

★★★ <第38回知的財産翻訳検定試験【第20回和文英訳】> ★★★
《 1 級課題 -機械工学》

【問 1】

[0011]

Also, more and more low-grade coals, such as lignite and subbituminous coal, have come to be used as fuel in thermal power generation and so forth. Such low-grade coals have a high water content, and powder of the loose bulk material 7 tends to become a sludge that readily adheres to the bucket 19. Accordingly, the above problem of load weight at the distal end of the boom 4, reduced volume of the bucket 19, and such like problems, are particularly likely to occur when unloading low-grade coal. This has led to a proportionate increase in the frequency of cleaning work necessitated.

[0012]

The present applicant has already filed a patent application for a bucket 28 (see Fig. 6) with an inner side surface that does not readily allow adhesion of loose bulk material 7 thereto, to solve the shortcomings of such a conventional bucket 19. This bucket 28 is disclosed in Patent Document 1.

[0014]

However, despite being extremely good with respect to the point of fluidizing the loose bulk material 7 therewithin, the bucket 28 disclosed in Patent Document 1 is formed of non-corrosion-resistant steel plates (wear-resistant steel plates) and is used in a painted state. Study conducted by the present inventors has shown that when the paint is stripped off through use over extended periods of time and rusting occurs, the loose bulk material 7 such as coal and the like will adhere to the rust sites.

[0015]

Also, the bucket 28 needs a corrosion margin to be included in anticipation of corrosion, inevitably leading to a proportionate increase in weight. Thus, there is room for improvement thereof.

【問 2】

[0023]

As illustrated in Fig. 1, the present embodiment is configured as follows. A predetermined amount of hot water that is discharged from an outlet 19 of

the bathtub 1 is discharged by a pump device 12 so as to flow into a circulation pipe 11. This hot water that is discharged flows into an inlet 6 of a five-way valve type flow distributor 5. The hot water flowing into the inlet 6 flows out of an outlet 7 and flows into a filter device 2, where filtering material in the filter device 2 filters the foul hot water, and the hot water that has become clean is sent to a heating device 3. After being heated to a predetermined temperature in the heating device 3, the hot water flows out of the heating device 3 into an outlet 8 of the five-way valve type flow distributor 5. The hot water flowing into the outlet 8 flows out of an outlet 9, and this hot water is returned into the bathtub 1 through a spout 20 of the bathtub 1.

[0024]

The above configuration is a circulation flow path for hot water when performing normal operations. When the filtering material in the filter device 2 becomes foul and is to be cleansed, the five-way valve type flow distributor 5 is adjusted so that the hot water circulation flow path is in the opposite direction from that in normal operations. Hot water discharged from the outlet 19 of the bathtub 1 flows into the inlet 6 of the flow distributor 5, the hot water flowing into the inlet 6 is discharged from the outlet 8 and flows into the heating device 3, the hot water discharged from the heating device 3 flows into the filter device 2, and the hot water that flows into the filter device 2 is used to cleanse the filtering material in the filter device 2. The hot water that has become foul from cleansing the filtering material flows into the outlet 7 of the flow distributor 5, and the foul hot water that flows into this outlet 7 is drained out of the circulating warm bath device from a drain outlet 10 of the flow distributor 5.

【問 3】

1. An additive manufacturing apparatus (100) comprising:
 - a powder material supply device (110) that supplies a powder material (P) to a supply position of a base material (B);
 - a light beam emitting device (120) that emits a light beam (BM) that melts the powder material (P) supplied to the supply position;
 - a movement device (M1, M2) that relatively moves the supply position and an emission position of the light beam (BM) relative to the base

material (B); and

a control device (130) that controls respective operations of the powder material supply device (110), the light beam emitting device (120), and the movement device (M1, M2), wherein

the additive manufacturing apparatus (100) forms a molten pool (MP) by melting the powder material (P) at a predetermined region of the base material (B) and forms beads adjacent in a width direction by allowing the molten pool (MP) to solidify,

the additive manufacturing apparatus (100) comprises a detection unit (140) that detects a size of the formed molten pool (MP), and

the control device (130) corrects a manufacturing condition when forming a following one of the beads such that an overlapping amount (L) in the width direction of a previously formed one and the following one to be formed following the previously formed one of the beads becomes constant based on the size of the molten pool (MP) obtained from the detection unit (140) when forming the previously formed one of the beads.