Dec. 18, 1928. 1,695,610

I. E. RITTER

VALVE SPRING COMPRESSING DEVICE

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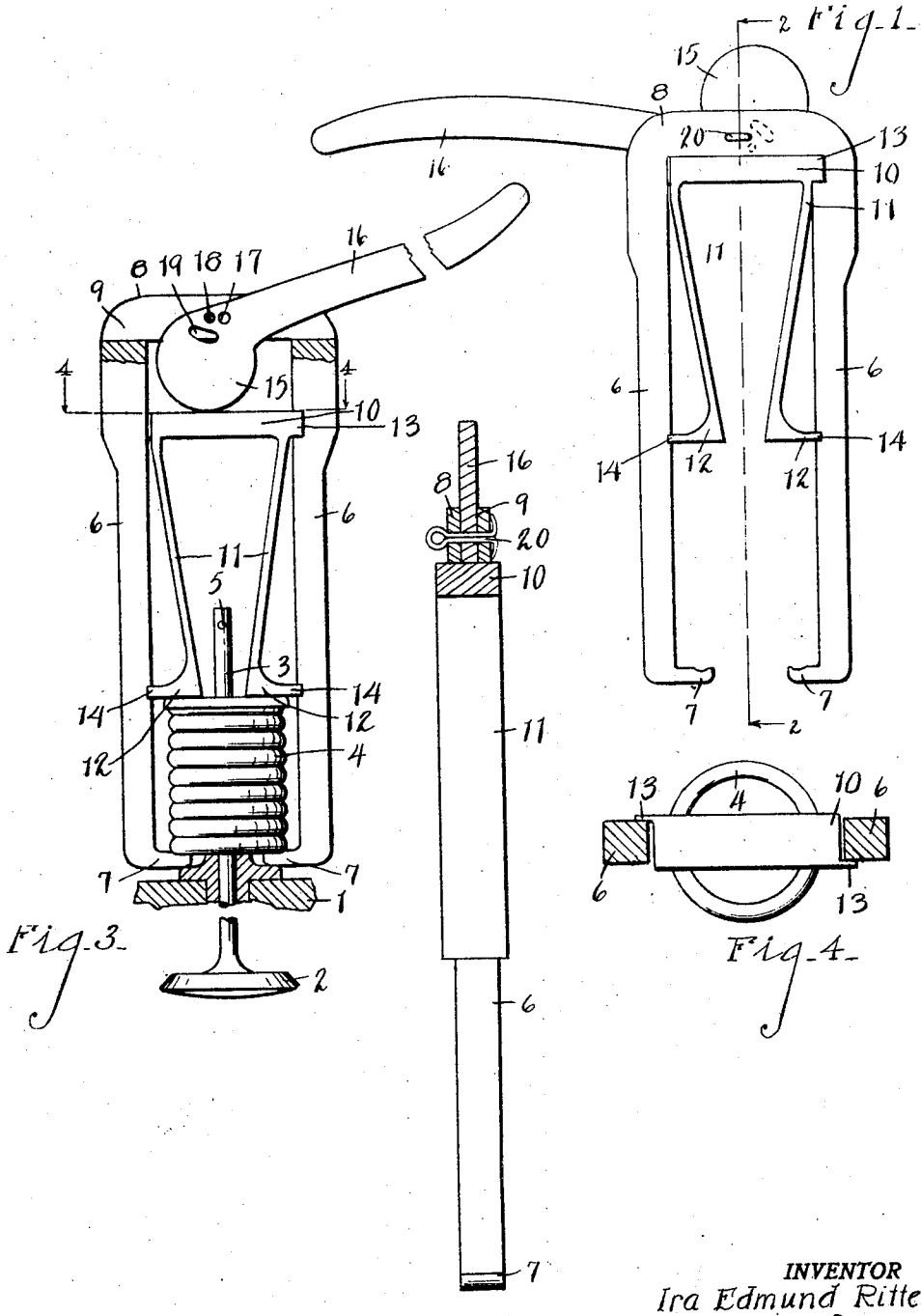

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VALVE-SPRING-COMPRESSING DEVICE.

Application filed July 20, 1927. Serial No. 207,217.

The main objects of this invention are:

First, to provide an improved valve spring compressing device for facilitating placing or removal of springs of internal combustion engine valves.

Second, to provide a device for this purpose which is of general adaptability, easy to operate and simple and economical in structure.

Objects relating to details and economies of construction and operation of my invention will appear from the detailed description to follow.

The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, forming a part of this application, in which:

Fig. 1 is a side view of my improved valve spring compressor.

Fig. 2 is a vertical section on line 2—2 of Fig. 1.

Fig. 3 is a fragmentary side view with the device in engagement with a valve spring, the spring retaining pin being omitted from the stem.

Fig. 4 is a horizontal section on line 4—4 of Fig. 3.

In the drawing similar reference characters refer to similar parts throughout the several views.

Referring to the drawing, 1 represents a portion of the wall of an internal combustion engine, 2 a valve and 3 its stem, 4 a spring, the stem having a hole to receive a retaining pin 5. These parts are conventionally illustrated.

My improved valve compressing device comprises a yoke-like body member having parallel arms 6 terminating at their outer ends into inwardly projecting spaced spring fingers 7 adapted to engage the bottom coil of a spring 4.

The cross member 8 of the body has a longitudinal slot 9 therein.

I provide a bifurcated thrust member comprising a crosshead 10 which is slidably engageable with the arms 6 of the body member, the legs 11 of the thrust member having out-turned feet 12 at the lower ends of its arms, recessed to slidably engage the arms 6 of the body member.

The crosshead 10 of the thrust member has diagonally opposed projecting lugs 13 which engage the arms, the lugs 14 formed by recessing the ends of the feet 12 also slidably engaging the arms 6.

This arrangement of lugs permits the thrust member being formed as a unit and readily engaged or disengaged, the arms 11 being sprung to engage or disengage them.

The thrust member is actuated by means of the eccentric 15 which is provided with a handle 16 and a plurality of holes 17, 18 and 19, a pivot 20 being selectively engageable with these holes, thereby regulating the throw of the eccentric. The hole 19 is elongated or in the form of a slot, the outer end of the hole being approximately the same distance from the edge of the eccentric as the hole 18. This is to facilitate the engagement of the pin therethrough and so that when the eccentric is actuated, it may be thrown past the center, thereby retaining it in its actuated positions.

My improved spring compressing device is very simple in operation, the valve pin being fully accessible when the spring is compressed, as is illustrated in Fig. 3. The spring may be removed and replaced, the device acting as a holder for the spring.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A valve spring compressing device comprising a yoke-like body having parallel arms with opposed inwardly projecting spaced spring engaging fingers at their outer ends, the cross member of said body being longitudinally slotted, a bifurcated thrust member provided with a cross member slidably engaging the arms of the body, the legs of said thrust member terminating in outwardly projecting spring engaging feet slidably engaging the arms of said body, and an eccentric pivotally mounted in the said slot to coact with said cross member and provided with a handle and with a plurality of spaced pivot holes with which the pivot may be selectively engaged to vary the throw of said eccentric, the outer of said holes being elongated facilitating the engagement of the pivot therewith and permitting the eccentric to be thrown by the center.

2. A valve spring compressing device comprising a yoke-like body having parallel arms with opposed inwardly projecting spaced spring engaging fingers at their outer ends, the cross member of said body being longitudinally slotted, a bifurcated thrust member slidably engaging the arms of said body, the

legs of said thrust member terminating in outwardly projecting spring engaging feet slidably engaging the arms of said body, and an eccentric pivotally mounted in the said slot to coact with said thrust member.

3. A valve spring compressing device comprising a yoke-like body having parallel arms with opposed inwardly projecting spaced spring engaging fingers at their outer ends, the cross member of said body being longitudinally slotted, a bifurcated thrust member provided with a cross member slidably engaging the arms of the body, the legs of said thrust member terminating in outwardly projecting spring engaging feet slidably engaging the arms of said body, and an eccentric pivotally mounted in the said slot to coact with said cross member and provided with a handle and with a plurality of spaced pivot holes with which the pivot may be selectively engaged to vary the throw of said eccentric.

In witness whereof I have hereunto set my hand.

IRA EDMUND RITTER.