

The Clarke Troller

A Canadian Innovation in Outboard Design

By Ken Kirk

The *Clarke Troller* is one of the most unique and innovative outboard motors ever developed. It was designed, engineered and manufactured by a very imaginative Toronto engineer, Douglas R. Clarke.

The *Clarke Troller* had a number of significant innovations. It was extremely compact, small and very light weight which made it ideal for back packing into remote lakes and for use on canoes and other small craft. It weighed just over 10 lbs. and was only 21" high. The diminutive motor developed 1.2 hp at 2500 rpm and the gas tank capacity was just 32 oz.. But its most unique feature was that the entire power head...combustion chamber....piston, spark plug and all, were located under the water. The propeller was located at the end of the crankshaft and was in fact the flywheel. This kept the engine cool without a cooling system and also eliminated the extra weight of a drive shaft, lower gear case and prop shaft.

The Clarke Troller was advertised as having "50% Fewer Working Parts Than Any Other Gasoline Outboard". It sold for just \$49.00 FOB Toronto.

Douglas Clarke was the son of prominent Canadian businessman Lionel H. Clarke who was appointed the first chairman of the Toronto Harbour Commission in 1911 and later served as Lieutenant Governor of Ontario from 1919 until his death in 1921.



It is unclear just when Doug Clarke established his own manufacturing company but it is clear that his D. R. Clarke Engine Co. Ltd., on Cumberland Street, Toronto, was an established engine builder well before his introduction of the *Clarke Troller* outboard in late 1937.

His core business was small industrial 2 and 4-cycle engines designed to fit in tight spaces and to be easily moved and adapted as a power source for a wide variety of applications. He designed and built the *Clarke Powerbolt* industrial engine that was 4-cycle, air cooled, and was only 14" square without any protrusions or overhanging accessories.

Clarke Troller cont 'd

Later he developed a 2-cycle engine that was 10" square including the gas tank. This engine he advertised as the "World's lightest practical industrial engine weighing only 18 lbs! Extremely Compact". So it seemed that Clarke had an interest and expertise in designing extremely small, compact engines.

No one knows his inspiration for designing a trolling outboard motor. However he did put his talent for designing small compact engines to the supreme test with this new venture.

Clarke's first design was identified as the "Clarke Outboard". Patent applications with engineering drawings were submitted in both Canada and the U.S.. Advertising materials were developed and published with a line drawing of the motor. However no photographs of his first incarnation have been found, leading to speculation that no motors of his original design were ever produced. None are known to exist today.

The second design of the *Clarke Troller* outboard was patented by Clarke in Canada in 1937. It was also patented in England and the U. S. The U.S. master patent was applied for August 30, 1937 and was issued to Clarke on May 23, 1939.

Production of the *Clarke Troller* began in the fall of 1937 with the first models designated as 1938. Clarke established a U.S. subsidiary company he named the Clarke Engineering Co.. He took on a U. S. partner to assist in the financing of this new venture.

May 23, 1939.

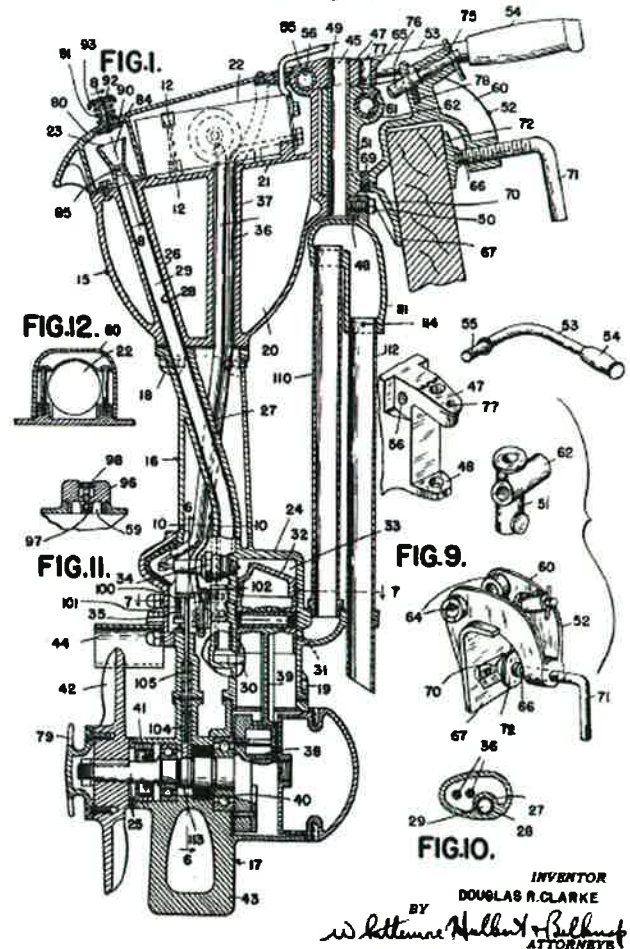
D. R. CLARKE

2,159,256

PORTABLE INTERNAL COMBUSTION ENGINES

Filed Aug. 30, 1937

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The partner was Russell Alger the 3rd. Alger was from a very prominent and wealthy Detroit family. His father had been Vice President of the Packard Motor Car Co. as well as a member of the Packard board of directors.

The *Clarke Troller* operation was located on Grinnell Street in Detroit. This made for easier and duty free access to the larger U.S. market. All of the aluminum castings were done in Detroit where the expertise and manufacturing resources were readily available. Motors for the U.S. market were assembled in Detroit while motors sold in Canada were assembled in Toronto. About this time Doug Clarke moved his Toronto operation to larger premises at 225 Richmond Street West.

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The *Clarke Troller* was marketed with a wide array of accessories. A smart little canvas carrying bag and tool kit were standard equipment....but.....you could buy the Clarke Universal Outboard Bracket that would facilitate easy mounting of the motor to the gunwale of a canoe or small sailboat. There was also a unique ratchet type starting device which could be attached to the starting rope pulley on the propeller hub. There was even a Clarke Utility Light which was powered by the motor when it was running.

Clarke offered both long and short tower models. Subsequently a two cylinder version rated at 3 HP was added to the line.

Considering that these motors were produced for little more than three years a surprising number of the singles still exist today. Although not considered common they can still be found and many collectors have one in their collections. It seems that people who had one just couldn't bring themselves to throw it away. It was neat, clean and cuteand it didn't take up a lot of space. The twin cylinder model is much harder to find.



Production of the *Clarke Troller* was halted in late 1940 or early 1941. Consumer acceptance had been slow to materialize. The notion of an internal combustion motor running under the surface of the water just seemed illogical and potentially problematic to many potential buyers. The speed control was not user friendly or precise.....it was by needle valve adjustment and / or by presetting the pitch on the propeller blades before starting the engine. However, not all *Clarke Trollers* had this adjustable propeller blade feature. Also these small outboards often proved not to have enough power to push even the lightest skiff or canoe at trolling speeds against a stiff breeze.

During World War II the manufacturing capacity of the D.R. Clarke Engine Co. in Toronto was focused on war time production. In the post war period Clarke moved his operations to Dufferin Street and carried on production of compact lightweight 4-cycle industrial engines. In the late 1950's Clarke also returned to outboard production but on a much less sophisticated bases than in the 1930's. The Clarke outboard motor of the 50's & 60's was of conventional configuration.

Clarke Troller cont 'd

It consisted of an off-the-shelf air cooled motor produced by Power Products / Tecumseh complete with ready pull starter and gas tank. Clarke fitted this to a transom clamp, leg and lower gear case of his own design. These motors were rated at 3 HP and sold for \$110.00. A far cry from the innovative design, quality castings and precision mechanics of the *Clarke Troller*.

Even though every *Clarke Troller* has "Clarke Engine Co. Detroit, Mich" cast in the coil cover...it was the innovative concept and engineering genius of Canadian, Douglas R. Clarke and the resources of his D. R. Clarke Engine Co., Toronto, that made this loveable little outboard an unforgettable player in the historical development of the outboard.

CLARKE UNIVERSAL OUTBOARD BRACKET



(Patent Pending)
This bracket can be mounted on a canoe, rowboat or on the side of a sailboat. It can be attached in a few seconds without the use of any tools. It will fit on either side of the boat, it is strongly made with an attractive aluminum finish. It weighs only 1 1/2 pounds. With one of these brackets which fits in the Troller canvas case, you can mount your outboard on practically any type or shape of small boat.

PRICE \$3.95 F.O.B. TORONTO
CLARKE UTILITY LIGHT



(Patented 1937)
This light fits on any standard flat metal dry battery, small bulb draws very little current, strongly made it can be attached in less than a minute. The light has an ignition outlet which fits the plug on the Troller. The light can be used while the motor is running or carried separately as a flashlight.

PRICE \$2.00 F.O.B. TORONTO
Battery \$2.40
(All prices subject to changes)

**Clarke Outboard Motor
Troller Model**



Patented 1937

Lightest Practical Outboard Motor in the World
D. R. CLARKE ENGINE CO.
225 Richmond Street West
TORONTO - ELGIN 6017