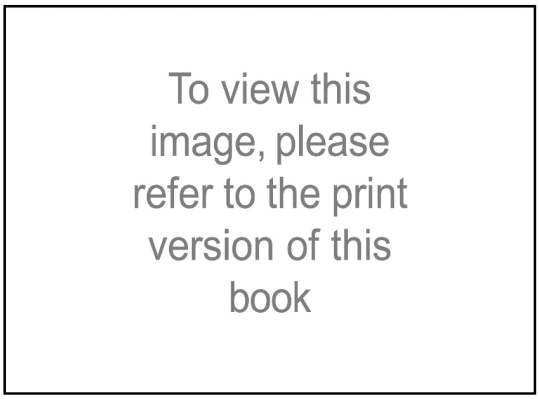

Fig. 2-16. *Jet nozzle and buckets.*

conditions will vary the exact pitch setting, it is essentially impossible to set it correctly on the ground. The procedure is to establish straight-and-level flight by reference to airspeed, and altitude then calibrates the miniature airplane. A subsequent change in airspeed will require recalibration. Many pilots will set it for straight-and-level cruise and use it as a reference for all other configurations. For instance, one bar width up may produce a 500-fpm climb at cruise power, and one bar width below may produce a 500-fpm descent. Pilots should develop a pitch-power-airspeed table for every aircraft they fly and particularly if they fly it in instrument conditions.

Prior to an instrument takeoff, never do a fast, 90-degree taxi turn. Both the heading and attitude indicators will precess as a result, and those instruments will provide unreliable information during one of the most critical phases of flight—takeoff and initial climbout. This precession lasts about one minute and can be avoided by taxiing slowly or waiting a minute while lined up with the runway before takeoff.

Preflight of the heading indicator includes setting it to a reliable magnetic reference. This should be done while on the ground, preferably prior to taxi. Once set, the pilot should observe it during taxi to assure it is changing heading appropriately. Don't taxi or fly with the heading indicator caged, as bearing damage may be the result.

Use the caging mechanism only to reset the gyro in straight-and-level flight or when stopped on the ground. If the heading immediately changes after setting, the instrument is unreliable. However, the instrument needs approximately five minutes after startup before setting the heading to assure it is up to speed.

Many pilots will align the aircraft with the runway and use the runway number to calibrate the indicator. Unfortunately, the runway number is not an accurate representation of the actual magnetic course, varying as much as five degrees. Instead, a properly calibrated, undisturbed magnetic compass should be used. Prior to taking the reading, make sure there are no pens, watches, stopwatches, or other magnetic articles lying near the compass that may introduce errors.

If you happen to have a gyro system that operates from a venturi, it is not accurate enough to set the instruments on the ground. Venturi systems are essentially unreliable