Engineering an invention

Das Ajee Kamath has been given a patent by the Government of India on the invention of an apparatus that will bring changes in the working of an IC engine.

AS A young schoolboy he quizzed his teachers to the point of frustration. Frustration, perhaps on both sides. So when Das Ajee Kamath was finally given a patent by the Government of India on the invention of an apparatus adapted to perform as a compressor, motor, pump and internal combustion engine all his queries for the moment seemed to have been answered.

The invention

" Initially I was sceptical, but now with the stamp of an inventor, I feel good." What this marine engineer has invented maybe difficult for the layman to comprehend but when its utility comes good in varied applications, conventional engines would have undergone a utilitarian change.

Explaining the invention says Ajee Kamath, "The conventional engines operate either two stroke or in four stroke cycles but with the usage of the mechanics involved in the apparatus in an internal combustion engine, this will be reduced to a single or two stroke one, thus eliminating half the strokes per cycle,(i.e. eliminating the reversal of piston stroke). It is a concept that will help burn

different fuels in a rotary variable compression ratio engine, which eliminates force and inertia reversal and reduces quite a lot of vibrations because the piston or vanes is hinged to a sleeve. The compression ratio control leads to improving on thermal efficiency."

And ask him to put it plainly for the layman he smiles and begins in earnest, his hands going into a mechanical vertical motion of pistons in an engine, enacting the mechanics, "With the adaptation of this apparatus, the explosion which causes this vertical motion, is in turn translated directly into rotary motion. ," says the driven engineer, his hands now changing into a rotary motion.

Website

Mr. Kamath's website explains that the invention is directed more particularly to the components of a rotary internal combustion engine, their arrangement and their relative motion so as to derive continual rotary output on a shaft.

It is known I.C engines work on gas cycle comprising compression, expansion, heat addition and rejection along with gas exchange. Also that heat addition is done by spontaneous ignition of different types of fuels and that the choice of fuel directly depends on the compression ratio. The object here (of the invention) is to achieve the same gas cycle in an engine, using entirely new components, their arrangement and their relative motion. In this engine it is possible to achieve stepless variation in compression ratio during its operation by movement of a set of cam followers. This results in smooth changeover from one fuel to other, i.e engine running on your choice of fuel.

Presently working as first engineer in Teekay Shipping Limited, and sailing on M.T. Victoria Spirit in the North Atlantic, Mr. Kamath says that working so closely with mammoth engines on ships (the current ship engine he is working on produces 20,940 bhp at 88 rpm) helped him understand the technical fine print and made him think of the prospect of improving on thermal efficiency.

Curious, scientific

"The concept was in my mind after the first class on internal combustion engine at college, but was formatted on the high seas," he says his eyes twinkling with bigger dreams.

Born out of curiosity and a scientific bent of mind most of the appliances at his home are "custom made". And ask him about the long wait before the approved patent, he replies, matter-of -fact, "They made some enquiries, cross checked in detail and finally patent office engineers approved of it. I applied for it in '99 and have just received the approval." And where will the application of the invention be most effective? "In slow speed engines at sea, ship engines," says the marine engineer who informs that the manufacturing of a prototype is in the preliminary stage and that he is still running behind the engine. It is, one hopes, only a matter of time when engines will run to his mechanics.

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