

BUFFALO GASOLENE MOTOR COMPANY – PART II – ENGINES, TRANSMISSIONS, PATENTS

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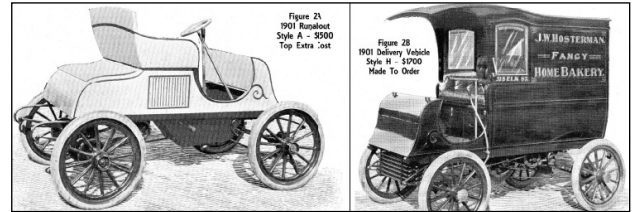
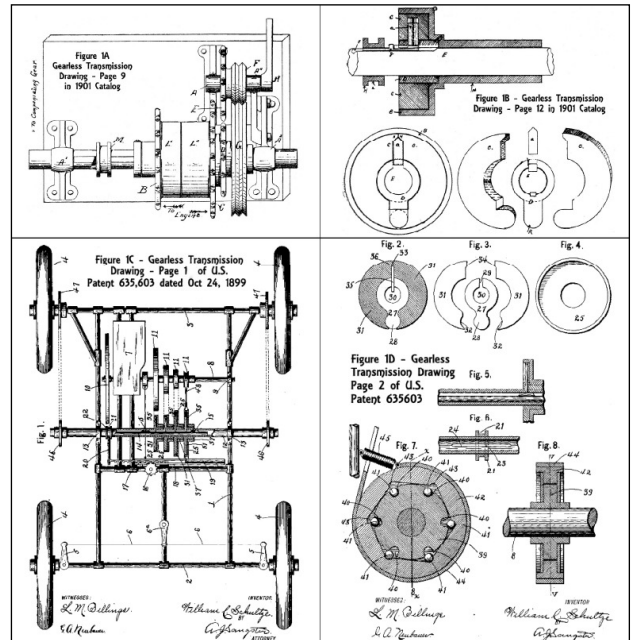
While we typically enjoy the Annual Christmas List in this issue, there weren't enough new ideas for one (apologies!). So let's take another look at the Buffalo Gasolene Motor Company (BGMC) of Buffalo, NY. In Part I we looked at the company's history and found that BGMC bought Empire Motor Works (also of Buffalo) in 1901 for their Empire Gearless Transmission, and that this patented transmission may have pre-dated similar ones. We now have available additional information on this transmission and on early BGMC engines & vehicles thanks to scanned images of a rare 1901 BGMC catalog courtesy of Pearl T. of California. Figures 1A thru 1D show technical features of the transmission. The Empire transmission received U.S. patent number 635,603 dated Oct. 24, 1899 for *Motor Carriage* invented by William Schultze of Buffalo. You can access any patent using Google's patent website (www.google.com/advanced_patent_search). Anyone who'd like paper or electronic (PDF) copies of the 1901 catalog or patents please contact Brian at the mailing or e-mail addresses above, or at 716-805-0102 (evenings).

Figs. 2A & 2B are images of two 1901 BGMC vehicles (none likely survive). Besides the Empire patent, BGMC was awarded many U.S. patents, including these.

- 719,072 **Spark Igniting Mechanism for Explosive Engines** to Charles Annesley of Buffalo, dated Jan. 27, 1903 – this is for the unique chain-driven ignition system on the top of the 12 HP engine seen in Fig 3, taken from the 1901 BGMC catalog.
- 804,999 **Variable Speed Gearing** to William E. Blair of Buffalo, dated Nov. 21, 1905 – this is for an automobile speed changing and reversing mechanism.
- 805,000 **Driving Mechanism for Two Pump Plungers** to William E. Blair, dated Nov. 21, 1905 – this is for air and water pumps in early automobile engines.
- 849,719 & 897,341 **Propeller Adjusting Device** to William E. Blair, dated Apr. 9, 1907 & Sept. 1, 1908 – these are the first BGMC patents for a marine device.
- 1,037,856 **Valve Stem Housing** to William E. Blair, dated Sept. 10, 1912.
- 1,044,479 **Starting Device for Explosive Engines** to William E. Blair, dated Nov. 19, 1912 – for a valve used in compressed-air-powered engine starters.
- 1,195,179 **Heating Device for Internal-Combustion Engines** to William & Frank Blair, dated Aug. 22, 1916 – to start engines on gasoline then allow a switch to cheaper kerosene after reaching normal operating temperatures – see Fig. 4.
- 1,595,619 **Carburetor** to Rolland R. Reck of Bradford, PA and Charles S. Alt of Buffalo, dated Aug. 10, 1926 – allows a gasoline engine to be run on gaseous fuels.

The tractor engine shown in Fig. 4 is from a 1913 ad in *Gas Power*. Finally, the table below has specifications from the 1907 BGMC *Marine Motors* catalog.

MARINE GASOLINE MOTOR SPECIFICATIONS FOR 1907							
Rated HP	No. of Cylinders	Bore x Stroke inches	Displacement cu. in. (liters)	Min.—Norm. Engine RPM	Weight pounds	List Price in 1907 \$	
2	2	2½ x 4	40 (0.6)	200–750	135	155.00	
5	2	3½ x 5	96 (1.6)	150–600	350	350.00	
6	1	6 x 7½	212 (3.5)	100–350	825	240.00	
7½	2	4½ x 5	159 (2.6)	150–600	500	475.00	
9	1	7 x 9	346 (5.7)	100–350	1450	600.00	
10	4	3½ x 5	192 (3.2)	125–600	560	375.00	
12	2	6 x 7½	424 (7.0)	100–350	1370	480.00	
15	4	4½ x 5	318 (5.2)	125–600	820	850.00	
18	2	7 x 9	693 (11.4)	100–350	1970	720.00	
20	4	5 x 6	471 (7.7)	125–500	1250	1,125.00	
30	4	6 x 7	792 (13.0)	100–450	1600	1,700.00	
40	4	7 x 8	1232 (20.2)	100–400	2550	2,250.00	
65	4	8½ x 9	2043 (33.5)	90–375	3250	3,500.00	
100	6	8½ x 9	3064 (50.2)	90–375	4625	5,300.00	



HORIZONTAL OR VERTICAL 12 ACTUAL (Guaranteed) BRAKE HORSE POWER MOTOR Figure 3

Four Cylinder non-vibrating.
Speed variation, 200 to 1000 rev. per minute.
Weight, 355 lbs.
Fly Wheel, 120 lbs.
Height, center of Crank up, 20½ in.; center of Crank down, 4½ in.
Width, 13 in.
Length, 27 in.
Length of shaft on ends 6 and 8 in. outside of everything.
Mechanically operated inlet valves.
Metal enclosed base.
Steel Valves.
Steel Cranks 1½ in. dia. 4½ bore x 5 in. stroke.
Completely waterjacketed including head.
Double lock nuts and split keys throughout.

Price with Batteries, Coil, Switch, Mufflers, Wrenches, Vaporizer and Starting Crank, \$600.00.

