

IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

ULTRA-MEK, INC.,	)	
	)	
Plaintiff and	)	
Counter Defendant,	)	
	)	
v.	)	1:18CV281
	)	
UNITED FURNITURE INDUSTRIES,	)	
INC., OISEYS INTERNATIONAL,	)	
INC., MAN WAH HOLDINGS LTD.,	)	
JIANGSU YULONG SMART	)	
TECHNOLOGY CO., LTD.,	)	
REMACRO MACHINERY	)	
TECHNOLOGY CO., LTD.,	)	
TAIZHOU CHENGUANG VEHICLE CO.,	)	
LTD., and MAN WAH (USA), INC.,	)	
	)	
Defendants and	)	
Counter Claimants.	)	

**MEMORANDUM OPINION AND ORDER**

**OSTEEN, JR., District Judge**

Presently before this court is a Renewed Motion for Partial Summary Judgment of No Literal Infringement filed by United Furniture Industries, Inc., Oiseys International, Inc., Man Wah Holdings Ltd., Jiangsu Yulong Smart Technology Co., Ltd., Remacro Machinery Technology Co., Ltd., Taizhou Chenguang Vehicle Co., Ltd., and Man Wah (USA), Inc. (together, "Defendants").

(Doc. 237.) This court will grant the motion.

## **I. FACTUAL AND PROCEDURAL BACKGROUND**

Plaintiff Ultra-Mek, Inc. is the owner of two patents that each describe a reclining chair. (First Am. Compl. (Doc. 31) ¶¶ 22-25.) The patents are U.S. Patent Number 8,016,348 (the “’348 patent”) and U.S. Patent Number 8,297,693 (the “’693 patent”). (Ex. A (“’348 patent”) (Doc. 31-1); Ex. B (“’693 patent”) (Doc. 31-2).)

Plaintiff sued Defendants, alleging multiple of their mechanisms (together, “accused mechanisms”) infringed Plaintiff’s patents. (First Am. Compl. (Doc. 31) ¶¶ 73-88.) The case proceeded to claim construction, and this court construed disputed claim terms. (Doc. 124.) This court did not construe the phrase “opposed first and second ends,” as used in claims 7 and 13 of the ’348 patent and claim 1 of the ’693 patent. (See id.)

The case progressed to the summary judgment stage, and this court denied the parties’ summary judgment motions. (Doc. 174 at 40.)<sup>1</sup> However, the summary judgment opinion included language that was dismissive of Plaintiff’s literal infringement theory because the allegedly infringing mechanisms do “not have literal opposed ends in the format envisioned by the patent.” (Id. at

---

<sup>1</sup> All citations in this Memorandum Opinion and Order to documents filed with the court refer to the page numbers located at the bottom right-hand corner of the documents as they appear on CM/ECF.

25.) Based on this language, Defendants filed a motion in limine to exclude any trial "testimony asserting that claims 7, 13, and 14 of the '348 patent and claims 1, 2, and 4-7 of the '693 patent are literally infringed." (Doc. 180 at 3.)

This court denied that motion as unripe, (Doc. 214 at 15), and the parties agreed to file supplemental claim construction briefs regarding the meaning of the phrase "opposed first and second ends," (Doc. 211 at 32). After carefully reviewing that briefing, this court construed "opposed first and second ends" as referring to "the lengthwise extremities of the [power actuating unit/actuating unit/linear actuating unit], wherein length is defined by the axis in which the [power actuating unit/actuating unit/linear actuating unit] moves forwardly and rearwardly." (Doc. 234 at 14.)

Relying on that construction, Defendants filed a renewed motion for partial summary judgment of no literal infringement of claims 7 and 13 of the '348 patent and claim 1 of the '693 patent (and their dependent claims). (Doc. 237.) Those three claims contain the following language, with minor differences reflected in brackets:

wherein the [power actuating unit/actuating unit/linear actuating unit] includes opposed first and second ends, and wherein the first end of the [power actuating unit/actuating unit/linear actuating unit] moves forwardly as the seating unit moves from the upright position to the TV position, and wherein the second end

of the [power actuating unit/actuating unit/linear actuating unit]<sup>2</sup> moves rearwardly when the seating unit moves from the TV position to the fully reclined position.

(`348 patent (Doc. 31-1) at 10:9-15, 11:14-12:3; `693 patent (Doc. 31-2) at 9:45-51.) Defendants' motion is accompanied by a brief. (Defs.' Br. in Supp. of Renewed Mot. for Partial Summ. J. of No Literal Infringement ("Defs.' Br.") (Doc. 238).) Plaintiff responded in opposition to the motion, (Pl.'s Opp'n to Defs.' Mot. for Partial Summ. J. of No Literal Infringement ("Pl.'s Resp.") (Doc. 239)), and Defendants replied, (Defs.' Reply Br. in Supp. of Renewed Mot. for Partial Summ. J. of No Literal Infringement ("Defs.' Reply") (Doc. 242)). Both parties have submitted supplemental expert reports to support their respective positions. (Ex. 1, Suppl. Expert Report of Rufus Brown Responding to Ct.'s Claim Construction Order ("Brown Report") (Doc. 238-2); Ex. 2, Suppl. Expert Report of Dr. Kimberly Cameron Regarding Noninfringement ("Cameron Report") (Doc. 238-3).) Defendants' partial summary judgment motion is now ripe for adjudication.

---

<sup>2</sup> For ease of reference, this court will hereinafter use the term "actuating unit" as shorthand to collectively refer to the power actuating unit, actuating unit, and linear actuating unit.

## II. STANDARD OF REVIEW

Summary judgment is appropriate when “there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a); see also Celotex Corp. v. Catrett, 477 U.S. 317, 322–23 (1986). This court’s summary judgment inquiry is whether the evidence “is so one-sided that one party must prevail as a matter of law.” Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 252 (1986). The moving party bears the initial burden of demonstrating “that there is an absence of evidence to support the nonmoving party’s case.” Celotex, 477 U.S. at 325. If the “moving party discharges its burden . . . , the nonmoving party then must come forward with specific facts showing that there is a genuine issue for trial.” McLean v. Patten Cmty., Inc., 332 F.3d 714, 718–19 (4th Cir. 2003). Summary judgment should be granted “unless a reasonable jury could return a verdict for the nonmoving party on the evidence presented.” Id. at 719; see also TechSearch, L.L.C. v. Intel Corp., 286 F.3d 1360, 1371 (Fed. Cir. 2002) (“To support a summary judgment of noninfringement it must be shown that, on the correct claim construction, no reasonable jury could have found infringement on the undisputed facts . . . .”). “[M]ere allegations” in support of a party’s pleadings without “any significant probative evidence” to support those allegations do

not provide sufficient evidence to allow a reasonable jury to resolve a dispute in favor of that party. Liberty Lobby, 477 U.S. at 248-49 (internal quotation marks omitted) (quoting First Nat'l Bank of Ariz. V. Cities Serv. Co., 391 U.S. 253, 288, 290 (1968)); see also Mortg. Grader, Inc. v. First Choice Loan Servs. Inc., 811 F.3d 1314, 1325 (Fed. Cir. 2016) ("The mere existence in the record of dueling expert testimony does not necessarily raise a genuine issue of material fact.").

Put another way, simply showing "some metaphysical doubt as to the material facts" is not sufficient to establish a genuine dispute. Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 586 (1986). In considering whether a genuine issue of material fact exists, the court must be careful not to weigh the evidence or make credibility determinations. Liberty Lobby, 477 U.S. at 255. Instead, the court must view the facts in the light most favorable to the non-moving party, drawing all reasonable inferences in favor of that party. Id.

### **III. ANALYSIS**

Defendants' principal argument is that partial summary judgement of no literal infringement is warranted because the relevant patent claims require that the actuating unit's second end "move[] rearwardly when the seating unit moves from the TV position to the fully reclined position," but the accused

mechanisms' second ends never move rearwardly. (Defs.' Br. (Doc. 238) at 6-13.) In making this argument, Defendants start by pointing to video evidence that they claim show that the accused mechanisms' second ends only move forwardly during the entirety of the motion cycle. (Id. at 8-9.) This video evidence is sufficient to demonstrate that there is an absence of evidence supporting Plaintiff's literal infringement claim on the patent claims at issue, and thus Defendants have discharged their initial summary judgment burden. See Celotex, 477 U.S. at 325. Plaintiff in response advances specific facts that it claims show that whether the second ends move rearwardly remains a genuine issue for trial. (Pl.'s Resp. (Doc. 239) at 7-11.)

Those facts Plaintiff has put forward to show the second ends move rearwardly are from its expert's supplemental report. (See, e.g., id. at 8-9 (discussing Brown Report (Doc. 238-2)).) That report is by Mr. Brown and states:

Claims 7 and 13 of the '348 Patent and claim 1 of the '693 Patent further require that the "second end of the [power actuating unit/actuating unit/linear actuating unit] moves rearwardly when the seating unit moves from the TV position to the fully reclined position." As construed by the Court, this element requires that the second "lengthwise extremity" of the actuator moves rearwardly as the seating unit moves from the TV position to the fully reclined position.

[ ] This element is literally met by the 4152 mechanism. At my request and direction, videos, photographs, and measurements were taken of the 4152 mechanism (which was fixed in place in front of and pointed away from a wall) as the mechanism was cycled

between the TV position and the fully reclined position. In each position, a measurement was taken from a fixed point behind the rear of the mechanism to the rearmost extremity of the actuator—what Dr. Cameron and I agree is the claimed “second end.” When the 4152 mechanism was in the TV position, the rearmost extremity of the actuator (the “second end,” as construed by the Court) was approximately 19 3/8” (nineteen and three-eighths inches) away from the wall behind the mechanism. When the 4152 mechanism was in the fully reclined position, the rearmost extremity of the actuator (the “second end,” as construed by the Court) was approximately 18 3/4” (eighteen and three-quarters inches) away from the wall behind the mechanism . . . .

[ ] The rearmost extremity (the “second end,” as construed by the Court) thus moves rearwardly when the mechanism and seating unit move from the TV position to the fully reclined position, as required by claims 7 and 13 of the '348 Patent and claim 1 of the '693 Patent. The amount of rearward movement of the “second end” is approximately 5/8” (five-eighths of an inch).

(Brown Report (Doc. 238-2) ¶¶ 11-13.) Mr. Brown came to a similar conclusion regarding the 5151 mechanism by conducting the same testing. (Id. ¶¶ 18-20 (concluding that the second end of the 5151 mechanism moved rearwardly by approximately three-quarters of an inch).)

Defendants argue that this evidence is insufficient to create a genuine issue for trial because the evidence is (1) too unreliable and, (2) fails to show “rearwardly” motion as defined by the patent. (Defs.’ Br. (Doc. 238) at 10-13; see also Defs.’ Reply (Doc. 242) at 5-10.) This court is unconvinced by Defendants’ first argument but persuaded by the second. Each is addressed in turn.



**A. The Measurements' Reliability**

Defendants argue the measurements Mr. Brown relied upon "should be disregarded for purposes of summary judgment." (Defs.' Reply (Doc. 242) at 10.) They contend the measurements are inaccurate, thus rendering Mr. Brown's conclusions unreliable. (See id. at 8-10; Defs.' Br. (Doc. 238) at 10 n.2.) Specifically, Defendants insist that: the measurements themselves do not comport with the scientific method; Mr. Brown did not adequately supervise or verify the measurements; and, the measurements are self-serving, and thus suspect, because they were recorded by Plaintiff's counsel and a co-inventor of the patents. (Defs.' Br. (Doc. 238) at 10 n.2; Defs.' Reply (Doc. 242) at 8-10.)

Despite these challenges, this court will not disregard the measurements Mr. Brown relied upon for purposes of adjudicating the instant summary judgment motion. A different record might permit an analysis of facts to suggest his measurements are not scientifically valid. See Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 592-93 (1993). However, here, Defendants' arguments largely concern the credibility and weight to give the measurement evidence, and those arguments may not be considered by this court on summary judgment. Indeed, longstanding Supreme Court precedent holds that "[c]redibility determinations, [and]

the weighing of the evidence . . . are jury functions, not those of a judge . . . ruling on a motion for summary judgment . . . . The evidence of the non-movant is to be believed.” Liberty Lobby, 477 U.S. at 255. This court must view the measurement evidence in the light most favorable to Plaintiff because it is the non-moving party. Id. Thus, this court accepts as accurate the measurements Mr. Brown’s report relied upon. The problem for Plaintiff, however, is that those measurements do not show “rearwardly” motion, as defined by the patents, rendering Mr. Brown’s conclusions unsupported.

**B. “Rearwardly” Motion**

Defendants point out that Mr. Brown’s supplemental report and conclusions ignore the definition of “rearwardly” as defined in the patents’ shared specification.<sup>3</sup> (Defs.’ Br. (Doc. 238) at 10-13; see also Defs.’ Reply (Doc. 242).) The patents’ specification states that:

As used herein, the terms “forward,” “forwardly,” and “front” and derivatives thereof refer to the direction defined by a vector extending from the backrest toward the seat parallel to the underlying surface. Conversely, the terms “rearward,” “rearwardly,” and derivatives thereof refer to the direction directly opposite the forward direction; the rearward direction is defined by a vector that extends from the seat

---

<sup>3</sup> The two patents’ specifications appear identical. (Compare ‘348 patent (Doc. 31-1) at 4-17, with ‘693 patent (Doc. 31-2) at 4-17.)

toward the backrest parallel to the underlying surface.

(`348 patent (Doc. 31-1) at 4:19-27 (emphasis added); `693 patent (Doc. 31-2) at 4:23-31 (emphasis added).)

Defendants argue that during the transition from the alleged intermediate TV position<sup>4</sup> to the fully reclined position the accused mechanisms' second ends do not move rearwardly, that is in a direction "defined by a vector that extends from the seat toward the backrest parallel to the underlying surface." (E.g., Defs.' Br. (Doc. 238) at 11 (quoting `348 patent (Doc. 31-1) at 4:19-27).) Instead, consistent with the finding of its expert, Defendants argue that the second ends' motion during this period in the reclining cycle "is more akin to an upward lift (perpendicular to the forward and rearward direction) than movement in the rearward direction as contemplated by the patents." (Id.; Cameron Report (Doc. 238-3) ¶ 29.)

Plaintiff responds that even if the patents' specification definition of rearwardly is applied, "Mr. Brown's testing clearly measured the amount of rearward movement of the second ends of the Accused Mechanisms, i.e., movement parallel to the

---

<sup>4</sup> Defendants do not concede that the accused mechanisms have an intermediate TV position. (Defs.' Br. (Doc. 238) at 7.) The parties agree, as does this court, that dispute does not need to be resolved in adjudicating the present motion. (Compare id., with Pl.'s Resp. (Doc. 239) at 5 n.7.)

underlying surface.” (Pl.’s Resp. (Doc. 239) at 12.) Plaintiff does not reject Defendants’ assertion that during the transition from the alleged intermediate TV position to the fully reclined position the second ends’ motion could be described as an “upward lift”; instead, Plaintiff insists that characterization is irrelevant because the upward lift includes some amount of rearward motion. (See id. at 13.) Plaintiff argues the inclusion of only some amount of rearward motion is sufficient because “[t]he claims at issue are not limited to any precise amount of rearward movement.” (Id.)

To rule on this issue, this court needs a definition of the claim term “rearwardly.”<sup>5</sup> It can adopt one in this Memorandum Opinion and Order because the Federal Circuit has held that “[u]nder our precedent, the district court [i]s well within its power to clarify, supplement, and even alter its construction of the [claim] limitations in its summary judgment order.” Level Sleep LLC v. Sleep No. Corp., No. 2020-1718, 2021 WL 2934816, at \*3 (Fed. Cir. July 13, 2021).

This court defines the term “rearwardly,” as used in the last clause of claims 7 and 13 of the ’348 patent and claim 1 of

---

<sup>5</sup> Plaintiff argues that this court does not need to construe “rearwardly” to resolve this motion, (Pl.’s Resp. (Doc. 239) at 11), but Plaintiff has failed to offer this court a viable alternative route to resolve the motion without such a construction.

the '693 patent, consistent with the specification's definition. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996) ("Claims must be read in view of the specification, of which they are a part."); Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) ("[T]he specification ' . . . is the single best guide to the meaning of a disputed term.'" (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996))). Critically, Plaintiff does not dispute this definition nor offer an alternative definition. (See Pl.'s Resp. (Doc. 239) at 12.) Incorporating the patents' specification definition of rearwardly, the relevant claim limitations state: "the second end of the actuating unit moves [in a direction 'defined by a vector that extends from the seat toward the backrest parallel to the underlying surface'] when the seating unit moves from the TV position to the fully reclined position." (E.g., '348 patent (Doc. 31-1) at 11:17-12:3.)

The accused mechanisms' second ends do not move rearwardly, as defined by the patents' specification. Instead, Plaintiff's own video evidence shows they move in an arc-like motion that is plainly not "parallel to the underlying surface," which is the floor. (See, e.g., Doc. 240-3 at 00:10-00:15.) The measurements Mr. Brown relied on show that at the conclusion of this arc-like

motion, when the seating unit is in the fully reclined position, the second ends are further rearward than they were in the alleged intermediate TV position. (See Brown Report (Doc. 238-2) ¶¶ 12, 19.) But that does not matter. The claim limitation at issue only concerns the second ends' directional motion, not their ultimate location. What matters is the direction the second ends moved in to arrive at their further rearward location in the fully reclined position.

Plaintiff has provided no evidence that the second ends move in a direction "defined by a vector that extends from the seat toward the backrest parallel to the underlying surface." (See '348 patent (Doc. 31-1) at 4:25-27; '693 patent (Doc. 31-2) at 4:25-27.) To reiterate, all Plaintiff has provided are measurements showing that ultimately the second ends arrive at a rearward location, (see Brown Report (Doc. 238-2) ¶¶ 12, 19), but the uncontroverted evidence shows that the motion the second ends take to get to that location is "arc-like," (see, e.g., Doc. 240-3 at 00:10-00:15). Such nonlinear motion does not fall within the scope of the relevant patent claims because it is not "rearwardly," that is, along a vector parallel to the floor. (See '348 patent (Doc. 31-1) at 4:25-27; '693 patent (Doc. 31-2) at 4:25-27.)

Mr. Brown's opinion that the second ends do move rearwardly does not create a genuine dispute of material fact because he did not apply, or appear to consider, the patents' specification definition of "rearwardly." (See Brown Report (Doc. 238-2).) Thus, his finding of rearwardly movement is a "mere allegation[]" in support of Plaintiff's opposition brief that is unsupported by "any significant probative evidence." Liberty Lobby, 477 U.S. at 248 (internal quotation marks omitted) (quoting First Nat'l Bank of Ariz., 391 U.S. at 288, 290). That is not enough to allow a reasonable jury, applying the patents' construction of rearwardly, to find literal infringement on the relevant claims. Id.; TechSearch, 286 F.3d at 1371. "The mere existence in the record of dueling expert testimony does not necessarily raise a genuine issue of material fact." Mortg. Grader, 811 F.3d at 1325. "A party does not manufacture more than a merely colorable dispute simply by submitting an expert declaration asserting that something is black when the moving party's expert says it is white; there must be some foundation or

basis for the opinion.”<sup>6</sup> Invitrogen Corp. v. Clontech Lab’ys, Inc., 429 F.3d 1052, 1080 (Fed. Cir. 2005). Applying that maxim here, there must be some foundation or basis for Mr. Brown’s opinion. But there is no foundation or basis for Mr. Brown’s opinion because he did not apply the patents’ definition of rearwardly. Therefore, the statements in his expert report finding rearward movement fail to create a genuine dispute of material fact and “do[] not prevent partial summary judgment.” Id. at 1080-81 (affirming partial literal infringement summary judgment order, despite contrary expert testimony).

Plaintiff has not “come forward with specific facts showing that there is a genuine issue for trial” on literal infringement of claims 7 and 13 of the ’348 patent and claim 1 of the ’693 patent, along with their dependent claims. McLean, 332 F.3d at 718-19. Due to this “absence of evidence to support the nonmoving party’s case,” Celotex, 477 U.S. at 325, no “reasonable jury could return a verdict in favor of the nonmovant on the evidence presented,” McLean, 332 F.3d at 719; see also TechSearch, 286

---

<sup>6</sup> “That maxim is especially true in cases involving relatively simple technology, such as this one, because ‘the technology will be easily understandable without the need for expert explanatory testimony.’” K-TEC, Inc. v. Vita-Mix Corp., 696 F.3d 1364, 1374 (Fed. Cir. 2012) (quoting Centricut, LLC v. Esab Group, Inc., 390 F.3d 1361, 1369 (Fed. Cir. 2004)) (affirming trial court’s summary judgment order in a case concerning blenders, despite contrary opinion in expert report).



F.3d at 1371. Therefore, summary judgment of no literal infringement on claims 7 and 13 of the '348 patent and claim 1 of the '693 patent, and their dependent claims, will be granted.

**IV. CONCLUSION**

For the foregoing reasons, **IT IS THEREFORE ORDERED** that Defendants' Renewed Motion for Partial Summary Judgment of No Literal Infringement, (Doc. 237), is **GRANTED**.

This the 17th day of August, 2022.

  
\_\_\_\_\_  
United States District Judge