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Hercules Engine News

By Glenn Karch

Throttle-Governed Engines

The Hercules throttle-governed models EK through SK engines are certainly not as common as the hit-and-miss models. But, I would not consider them rare. However, there is a certain mystic about them. Illustrated at right (Photo 1) is the typical Model EK engine with the flywheel removed for a better view of the various parts.

To better understand how it all works, several cutaways help us see just what it takes to make it all work.

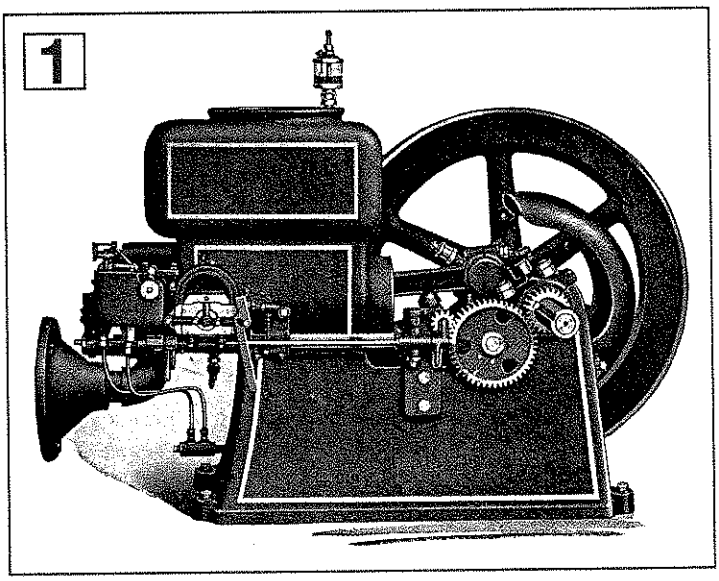

Photo 1 (above): *Governing parts exposed on a Model EK engine.*

The illustration in Photo 2 (opposite page) shows all the essential parts. The throttle-governed engine has the same governor bracket, weights, spindle and shaft as the hit-and-miss engines, but the operating parts differ. The governor (7) causes the arm (8) to make the throttle rod (9) pivot, engaging an adjustable link (17) that moves the throttle shaft and butterfly (10). The throttle is in a separate body and each engine size requires a different one. The fuel bowl cutaway shows the internal parts. It shows the fuel pump (11), the fuel pump lever (14), the fuel bowl drain (13) and the attaching fuel lines. With the drain valve shut, it becomes an overflow-type fuel system with the surplus fuel returning to the tank once the fuel is up to the proper level.

The fuel pump shown in Photo 3 is simple – it consists of the body (5), plunger (7), two check balls (2 and 3) and a return spring (not numbered). The pump screws in through the bottom of the fuel bowl. The little circle above the top check ball (3) is a small pin through the plunger to keep the check ball from floating up too high. If the fuel pump becomes badly worn, a small leather washer snugly fit between the plunger and spring will aid the pumping action.

Photo 4 shows the fuel intake part of the system. The fuel adjustment valve (5) fits into the fuel opening (6) and regulates the amount of fuel going through the fuel tube (7). The airflow

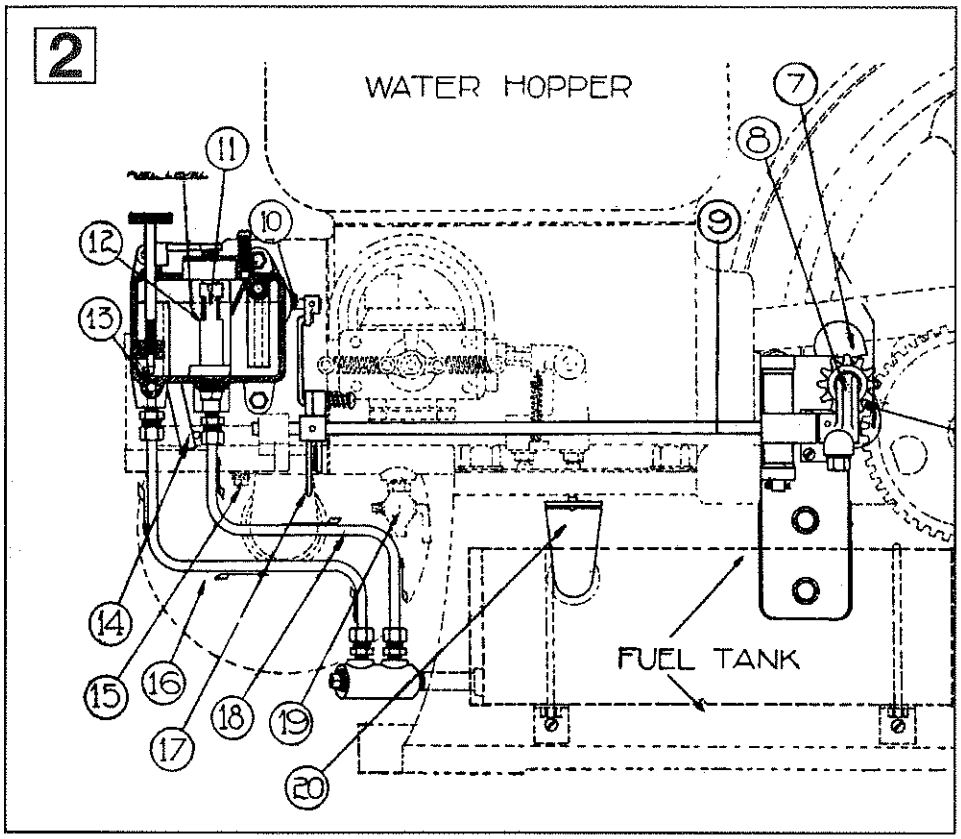

Photo 2 (left): *A Hercules engine with different operating parts, but with the same governor bracket, weights, spindle and shaft as the hit-and-miss.*

inlet (1) size varies, depending on engine size.

To start the kerosene engine, all kerosene must be drained back into the main fuel tank and the drain valve must be closed. Through the top opening in the fuel bowl, gasoline for starting must be poured in until the fuel runs into the overflow. With the fuel valve turned on, the engine is started on gasoline. Once started and running steadily, the fuel pump will begin to pump kerosene into the fuel bowl, and eventually, the engine will be running on straight kerosene. Near the top of the cylinder head is a fitting and a line to the throttle body. This is to supply a small amount of water to the fuel mixture when the engine is running on kerosene under heavy load and starts to pound.

Glenn Karch is a noted authority on Hercules engines. Contact him at: 20601 Old State Road, Haubstadt, IN 47639; glenn.karch@gte.net

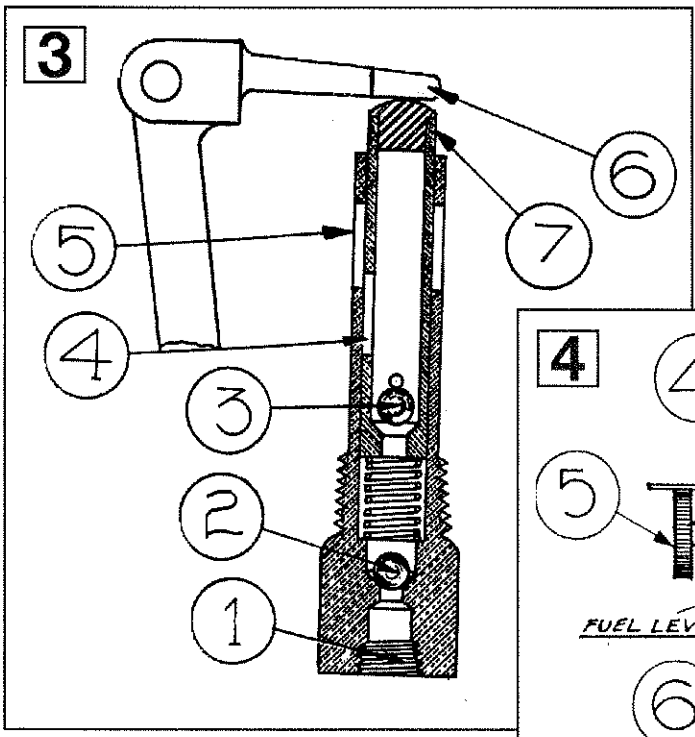

Photo 3 (above): *A simple fuel pump consisting of a body, plunger, two check balls and a return spring.*

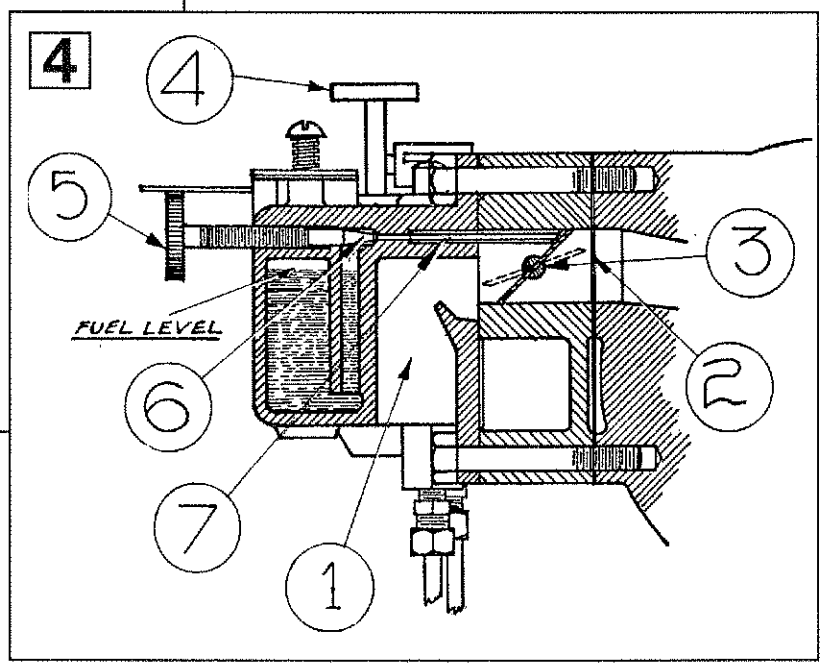

Photo 4 (right): *An illustration showing how fuel is inducted.*