March 9, 1943. F. C. SHOCK 2,313,174

WRENCH

Filed July 3, 1941 2 Sheets-Sheet 1

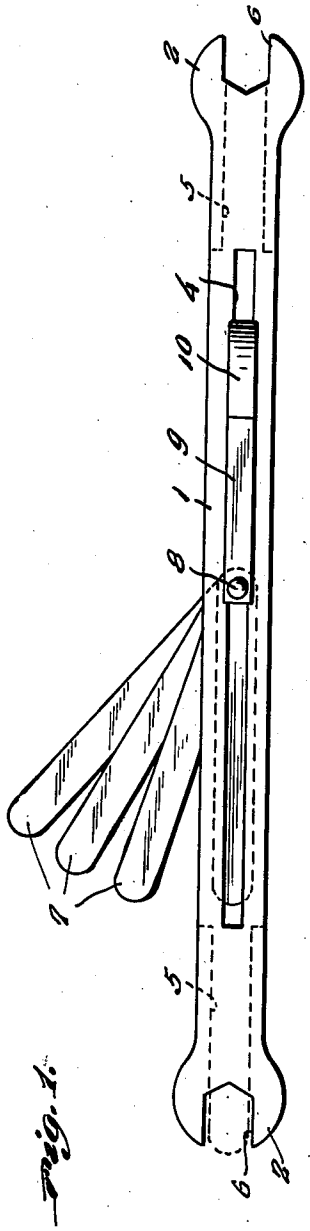

Fig. 1.

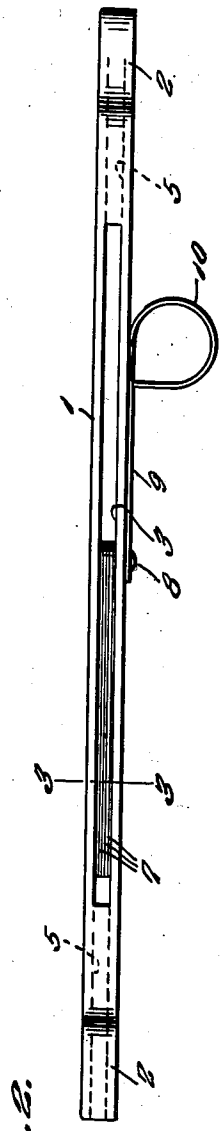

Fig. 2.

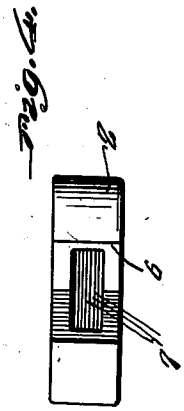

Fig. 3.

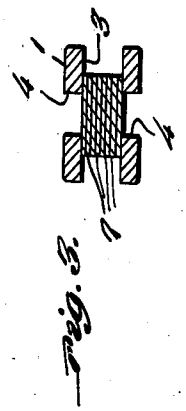

Fig. 4.

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WRENCH

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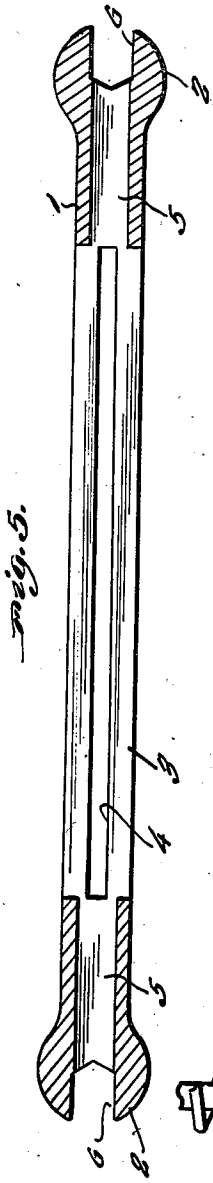

Fig. 5.

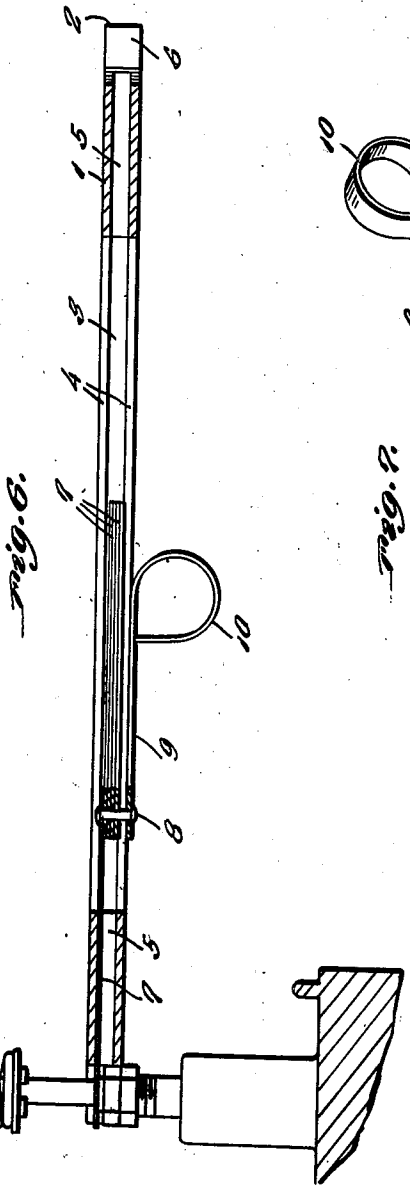

Fig. 6.

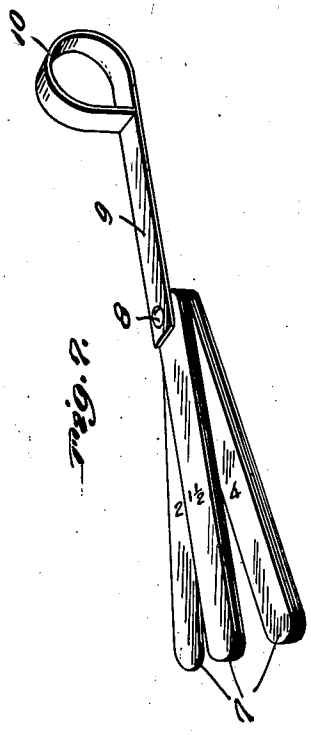

Fig. 7.

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Patented Mar. 9, 1943 2,313,174

UNITED STATES PATENT OFFICE

2,313,174

WRENCH

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Application July 3, 1941, Serial No. 401,012

1 Claim. (Cl. 7—1)

This invention pertains to new and useful improvements in wrenches particularly for adjusting internal combustion engine valves and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character embodying unique means for gauging the clearance of said valves.

Another very important object of the invention is to provide a tool of the aforementioned character in the form of a double end wrench wherein the gauges are adapted to be expeditiously used with the jaw on either end.

Other objects of the invention are to provide a wrench of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, light in weight and which may be manufactured at low cost.

All the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a bottom plan view of a tool constructed in accordance with the present invention.

Figure 2 is a view in side elevation of the device.

Figure 3 is a cross-sectional view, taken substantially on the line 3—3 of Figure 2.

Figure 4 is an end elevational view.

Figure 5 is a view in horizontal section through the tool.

Figure 6 is a view in vertical longitudinal section, showing the tool in use.

Figure 7 is a perspective view of the gauges and the operating means therefor.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a metallic handle 1 of suitable length. Integral jaws 2 are provided on the ends of the handle 1. Formed in the handle 1 is a chamber 3 which terminates at points in spaced relation to the jaws 2. It will be observed that the chamber 3 is open at its sides. Formed in the upper and lower portions of the handle 1 are slots 4 which communicate with the chamber 3. Longitudinal passages 5 establish communication between the chamber 3 and the nut reeciving recesses or openings 6 of the jaws 2.

Mounted for sliding and swinging movement in the chamber 3 is a plurality of feeler gauges 7 of various thicknesses. The gauges 7 are pivotally connected at one end by a rivet or pin 8 which projects through the lower slot 4. Mounted on the lower end portion of the rivet or pin 8 is an operating handle 9 which terminates, at one end, in a finger receiving loop 10.

It is thought that the manner of using the tool will be readily apparent from consideration of the foregoing. Of course, the jaws 2 are applied to the usual valve nuts for turning same. To check the clearance of the valve being adjusted, the gauges 7 are swung laterally, as suggested in Figure 1 of the drawings. The desired gauge is selected and swung back into the chamber 3. The gauge unit is then moved forwardly through the medium of the handle 9 for projecting the selected gauge through the passage 5 into the recess 6 of the jaw 2 on this end of the wrench. When the desired check has been made the selected gauge may be conveniently retracted from the jaw recess 6. The construction and arrangement is such that the gauges 7 may be conveniently swung for use on either end of the wrench. When the gauges 7 are not in use they are enclosed in and protected by the handle 1.

It is believed that the many advantages of a wrench constructed in accordance with the present invention will be readily understood, and although a preferred embodiment of the tool is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

A tool of the class described comprising an elongated handle, a jaw on one end of the handle, said handle having a longitudinally elongated chamber therein communicating with the jaw, said handle further having longitudinal slots therein communicating with the chamber, a pin operable in the slots, a plurality of feeler gauges journaled on the pin and slidable in the chamber, said chamber being open on opposite sides for swinging the gauges laterally from the handle for making a selection of said gauges, the gauges being adapted for selective projection into the jaw, and an operating handle secured on one end of the pin and operable on the first-named handle, the second-named handle including a finger loop on one end.

FRED C. SHOCK.