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CESARI AND MCKENNA, LLP
ONE LIBERTY SQUARE
SUITE 310
BOSTON, MA 02109

EXAMINER	
SIMPSON, SARAH A	

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SHU-TUNG LI and DEBBIE YUEN

Appeal 2019-002522
Application 13/530,322
Technology Center 3700

Before MICHAEL L. HOELTER, BRETT C. MARTIN, and LEE L. STEPINA, *Administrative Patent Judges*.

MARTIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1, 4–6, 8–11, and 14. Claims 17–20 were withdrawn and claims 2, 3, 7, 12, 13, 15, and 16 were canceled during prosecution. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] 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 Collagen Matrix, Inc. Appeal Br. 2.

CLAIMED SUBJECT MATTER

The claims are directed to compression and kink resistant implants. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A compression and kink resistant implant for nerve repair, comprising a tubular biopolymeric membrane formed of collagen and a biodegradable synthetic polymeric filament, the tubular biopolymeric membrane having an outer surface and being biocompatible, resorbable, and semipermeable, the biodegradable synthetic polymeric filament being helical and located on the outer surface of the tubular biopolymeric membrane, wherein the biodegradable synthetic polymeric filament has a helical pitch of 1 mm to 2 mm, the implant, having a circular cross sectional area, has a compression resistance of 1 N to 10 N and a kink resistance angle of 40 degrees to 150 degrees, the biodegradable synthetic polymeric filament is formed of a polymer selected from the group consisting of polyglicolic acid, poly lactic acid, copolymers of polyglicolic acid and poly lactic acid, polycaprolactone, copolymers of poly lactic acid and polycaprolactone, and copolymers of polyglicolic acid and polycaprolactone, and the implant maintains the circular cross sectional area *in vivo* for 12 to 24 weeks after implantation.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Li	US 6,716,225 B2	Apr. 6, 2004
Scanlon	US 2007/0207186 A1	Sept. 6, 2007
Zhang	US 2010/0234863 A1	Sept. 16, 2010

REJECTION

Claims 1, 4–6, 8–11, and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Li, Zhang, and Scanlon. Final Act. 4.

OPINION

Obviousness

Appellant's main argument against the Examiner's rejection is that "an ordinary artisan would not have learned from Zhang and Scanlon how to modify the nerve repair implant described in Li to have a circular cross-sectional area maintained for 12–24 weeks *in vivo*." Reply Br. 3. Appellant further argues that Zhang is deficient because it teaches that "PCL should be integrated within the walls of the implant, not helically wrapped around it in the form of a filament." Reply Br. 3. Appellant then asserts that Scanlon's teachings are insufficient because Scanlon teaches a tubular reinforcement, rather than a helical filament, the implant itself is helical, rather than being wrapped with a helical filament, and the specifically claimed polymers are merely part of a list of several hundred materials, and nothing would have led one of ordinary skill to specifically select the claimed materials. Reply Br. 4.

Appellant's characterization of Scanlon's teachings is incomplete. Although it may be true that Scanlon includes embodiments where a) the reinforcement member 68 is tubular and b) the implant of Fig. 61 is a helical implant rather than merely a helical reinforcement, the Examiner is correct that Scanlon does teach other embodiments that include a helical filament as claimed. Figure 34 shows a generally tubular-shaped reinforcing member 68, but that member is formed of crisscrossing helical filaments. Scanlon further explains that "supporting member 64, reinforcement 68, or combinations thereof are positioned either on or near the outside surface 16, inside surface 17, or combinations thereof." Scanlon ¶ 82. Scanlon also

states that "reinforcement 68 preferably forms a mesh or lattice structure" that includes "open cells." Scanlon ¶ 100.

Based on these teachings, we agree that Scanlon teaches the claimed helical filament on the outer surface of the membrane. Although in tubular form, we do not agree that an open lattice of helical filaments is insufficient to meet the claim language at issue. The claims do not preclude multiple filaments and so Scanlon does properly teach the claimed helical filament.

As to the list of multiple materials, one of skill in the art would understand Scanlon as teaching that any one of those materials would be suitable for forming the reinforcement. The simple fact that there are numerous choices does not make the teaching any less significant.

In general, Appellant also has not rebutted the Examiner's finding that an implant having properties (i) [compression resistance of 1 to 10 N] and (ii) [a kink resistance angle of 40 degrees to 150 degrees] has the structural stability to maintain a circular cross-sectional area in vivo for 12–24 weeks after implantation, given Li's teaching that the materials do not degrade for 3–6 months. The Examiner admits that Li's structure would not maintain its integrity for that full 3–6 months or even the claimed 12–24 weeks, but the Examiner finds (i) in Zhang and (ii) in Li and that "Scanlon teaches a polycaprolactone biodegradable synthetic polymer reinforcement filament" such that the combination having features (i) and (ii) would meet the 12–24 week limitation. Ans. 4. Appellant argues that "Zhang in no way teaches or even suggests using a helically wrapped synthetic polymer filament," but the Examiner finds the helical structure in Scanlon, not Zhang. Reply Br. 4. Taking the teachings of all three references together, the Examiner properly

finds that the combination achieves all of the features found in claim 1 and does address how the combination would have been made.

Appellant relies on the arguments for claim 1 in rebutting the rejection of claims 11 and 14. Reply Br. 4. Having already found these arguments unpersuasive, we similarly sustain the rejection of independent claims 11 and 14. Appellant offers no other specific arguments for the dependent claims and we likewise sustain the rejection of those claims as well.

CONCLUSION

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1, 4–6, 8–11, 14	103	Li, Zhang, Scanlon	1, 4–6, 8–11, 14	

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