★★★ ＜第36回知的財産翻訳検定試験【第19回和文英訳】＞ ★★★
≪１級課題 -機械工学-≫

【問 1】
[0006]
In the conventional ceiling structure of the fluidized roaster described above, the specialty-form bricks 8, the cylindrical side plates 10, and the shelf racks 9 attached to the topmost portion of the cylindrical side plates 10 deteriorate over time, and in the process of doing so, eventually are no longer capable of supporting the entire weight of the fireproof bricks making up the ceiling structure. The entire fluidized roaster then needs to be built anew.
[0007]
Further, deterioration over time of the specialty-form bricks 8 in the labyrinth function that functions, by means of the specialty-form bricks 8, to keep combustion gasses within the fluidized roaster from being released into the atmosphere, also leads to marked deterioration in the labyrinth function due to gaps occurring at joints between the bricks becoming larger.
[0008]
The present invention has been made to address such problems of the conventional ceiling structure, and it is an object thereof to provide a fluidized roaster that does not need to be entirely built anew even in a case in which the specialty-form bricks 8, the cylindrical side plates 10, and the shelf racks 9 attached to the topmost portion of the cylindrical side plates 10, thereof deteriorate over time. A further object is to continue to exhibit the labyrinth function that keeps combustion gasses within the fluidized roaster from being released into the atmosphere.
※段落[0006]において「円筒形側板」の参照符号を補足して「円筒形側板１０」としました。

【問 2】
1. Sharpening Step
[0038]
A first billet 11 used in the present embodiment is a plate made of steel such as carbon tool steel. A flat bar having an area that is appropriate in accordance with the size of a blade 1 that is to be manufactured is used as

the billet 11. The number of flat bars needed to yield one blade 1 may be one, but in the present embodiment two rectangular flat bars, namely a first flat bar 11A and a second flat bar 11B, are used, as illustrated in FIGS. 3A and 3B. Note that in the Description of the Embodiments, the first flat bar 11A and the second flat bar 11B will be collectively referred to as "flat bar 11A (11B)", since the procedures for forming blade edge portions 17 thereon are identical.

[0039]

Before formation of the blade edge portion 17, the flat bar 11A (11B) is a rectangular plate that has a certain thickness, as illustrated in FIG. 2A. The step of machining this plate to form the blade edge portion 17 is the sharpening step. That is to say, in the sharpening step, machining is performed such that the flat bar 11A (11B) is brought to a sharpened point, from an intermediate portion in a width direction toward one end thereof.

[0040]

The flat bar 11A (11B) that has been subjected to the sharpening step has a spine 16 having a predetermined thickness, and the blade edge portion 17 that has an increasingly smaller thickness as the distance from the spine 16 increases, i.e., the farther outward in the width direction of the flat bar 11A (11B). A blade edge 17a is formed on the distal end of the blade edge portion 17. The blade edge portion 17 is a double-bevel blade edge portion, obtained by machining both faces of a side edge of the flat bar 11A (11B). In other words, the blade edge portion 17 is formed such that a center line that bisects the flat bar 11A (11B) with respect to the thickness direction substantially agrees with the distal end (blade edge 17a) of the blade edge portion 17.

[0041]

Examples of methods for sharpening the flat bar 11A (11B) include grinding one side edge using a grindstone, and flattening one side edge by application of pressure in forging or the like.

2. Heat Treatment Step and Grinding Step

[0042]

Following the sharpening step, the flat bar 11A (11B) is subjected to heat treatment. Heat treatment includes quenching, in which the flat bar 11A (11B) is rapidly cooled from a high-temperature state, and tempering, in which the quenched flat bar 11A (11B) is reheated.

[0043]
After the heat treatment, the blade edge portion 17 is ground again to restore the sharpened point. The reason is that the distal end (blade edge) of the blade edge portion 17 dulls in the heat treatment, and the blade edge needs to be brought to a sharpened state again following the heat treatment. A whetstone with a finer grit than the grindstone is preferably used at this time.
※米国出願のため、段落[0040]のブラケット[ ]は外して翻訳しました。

【問 3】
1. A timepiece having a mechanism for displaying a moon position and a lunar age, the timepiece comprising:

a constellation plate (4) that includes a disc displaying principal stars and constellations and a timepiece mechanism with a celestial north pole or a celestial south pole as an axis of rotation of the disc, the constellation plate (4) being driven by the timepiece mechanism to rotate in synchronization with diurnal motion of the stars, the constellation plate (4) further displaying the ecliptic (4a) in a substantially eccentric ring shape, a date in a year indicating a position of the sun on the ecliptic (4a), and a region (4b) indicating a range of transit of the moon in a vicinity of the ecliptic (4a); and

a moon display (3) that has a circumference, rotates at a predetermined rate of rotation relative to the constellation plate (4), and displays an indicator (3a) indicating a position of the moon in a range in which the moon is allowed to be present, and a lunar age (3b) corresponding to the date on the circumference.

2. The timepiece having a mechanism for displaying a moon position and a lunar age according to claim 1, wherein

the display of the range of transit of the moon in the constellation plate (4) is in the region (4b) having a band shape with a predetermined width inside and outside of the ecliptic (4a), and

the indicator (3a) indicating the position of the moon on the moon display (3) has a predetermined angular width relative to the center of the moon display (3).