

# *Alanson Partridge Brush*



*Incorporating a feature Article from Hemmings Classic Car □ December, 2006*

*The scene was electrifying: Thousands milled about and cheered lustily on a crisp fall morning in October 1902 as a tiny car clattered up the steps leading to the entrance of the magnificent, newly opened Wayne County Courthouse in Detroit. Reaching the Beaux-Arts building's landing, it made a U-turn and descended smartly to the bottom of the stairs on Randolph Street. The crowd mobbed the tiny car. It was the very first Cadillac ever built, and decades later, the area in front of the courthouse would be renamed Cadillac Square in*

*commemoration of its feat.*

*In the seat that day, 103 years ago, was the man mostly responsible for the landmark car's basic design, a native Detroiter named Alanson Partridge Brush. He is one of the lesser-known lights in the early American auto industry's galaxy of stars, but was nonetheless a gifted, self-taught engineer who developed and patented a raft of innovations that, in some cases, have long been wrongly credited to others.*

*Born in 1878, Brush must have been something of a mechanical autodidact early on, because he received a normal public elementary and secondary education, but apparently never attended college or received an engineering degree. He fought in an infantry unit during the Spanish-American War, battling in Cuba when Teddy Roosevelt and his Rough Riders were subjugating it.*

*Alanson Partridge Brush Part 2* Mustered out, Brush joined the firm established in 1890 by master machinist Henry M. Leland and financed by Michigan lumber magnate Robert C. Faulconer, appropriately named Leland and Faulconer. When Brush arrived in 1899, he already had a number of patents under his belt. Leland, meanwhile, had a contract to produce 2,000 gasoline engines for Oldsmobile. Brush was extensively involved in their development, boosting their output by 23 percent, but Oldsmobile ultimately rejected them. Retooling for the new engine would have further delayed a production startup, which had already fallen behind because of a fire at the Olds factory in March 1901.

The following year, Leland was called in as a consultant by William Murphy and Lemuel W. Bowen, two early financial backers of Henry Ford, who were disgusted by his tinkering with race cars. They asked Leland to appraise the Ford factory and equipment so they could liquidate it and get out of the car business. Instead, Leland showed them the Brush-massaged engine that Oldsmobile had nixed, and urged Murphy and Bowen to stay in the game. The car they agreed to build was named Cadillac, after the French explorer who had discovered what became Detroit in the early 1700s.

Following Brush's highly publicized demonstration drive, the prototype Cadillac was displayed at the New York Automobile Show, where company sales manager William E. Metzger took more than 2,200 orders in less than a week. The first production Cadillac, the Model A, was introduced in 1903. Brush, now Cadillac's chief engineer, loaded the Model A with components he'd designed and patented himself. The 10hp, single-cylinder engine, displacing 98.2 cubic inches, had a detachable cast-alloy cylinder assembly with a copper water jacket for more efficient cooling. It also introduced the variable-lift, cam-operated intake valve, along with an improved carburetor and adjustable rack-and-pinion steering. Most noteworthy, though, was its Brush-patented two-speed planetary transmission. To this day, people parrot the myth that Ford's Model T was the first car thus equipped.

Brush would design the first four-cylinder Cadillac engine in 1905, before teaming up with Murphy to co-found Oakland in Pontiac (Oakland County, Michigan) in the summer of 1907. A prototype was soon built, although Brush was gone by the end of the year. He wanted to build a very light two-cylinder car that Leland had turned down at Cadillac.

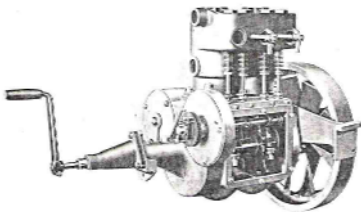
## *Alanson Partridge Brush Part 3*

*In 2012 Alanson Partridge Brush's dream has come to life !*

*Thanks to the tireless efforts of Brian Love and his friend Colin the World's only Brush 2 cylinder engine is now installed in my 1910 Brush – fired up and ready for its first rally – the 2011 VCCA NSW Blue Mountains to be followed by the VCCA VIC Cobram Rally, the National at Mittagong, and the Mudgee 1&2 - all in preparation for the 2012 Centenary Expedition for 1 & 2 cyl veterans - Perth to Sydney – 4,100km.*

*1905 Brush develops plans for a 2cylinder engine- company defers and focuses on 1 cylinder – APB sells plans to Oakland*

*This is the 1907 Oakland 2 cyl engine – sadly there are no cars in existence – it is virtually the same as my 1909 Brush 2 cyl motor.*



*1909 At the New York Auto Show Brush exhibited the new 2 Cyl. Runabout. It was said to run up to 50mph, 12 hp, rev. to 2,500 rpm with counter balance gears.*

*The Brush Club has copies of the marketing material and there are photos of the car at the NY Show. BUT*



*could one be found anywhere in the world- NO. One story is that A P Brush made a batch of 2 cyl. Motors but Briscoe decided to continue with the single cylinder – perhaps the \$750 price was too high compared to say \$350 for a Liberty single. I believe that Brush sold the 2 cyl motors to C A Strelinger Co . who manufactured electricity generators to charge Edison “Glass Jar” Batteries.*

### *1909 Brush 2 Cylinder*

*2005 Chip Perry, a resident of Maui, Hawaii was told of a strange engine in a circa 1900 sugar cane plantation house in Lahaina, Maui. Getting it home, following a massive task extracting the engine, generator and stand through the overgrown “cane grass”, Chip observed on the side plate the words THE BRUSH ENGINE. Time passed and he eventually got in touch with Mac McCoy, Editor of The Brush Runabout, who published details of the find and many photos in the September 2006 Issue.*

*2006 So started my investigations, calls to Mac and Chip – yes it is definitely a 2 cyl. Brush engine the same as the Oakland and the 1909 Brush – it looks Brush*

## *Alanson Partridge Brush Part 4*

- it operates anti-clockwise, has/had a counter balance shaft with two gears*
- virtually the same design as the single which has one gear, hinged con rods etc. etc.*

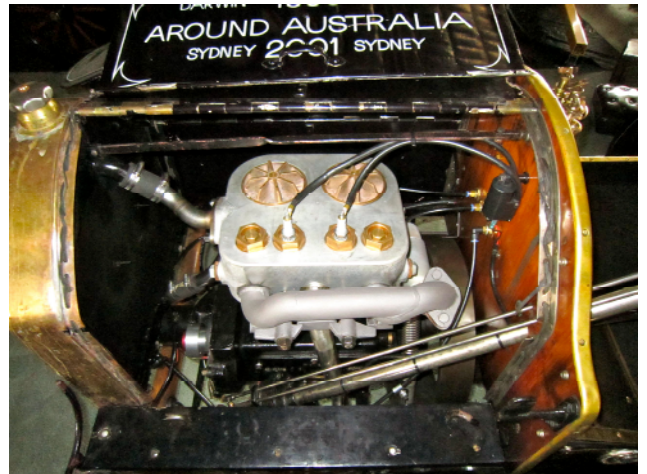
*The Brush Engine side plate which gives access to the two big ends – you can see a hinged big end through the oiling hole*



*Mac did a great PR job telling Chip of my various runs around and across Australia and, subsequently I became the owner of the only 2*

*cyl. Brush engine in the world.*

*The restored 2 cyl engine in my 1910 Brush*



## *BACK TO 1906*

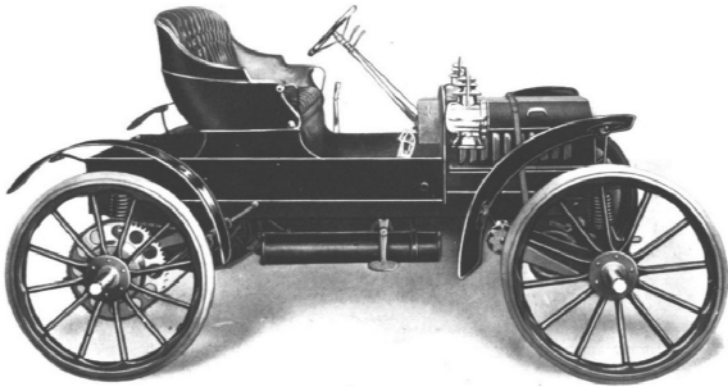
*When Frank Briscoe, whose brother, Benjamin, had founded Maxwell-Briscoe in 1904, showed up with investment capital he offered to bankroll Brush's project. By year's end, the Brush Runabout Company was open for business in Detroit, building what would become one of the most successful early light cars. **The two-seat Runabout's single-cylinder, 6hp engine's crankshaft turned counterclockwise, another Brush innovation. Its chassis and axles were hewn from oak, hickory and maple, and the Brush was the first car to have coil springs and shock absorbers at all four wheels. The car could easily reach 35 mph.***

*Murphy died suddenly in 1909, by which time Oakland had been merged into William Crapo Durant's nascent General Motors. Durant hired Brush as a GM consulting engineer. Meanwhile, Benjamin Briscoe, who harbored Durant-like delusions of grandeur, attempted to merge Brush, Maxwell-Briscoe, Stoddard-Dayton, and others into a GM-themed conglomerate called the United States Motor Co., financed solely by what amounted to promissory notes. Predictably, the firm imploded within a year, and the Brush Runabout was history.*

## *Alanson Partridge Brush Part 5*

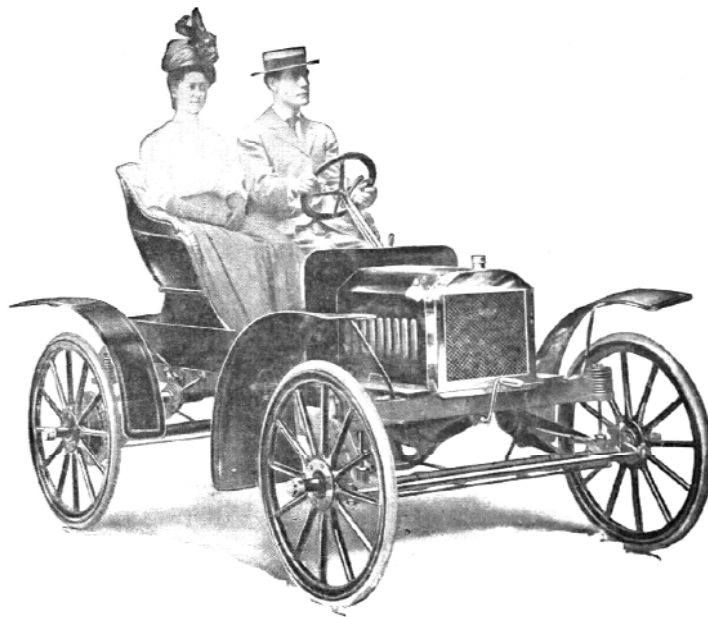
*Its creator, however, was not. Brush would go on to a distinguished career as a consulting engineer, forming his own firm, the Brush Engineering Association; one of its first projects was designing the 150-cu.in. inline-four for the Monroe, an entry-level car positioned below Chevrolet by Durant, and driven by Gaston Chevrolet to victory in the 1920 Indianapolis 500. He also did consulting work for marques as diverse as Marmon and American LaFrance, and started a second career as an expert*

*witness in patent-infringement cases. When Brush died in March 1952, the Detroit News mourned the passing of "a colorful auto pioneer."*



*1907 Prototype*

## **Brush \$500 Runabout**



**BRUSH RUNABOUT CO.**  
DETROIT, MICH.