

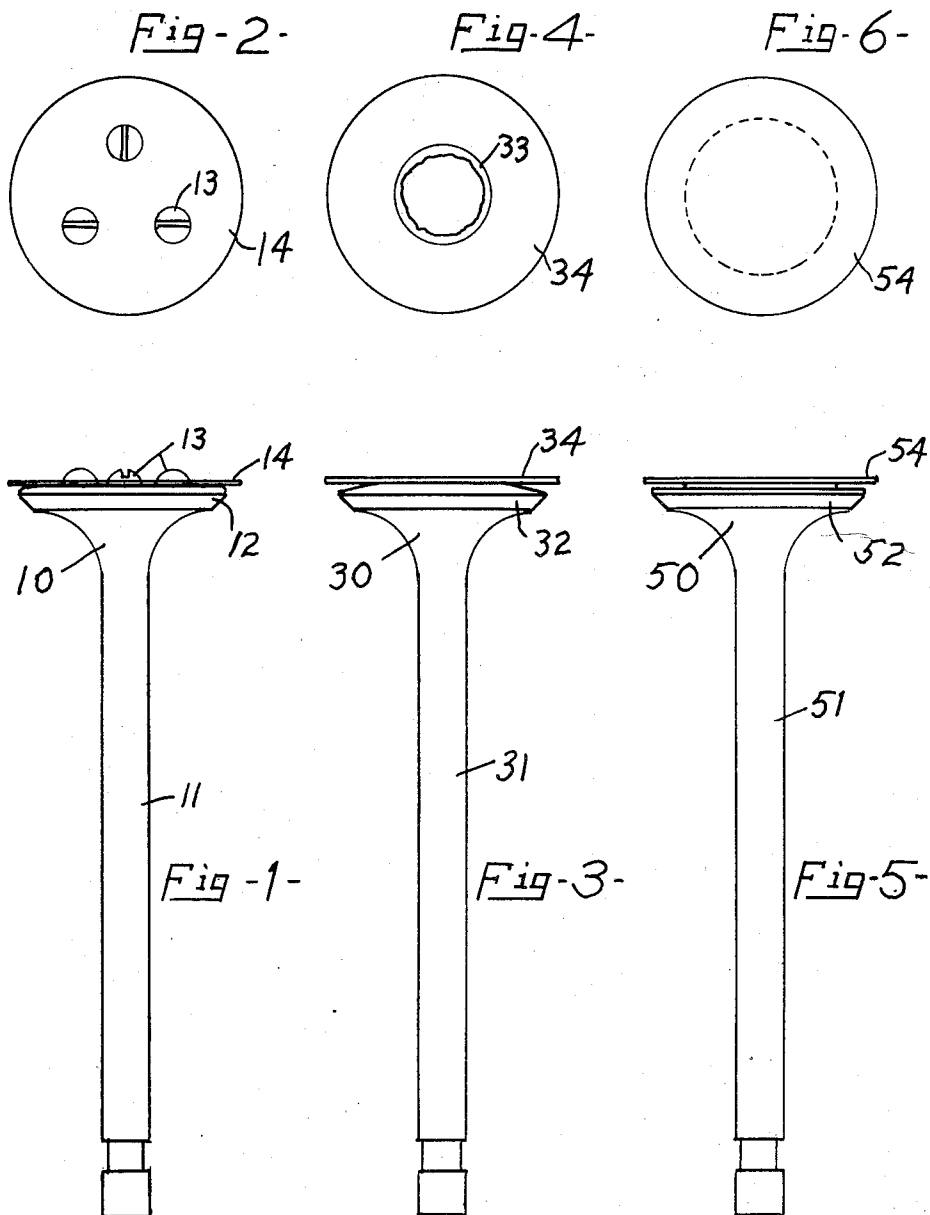
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INTAKE VALVES FOR INTERNAL COMBUSTION ENGINES

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INTAKE VALVES FOR INTERNAL COMBUSTION ENGINES

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5 Claims. (Cl. 123—188)

This invention relates to intake valves for internal combustion engines of the four-stroke class commonly used in automotive equipment, and its principal object is to provide improved means for controlling and avoiding detonation or "ping" in such engines. Another object is to provide an improved intake valve and structure, thermally operable to aid combustion and control detonation, and easy to manufacture at low cost.

These and other objects of the invention will be understood from the following description in connection with the drawings in which:

Fig. 1 is an elevational view of an improved intake valve;

Fig. 2 is a top view of the valve shown in Fig. 1;

Fig. 3 is an elevational view of another embodiment of the invention;

Fig. 4 is a top view of the valve shown in Fig. 3;

Fig. 5 is an elevational view of a third embodiment of the invention; and

Fig. 6 is a top view of the valve shown in Fig. 5.

Referring to the drawings, Fig. 1 shows an intake valve 10 of conventional design as commonly used in automobile engines, and comprising a stem 11 and head 12 integral therewith. Attached to head 12 by screws 13 is disc 14 of stainless steel or other noncorrosive material capable of withstanding severe thermal and other operating conditions. Disc 14 may be smaller in diameter than head 12, and may be attached by rivets instead of by screws 13, or in any other suitable manner. It is preferred that the attachment of disc 14 to head 12 be peripheral rather than axial, since axial attachment would tend to increase the flow of heat to valve stem 11. It is preferred that disc 14 be a separate piece of metal, not integral with valve head 12, the separation providing a heat dam to impede the flow of heat from disc 14 to head 12.

Fig. 3 shows another intake valve 30 of conventional design, and comprising stem 31 and integral head 32. Attached to head 32 by weld 33 is disc 34 of stainless steel or other noncorrosive material capable of withstanding severe thermal and other operating conditions.

Fig. 5 shows another intake valve 50 having a stem 51 and head 52 integral with disc or lip 54.

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Improved intake valves 10, 30, or 50, when installed in an engine of conventional design as used in automobiles, are instrumental in improving combustion and performance. In operation, the engine may "ping" at first, as though the intake valves had not been improved; but as the engine warms up, the detonation or "ping" disappears.

In operation, the lip of the disc, when it gets hot, may quicken the initial part of combustion and thereby decrease the lag and amount of the last part of the charge to burn, and thus inhibit detonation. Possibly the lip of the disc, when it gets hot, may serve as another "hot spot" to volatilize particles of fuel. Further speculation and research may determine precisely how and why this invention controls detonation, but I am aware of the fact that, in general, theory and function are not patentable.

Having thus described the invention and its operation, it is obvious that the objects, as stated, have been attained in a practical manner. It is understood that changes may be made in the form and in the structure of the invention without departing from the spirit or scope of the following claims.

I claim:

1. In an internal combustion engine, an intake valve, and means for improving performance comprising a disc concentric with and attached to the head of said valve.
2. In an internal combustion engine, an intake valve, a valve head on said valve, and means for controlling detonation comprising a disc on said valve head.
3. In an internal combustion engine, an intake valve, a valve head on said valve, and means for controlling detonation comprising a disc concentric with said valve head, and means for attaching said disc to said valve head.
4. In an internal combustion engine having a cooling system and an intake valve and an exhaust valve, means for accelerating the burning of the colder portion of the charge in the vicinity of the intake valve comprising a metal disc near the head of said intake valve, and means for delaying the flow of heat from said metal disc to said cooling system.
5. In an internal combustion engine having a cooling system and an intake valve and an exhaust valve, means for accelerating the burning of the colder portion of the charge in the vicinity of the intake valve comprising a metal disc substantially the same diameter as the intake valve head, said disc attached to said intake valve head in a manner delaying the flow of heat from said disc to said cooling system.

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