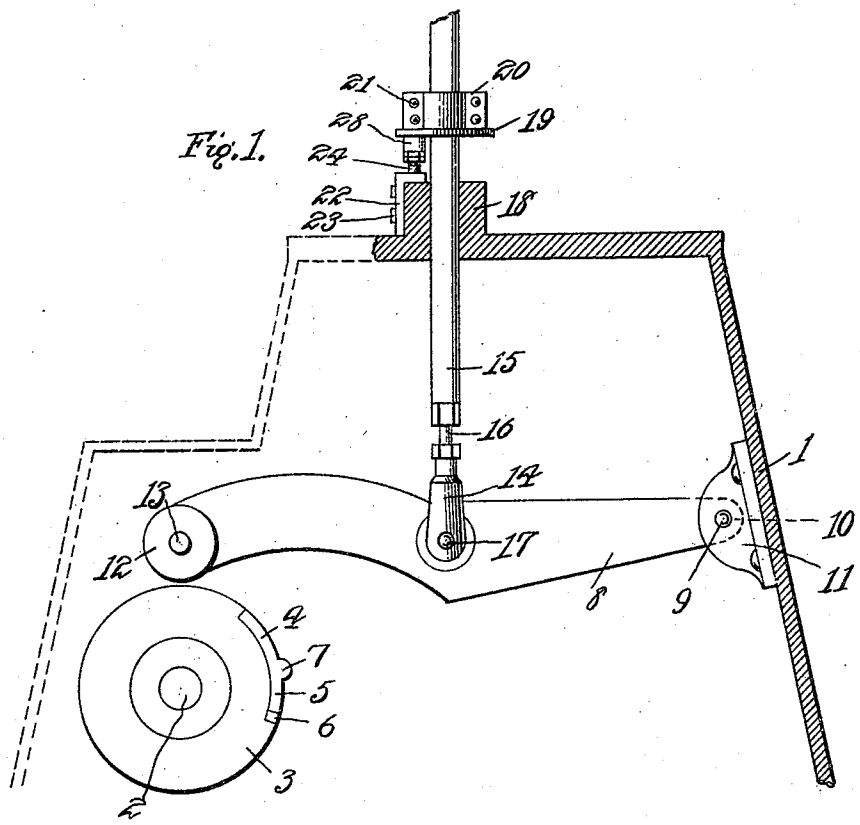
P. PINEAU.

VALVE OPERATING MECHANISM.

APPLICATION FILED SEPT. 23, 1916.

1,262,976. Patented Apr. 16, 1918.

Fig. 1.



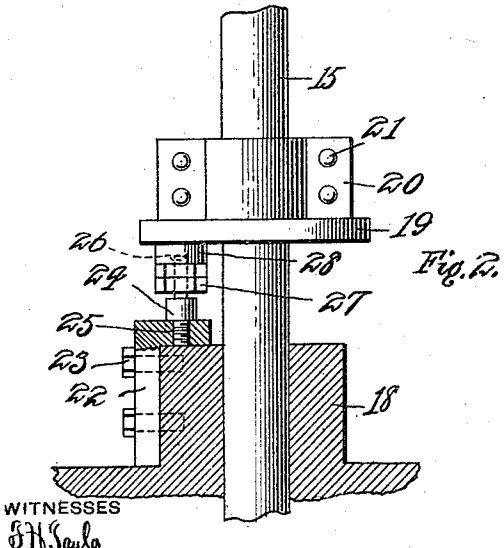
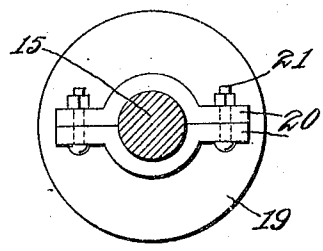




Fig. 2.

Fig. 3.




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# UNITED STATES PATENT OFFICE.

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## VALVE-OPERATING MECHANISM.

1,262,976. Specification of Letters Patent. Patented Apr. 16, 1918.

Application filed September 23, 1916. Serial No. 121,842.

*To all whom it may concern:*

Be it known that I, PETER PINEAU, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Valve-Operating Mechanism, of which the following is a specification.

The present invention has reference to valve operating mechanisms, and more particularly relates to valve operating mechanisms for internal combustion engines.

In various internal combustion engines the fuel controlling valve is actuated by a fuel valve rod which is pivotally mounted, a cam lever in the crank casing of the engine, the lever being moved about its pivot to consequently raise the rod by means of a rotatably mounted cam. This is particularly true in engines of the Diesel type and such engines employ a particular form of cam consisting of a disk like body in the outer periphery of which is embedded a nose. It is likewise to be understood that owing to the continuous use of the device the cam lever subsequent to being raised to actuate, the valve rod will fall upon the periphery and indent the same which after a certain period has elapsed causes the periphery to be roughened by these indentations and thereby hamper the efficient actuation of the device.

To overcome this objectionable occurrence, is the primary aim and object of the present invention and in accomplishing this object I provide novel means on the fuel valve rod and on the crank casing whereby the downward movement of the lever will be limited and will be held closely in spaced relation with the periphery of the cam so as to be engaged only by the nose, heretofore mentioned.

More particularly, the present invention embraces the provision of novel means for adjustably regulating the movement of the cam lever.

Among the other aims and objects of the invention may be recited the provision of a device of the character mentioned with a view to compactness, the number of parts of which are few, the construction simple, the cost of production low, and the efficiency high.

Other aims and novel details in the construction and arrangement of the various parts of the apparatus will be brought out more in detail in the description to follow, which, for a clear understanding of the invention, should be considered in connection with the accompanying drawings, forming a part hereof, and wherein I disclose for the purpose of illustration, a convenient and satisfactory embodiment of the invention. It is to be noted in this connection, that minor changes in the construction and arrangement of parts may be made without departing from the spirit of the invention or the particular operation of the various parts.

Broadly stated the invention may be said to consist of a collar carried by the fuel valve rod and engageable on its downward stroke with a cap adjustably supported on the bracket carried by the crank casing.

The invention is clearly illustrated in the accompanying drawings in which:—

Figure 1 is a side elevation of my invention applied to the fuel valve rod of an engine.

Fig. 2 is an enlarged side elevation of my invention partly in section to illustrate the construction of the parts.

Fig. 3 is an enlarged transverse section taken through the fuel valve rod.

Similar characters of reference are employed in all of the above described views to indicate corresponding parts.

Referring now, more particularly, to the accompanying drawings I have illustrated a crank casing 1 of an engine which may be and preferably is of a Diesel type construction. A cam shaft 2 is rotatably mounted in the casing and driven in the main shaft of the engine (not shown). A cam is carried by the shaft 2 and preferably consists of a disk 3 having a recess 4 in the periphery thereof. An arcuate plate 5 is removably held in the recess by means of a wedge 6 while a nose 7 is formed on the plate and extends beyond the periphery. A cam lever 8 has its inner end pivotally connected by means of a suitable pin 9 to a bracket 10 secured by suitable fastening devices 11 to the inner wall of the casing. A roller 12 is rotatably mounted by means of a suitable pin 13 on the outer end of the lever. The roller is of the usual construction being engageable with the cam and consequently actuating the fuel valve of the engine (not shown). A fuel valve rod is composed of sections 14 and 15 adjustably connected to each other by means illustrated by the numeral 16, the lower end

of the section 14 being pivoted by means of a suitable pin 17 intermediate the ends of the cam lever 8. The section 15 is slidably arranged through the crank casing and also through a boss 18 integral with the upper end thereof. For the purpose of limiting the downward movement of the cam lever and for holding the roller 12 in closely spaced relation with the periphery of the cam body 3 so that it will only be engaged by the nose 7 to consequently actuate the valve means connected to the upper end of the section 15, I have provided my improved controlling means for the rod. In the present instance this means consists of a collar 19 rigidly connected to the section 15 of the rod by means of clamping members 20, one of which is integral with the collar while both are connected to each other by suitable fastening means such as nut and bolt arrangements 21. As is apparent the lower flat face of the collar is arranged adjacent the upper face of the boss 18. An angle bracket 22 is connected by means of suitable fastening devices 23 to the side and top of the boss as illustrated in the drawings. A rod 24 has the lower end reduced and screw threaded as at 25 so as to engage the top of the bracket 22 on top of the boss. The opposite end or upper end of the rod 24 is also reduced and screw threaded as indicated by the numeral 26. A nut 27 is now threaded on the reduced end 26 as is a cap 28.

The operation of the invention may be reviewed as follows:

In order to adjust the downward movement of the cam lever the cap 28 is adjusted on the upper reduced end 26 so as to be engaged by the collar 19. The cap is held in adjusted position on the ends 26 by means of the nut. Incidentally it is noted that the cap has the lower edge thereof constructed in a polygonal shape to conform to the nut so that it may be readily engaged by a wrench (not shown) when it is desired to adjust the movement of the rod 15 and consequently control the movement of the cam lever.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claim is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

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

The combination with a casing, a cam shaft therein, a cam carried by the shaft including a disk body and a nose projecting from the periphery thereof, a cam lever pivoted in the casing, a roller rotatably mounted on the free end of the lever and arranged above the disk, and a fuel valve rod slidable in the casing and pivoted to the cam lever intermediate the ends thereof, of a sectional collar removably clamped on the valve rod, a bracket connected to the casing, a screw threaded rod carried by the bracket, a cap adjustable on the threaded rod and arranged in the path of movement of the collar to limit the downward movement and consequently allow the roller to be engaged only by the nose, and means for locking the cap in an adjustable position.

In testimony whereof I affix my signature in presence of two witnesses.

PETER PINEAU.

Witnesses:
JAMES PINEAU,
PETER DUFF.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**