

UNITED STATES PATENT OFFICE

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STEEL ARTICLE INSENSIBLE TO THE ACTION OF HOT GASES, VAPORS, AND LIQUIDS

No Drawing. Application filed January 7, 1930, Serial No. 419,213, and in Germany April 23, 1929.

The invention relates to the process for making steel insensible to the action of hot gases and vapors as set forth in my Patent, No. 1,829,118.

cence Ac_3 and quickly cooled, followed by reheating to 600 to 650° C., said steel alloy containing 0.05 to 0.2% of carbon, about 5 to 12% chromium, about 0.2 to 1% of molybdenum and about 0.2 to 0.5% of vanadium.

The foregoing specification signed at Cologne, Germany, this 20 day of Dec., 1929.
BENNO STRAUSS.

5 Exhaustive tests have proved that it is of great technical advantage to use for the manufacture of steel articles that must have a high resistance to the action of hot gases, vapors and liquids, steel alloys which contain about 0.05 to 0.02 per cent of carbon, about 5 to 12 per cent of chromium, 0.2 to 1 per cent of molybdenum, and preferably about 0.2 to 0.5 per cent of vanadium, and which then are treated according to the process set forth in my above-co-pending application.

10 For, the articles manufactured from these steel alloys and treated in the above manner, viz. heated above the point of recalcence Ac_3 , quickly cooled from above this point, and reheated up to about 600° to 650° C., are remarkable for the following advantages which are of great technical importance: They show a texture which is free of grain boundaries and further possess, probably due to this absence of grain boundaries, a very high resistance to the attack of hydrogen even when taking place under high pressures and at high temperatures, and, finally, they possess a very high resistance to heat, more particularly when containing both molybdenum and vanadium.

What I claim is:—

35 1. Articles which in their normal use are subjected to the attack of hydrogen or of hydrogen containing gases taking place under high pressure and at high temperatures, said articles consisting of a steel alloy that has been heated above the point of recalcence Ac_3 and quickly cooled, followed by reheating to 600° to 650° C., said steel alloy containing 0.05 to 0.2% of carbon, about 5 to 12% of chromium and about 0.2 to 1% of molybdenum.

45 2. Articles which in their normal use are subjected to the attack of hydrogen or of hydrogen containing gases taking place under high pressure and at high temperatures, said articles consisting of a steel alloy that has been heated above the point of recalc-

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