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(54) Title: METHOD FOR COATING FIREARM BARREL

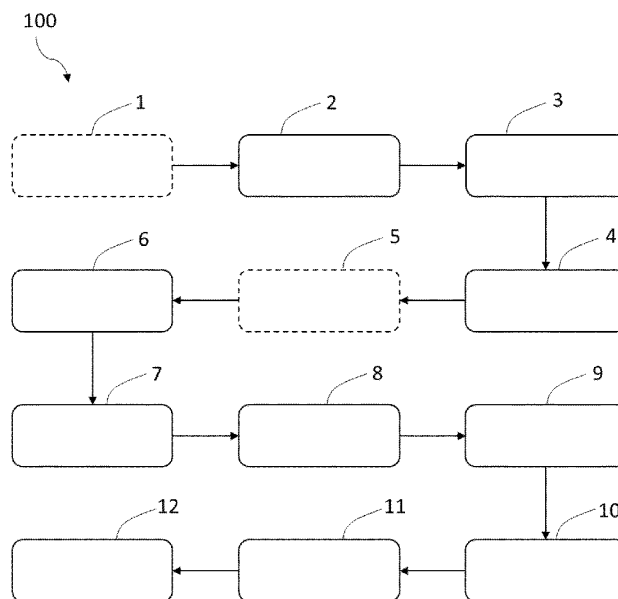


FIG. 1

(57) Abstract: The present invention relates to a method for providing a coating on the internal surface of a barrel of a small calibre or medium calibre firearm, the internal surface defining an internal volume, the method comprising: providing, in a reaction chamber, a firearm comprising a barrel to be treated and a cylindrical electrode having an outer surface and comprising a target material substantially coaxially within the barrel; closing the reaction chamber; reducing the pressure to a predetermined pressure value, supplying a gas to the reaction chamber, thereby providing the gas in the internal volume and increasing the pressure within the reaction chamber to a working pressure; applying a first electric field to the electrode, so as to use the electrode as a target cathode and the barrel as an anode, thereby activating the gas into a plasma gas; removing the target

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material by the plasma gas and depositing it on the internal surface; turning off the first electric field; stopping the supply of the gas; bringing the reaction chamber back to atmospheric pressure; removing the firearm comprising the treated barrel from the reaction chamber; the distance between the outer surface of the electrode and the internal surface of the barrel being at least 0.5 mm, the electric field being applied for a duration sufficiently long to form a layer of target material on the internal surface of the barrel, and the product of the working pressure and the distance between the electrode and the internal surface being between 10^{-5} Torr.cm and 45 Torr.cm.