★★★ ＜第27回知的財産翻訳検定試験【第13回英文和訳】＞ ★★★
≪１級課題 -電気・電子工学-≫

【解答にあたっての注意】
１．問題の指示により和訳してください。
２．解答語数に特に制限はありません。適切な箇所で改行してください。
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．次の英文は、自動車のエンジン制御に関する発明の請求項です。図面も参照して日本語に訳してください。

1. A vehicle comprising:
a battery; and
a controller configured to
in response to detecting a load of the vehicle drawing power from the battery, decrease to a first predefined value a state of charge (SOC) threshold at which engine start is initiated,
in response to detecting that the load is no longer drawing power from the battery, increase the SOC threshold, and
in response to a SOC falling below the threshold, initiate engine start.

6. A method comprising:
by a controller,
decreasing a state of charge (SOC) threshold at which engine start is initiated in response to detecting a load of a vehicle drawing power from a vehicle battery and user input authorizing the decreasing unless a request for economy mode exists,
increasing the SOC threshold in response to detecting subsequent absence of the load, and
initiating engine start in response to a SOC falling below the SOC threshold.

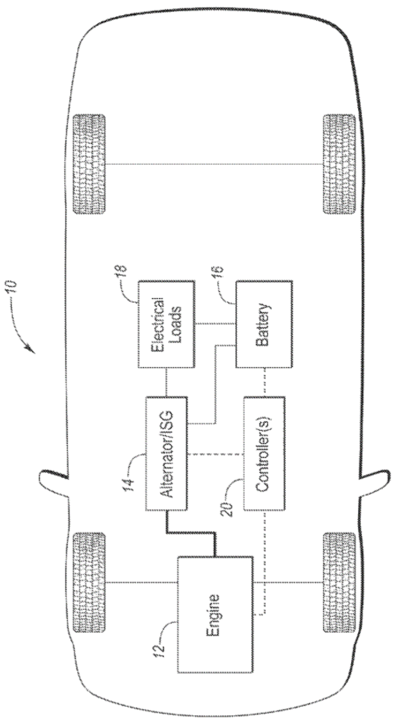

FIG. 1

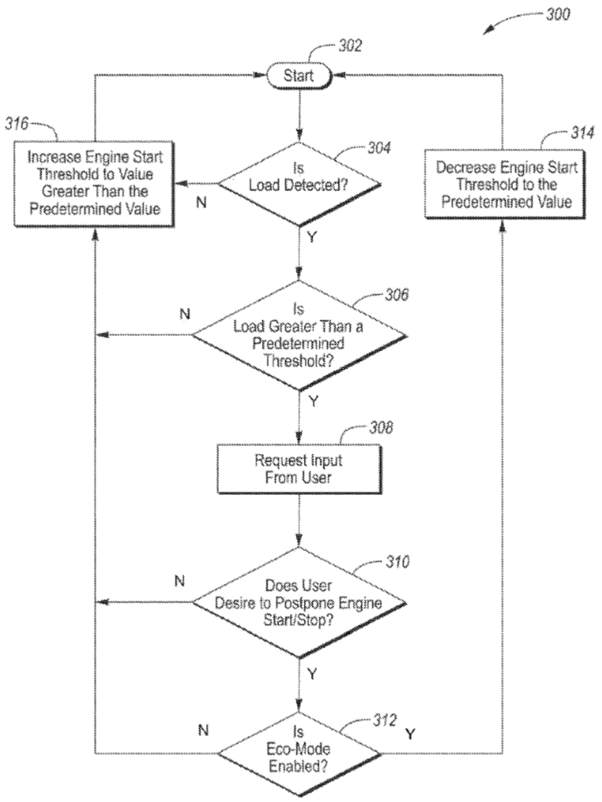

FIG. 3

問 2. 次の英文は、いわゆる視力矯正のための「ＬＡＳＩＫ」に関する特許の従来技術の欄の記載です。太字の部分（A）～（A’）、（B）～（B’）を日本語に訳してください。

In preparation for a so-called "flap and zap" (Lasik) ophthalmic laser surgery procedure, it is common practice to first create a stromal flap. Typically, this is done by mechanically cutting into the stroma to create the flap. To date, it has been the practice to accept the resultant incision as being substantially flat. Actually, however, the interface surface that results when the flap is created is not flat. **(A) Instead, due to irregularities in the sharpness of the cutting blade, due to imperfect applanation for stabilizing the cornea during cutting of the flap, and due to the resistance between the stromal tissue and the cutting blade as the flap is created, the resulting incision typically includes several surface irregularities. (A')** These irregularities, unfortunately, are significant. Indeed, it happens that these irregularities are generally in the form of asymmetric undulations that may vary in amplitude by as much as ten microns, and extend over a distance of as much as a millimeter. As is well known, undulations (surface irregularities) of this magnitude will induce noticeable aberrations in any wavefront that passes through the surface. It is known that an excimer laser has a relatively large spot size (e.g. approximately one millimeter in diameter). It is also known that an excimer laser will superficially photoablate an exposed layer of stromal tissue to a substantially uniform depth within the spot size. Consequently, any undulations of one millimeter that are initially present on an exposed surface of stromal tissue will persist and will still be present after the procedure has been completed. This, however, is good. Although the surface undulations will introduce aberrations during the procedure, these same aberrations will be cancelled when the flap is lowered onto the exposed surface.

(B) Heretofore, whenever closed-loop control of an excimer laser has been employed during ophthalmic surgery, the contribution of the surface irregularities (undulations) to the total aberrations of the eye has been generally disregarded. Consequently, it has been the practice in earlier closed-loop control systems to generate a controlling error signal by comparing the extent of actual tissue photoablation to the predetermined amount of desired photoablation. Using wavefront analysis, this has been done by identifying the actual distorted wavefront that is created by the stromal tissue (including the undulation contribution), and then comparing the distorted wavefront with a desired wavefront to generate the error signal. The desired wavefront, however, is normally determined off-site and is the result of a diagnostic examination. Thus, it is predetermined, and does not account for aberrations that are subsequently introduced by surface undulations (irregularities) when the flap is subsequently created at the time the procedure is to be performed. The result here is that the undulations on the exposed surface are removed along with the desired tissue removal. (B')

問 3. 次の英文は、飛行機の機体への印刷を行うための発明に関する実施例の説明です。図面も参照しつつ、太字の部分(X)～(X')、 (Y)～(Y')、(Z)～(Z')を日本語に訳してください。

FIG. 8 is a sectional view of a printhead 300 printing image slices 404 on a surface 102. The printhead width 302 may be oriented parallel to a transverse direction 354 (FIG. 13) to the rastering path 350. The printhead 300 may include a plurality of nozzles 308 or orifices distributed between opposing widthwise ends 306 of the printhead 300. For example, an inkjet printhead may include thousands of orifices. The printhead 300 may eject droplets 330 (FIG. 10) of ink, paint, or other fluids from the orifices to form a coating having a coating thickness 336 on the surface 102.

(X) Each image slice 404 (FIG. 8) may have opposing side edges 416 defining a bandwidth 410 of the image slice 404. The printhead 300 may be configured to print an image slice 404 with an image gradient band 418 along at least one of the side edges 416. In the example shown, an image slice 404 may contain an inner portion 414 bounded on opposite sides by an image gradient band 418. An image gradient band 418 may be described as a band within which the intensity of the color of the image slice 404 changes (e.g., decreases) along a transverse direction 354 relative to the direction of the rastering path 350 from an inner boundary 420 of the image gradient band 418 to the side edge 416. (X') For example, the inner portion 414 of the image slice 404 may be black in color. Within the image gradient band, the color may gradually change from black at the inner boundary 420 (e.g., a relatively high intensity) to white (e.g., a relatively low intensity) at the side edge 416 of the image slice 404. An image gradient band 418 of an image slice 404 may be wider than the inner portion 414 of the image slice 404. For example, an image gradient band 418 may be no more than 30% the bandwidth 410 of the image slice 404.

The printhead 300 may be moved along the rastering paths 350 such that the image gradient bands 418 of the image slices 404 overlap.

(Y) Advantageously, the overlapping rastering paths 350 allow for gaps and overlaps representing deviations from the nominal spacing between adjacent

image slices 404 resulting in a reduced likelihood that such deviations from the nominal image slice spacing are visually perceptible. In this regard, the image gradient bands 418 on the side edges 416 of the adjacent image slices 404, when superimposed, result in imperceptible image edges even with imperfect tracking by the robot 202 along the rastering paths 350. (Y') In this manner, the image gradient bands 418 allow for printing of complex, intricate, and multi-colored images in multiple, single-pass image slices 404 on large-scale surfaces 102 using large-scale rastering devices such as the robot 202 shown in FIGS. 1-5.

FIG. 9 is a magnified view of a printhead 300 showing one example for forming an image gradient band 418. As indicated above, the decrease in the intensity of the image gradient band 418 may be achieved by reducing or tapering the coating thickness 336 along a transverse direction 354 (FIG. 13) from the inner boundary 420 of the image gradient band 418 to the side edge 416 of the image slice 404. The droplet spacing 332 may be uniform within the inner portion 414 of the image slice 404. In FIG. 9, the coating thickness 336 within the image gradient band 418 may be tapered by progressively increasing the droplet spacing 332 between the droplets 330 ejected by the nozzles 308. In this regard, some of the nozzles 308 (e.g., orifices) of the printhead 300 in the area wherein the image gradient band 418 is to be printed may be electronically deactivated and may be referred to as inactive nozzles 312, and only active nozzles 310 within the image gradient band 418 may eject droplets 330 to form the image gradient band 418. In other examples, the printhead 300 may be provided with progressively larger gaps between nozzles 308 for the area wherein the image gradient band 418 is to be printed.

FIG. 10 is a magnified view showing another example of a printhead 300 forming an image gradient band 418 by maintaining the nozzles 308 as active nozzles 310 producing a uniform droplet spacing, and progressively decreasing the droplet size 334 in the area where the image gradient band 418 is to be formed. In still further examples, image gradient band 418 may be formed by a combination of controlling the droplet spacing 332 and controlling the droplet size 334. However, other techniques may be implemented for forming image gradient band 418 and are not limited to the examples shown in the Figures and described above. The printhead 300 may be configured to form the image gradient band 418 with an image gradient that is linearly decreasing. Alternatively, the image gradient within the image gradient band 418 may be non-linear.

FIG. 11 is a diagrammatic sectional view of adjacent image slices 404 with overlapping image gradient bands 418. Shown is the coating thickness 336 (FIG. 10) in the image gradient band 418 and in the inner portion 414 of each image slice 404. FIG. 12 is a plan view of the image slices 404 of FIG. 11 showing the overlapping image gradient bands 418 and the parallel rastering paths 350 of the image slices 404. In the system 200 as shown, the arm (FIG. 7) may move the printhead 300 to print a new image slice 406 in parallel relation to an existing image slice 408 (e.g., a previously-printed image slice 404) in a manner such that an image gradient band 418 of the new image slice 406 (FIG. 8) overlaps an image gradient band 418 of the existing image slice 408. In this regard, the side edge 416 of each image slice 404 may be aligned with an inner boundary 420 of an overlapping or overlapped image gradient band 418. However, in an example not shown, the printhead 300 may print image slices 404 in a manner to form a gap between the side edge 416 of an image gradient band 418 of a new image slice 406 and an existing image slice 408. As indicated above, the printhead 300 may print the image gradient band 418 of the new image slice 406 and the existing image slice 408 such that the overlap has an image intensity equivalent to the image intensity of the inner portion 414 of the new image slice 406 and/or the existing image slice 408.

In a still further example not shown, the printhead 300 (FIG. 10) may form an image gradient end on at least one of opposing ends of an image slice 404. An image gradient end may have an image intensity that may decrease toward an end edge (not shown) of the image slice 404. **(Z) Such an image gradient end may provide a means for blending (e.g., feathering) the image slice 404 with the color and design of the existing color and design of the surface 102 area surrounding the newly-applied image 400. For example, the system may apply a newly-applied image 400 to a portion of a surface** that may have undergone reworking such as the removal and/or replacement of a portion of a composite skin panel (not shown) and/or underlying structure. The image gradient ends of the newly-applied image slices 404 may provide a means for blending into the surrounding surface 102. The image gradient end may also facilitate the blending on a new image slice 406 with the image gradient end of another image 400 located at an end of a rastering path 350 of the new image slice 406. (Z')

Referring to FIG. 13, shown is an example of a printhead 300 mounted on an end 214 of a robot arm and being movable by the arm over a surface 102 along a rastering path 350 while printing a new image slice 406 adjacent to an existing image slice 408. The printhead 300 may include a reference line printing mechanism 320 configured to print a reference line 322 when printing the new image slice 406. The reference line 322 may provide a means for the printhead 300 to precisely track the rastering path 350 of an existing image slice 408. The printhead 300 may include a reference line sensor 326 such as an image detection system for sensing the reference line 322 and providing path error feedback to the controller 208 (FIG. 14) to allow the robot 202 to generate path correction inputs to the printhead 300 such that the side edge 416 of the new image slice 406 is maintained in alignment with the side edge 416 of the existing image slice 408.

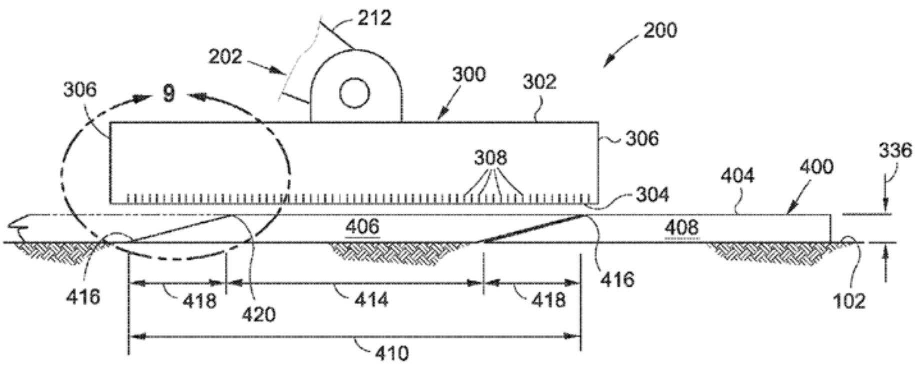

FIG. 8

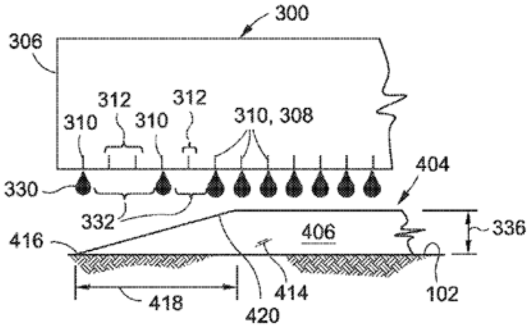

FIG. 9

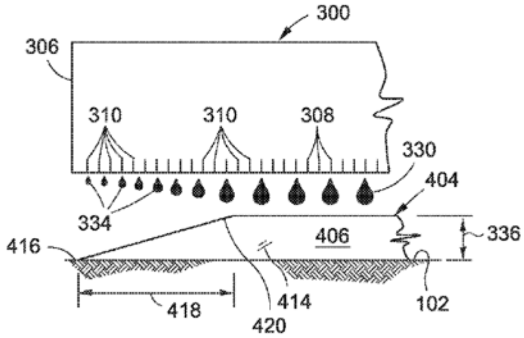

FIG. 10

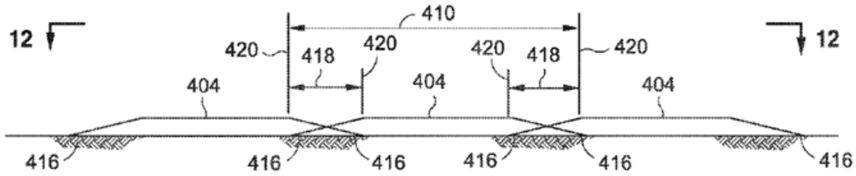

FIG. 11

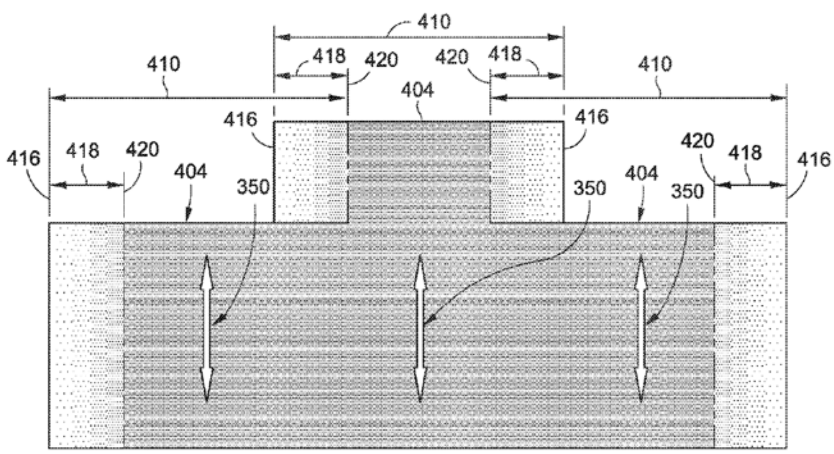

FIG. 12

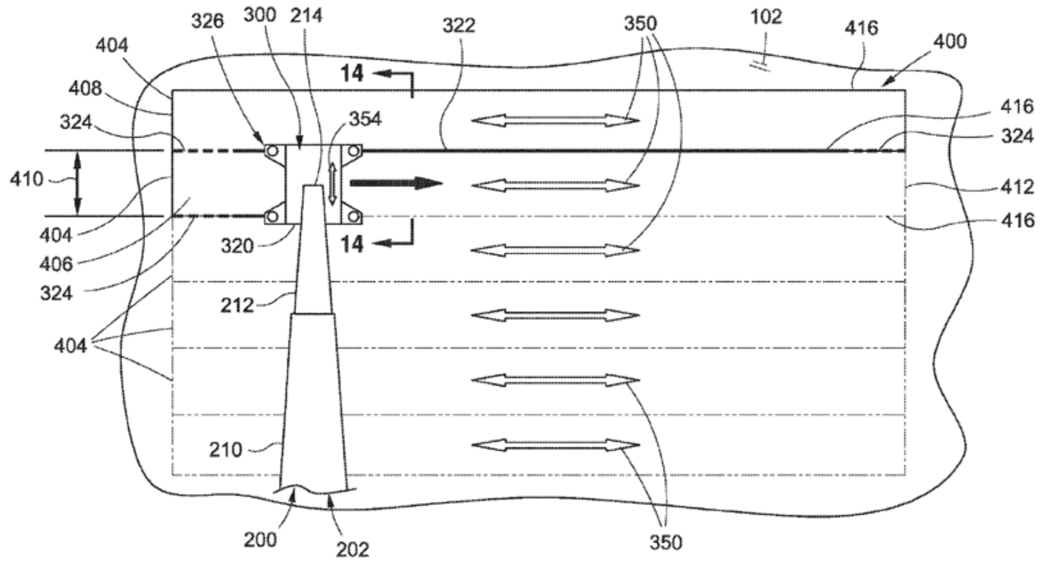
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FIG. 13