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1,535,406

G. A. EYNON

NEEDLE VALVE RETAINER

Filed Jan. 29, 1923

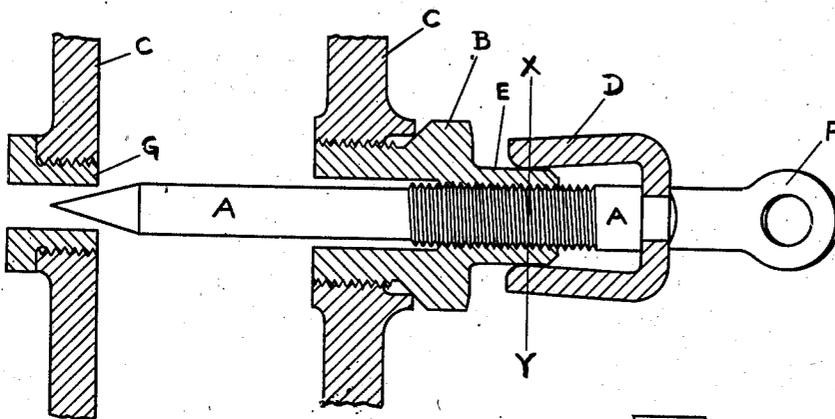


FIG. I

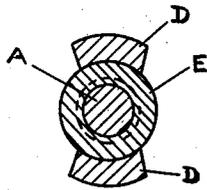


FIG. II

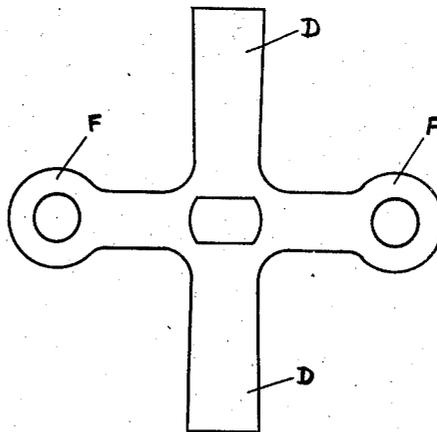


FIG. III

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## NEEDLE-VALVE RETAINER.

Application filed January 29, 1923. Serial No. 615,494.

*To all whom it may concern:*

Be it known that I, GEORGE A. EYNON, a citizen of the United States, residing at 3234 Lothrop Ave., Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Needle-Valve Retainers, of which the following is a specification.

This invention relates to bolt retainers and specifically to a needle valve retainer. The object of this invention is to provide a simple and inexpensive retainer for an adjustable needle valve.

The devices heretofore in use have been provided only for a definite graduated adjustment. That is to say they provided for  $\frac{1}{6}$ th,  $\frac{1}{10}$ th, or  $\frac{1}{12}$ th of a turn, and it is desirable to give much smaller adjustments than this; if a serrated surface with a large number of teeth is provided, the serrations wear down and the device thus fails to function. The device shown herewith provides an infinite number of positions and is adapted to be automatically retained in any one of them by friction.

Figure I shows a cross section through the center of the needle valve.

Figure II shows a transverse section taken on the plane X—Y of Figure I.

Figure III shows the development of the retainer and operating arms.

In Figures I, II and III, A indicates the needle valve threaded into a needle valve support B, which in its turn is threaded into the casting C. D are the arms of the retaining device which is riveted to the end of the

valve A and engages with considerable pressure on the cylindrical projection E of the piece B. F are the operating arms forming the handle of the valve A which are made integral with the arms D. G is the needle valve seat toward and away from which the needle valve A is adjusted.

The arms D are inclined towards each other and are made concave on the inner face so as to increase the wearing surface upon the cylindrical surface E. The arms D are sprung so that they press upon E with considerable pressure. The needle valve A is thus adjustably retained in any position by reason of the friction between the cylindrical portion E and the arms D as shown in Figure II. In order to get the necessary elasticity the piece formed by the arms D and F is made of mild steel and is stamped from sheet steel as shown in Figure III, and bent into the form shown in Figures I and II.

What I claim is:

A device of the class described, comprising a threaded needle valve, a needle valve support into which said needle valve is threaded, a cylindrical projection from said needle valve support, a plurality of prongs being adapted to frictionally engage with the said cylindrical projection from said needle valve support, whereby at any fractional turn thereof said needle valve will be retained in position.

In testimony whereof I affix my signature.  
 GEORGE A. EYNON.