No. 860,052. PATENTED JULY 16, 1907.

W. McCORMICK.

CUTTING TOOL.

APPLICATION FILED MAR. 25, 1907.

Fig. 1.

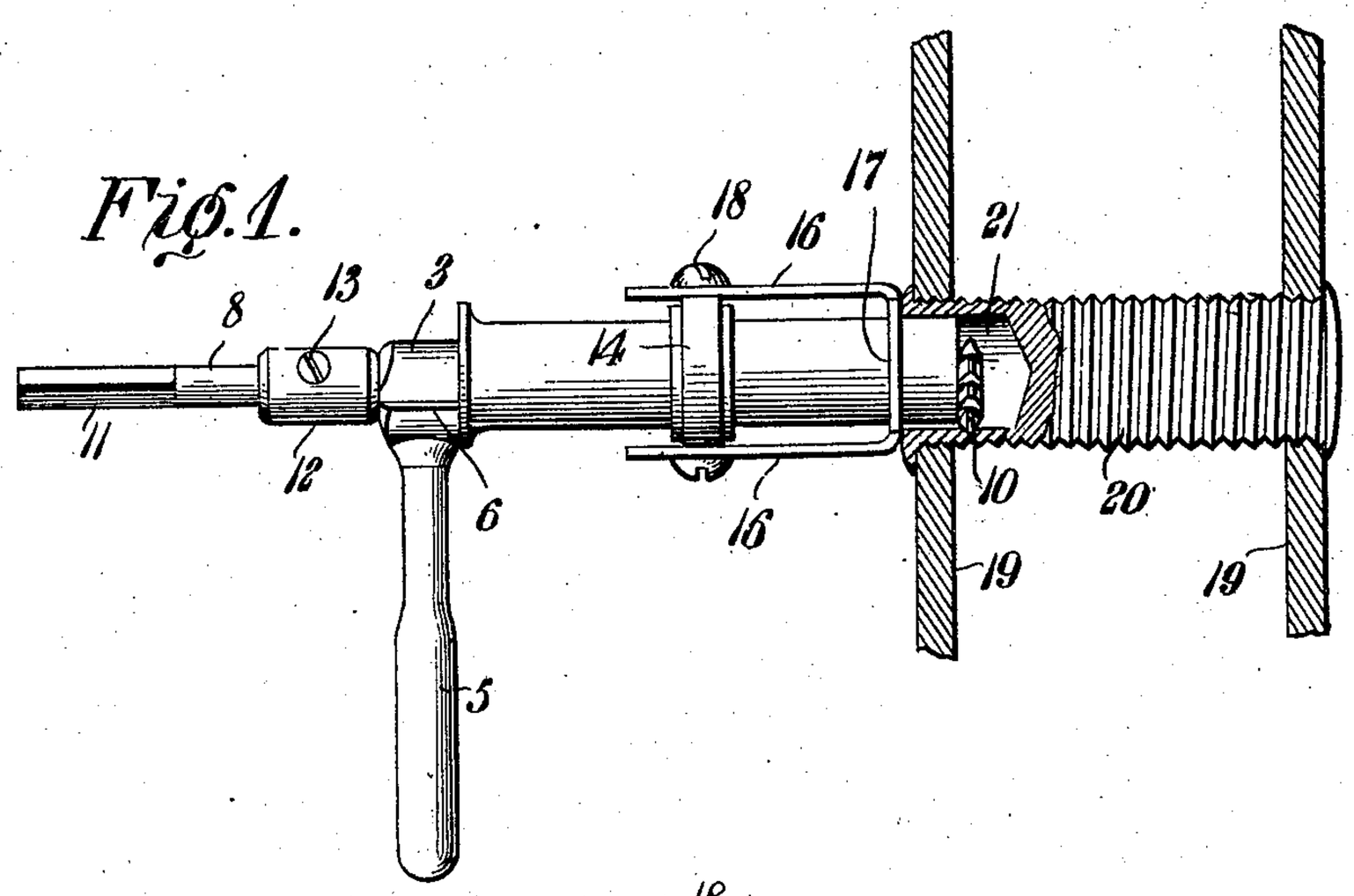


Fig. 2.

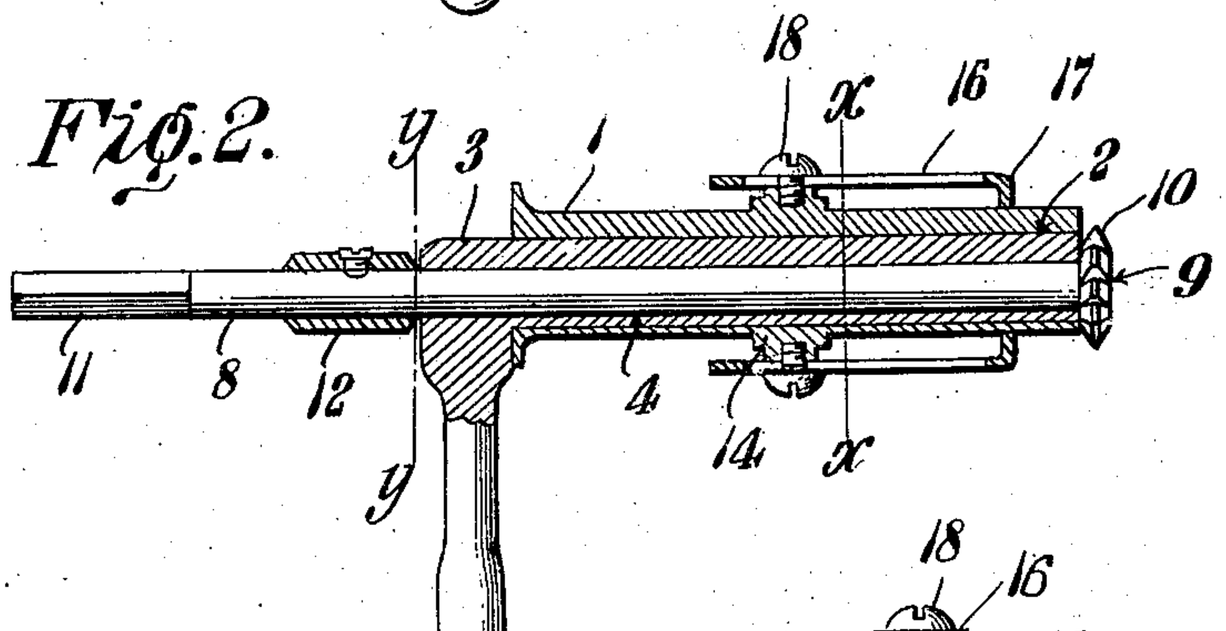
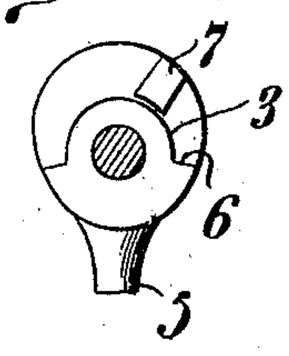


Fig. 4.



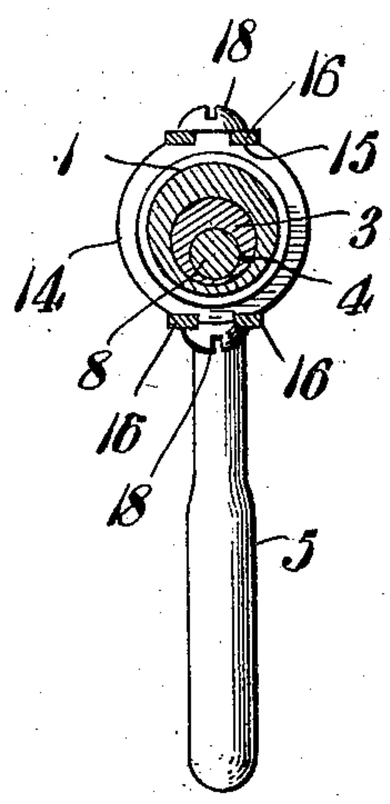


Fig. 3.

WITNESSES:

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WASHINGTON McCORMICK, OF HILLYARD, WASHINGTON.

CUTTING-TOOL.

No. 860,052. Specification of Letters Patent. Patented July 16, 1907.

Application filed March 25, 1907. Serial No. 364,353.

To all whom it may concern:

Be it known that I, WASHINGTON McCORMICK, a citizen of the United States, residing at Hillyard, in the county of Spokane and State of Washington, have invented a new and useful Cutting-Tool, of which the following is a specification.

This invention relates to cutting tools and is more particularly designed for cutting stay bolts such as used in locomotive boilers and the like.

The object of the invention is to provide an efficient device of this character which is very compact in construction and can be easily manipulated.

A still further object is to provide a tool having an adjustable gage plate whereby a tool can be held at a proper distance within the stay bolt to be cut.

A still further object is to provide simple means whereby the cutter of the tool can be quickly thrown into or out of operative position. Heretofore in devices of this character pawls and ratchets have been employed for shifting the cutters into or out of operative position but such mechanism has been found to complicate the construction.

One of the objects of the invention is to provide simplified means for actuating the cutting tool, said means being limited in its movement so that the cutter will be held positively either fully retracted out of operative position or projected to its greatest extent into operative position.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is an elevation of the tool, the same being shown in position within a stay bolt, said bolt being shown in position within a portion of a boiler; Fig. 2 is a longitudinal section through the tool; Fig. 3 is a transverse section therethrough on line x—x, Fig. 2; and Fig. 4 is a section on line y—y, Fig. 2.

Referring to the figures by characters of reference, 1 is a cylindrical sleeve having an eccentric bore 2 extending longitudinally therethrough, and within this bore is rotatably mounted a core 3 also provided with an eccentric bore 4. The core 3 has one end thereof projecting beyond the sleeve 1 and formed with a radially extending arm 5 constituting a handle. Oppositely extending shoulders 6 are formed upon the projecting portion of the core and are designed to limit the movement of a lug 7 which projects from the end of the sleeve 1. The lug and shoulders are so arranged that when the lug bears upon one of the shoulders the bore 4 is located at its greatest distance from the longitudinal center of the sleeve and when the lug rests upon the other shoulder the longitudinal center of the bore 4 is disposed at the center of the sleeve 1. Rotatably mounted within the bore 4 is a spindle 8 having a rotary cutter 9 at one end thereof, the periphery of which is preferably formed with teeth 10 which are wedge-shaped in cross section. The diameter of this cutter is equal to or less than the diameter of the sleeve 1 and it is obvious that when the spindle 8 is disposed along the longitudinal center of the sleeve the cutter will lie within the periphery of the end of said sleeve. That end of the spindle farthest removed from the cutter 9 is angular in cross section, as shown at 11 to facilitate the connection with the drive shaft of a motor and a sleeve 12 is fastened to the spindle in any preferred manner, as by means of a set screw 13 to hold the parts assembled.

An annular flange 14 is formed about the center of the sleeve 1 and is provided at diametrically opposite points with a pair of angular recesses 15 in which are slidably mounted longitudinally slotted arms 16 connected at one end by a head 17 which loosely embraces the sleeve 1. Set screws 18 extend through the slotted arms and into the flange 14 and are designed to hold the head 17 in any position to which it may be adjusted upon the sleeve 1.

In Fig. 1 has been shown boiler plates 19 connected by a stay bolt 20. When it is desired to cut the stay bolt from one of the boiler plates a recess 21 is drilled into one end of the bolt and into this recess is inserted the cutter 9 of the tool constituting the present invention. This cutter is normally disposed with its center in alinement with the longitudinal axis of sleeve 1 and it is therefore apparent that said sleeve can be readily inserted into the bore 21. The gage formed by head 17 and arms 16 is adjusted so as to contact with the end of the stay bolt when the cutter is located at the proper point within the stay bolt. After the parts have been spaced in this manner the arm 5 is swung laterally so as to rotate the core 3 within the eccentric bore 2. This will swing the spindle 8 away from the longitudinal center of the sleeve and the cutter will therefore be projected beyond the periphery of the sleeve and into contact with the stay bolt. The spindle 8 is designed to be driven by a suitable motor and while the cutter is rotating rapidly therewith it can be gradually pressed against the stay bolt by pressing against the arm 5. When it is desired to disengage the cutter from the stay bolt so as to permit the tool to be withdrawn it is merely necessary to throw the arm 5 in an opposite direction until it is stopped by the lug 7 which will occur when the cutter assumes a position with its center in alinement with the axis of the sleeve. Considerable importance is attached to this feature inasmuch as it can be determined positively when the cutter has assumed such a position as to permit the withdrawal of the tool from the stay bolt. By providing the gage upon the sleeve the tool can be readily re-set in the same position as that from which it may have

been removed. By removing the retaining sleeve 12 the spindle 8 can be easily withdrawn from the core 3 and said core can be slipped out of the sleeve 1. Any one of the parts of the tool can therefore be readily renewed in the event of wear or breakage and all of the parts can be taken apart for the purpose of cleaning them.

What is claimed is:

1. The combination with a sleeve having an eccentric bore, a core revolubly mounted therein and having an eccentric bore, and a spindle revolubly mounted within the core; of an arm extending laterally from the core and constituting a combined weight and handle, stop shoulders formed with the core and adjacent the arm, a projection upon the sleeve, either of said shoulders being disposed to contact with the projection to limit the movement of the core, said arm being disposed to hold either shoulder in contact with the projection, and a cutter upon the spindle.

2. The combination with a sleeve having an eccentric bore, a core revolubly mounted therein and having an eccentric bore, a spindle revolubly mounted within the core, and a cutter upon the spindle, said sleeve having an annular flange formed with guide grooves; of a gage head surrounding and slidably mounted upon the sleeve, longitudinally slotted arms extending therefrom and mounted within the guide grooves, and means for clamping the arms upon the flange and within the grooves, said head and arms constituting a gage.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WASHINGTON McCORMICK.

Witnesses:
H. C. HORN,
THOMAS R. RYAN.