

★★★ <第11回知的財産翻訳検定試験【第5回英文和訳】> ★★★

《1級課題「機械工学」》

【解答にあたっての注意】

1. ***START***から***END***までを和訳してください。
2. 解答語数に特に制限はありません。
3. 課題文に段落番号がある場合、これを訳文に記載してください。
4. 課題に図面が添付されている場合、該当する図面を参照してください。★「課題図表の表示／非表示」リンクで表示
5. 課題は3題あります。それぞれの課題の指示に従い、3題すべて解答してください。

[問1] 次のクレーム (claims) を日本語に翻訳してください。なお、翻訳にあたってはクレームの後ろの明細書の記載 (抜粋) および図面を参考にしてください。

START

1. An illuminator comprising at least one flat optical fiber having opposite flat surfaces, opposite side surfaces, and two ends,
wherein the fiber has a clad light conducting core for conducting light entering an end of the fiber by internal reflection, and a pattern of U shaped notches or grooves provided in at least one side of the fiber along at least a portion of the length of the fiber to cause conducted light to be emitted from the fiber.
2. An illuminator comprising a light guide having at least one light receiving edge for receiving light from a light source for transmission through the light guide by internal reflection, some of a surface of the light guide being coated with a masking material, and a pattern of shallow U shaped notches or grooves that are laser cut in unmasked areas of the surface for causing at least some of the transmitted light to be reflected or refracted out of the light guide.

END

《参考》明細書の記載 (抜粋)

FIELD OF THE INVENTION

This invention relates to transparent light emitting members that have specially shaped notches or grooves in one or more surfaces to create a selected light output distribution from such members.

BACKGROUND OF THE INVENTION

It is well known that light transparent members including for example rods, panels, films, sheets and plates, can be made into light emitting members or illuminators by notching the members in a certain pattern. However, such notches are typically relatively sharp grooves, which do not scatter light very finely.

DETAILED DESCRIPTION OF THE INVENTION

The light emitting member may also comprise one or more optical fibers. The optical fibers may be flat. Fig. 1 is an enlarged schematic perspective view of such a flat optical fiber that may be used to make the light emitting members/illuminators of the present invention. This flat fiber has opposite flat sides 29 and 30, opposite side edges 31 and 32, ends 33 and 34, and a light transmitting core portion 35 made of a suitable optically transparent material such as glass or plastic having the desired optical characteristics and flexibility.

Fig. 2 is an enlarged schematic perspective view showing a laser being used to cut different patterns of U or C shaped notches or grooves in one side of a light emitting member. A portion of the surface of the light guide may also be coated with a masking material 55, and a pattern of shallow U shaped notches or grooves 3 may be laser cut in the unmasked areas 56 of the surface as shown in Fig. 2.

【1級/機械工学 問1 図面】

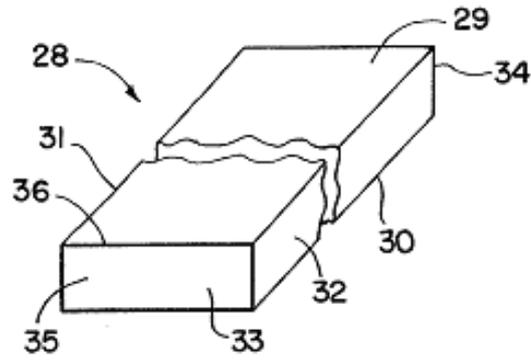


Fig. 1

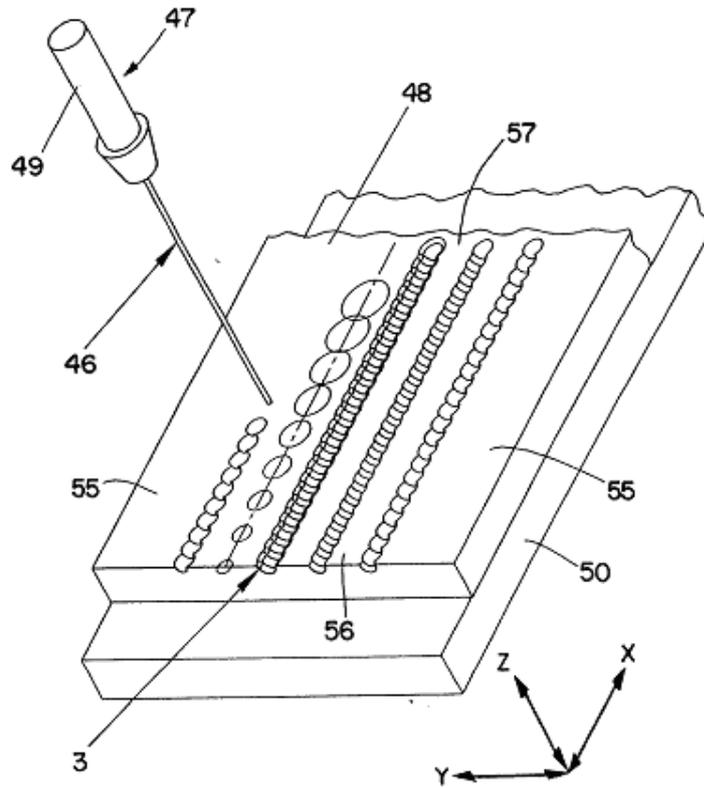


Fig. 2

〔問2〕 次の米国特許明細書中の背景技術にかかわる記載内容について翻訳しなさい。

START

[0002] In sharp contrast to auto racing transmissions, input planetary gears used in the wind turbine power generating industry operate under significantly different conditions, where the gears experience very high, varying loads at low pitch line velocities such that boundary lubrication is predicted rather than hydrodynamic (or even elastohydrodynamic) lubrication, which is desirable. Boundary lubrication occurs when the mating gear teeth during operation are wetted with fluid but the lubricant film thickness is less than the combined mating surface roughness. Thus, the lubricant film can be penetrated by peak asperities, and metal-to-metal contact generates metal debris from the gear teeth, contributing to gearbox failure. Traditionally manufactured ground wind turbine gear teeth are hoped to achieve a surface finish of $Ra = 0.5 - 0.7$ micron. However, those practiced in the art recognize that a traditionally manufactured annular gearwheel will have a much higher surface finish.

[0003] In contrast, chemically accelerated vibratory superfinishing to a condition of $Ra < 0.3$ micron was thought to be too smooth for large wind turbine generators in that the teeth flanks would have insufficient lubricant retention for operation and tooth failure was predicted. Thus, it was questionable whether or not superfinishing using chemically accelerated vibratory finishing of the input planetary stage would add any performance value to the gear box. Only lengthy and costly field testing could provide the answer.

END

〔問3〕 次の米国特許明細書中の実施例にかかわる記載内容について翻訳しなさい。翻訳にあたっては図面を参考にしてください。

START

[0004] Referring to FIG. 1 there is shown a double hollow universal joint 8 having two hollow universal joints 10. The double universal joints 10 interconnect a first member 12, a second member 14 and a third member 24. It should be understood that the double hollow universal joint 8 shown in these Figures has specific application with respect to use in a pig train for pipeline inspection devices. Accordingly, the first member 12 and the third member 24 are shown as blocks having fastening bolts 15 and a hollow central bore 17 that is adapted to

be attached to a pig device of a pig train. While the illustrations relate to this application, it should be understood that the first member 12 and the third member 24 may comprise alternative structures. Further, second member 14 is shown in the drawings as a hollow tubular structure. It should be understood that this intermediate structure in the double hollow joint 8 may vary in length and actually be as short as or close to approximating that shape of a ring. Accordingly, the first member 12, the second member 14 and the third member 24 may comprise other shapes such as ring shapes or shaft like members for example. Hence, the double universal joint 8 as shown in FIG. 1 may have other applications than that which is described herein, and each of the universal joints 10 may be utilized on its own as a single hollow universal joint for alternative applications.

END

【1級/機械工学 問3 図面】

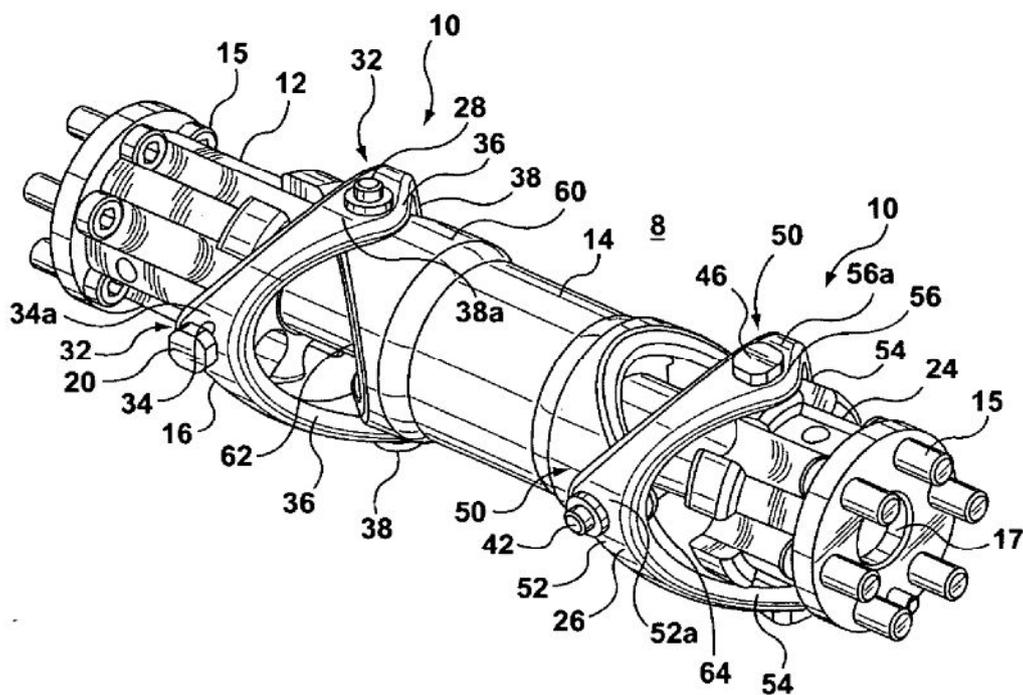


FIG. 1