Utilizing Claims of Granted Patents

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Points

- Inventive steps requirements
- Description requirements
- Consideration of experiment results submitted afterward

1. Present application

Claim

Alloy consisting of metal A 10-90wt.% and metal B 90-10wt.% hardened through heat treatment at 700 degree or higher.

Description

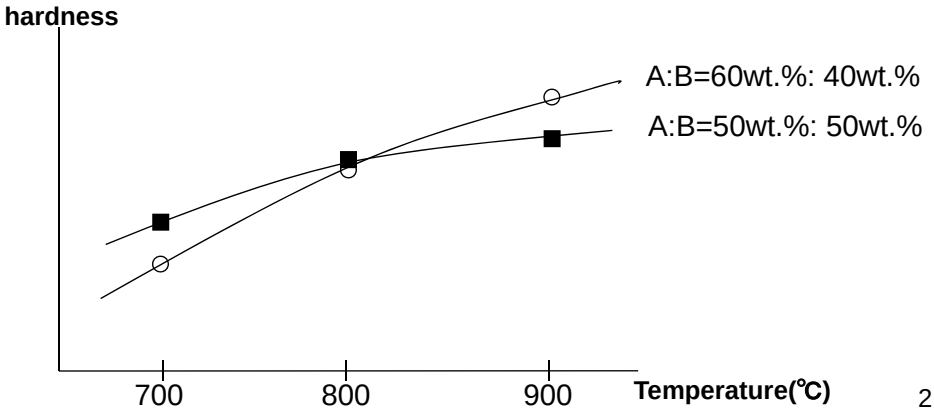
- The ratio of metal A is 10-90 wt.%, preferably 30-90 wt.%, more preferably 50-90 wt.% ➡ adequate hardness

Example

T=700, 800, 900℃

A:B=50wt.%:50wt.%

60wt.%:40wt.%



2. Cited Document

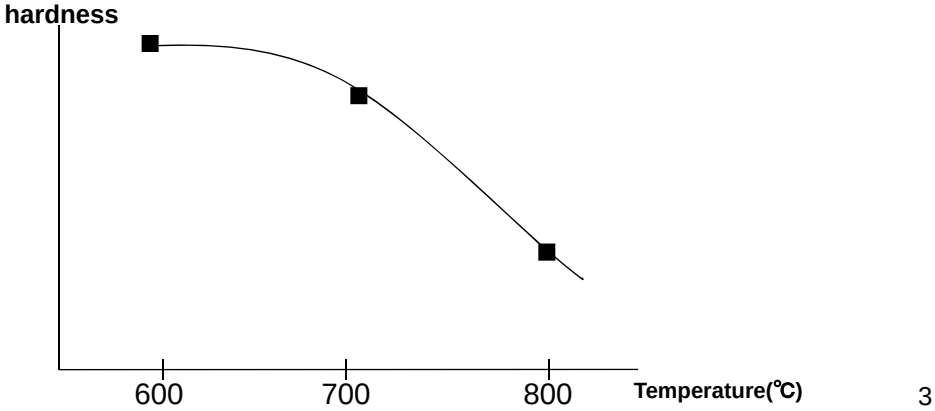
Description

- Alloy consisting of metal A and metal B hardened through heat treatment at 800 degree or lower.
- The ratio of metal A and metal B is arbitrary.
- The hardness is favorably increased at 800 degree or lower.

Example

T=600, 700, 800℃

A:B=10wt.%:90wt.%



Present Application

Alloy consisting of metal A 10-90wt.% and metal B 90-10wt.% hardened through heat treatment at 700 degree or higher

Cited Document

Alloy consisting of metal A and metal B hardened through heat treatment at 800 degree or lower

Granted Claim of Patent Office A

Alloy consisting of metal A **30**-90wt.% and metal B **70**-10wt.% hardened through heat treatment at **800 degree or higher**.

- The ratio of metal A is limited from 10-90wt.% to 30-90wt.%
  (The ratio of metal B is limited from 90-10wt.% to 70-10wt.%)
- The temperature is limited from 700 degree or higher.
  to 800 degree or higher.

Granted Claim of Patent Office B

Alloy consisting of metal A **50**-90wt.% and metal B **50**-10wt.% hardened through heat treatment at 700 degree or higher.

- The ratio of metal A is limited from 10-90wt.% to 50-90wt.%
  (The ratio of metal B is limited from 90-10wt.% to 50-10wt.%)
- The temperature is not limited.

➡ **Difference**

- **Range of the ratio of metal A and metal B**
- **Range of the temperature of heat treatment**

5. Patent Office A: Reason for refusal **(1)**

✓ Lack of Novelty

Present Application

Alloy consisting of metal A 10-90wt.% and metal B 90-10wt.% hardened through heat treatment at 700 degree or higher

Disclosure of the cited document

Alloy consisting of metal A 10wt.%and metal B 90wt.% hardened through heat treatment at 700 or 800 degree

Claimed invention of the present application is disclosed in the cited document.

5. Patent Office A: Reason for refusal (2)

✓ Lack of Inventive Step

Present Application

Alloy consisting of metal A 10-90wt.% and metal B 90-10wt.% hardened through heat treatment at 700 degree or higher

Disclosure of the cited document

- The ratio of metal A and metal B is arbitrary.
- The hardness is favorably increased at 800 degree or lower.

A person skilled in the art would arbitrarily arrange the ratio of metal A and metal B and arrange the temperature of the heat treatment **in the range of 800 degree or lower**, in order to make the alloy hard, easily arriving the present invention.

6. Argument by the applicant against the office action

Amendment of the Claim

Alloy consisting of metal A 30-90wt.% and metal B 70-10wt.% hardened through heat treatment at 800 degree or higher.

Argument by the applicant

- The amended claimed invention is not specifically disclosed in the cited document any more.
- The cited document does not encourage a person skilled in the art to increase the temperature of the heat treatment to 800 degree or higher.
- The present invention has found that, in the specific range of the ratio of metal A and metal B, hardness of the alloy is increased when heated at 800 degree or higher.

➡ **The amended claimed invention is novel and inventive.**

7. Patent Office B: Reason for refusal **(1)**

✓ **Lack of Novelty**

The same reason as that of Patent Office A

Present Application

Alloy consisting of metal A 10-90wt.% and metal B 90-10wt.% hardened through heat treatment at 700 degree or higher

Disclosure of the cited document

Alloy consisting of metal A 10wt.%and metal B 90wt.% hardened through heat treatment at 700 or 800 degree

⬇

Claimed invention of the present application is disclosed in the cited document.

8. Patent Office B: Reason for refusal **(2)**

✓ Lack of Inventive Step

Present Application

Alloy consisting of metal A 10-90wt.% and metal B 90-10wt.% hardened through heat treatment at 700 degree or higher

Disclosure of the cited document

- The ratio of metal A and metal B is arbitrary.
- The hardness is favorably increased at 800 degree or lower.

The logic is different from that of Patent Office A.

A person skilled in the art would arbitrarily arrange the ratio of metal A and metal B. A person skilled in the art would also suitably arrange the temperature of the heat treatment **even beyond 800 degree** in the light of the common general technical knowledge that the alloy's hardness changes according to the composition of alloy or the temperature of heat treatment. So, the present claimed invention is easily arrived based on the disclosure of the cited document.

9. Patent Office B: Reason for refusal **(3)**

✓ Noncompliant of Support requirement

Not pointed out by Patent Office A

Common general technical knowledge:

- The adequate temperature of the heat treatment depends on the composition of the alloy.

Fact described in the cited document:

- In case of the alloy of metal A 10wt.% and metal B 90wt.%, hardness of the alloy lowers at higher than 700 degree.

Fact disclosed in the present application:

- The hardness is confirmed only when A: B= 50wt.%: 50wt.% and A: B= 60wt.%: 40wt.% by the experiment in the description.

→ It is not supported that hardness of the alloy is increased through heat treatment at 700 degree or higher in **all the range** of metal A: metal B= 10wt.%:90wt.% ~ 90wt.%:10wt.%

10. Argument by the applicant against the office action

Amendment of the Claim

Alloy consisting of metal A 50-90wt.% and metal B 50-10wt.% hardened through heat treatment at 700 degree or higher.

Argument by the applicant

- The amended claimed invention is not specifically disclosed in the cited document any more.
- The cited document suggests that hardness of the alloy is decreased through heat treatment at higher than 700 degree.

  To the contrary, the present invention has found that, in the specific range of the ratio of metal A and metal B, hardness of the alloy is increased when heated at 800 degree or higher.

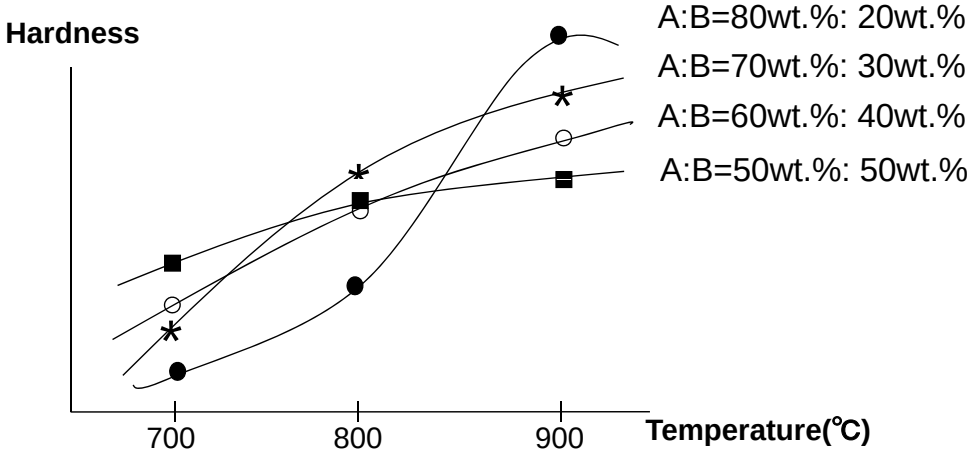
➡ **The amended claimed invention is novel and inventive.**

11. Additional experiment result submitted by the applicant

Description originally filed

- The ratio of metal A is 10-90 wt.%, preferably 30-90 wt.%, more preferably 50-90 wt.%.

Additional experiment result



Argument by the applicant

➡ Experiment result shows that hardness of the alloy is increased through heat treatment at 700 degree or higher in the range of the ratio of metal A 50-90 wt.% and metal B 50-10 wt.% as stated in the description originally filed.

➢ Inventive steps

What temperature range and what ratio range are considered to involve inventive steps, considering the disclosure and the working examples?

- Suggestion in cited document
- Motivation
- Obstructive factor
- Unexpected results

➢ Description requirements

What temperature range and what ratio range are considered to be supported by the description?

- Disclosure by the description originally filed (especially Examples)
- Common general technical knowledge
- Experiment results submitted afterward

Thank you for your kind attention!

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JAPAN PATENT OFFICE