

The invention proposed relates to the area of machine-building, in particular, to making gun barrels. The main point of the invention is that on the inner surface of the gun barrel is placed a coating made of refractory metal, at that the threshold of cold fragility of the coating metal is within the temperatures from minus 200°C to plus 20°C (thus the coating has low hardness and good plastic properties at room temperature). As coating molybdenum, niobium, chromium or tungsten are used. The coating made of refractory metal has fine-grain structure, with the grain dimensions 0.05-1.0 micron. In the method proposed the metal of the coating is placed inside the barrel, than it is evaporated, with ionization of vapor and condensation of ions and neutral atoms of metal at the inner surface in medium with decreased atmospheric pressure. The protective coating obtained by the method proposed is deformable together with the surface layer of the barrel without formation of cracks, and it keeps its impermeability for the products of the powder burning.