

April 8, 1930.

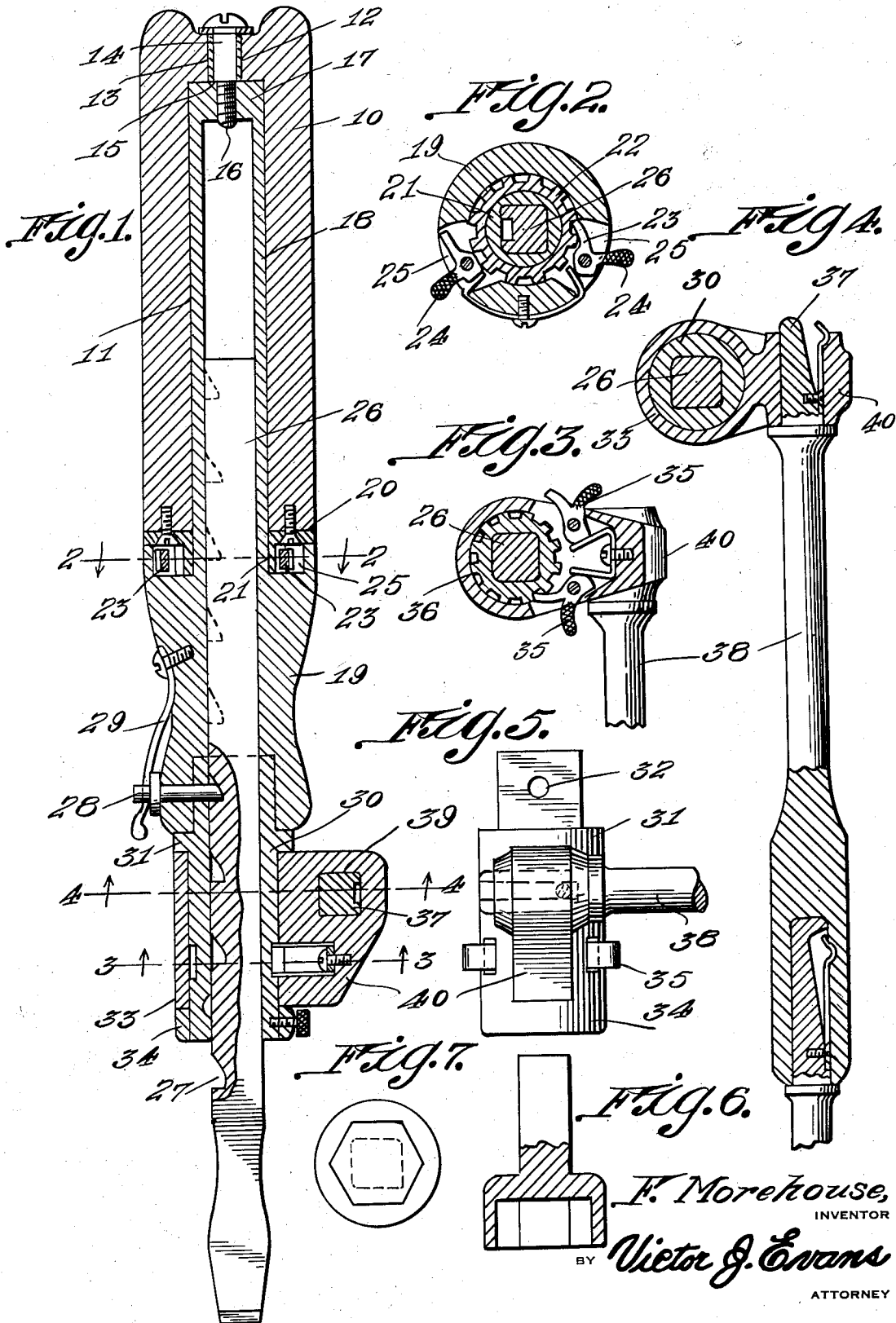
F. MOREHOUSE

1,753,441

SCREW DRIVER

Filed March 27, 1929

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Fig. 8.

Fig. 12.

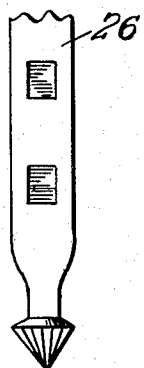


Fig. 13.

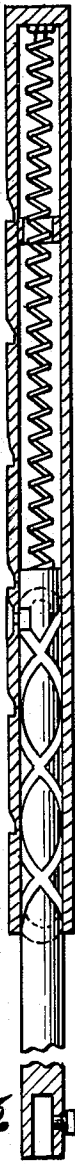


Fig. 9.

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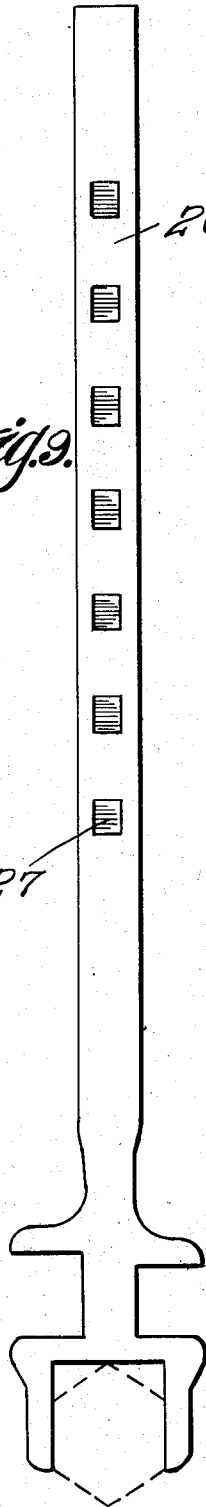


Fig. 10.

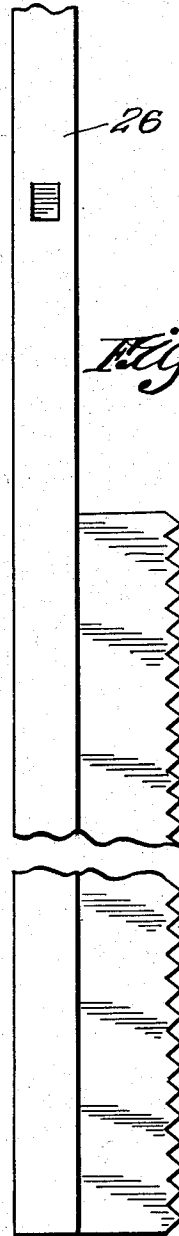
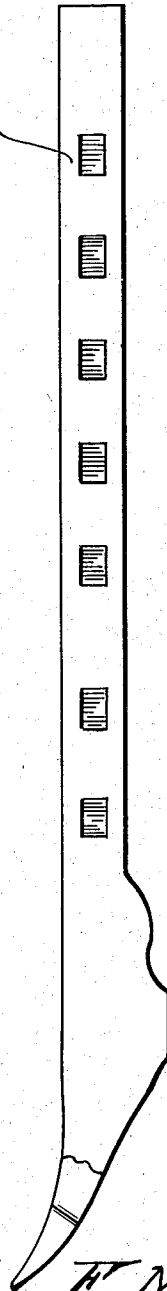


Fig. 11.

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SCREW DRIVER

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This invention relates to new and useful improvements in tools embodying among other characteristics a handle designed for detachable engagement with the shanks of different tools.

Another object of the invention consists in the provision and arrangement of means whereby the tools may be extended for appreciable distances from the handle.

10 An additional object of the invention consists of ratchet connections for the handle and tools therefor.

With the above and other objects in view, the invention further consists of the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

20 Figure 1 is a longitudinal sectional view taken through my improved handle construction.

Figures 2, 3 and 4 are horizontal sectional views taken on lines 2—2, 3—3 and 4—4 respectively through Figure 1 of the drawings.

Figure 5 is an elevation of a detachable extension sleeve for the handle construction.

Figure 6 is a detail sectional view taken through a socket member for use in conjunction with the adaptor.

Figure 7 is a bottom plan view of the socket.

Figure 8 is a longitudinal sectional view taken through a reversible form of tool shank.

Figure 9 is an elevation of a form of tool 35 and shank therefor.

Figure 10 is a view similar to Figure 9 of the drawings of a tack puller or claw.

Figure 11 is a fragmentary elevation of a tool shank carrying a saw blade.

40 Figures 12 and 13 are fragmentary elevations of the attaching shanks of augers and countersinks.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates generally the handle of the improved tool and which is provided with a bore 11 extended throughout the major portion of its length and preferably cylindrical in cross section. The bore 11 is in turn in communica-

tion with a counter bore 12 within one end of the handle and which accommodates a bearing sleeve 13 therein. A bolt 14, passed through the bore of the sleeve 13, disposes the shoulder portion 15 therefor, as defined between the bolt proper and a threaded extension 16 therefor flush with the enlarged end 17 of a sleeve member 18 telescopically associated with the handle 10 and within the bore 11 thereof. The threaded extension is adjustably connected with the enlarged end wall 17 of said sleeve.

The outer exposed and projecting portion 19 of the sleeve 18 is shaped in conformity with the outer side wall contour of the handle 10 to simulate the general shape of the conventional type of screw driver handle.

An annulus 20, carried upon the outermost end of the handle 10, carries a sleeve 21 upon the inner periphery thereof encircling the adjacent portion of the sleeve 18. Teeth 22, radially disposed upon the outer surface of the sleeve 21, are adapted for selective contacting engagement with the fingers 23 of pawls or dogs 24 swingably mounted within recesses 25 in the portion 19 of the sleeve 18 whereby a reversible ratchet driving connection is established between the handle and sleeve.

The shanks, such as indicated at 26, of the tools disclosed in Figures 9 and 13 inclusive, may then be inserted within the bore of the sleeve 18 in the manner shown in Figure 1 of the drawings. Notches or other depressions, such as indicated at 27, arranged upon one side and disposed at spaced intervals throughout the lengths of said shanks, are adapted to selectively accommodate a locking pin 28 yieldingly projecting within the bore of the sleeve against the tension of a spring finger 29 carried by the portion 19 whereby said shanks may be rigidly retained against sliding movement as to inward movement within the sleeve but same can be extended from the handle and sleeve within the confines of its particular length.

The detachable extension sleeve, as mentioned in the foregoing, comprises a sleeve like barrel or housing 30 including a boss or flange outwardly projecting from the outer

surface thereof to engage the adjacent end of the portion 19 and for other purposes to be brought out in the further description of the present invention.

5 The bore of the barrel is shaped in conformity to and longitudinal with the bore of the sleeve 19 and held in such position by the locking pin 28 passed through an opening 32 therein. A ratchet sleeve 33, rotatably
10 mounted upon the outer surface of the barrel 30 between the adjacent side of the boss or flange 31 and a stop collar 34, carries alternately operable pawls 35 selectively engaged with ratchet teeth 36 formed upon and dis-
15 posed in a circuitous course about the outer surface of said barrel as evidenced from the illustration of my invention in Figure 3 of the drawings.

The socket end 37 of an extension or handle
20 38 is receivable within a correspondingly shaped opening 39 in an enlargement 40 carried by the sleeve 33.

The arrangement of the handle or extension 38 at rightangles to the tool shank and
25 handle will provide a guide and lever by means of which great stress could be applied and added to the driving power of the sleeve 18 during the time the handle 10 could be firmly grasped and the ratchet connection
30 therefor established between the handle and sleeve could be set in such position that the locking connection could slip by tooth by tooth during the step by step movement of the barrel 30.

35 If desired, a sleeve member of the configuration shown in Figure 8 of the drawings may be substituted in lieu of any of the tool shanks 26 whereby the tool may be operated after the manner of an automobile drill.
40 Obviously the shanks of socket wrenches and other tools may be adequately accommodated within the bores of either the sleeve or barrel. The latter also cooperates with the sleeve in providing an extension therefor.

45 The invention is susceptible of various changes in its form, proportions and minor details of construction, and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

50 Having thus described the invention, what is claimed is:—

1. A tool construction comprising a handle having a longitudinal bore, a sleeve revolv-
55 ably mounted within the bore of the handle having a rectangular bore, a ratchet driving connection established between the handle and sleeve, a detachable extension sleeve carried by the first mentioned sleeve forming a
60 guide for tool shanks extended through the bore of said first mentioned sleeve, a locking element carried by the sleeves having en-
gagement with the extension sleeve and tool shank, a ratchet member carried by and oper-
65 able in conjunction with said extension sleeve and first mentioned sleeve, and an extension

for the latter mentioned ratchet member operable at rightangles to and in conjunction with said handle.

2. A tool construction comprising a handle having a longitudinal bore, a sleeve revolv- 70 ably mounted within the bore of the handle having a rectangular bore, a ratchet driving connection established between the handle and sleeve, a detachable extension sleeve car- 75 ried by the first mentioned sleeve forming a guide and extension for the extended portions of tool shanks carried within the bore of the first-mentioned sleeve, a locking ele- 80 ment carried by the first mentioned sleeve to effect locking connection of the extension sleeve and tool shank therewith, an enlarge- 85 ment revolvably mounted upon the extension sleeve, a ratchet connection established as between the extension sleeve and enlargement, and an extension having detachable connec- 90 tion with and operable at rightangles to the enlargement for use in conjunction with said handle.

In testimony whereof I affix my signature.
FRANK MOREHOUSE. 90

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