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(54) Title: HIGH-PURITY TITANIUM-NICKEL ALLOYS WITH SHAPE MEMORY

(57) Abstract: The invention includes an alloy containing equivalent amounts of nickel and titanium. The alloy has shape memory and a metallic purity of at least about 99.995%, and comprises less than about 200 ppm of gases. The invention also includes an alloy comprising titanium and nickel where the titanium and nickel amounts are non-equivalent. The alloy has shape memory and has a metallic purity of at least 99.995%, and contains less than about 200 ppm of gases. The invention further includes a method of producing a shape memory alloy. Titanium is provided having a metallic purity of at least 99.999% and nickel is provided having a metallic purity of at least 99.99%. The titanium and nickel are combined utilizing at least one melting event independently selected from e-beam melting, vacuum arc melting, vacuum induction melting, induction skull melting and plasma melting.

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