ABSTRACT
(Figure 1)

Apparatus and method for measurement of the muzzle velocity of a projectile or the like

An apparatus is proposed for measurement of the muzzle velocity (V_0) of a projectile (6) or the like, as well as a method which can be carried out using this apparatus. The apparatus comprises a weapon or launch barrel as a waveguide (1), a signal generator (4) which is electrically connected via a signal supply to at least one transmitting coupler (2) for excitation of the weapon or launch barrel (1), and a receiving line for passing on the signals measured at at least one receiving coupler (3) to an evaluation device (5). The distance between the transmitting coupler (2) and the receiving coupler or couplers (3) is variable and can be selected individually depending on the mode selection of the waveguide (1). The receiving coupler (3) should be placed with respect to the transmitting coupler (2) depending on the preferred measurement method. If the velocity is measured after the projectile (6) has passed through, the receiving coupler (3) is located between the projectile base and the transmitting coupler (2), while the receiving coupler (3) is located between the projectile nose and the transmitting coupler (2) when the velocity (V_0) is measured before the projectile (6) passes through. Correspondingly, in a combination of both measurement methods, at least two receiving couplers (3) can be included, and the transmitting coupler (2) must then be placed between the two receiving couplers (3). The electromagnetic field of the empty weapon or launch barrel (1) is measured without a projectile (6), before the projectile (6), or after the projectile (6), or in combinations. The muzzle velocity (V_0) is then determined from the measured signals.