

of 5000 ft. per second. Naturally, with this velocity and projectile construction of high hardness and toughness qualities, penetration of armor was achieved with devastating results.

A bullet of 6mm size with two fins of .375" dia. could be used for the initial test of the Gerlich principle. The barrel should be approximately 26" in length with an initial smooth bore diameter of .375" gradually tapering to .240" in 20". The last 6" contains a gain twist rifling to achieve stability.

It seems possible that a projectile, if properly designed, could provide its own power supply. The core would be the actual projectile surrounded by the igniting material safe enough under normal handling to be of no concern. When initiated forward by the thrust of a base percussion type primer the friction caused by contact with the tapered bore would provide combustion. Because of the large working area extra thrust would be attained as the eroding bullet approached muzzle bore dimensions. At a point approximately 6" from the muzzle ignition would be complete and a gain twist would stabilize the projectile. In this design no ejection or extraction is needed and the design of the receiver could be shorter in length, thus lighter in weight, lower cost and would provide a faster lock time.

Fig. 12

Fig. 13

Fig. 14