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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* YOUN JAE LEE

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Appeal 2019-002605  
Application 14/711,799  
Technology Center 3600

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Before CHARLES N. GREENHUT, JILL D. HILL, and  
MICHAEL L. WOODS, *Administrative Patent Judges*.

GREENHUT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the  
Examiner's decision to reject claims 21–27 and 35–39. *See* Non-Final Act.

1. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Zinus, Inc. Appeal Br. 1.

### CLAIMED SUBJECT MATTER

The claims are directed to a mattress supporting system with locking mechanism for leg supports. Claim 21, reproduced below, is illustrative of the claimed subject matter:

21. An apparatus comprising:  
a bed frame assembly with a hinge at which a first portion of the bed frame assembly is adapted to unfold from a second portion of the bed frame assembly, wherein the bed frame assembly has a first cross bar, a second cross bar and longitudinal bars, and wherein opposite ends of the first cross bar are attached to the longitudinal bars;  
a leg support pivotally attached to the first cross bar;  
a slotted bracket with a rounded slot attached to the second cross bar, wherein the rounded slot has a terminal end and an entrance, and wherein the terminal end is wider than the entrance; and  
a diagonal strut with a bolt and a conical washer on the bolt, wherein the diagonal strut is attached to the leg support and to the slotted bracket, and wherein the conical washer is pressed into the terminal end of the rounded slot.

### REFERENCES

The prior art relied upon by the Examiner is:

<b>Name</b>	<b>Reference</b>	<b>Date</b>
Hannon	US 4,148,724	Apr. 10, 1979
Choi	US 2010/0235990 A1	Sept. 23, 2010
Oh	US 2016/0157621 A1	June 9, 2016

### REJECTION

Claims 21–27 and 35–39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Oh, Hannon, and Choi.

OPINION

*Claim 21*

In rejecting claim 21, the Examiner relied on Oh for the basic bed frame structure (Non-Final Act. 3), Hannon for teaching the use of a conical washer (Non-Final Act. 4 (citing Hannon, Figs. 2, 4)), and Choi for teaching a rounded end of a bolt-accommodating slot (Non-Final Act. 4 (citing Choi, Fig. 4)).

Appellant's arguments begin by pointing out that no single reference teaches a conical washer being pressed into the end of a slot. App. Br. 6. Appellant makes similar arguments repeatedly. *See, e.g.*, App. Br. 6 ("A washer in [Hannon's] hole does not teach a washer in [Oh's] slot."). However, unlike anticipation, the obviousness inquiry is not whether the claimed invention is expressly disclosed or suggested in any one of the references, but whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the combined teachings of those references. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981); *see also In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) ("Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references" (citation omitted)); Ans. 3 (quoting MPEP § 2145(IV)). Thus, no single reference teaching a conical washer being pressed into the end of a slot is not indicative of Examiner error.

Appellant next argues there was no reason to make the modification proposed by the Examiner. App. Br. 6–7. Appellant recognizes and acknowledges the conical washer will "permit movement" during fastening. App. Br. 7 (emphasis omitted). Appellant contends this is undesirable

because Appellant's goal of using the conical washer is to prevent the bolt from slipping out of the rounded slot. App. Br. 7 (citing Spec. paras. 119, 127).

First, it is not necessary for the prior art to serve the same purpose as that disclosed in Appellant's Specification in order to support the conclusion that the claimed subject matter would have been obvious. *See In re Lintner*, 458 F.2d 1013, 1016 (CCPA 1972); *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007) (“[N]either the particular motivation nor the avowed purpose of the [Appellant's] controls” in an obviousness analysis.). “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR*, 550 U.S. at 420.

Second, as Appellant also appears to recognize (App. Br. 7 (annotating Hannon, Fig. 4)), the movement referred to in Hannon and by the Examiner relates to the ability of the bolt to fasten adequately while tolerating some degree of non-perpendicular alignment:

Rail mounting holes 55 are larger than the diameter of bolt shank 38 and the outer circumference of conical washer 58 (FIG. 4) so as to permit movement of conical washer 58 with respect to the edges of holes 55. Enlarged holes 55 permit the continued movement of lower angled flange 10 toward frame wall 44 when tensioning screen 2, even when insulator protective strip 63 is engaged with vertical wall 44.

Hannon, col. 6, ll. 19–27 (cited at Non-Final Act. 4; Ans. 4). This would be advantageous to accommodate any misalignment or lack of perfect perpendicularity in Oh. Although it is not expressly argued, to the extent it is Appellant's position that such an arrangement could potentially lead to Appellant's suggested adverse consequence of permitting or encouraging the

bolt to slip out of Oh's slot (e.g., in the particular case the bolt alignment couples with the conical washer to create a wedge force that happens to coincide with the direction of the slot) it must be remembered that the Examiner also proposed to incorporate Choi's rounded bolt-accommodating slot end which would prevent any such slippage. In the Examiner's proposed combination Hannon's conical washer would still cooperate with a largely circular opening, albeit one arranged at the end of a slot as in Choi, and thus, be expected to provide similar benefits to those described in Hannon.

Appellant's arguments concerning the absence of a pressing force exerted in Hannon (App. Br. 8) are again improperly focused on a single reference as opposed to the Examiner's proposed combination of reference teachings.

Appellant provides a skeletal non-analogous-art argument on pages 8–9 of the Appeal Brief. The Examiner provides an analogous art analysis on pages 5–7 of the Examiner's Answer (citing MPEP § 2141.01(a)). The only issue raised by Appellant with regard to the Examiner's analogous art analysis is:

The [E]xaminer's argument lacks credibility because Hannon's conical washer 58 does not prevent bolt 36 from moving out of hole 55. A bolt can move out of a slot, but a bolt can never move out of a hole. A washer is conventionally used to prevent a threaded connection from untightening. But no conventional washer or even Hannon's conical washer has ever been used to prevent a bolt from moving out of a slot.

Reply Br. 9.

The comments “a bolt can never move out of a hole” and “no conventional washer . . . has ever been used to prevent a bolt from moving out of a slot” appear to suggest either Appellant is referring to transverse

movement of the bolt or Appellant is considering the washer alone, neglecting its cooperation with a nut. Reply Br. 9.

As mentioned above, Hannon's conical washer serves to fill the enlarged hole 55 allowing Hannon's bolt to properly seat and be fastened therein. Ans. 6. It is true that the relative sizes of Hannon's hole 55 and nut 61 are not discussed, but based on Figure 2 of Hannon, and the associated description of enlarged holes 55, it seems very reasonable for the Examiner to conclude that Hannon's conical washer 58 plays a significant role in preventing the withdrawal of bolt 36 from hole 55. This is not changed by the fact that the washer 58 cooperates with an additional structure, nut 61, to do so.

The Examiner's quotation of MPEP § 2141.01(a)(IV) is appropriate here where patentability is premised upon a very simple arrangement of very common mechanical components such as nuts, bolts, slots, and washers:

In a simple mechanical invention a broad spectrum of prior art must be explored and it is reasonable to permit inquiry into other areas where one of ordinary skill in the art would be aware that similar problems exist.

Indeed, the Supreme Court has recognized, "familiar items may have obvious uses beyond their primary purposes." *KSR*, 550 U.S. at 420; *see also In re ICON Health & Fitness, Inc.*, 496 F. 3d 1374, 1380 (Fed. Cir. 2007) ("[A]n inventor considering a hinge and latch mechanism for portable computers would naturally look to references employing other ' housings, hinges, latches, springs, etc.,' which in that case came from areas such as 'a desktop telephone directory, a piano lid, a kitchen cabinet, a washing machine cabinet, a wooden furniture cabinet, or a two-part housing for

storing audio cassettes’’) (discussing *In re Paulsen*, 30 F.3d 1475, 1481–82 (Fed. Cir. 1994)).

For the foregoing reasons, we sustain the Examiner’s rejection of claim 21. We also sustain the rejection of dependent claims 22 and 27 which are not separately argued. *See* 37 C.F.R. § 41.37(c)(1)(iv).

*Independent claim 35 and dependent claims 24 and 25*

Regarding claim 35, Appellant repeats the arguments addressed above with regard to claim 21. App. Br. 10–12. These arguments remain unpersuasive for the reasons discussed above.

Claim 35 additionally recites a limitation pertaining to a round opening at the terminal end of the slot. Claims 24 and 25 contain similar limitations. In regard to this aspect of the claimed subject matter, Appellant argues, “Oh’s notch 82 does not have a round opening at its end with a diameter that is larger than the width of the rest of the notch.” App. Br. 10. This argument is inapposite. The Examiner clearly stated this feature was lacking from Oh and relied on Choi in this regard. Non-Final Act. 4; Ans. 7. Arguments must address the Examiner’s action. 37 C.F.R. § 41.37(c)(1)(iv) (“The arguments shall explain why the examiner erred as to each ground of rejection contested by appellant.”).

Accordingly, we are not apprised of any errors in the Examiner’s rejection of independent claim 35, dependent claims 24 and 25, or claims 36, 38, and 39 which depend from claim 35 and are not separately argued.

*Dependent claim 26*

In addition to the rounded opening discussed above with regard to claims 24, 25, and 35, claim 26 recites that “the round opening has a diameter that is . . . smaller than the largest diameter of a coned portion of the conical washer.” Appellant argues that “[t]here is no basis to compare the size of a slot of one reference (Oh) with the size of a conical washer of another.” App. Br. 10. This argument again stems from the absence of a single reference teaching the combination claimed. As the Examiner points out, Hannon teaches the washer 58 must be larger than the hole 55. Were this teaching not applied to the opening at the end of Choi’s slot, the washer would fall through the hole and be rendered unsuitable for its intended purpose. The fact that judgment and mechanical skill may be required to arrive at a particular combination does not necessarily mean that particular combination constitutes a nonobvious invention. *Graham v. John Deere Co. of Kansas City*, 383 US 1, 10–12 (1966). Appellant’s argument that one would not know to size a washer bigger than the bolt-receiving opening fails to attribute the requisite level of skill to the hypothetical artisan of § 103(a). *In re Sovish*, 769 F. 2d 738, 743 (Fed. Cir. 1985) (concluding an argument that “presumes stupidity rather than skill” is not persuasive).

*Dependent claims 23 and 37*

Claims 23 and 37 recite that the conical washer is pressed into the slot by a wing nut. Appellant again argues the references individually, pointing out that no single reference combines a wingnut with a washer. App. Br. 9, 12. Appellant argues Hannon’s wrench-tightened nut would work better for holding Hannon’s screen. App. Br. 9, 12; Reply. Br. 10. This is inapposite

because the question is not whether it would have been obvious to incorporate Oh's wing nut into Hannon's device and application but whether it would have been obvious to incorporate Hannon's washer into Oh's device, where Oh already employs a wing nut (*see* Oh, Fig. 8). Non-Final Act. 5 (citing Oh, para. 33). That issue has been addressed above with regard to claim 21.

### CONCLUSION

The Examiner's rejection is affirmed.

### DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
21-27, 35-39	103(a)	Oh, Hannon, Choi	21-27, 35-39	

### TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED