

REMARKS

The Applicant thanks the Examiner for the telephone interview of September 27, 2011 and in light of the discussion and the Final Office Action dated 11/09/2011 provides the above noted amendments and the following remarks with respect to independent claims 1 and 10.

Claims 1 - 15 are pending in this application. Claims 16 – 19 are withdrawn.

Claims 1 - 10 are rejected in the final official action as obvious under 35 U.S.C. 103(a) as being unpatentable over Dundorf U.S. Patent No. 5,197,013 hereinafter Dundorf `013 in view of Estape U.S. Patent No. 2004/0128932 hereinafter Estape `932 and Risser et al. U.S. Patent No. 7,060,934 hereinafter Risser et al. `934, further in view of Universal Laser Systems (M-300 Laser Engraving and Cutting System, hereinafter, M-300.)

The Applicant thanks the Examiner for the telephone interview of September 27, 2011 and in light of that discussion provides the above noted amendments and the following remarks with respect to independent claims 1 and 10.

As an initial matter claims 1 and 10 are amended to clarify the claimed aspects of the present invention specifically the *polyurethane* foam material being cut with the laser. Also, as discussed during the telephone interview, none of the references disclose or even suggest the specifically claimed step or feature of selecting an optical focusing device, such as a mirror power based on the thickness of the foam. Further, none of the references disclose the step of focusing the focal point of the laser deep within the material and *closer* to the rear surface of the foam than the front surface. Claims 1 and 10 are also specifically amended in this regard:

..aligning the focal point of the laser at an intermediate point between the front surface and *closer to* the rear surface of the foam material based on the mirror power selected and the thickness of the selected foam material;

Similarly, claim 10 recites:

..selecting a mirror power relative to the thickness of the foam material for the laser which defines a focal point of the laser at a desired distance from the laser along a beam axis; and

arranging the focal point of the laser at an intermediate point between the front surface and *closer to* the rear surface of the foam material;

Also, it important to the control of the laser cutting of such polyurethane foam that the foam material does not completely combust and catch fire. Given the above noted focal point depth settings, the density and/or thickness of the foam can play a roll relative to the speed at which the laser moves across and through the foam material. As noted in Applicant's specification at pgs. 10-11 in order to preclude complete combustion of the foam where the focal point is aligned within the material the speed is determined as a function of at least one of the density and thickness of the foam. This step is now also clearly recited in Applicant's claims 1 and 10.

In claim 1:

..inputting a speed setting to the laser controller based upon at least one of the *density and thickness* of the foam material; and

In claim 10:

..inputting a speed setting to a laser controller based upon at least one of the *density and thickness* of the foam material; and

Because the references either alone or in combination fail to disclose the specifically claimed step of the Applicant's invention of aligning the focal point of the laser at an intermediate position between the front surface and *closer to* the rear surface of the foam material according to the mirror strength and the material thickness, and the step of inputting a speed setting based on the *density and thickness* of the foam, the Applicant believes claim 1 should be allowable and respectfully requests that the obviousness rejections under 35 U.S.C. 103(a) be withdrawn. Each of claims 2 – 9 are dependent either directly or indirectly on claim 1 and thus, in view of the allowability of claim 1 as set forth above, the Applicant believes these claims to be allowable as well. Claimed 10 has been similarly amended and is believed to be allowable as well.

Claims 11 - 15 are rejected as obvious under 35 U.S.C. 103(a) as being unpatentable over Dundorf U.S. Patent No. '013, in view of Estape '932, Risser et al. '934, M-300 and Sutula U.S. Patent No. 2002/0114537 hereinafter Sutula '537. The Applicant has added the subject matter of claims 11 – 15 into claim 10 and has canceled these claims. The Applicant therefore respectfully requests that the Examiner reconsider and withdraw all obviousness rejections.

The above noted claim amendments and related remarks are directed to the merits of the present application and were not earlier presented or believed necessary because the Applicant considered the previously presented claim language to sufficiently differentiate the claimed subject matter from the cited reference(s). The Applicant believes that the claims as set forth herein to be novel and inventive over the prior art and, in any event, believes these after-final amendments place this case in better form and condition for consideration on appeal and therefore respectfully requests the Examiner to enter the same in accordance with 37 C.F.R. 1.116.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 50-5575).

Respectfully submitted,

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