

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Wilcox, *et al.*

U.S. App. No.: 18/404,525

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Examiner: Flemming Saether

Confirmation No.: 4785

BLIND FASTENER AND METHOD OF
INSTALLATION THEREOF

Attorney Docket No. 118508/US02/
PCTNS/180639PCTUSCON

RESPONSE TO OFFICE ACTION

Commissioner for Patents
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Applicant submits this Response in reply to the Office Action issued on October 2, 2025, (“*Office Action*”) for the above-identified patent application (“*Subject Application*”). In this Response:

Amendments to the claims begin on page 2; and

Remarks begin on page 8.

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions and listings of the claims in the *Subject Application*.

1. (Currently Amended) A blind fastener configured to be installed in a structure,
~~comprising the blind fastener consisting of:~~
 - a sleeve comprising
 - a first sleeve end,
 - a second sleeve end,
 - an elongate portion intermediate the first sleeve end and the second sleeve end,
 - the elongate portion comprising a sleeve diameter,
 - a collar positioned adjacent the second sleeve end, the collar comprising a collar diameter greater than the ~~first~~ sleeve diameter,
 - a cavity extending from the first sleeve end to the second sleeve end, the cavity comprising a cavity diameter; and
 - a mandrel at least partially received by the cavity, the mandrel comprising
 - a first mandrel end comprising an enlarged portion having a head diameter greater than the cavity diameter of the cavity, wherein the first mandrel end is disposed adjacent the first sleeve end,
 - a second mandrel end, ~~comprising~~
 - a pull region at the second mandrel end, the pull region extending to be adjacent to the second sleeve end prior to the installation of the blind fastener in the structure, and
 - a shank region intermediate the first mandrel end and the second mandrel end, the shank region comprising a shank diameter, the shank region extending through the cavity,
 - wherein the pull region comprises an axial length no greater than ~~3.25~~ 3 times the shank diameter of the shank region.

2. (Previously Presented) The blind fastener of claim 1, wherein the pull region comprises an axial length no greater than 1.5 times the shank diameter of the shank region.
3. (Previously Presented) The blind fastener of claim 1, wherein the pull region comprises an axial length no greater than 2 times the shank diameter of the shank region.
4. (Canceled)
5. (Original) The blind fastener of claim 1, wherein the mandrel does not comprise a breakneck groove.
6. (Canceled)
7. (Original) The blind fastener of claim 1, wherein the mandrel comprises a Rockwell hardness of at least HRC 43.
8. (Previously Presented) The blind fastener of claim 1, wherein the shank region comprises at least one of a threaded region, an annular shoulder, and a groove, and the pull region comprises at least one of a threaded region, an annular shoulder, and a groove.
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Previously Presented) The blind fastener of claim 1, wherein the blind fastener is configured to be installed in a bore in a structure, the bore having a bore diameter greater than the head diameter of the enlarged portion, the sleeve is configured to deform on a first side of the structure, the collar is configured to swage onto the shank region on an oppositely

disposed second side of the structure, and the mandrel is configured to remain intact after being installed into the structure.

14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Cancelled)
18. (Cancelled)
19. (Cancelled)
20. (Cancelled)
21. (Previously Presented) The blind fastener of claim 1, wherein the pull region comprises a single groove.
22. (Currently Amended) The blind fastener of claim 1, wherein the shank region comprises at least two grooves.
23. (Currently Amended) The blind fastener of claim 1, wherein the pull region comprises a single groove and the shank region comprises at least two grooves.
24. (Previously Presented) The blind fastener of claim 23, wherein the mandrel does not comprise a breakneck groove.
25. (Previously Presented) The blind fastener of claim 23, wherein the pull region comprises an axial length no greater than 1.5 times the shank diameter of the shank region.
26. (Previously Presented) The blind fastener of claim 25, wherein the shank diameter of the shank region is a major diameter of the shank region.

27. (Previously Presented) The blind fastener of claim 1, wherein the blind fastener comprises a metal alloy.
28. (Previously Presented) The blind fastener of claim 1, wherein the blind fastener comprises an iron alloy.
29. (Previously Presented) The blind fastener of claim 1, wherein the mandrel comprises a Rockwell hardness of at least HRC 45.
30. (Previously Presented) The blind fastener of claim 1, wherein the elongate portion is generally cylindrical.
31. (Cancelled)
32. (Previously Presented) The blind fastener of claim 1, wherein the collar is configured to be swaged onto the shank region.
33. (Currently Amended) The blind fastener of claim 1, ~~wherein the mandrel is at least partially received by the cavity of the sleeve, the first mandrel end is adjacent to the first sleeve end, and the second mandrel end is adjacent the second sleeve end.~~
34. (Currently Amended) A blind fastener comprising:
 - a sleeve comprising
 - a first sleeve end,
 - a second sleeve end,
 - an elongate portion intermediate the first sleeve end and the second sleeve end,
 - wherein the elongate portion comprises a sleeve diameter and is generally cylindrical, and
 - a collar adjacent to the second sleeve end, wherein the collar comprises a collar diameter greater than the sleeve diameter,
 - a cavity extending from the first sleeve end to the second sleeve end, wherein the cavity has a cavity diameter,
 - wherein the sleeve is a single piece; and

[[a]] the mandrel at least partially received by the cavity of the sleeve, the mandrel comprising

a first mandrel end adjacent to the first sleeve end and comprising an enlarged portion having a head diameter greater than the cavity diameter of the cavity, wherein the first mandrel end is disposed adjacent to the first sleeve end,

a second mandrel end, ~~comprising~~

[[a]] the pull region extending from the second sleeve end to the second mandrel end prior to installation and comprising a single groove, and

a shank region intermediate the first mandrel end and the second mandrel end, wherein the shank region has a shank diameter and ~~comprises~~ consists of grooves and a substantially smooth region,

wherein the mandrel does not comprise a breakneck groove and is configured to remain intact after being installed into a structure,

wherein the pull region comprises an axial length no greater than 1.5 times the shank diameter of the shank region, and

wherein the mandrel comprises a Rockwell hardness of at least HRC 43,

wherein the blind fastener is configured to be installed in a bore in a structure, the sleeve is configured to deform on a first side of the structure, the collar is configured to swage onto the shank region on an oppositely disposed second side of the structure, and the mandrel is configured to remain intact after being installed into the structure.

35. (Previously Presented) The blind fastener of claim 1, wherein the pull region comprises an axial length no greater than 1 times the shank diameter of the shank region.

36. (New) The blind fastener of claim 1, wherein the pull region comprises an axial length no greater than 2.5 times the shank diameter of the shank region.

37. (New) The blind fastener of claim 1, wherein the cavity is configured to be substantially smooth and free of threads.

38. (New) The blind fastener of claim 1, wherein the pull region is configured to

engage with an installation tool.

39. (New) The blind fastener of claim 1, wherein, prior to installation, the sleeve continuously extends from the enlarged portion of the first mandrel end to the pull region.
40. (New) The blind fastener of claim 1, wherein, prior to installation, the pull region extends from the second sleeve end to the second mandrel end.
41. (New) The blind fastener of claim 34, wherein the bore has a bore diameter greater than the head diameter of the enlarged portion.

REMARKS

I. Application Status

Claims 1–3, 5, 7–8, 13, and 21–35 were pending, with claims 1 and 34 being independent.

In the *Office Action*, the specification is objected to. Claims 1, 2, 5, 8, 13, 21, 24, 30–33, and 35 are rejected under 35 U.S.C. § 102(a)(1) as allegedly anticipated by U.S. Patent No. 7,156,596 to Makino et al. (“*Makino*”). Claims 2, 3, 25, and 26 are rejected under 35 U.S.C. § 103 as allegedly having been obvious over *Makino* as applied above, and further in view of U.S. Patent No. 10,738,816 to Yan et al. (“*Yan*”). Claims 22 and 23 are rejected under 35 U.S.C. § 103 as allegedly having been obvious over *Makino* in view of U.S. Patent Publication No. 2005/020056 to Denham et al. (“*Denham*”). Claims 7 and 27–29 are rejected under 35 U.S.C. § 103 as allegedly having been obvious over *Makino* in view of U.S. Patent No. 4,702,655 to Kendall et al. (“*Kendall*”). Claim 34 is rejected under 35 U.S.C. § 103 as allegedly having been obvious over *Makino*, *Yan*, *Denham*, and *Kendall*.

Applicant respectfully traverses each of the objections and rejections in the *Office Action*. Applicant respectfully requests reconsideration, withdrawal of the rejection, and allowance of the *Subject Application*. References herein to numbered paragraphs in the “Specification” refer to the paragraph numbering in U.S. Patent App. Pub. No. 2024/0133409.

Applicant would like to thank Examiner Saether for discussing the *Subject Application*, with Applicant’s representative Robert J. Sovesky on October 9, 2025. During the interview, the claim rejections under 35 U.S.C. §§ 102 and 103 were discussed. No agreement on allowance of the claims was reached.

II. Amendments to the Claims

Applicant amends claims 1, 22, 23, 33, and 34 herein. Support for the amendments to the claims can be found throughout the *Subject Application*, such as, for example, at least in the original claims, paragraphs [0020], [0022], and [0027], and FIGs. 1 and 2A.

Claim 31 is cancelled herein.

Applicant adds new claims 36-41 herein. Support for the new claim 35 can be found throughout the *Subject Application*, such as, for example, at least in the original claims, paragraphs [0020], [0022], and [0027], and FIGs. 1 and 2A.

The amendments herein do not add new matter to the *Subject Application* and are compliant with 35 U.S.C. §§ 112 and 132(a). The amendments are made without prejudice or disclaimer and solely to expedite allowance of the *Subject Application*. Applicant reserves the right to pursue the subject matter of the original or previously presented claims in continuing applications.

III. Objections to the Specification

In the *Office Action*, the Specification is objected to for not providing a reference to the parent application. In response, Applicant notes that a priority paragraph was added in the previous response filed with the Request for Continued Examination (RCE) filed July 16, 2025. Accordingly, Applicant respectfully requests the objection to the Specification be withdrawn.

IV. Rejections under 35 USC § 102

A claim is anticipated under 35 U.S.C. § 102 only if each and every feature as set forth in the claim is described in a single prior art reference, arranged as required by the claim, and in as complete detail as is contained in the claim. See MPEP § 2131. The identical invention must be described in a single reference with a level of detail that is as full and complete as is recited in the rejected claim. *Id.*

Claim 1 recites the blind fastener consisting of a sleeve and a mandrel. *Makino* discloses a blind rivet that includes at least three pieces, including a mandrel, a rivet body, and a tubular sleeve. *Makino* does not inherently or explicitly disclose the blind fastener is only a sleeve and a mandrel as recited in independent claim 1, as amended.

Additionally, claim 1 recites an axial length no greater than 3 times the shank

diameter of the shank region. This limitation is not explicitly or inherently disclosed in *Makino*.

Accordingly, Applicant respectfully submits that the rejection of claim 1 under 35 U.S.C. § 102 should be withdrawn. Claims 5, 8, 13, 21, 24, 30, 32-33, and 35 depend from claim 1 and should be allowable for at least the same reasons.

V. Rejections under 35 USC § 103

Applicant notes the burden is on the Office to establish a *prima facie* case of obviousness in view of the *Graham v. John Deere Co.* factual inquiries. In particular, *the Office* must at least (1) determine the scope and contents of the prior art, (2) ascertain the differences between the prior art and the claims in issue, and (3) resolve the level of ordinary skill in the pertinent art. “Once the *Graham* factual inquiries are resolved, [*the Office*] must determine the claimed invention would have been obvious to one of ordinary skill in the art.”

Yan does not teach or suggest a blind fastener and instead discloses a fastener that requires access to both sides of the structure to install. One of ordinary skill in the art would not apply the features of the fastener from *Yan* to a blind fastener, such as, for example, the blind rivet in *Makino*. Accordingly, the combination of *Yan* and *Makino* is improper.

Additionally, Applicant respectfully submits that *Yan*, *Kendall*, and *Denham* are insufficient to remedy the deficiency of *Makino*, as discussed above with respect to claim 1 in the remarks regarding the 35 U.S.C. § 102 rejection. Neither *Makino*, *Yan*, *Denham*, nor *Kendall* teach the feature recited in claim 1 wherein the pull region comprises an axial length no greater than 3 times the shank diameter of the shank region. As claim 1 is allowable over *Makino*, claims 2, 3, 25, and 26 should be allowable over *Makino* and *Yan*, claims 22, and 23 should be allowable over *Makino* and *Denham*, and claims 7 and 27-29 should be allowable over *Makino* and *Kendall*.

Claim 34 recites substantially similar feature of to claim 1, wherein “the pull region comprises an axial length no greater than 1.5 times the shank diameter of the shank region” and should be allowable over *Makino*, *Yan*, *Denham*, and *Kendall* for at least the same reasons.

Applicant respectfully requests that the rejections under 35 U.S.C. §103 be

withdrawn.

VI. Conclusion

Applicant submits that the claims of the *Subject Application* as presented herein are in condition for allowance. Applicant respectfully requests reconsideration and allowance of the *Subject Application*.

Applicant is not conceding that the claims of the *Subject Application* in their prior forms are not patentable. Applicant submits the present amended claims only to facilitate expeditious prosecution of the *Subject Application*. Applicant reserves the right to present the prior claims and other claims in continuing applications, subsequent responses, and/or appeal or pre-appeal proceedings. This Response should not be taken as acquiescence to any of the specific rejections, assertions, statements, and the like, presented in the *Office Action* that Applicant has not explicitly addressed herein. Applicant reserves the right to specifically address all such rejections, assertions, and statements in continuing applications, subsequent responses, and/or appeal or pre-appeal proceedings, if necessary.

If the undersigned can be of assistance to the Office in addressing any additional issues to advance the application to a condition of allowance, please contact the undersigned at the number set forth below. The Office is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No. 02-1818.

Respectfully submitted,

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