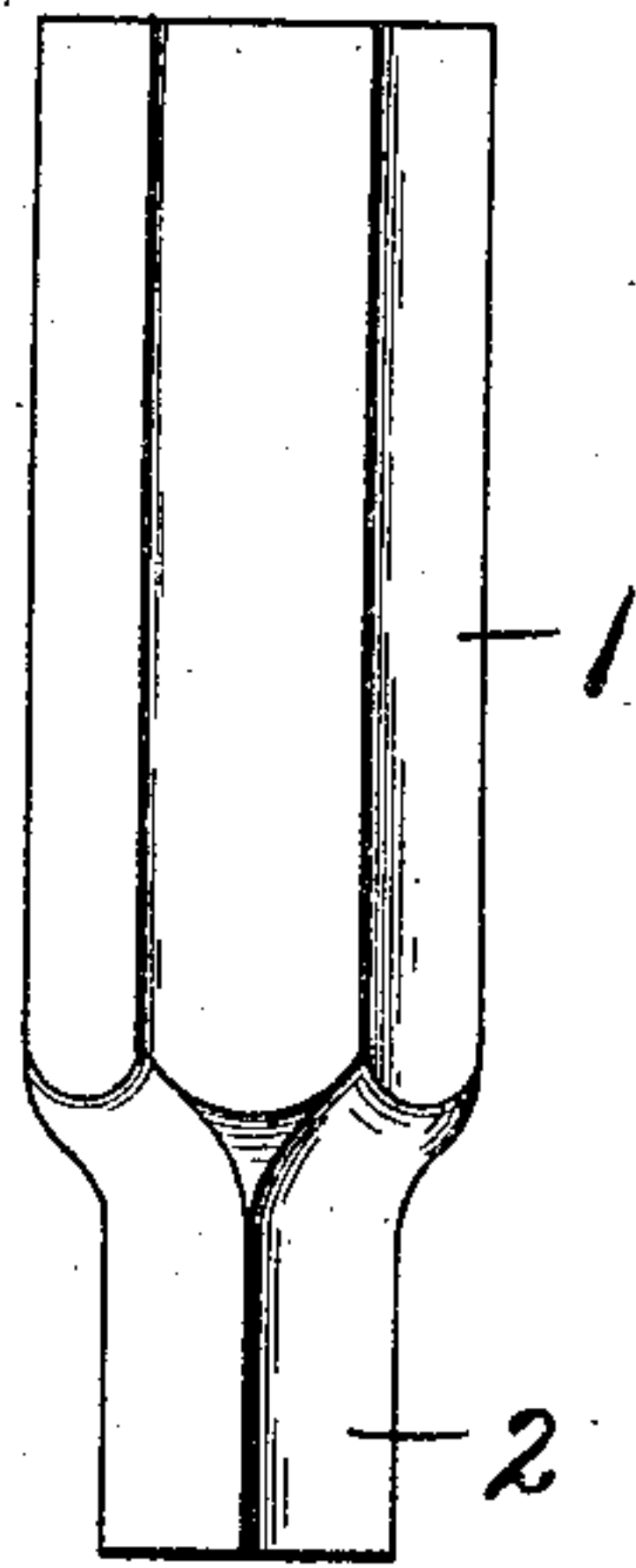


Fig. 3.

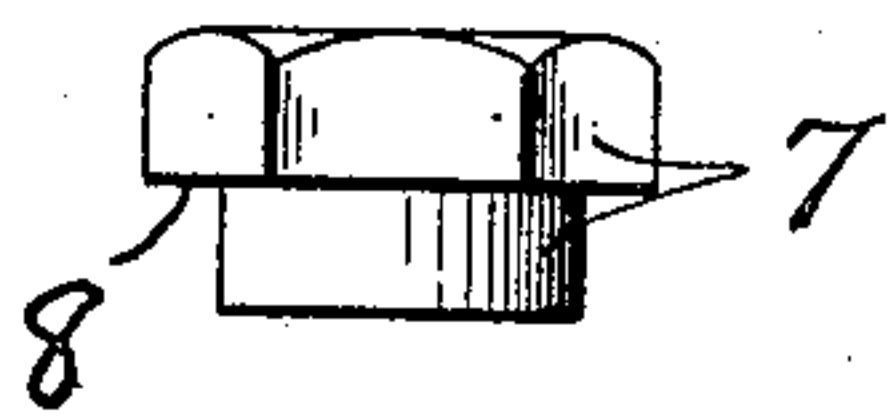


Fig. 5.

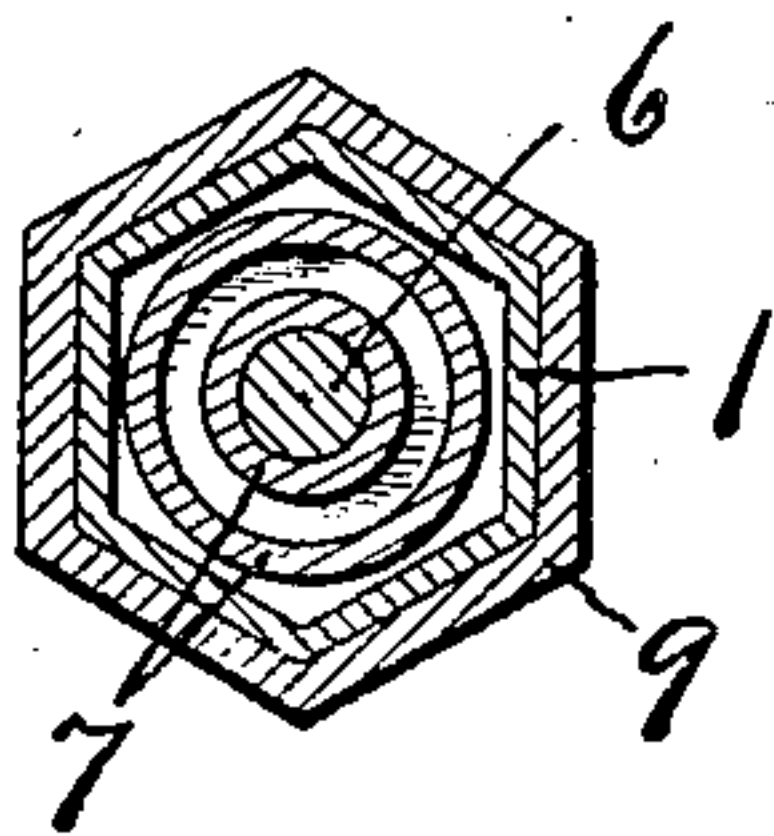
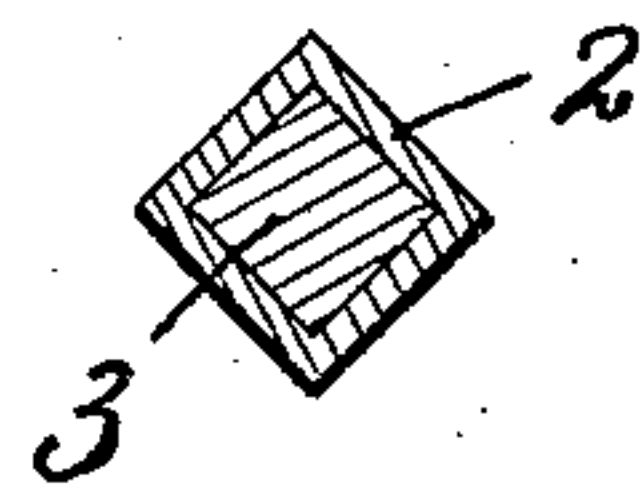


Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

JACOB J. ALBRECHT, OF SYRACUSE, NEW YORK.

COMBINATION-TOOL.

No. 876,675.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed August 27, 1907. Serial No. 390,393.

To all whom it may concern:

Be it known that I, JACOB J. ALBRECHT, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in a Combination-Tool, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in combination tools combining a spark plug socket with a screw driver and a suitable cap whereby the two parts may be locked together or separated and an extension socket adapted to fit over the cap and adjacent end of the spark-plug socket for the reception of a suitable turning tool, whereby the screw driver may be rotated.

My object, therefore is to combine the above elements in such manner that the device may be used as a screw driver, or by separating the parts, one of them may be used as a device for tightening or loosening spark plugs. In other words, I have sought to provide an all metal combination tool involving a screw driver in its shank and a separate handle consisting of a shell of angular cross section adapted to be fitted upon and secured to the shank of a screw driver and to be held in place by a threaded cap engaging the outer threaded end of a screw driver-shank and adjacent portion of the handle to draw the parts together.

A further object is to provide a wrench socket adapted to fit over the nut or cap and adjacent portion of the handle whereby the screw driver may be rotated through the medium of a ratchet wrench applied to the socket.

In the drawings—Figure 1 is a longitudinal vertical sectional view of a combination tool embodying the elements of my invention. Figs. 2, 3 and 4 are elevations of the detached parts of said tool. Figs. 5 and 6 are sectional views taken respectively on lines 5—5, and 6—6, Figs. 1.

In carrying out the objects stated, I provide an elongated metal shell —1—, hexagonal in cross section, with a hollow reduced end —2—, which is also angular, and preferably square in cross section, for receiving a similarly formed shank —3— of a screw driver —4—, said screw driver having a shoulder —5— at its junction with the shank —3— to abut against the adjacent end face of the reduced extension —2—. The shank 3— extends centrally entirely through

the interior of the shell —1— and is provided with a threaded outer extremity —6— which is engaged by a nut —7— having an annular shoulder —8— abutting against the adjacent end face of the tubular handle —1— to lock the screw driver and handle against relative endwise movement.

Fitted upon the outer end of the nut —7— and adjacent end of the handle —1— is a socket extension —9— which is adapted to be engaged by a suitable ratchet wrench, or a similar device, for turning the screw driver by power, or the socket section —9— may be removed and the screw operated by hand in the usual manner. Although I have shown a screw driver as used in connection with the hollow handle —1— it is evident that other similar tools, as drills, having a shank similar to the socket —3—, may be substituted for the screw driver. The top of the socket member —9— and the reduced portion —2— of the handle section —1— are angular (preferably square in cross section) and of substantially the same cross sectional area so that a ratchet wrench or similar instrument may be applied to either of these parts to rotate the device.

It will be observed that by making the handle —1— hollow so that the reduced end —2— is provided with a socket, which is square in cross section, the latter may be used to tighten square nuts of corresponding size, while the opposite end, which is provided with a hexagonal socket of larger cross sectional area, may be used for tightening similar shaped nuts, in which event a ratchet wrench may be applied directly to the square reduced portion of the handle, or the cap —9— may be placed upon the larger end of the handle and used in connection with a ratchet wrench (not shown).

It will be observed that this combination tool is especially adapted for automobile use, either as a screw driver or wrench; that is, the hexagonal shell or tubular section —1— may be detached from the other parts and the hexagonal socket end used to tighten or loosen spark plugs of gas engines, which plugs are usually hexagonal in cross section, and in most instances, of a standard size, so that the handle or socket —1— may be readily applied thereto and at the same time the reduced square-socket-end may be similarly used in connection with square nuts, or square-headed bolts of corresponding size. The invention, therefore, lies more particu-

larly in combining this tubular socket with a screw driver in connection with means for locking the two parts together against relative endwise movement, and at the same time permitting the screw driver to be readily detached or separated from the socket so that the latter may be used to tighten or loosen spark plugs, nuts or bolts, and in either case, the angularity of the socket permits the application of a ratchet wrench or other suitable tool, whereby the socket may be readily rotated.

What I claim is:

1. A combination tool comprising a tubular shell having an enlarged portion hexagonal in cross section, and a reduced portion square in cross section, a screw driver having a shoulder abutting against the end of the reduced portion and provided with a shank fitting in the angular reduced portion and extended centrally through the shell and terminating in a threaded end, a nut engaging the threaded end of the shank and adjacent

end of the shell, and a member fitting over the nut and adjacent end of the tubular shell and provided with an angular portion for the reception of a wrench, the cap serving to lock the nut against rotation relatively to the shell.

2. A combination tool comprising a tubular shell having an enlarged portion hexagonal in cross section, and a reduced portion square in cross section, a screw driver having a shoulder abutting the end of the reduced portion and provided with a shank fitting in the angular reduced portion and extended centrally through the shell and terminating in a threaded end, and a nut engaging the threaded end of the shank and adjacent end of the shell.

In witness whereof I have hereunto set my hand this 21st day of August, 1907.

JACOB J. ALBRECHT.

Witnesses:

H. E. CHASE,
MILDRED M. NOTT.