

United States District Court,  
N.D. Illinois, Eastern Division.

**GOSS INTERNATIONAL AMERICAS, INC,**  
Plaintiff.

v.

**K & M NEWSPAPER SERVICES,**  
INC. Defendant.

**Dec. 29, 2006.**

**Background:** Assignee sued for infringement of patent for variable speed signature collating apparatus. Defendant counterclaimed for a declaratory judgment of non-infringement and invalidity.

**Holdings:** In construing disputed claim terms, the District Court, Conlon, J., held that:

- (1) means-plus-function analysis did not apply in construing term "article feeder means;"
- (2) corresponding structure for "control means" element included a main controller;
- (3) a conveyer home position sensor could be included as corresponding structure in "means for providing signals" element of claims.

Claims construed.

6,082,724. Construed.

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### ***MEMORANDUM OPINION AND ORDER***

**CONLON, District Judge.**

Goss International Americas, Inc. sues K & M Newspaper Services, Inc. for patent infringement pursuant to 35 U.S.C. s. 271, et seq. K & M counterclaims for a declaratory judgment of non-infringement and invalidity. The parties seek construction of eleven disputed claims.

### **BACKGROUND**

## **I. The Patent**

Goss is the owner by assignment of U.S. Patent No. 6,082,724 ("the '724 patent"), issued by the United States Patent and Trademark Office on July 4, 2000. Pl. Memo. at Ex. A (cited hereafter as "Pat."). The patent, entitled "Variable Speed Signature Collating Apparatus," describes a machine commonly known as an "inserter" in the printing industry. Id. at 2; Def. Memo. at 2. An inserter is used for placing flat sheets of printed material, usually advertisements, into newspapers.

The '724 patent consists of two interconnected apparatuses. One is a series of "article sheet feeders" arranged in an oval configuration. These sheet feeders take advertising material, usually flat sheets of printed paper, and insert it into newspapers that are opened fold-side down. Although the parties dispute the precise components of the article feeders, they generally consist of a "hopper" that holds the advertising sheets, a "sucker" mechanism that pulls the sheets from the hopper, and a motorized feed drum equipped with a "gripper" for grabbing and rotating the sheets into position. Sensors indicate the speed the drum is turning, its position, and whether the sheets are properly delivered. *See* Pat. at Fig. 4.

The second apparatus is an oval conveyer assembly that moves a series of "sheet material receiving locations," or "pockets," which contain the opened newspapers. As the pockets travel around an oval conveyer under the sheet feeders, the feeders insert advertising material into the newspapers. The conveyer is powered by a variable speed motor and has sensors indicating the speed the conveyer is moving the pockets. The entire system is controlled by a "main controller." The main controller, via a series of other controllers, tells the motors in each of the individual article feeders how fast to operate, which allows each article feeder to insert sheet material at its own speed relative to the other feeders. The main controller also tells the motor driving the conveyer how fast to run, thereby controlling the speed that the pockets travel around the conveyer assembly.

Synchronizing the speed advertising material is delivered by the feeders and the speed the pockets travel on the conveyer ensures the advertising material is placed into the opened newspapers at precisely the right time. This causes less misfeeds and machine down time. It also allows advertising material to be placed in a precise location within the newspaper (*i.e.*, in the front or back of an opened paper). This feature is the patent's main improvement over prior art. The patent has a mechanism for making up any misfeeds that do occur via a separate "repair article sheet feeder." *See* Pat at Figs. 1, 2.

## **II. Procedural History**

Goss filed its complaint on April 3, 2006, alleging one count of infringement. K & M answered and filed its counterclaim for a declaratory judgment of non-infringement and invalidity on May 23, 2006. The parties exchanged proposed claim construction language, took and exchanged expert discovery, and filed lengthy briefs setting forth their constructions. The court found the parties' initial briefs "insufficient and unfocused," and ordered them to file a joint claim construction chart summarizing the disputed claims and terms, to identify the claims invoking the "means-plus function" analysis set forth in 35 U.S.C. s. 112, para. 6, and the parties' constructions. Minute Order, Dkt. No. 50 (Nov. 2, 2006). The parties filed their claim chart on November 28, 2006 and revised it twice. Revised Joint Claim Construction Chart, Dkt. No. 62 (Dec. 7, 2006) (cited hereinafter as "Claim Chart"). The court then held a hearing; the parties argued extensively for their constructions. Minute Order, Dkt. No. 64 (Dec. 11, 2006).

## **ANALYSIS**

## I. Legal Standards

### A. Principles of Claim Construction

Claim construction resolves the disputed meaning of a patent's terms; it is a question of law. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995) ( *en banc* ), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The court's analysis is guided by the Federal Circuit's decision in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed.Cir.2005). According to *Phillips*, the " 'bedrock principle' of patent law" is that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." 415 F.3d at 1312 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed.Cir.2004)). Claims should be read in the context of the entire patent, not just in the context of the particular claim where a disputed term appears. *Id.* at 1313-14. Generally, there is a heavy presumption that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed.Cir.2002). There is no "magic formula" for construing claims; "what matters is for the court to attach the appropriate weight to be assigned ... in light of the statutes and policies that inform patent law." *Phillips*, 415 F.3d at 1324.

The court's analysis of a patent begins with the intrinsic evidence, *i.e.*, "the patent itself, including the claims, the specification, and if in evidence, the prosecution history." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed.Cir.1996). Paramount is the claim's plain language, which is given the ordinary meaning it would have to "a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1312-13. In other words, the court must determine how a person of ordinary skill in the art would understand the claim. *Id.*; *see also On Demand Mach. Corp. v. Ingram Indust., Inc.*, 442 F.3d 1331, 1337-38 (Fed.Cir.2006). A person of ordinary skill in the art is presumed to read the claim in the context of the entire patent, including the specification. *Id.* at 1313. Therefore, the court "starts the [claim construction] decisionmaking process by reviewing the same resources as would that person, *viz.*, the patent specification and the prosecution history." *Id.*

The specification provides the "primary basis" for construing disputed claim language, because it contains the inventor's statutorily-required "full" and "exact" description of the claimed invention. *Id.* at 1315-16 (quoting 35 U.S.C. s. 112, para. 1); *see also Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed.Cir.1985). Claims must be construed "so as to be consistent with the specification." *Merck & Co. v. Teva Pharms. USA, Inc.*, 347 F.3d 1367, 1371 (Fed.Cir.2003). Accordingly, the specification is considered "the single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582. If a construction "stays true to the claim and most naturally aligns with the patent's description of the invention," it will be the correct construction. *Phillips*, 415 F.3d at 1316.

Courts should also consider the patent's prosecution history, if it is in evidence. *Id.* at 1317. The prosecution history consists of the complete record of the proceedings before the Patent and Trademark Office and the prior art cited during the patent's examination. *Id.* Like the specification, "the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention." *Id.* It also may indicate whether the inventor limited the invention in the course of the prosecution. *Id.* "Yet because the prosecution history represents an ongoing negotiation between the [Patent and Trademark Office] and the applicant, rather than the final product of the negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Id.*

Additionally, courts may consider extrinsic evidence during the claim construction process. Extrinsic evidence "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Id.* (citing *Markman*, 52 F.3d at 980). The dispute over the weight and use of dictionaries in construing claims has a lengthy history. *Id.* at 1319-24 (discussing problematic reliance on dictionaries because they focus on abstract meaning of words rather than meaning of claim terms within the context of the patent). However, *Phillips* makes clear that technical dictionaries are recognized "as among the many tools that can assist the court in determining the meaning of a particular terminology to those of skill in the art." *Id.* at 1318. General-usage dictionaries are considered somewhat less reliable, but also have a place in claim construction. *Id.* at 1322. Expert testimony has a similar role. It may be useful to explain how an invention works, ensure that the court's understanding of the technical aspects of the patent is consistent with a person of ordinary skill in the art, or establish that a patent term has a particular meaning in the pertinent field. *Id.* at 1318. However, "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." *Id.* Courts should discount any expert testimony that is clearly at odds with the claim construction mandated by the patent's written record. *Id.*; *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed.Cir.1998). Further, extrinsic evidence is considered only in the context of intrinsic evidence; it is "less significant" in determining the meaning of claim language than the patent's record. *Id.* at 1317.

## **B. Means-Plus-Function Analysis**

[1] [2] [3] Patents may contain claim elements described as a "means" for performing a specified function. 35 U.S.C. s. 112, para. 6. Elements described this way are called "means-plus-function" elements. *See Phillips*, 415 F.3d at 1311. The means-plus-function provision of Section 112 provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover corresponding structure, material, or acts described in the specification and equivalents thereof.

s. 112, para. 6. "Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function." *Phillips*, 415 F.3d at 1311. Therefore, Section 112, paragraph 6 does not apply if the claim element recites a definite structure that performs the specified function. *Id.* (means-plus-function limitation is a "purely functional placeholder in which structure is filled in by the specification"); *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed.Cir.1996). A claim element using the word "means" to describe a limitation is presumed to be a means-plus-function element. *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1375 (Fed.Cir.2003). The presumption is rebutted if "the claim, in addition to the functional language, recites structure sufficient to perform the claimed function in its entirety." *Id.* The court determines whether means-plus-function analysis applies on an element-by-element basis. *Cole*, 102 F.3d at 531.

[4] [5] If a claim element is governed by Section 112, paragraph 6, the court undertakes a two-step construction analysis. First, the court identifies "the function of the limitation," *i.e.*, what the element does. *Altiris*, 318 F.3d at 1375. The function is found in the claim. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113 (Fed.Cir.2002). The court may not narrow or broaden the scope of the function beyond the claim language. *Id.* Next, the court ascertains the "corresponding structure" necessary to perform the function. *Altiris*, 318 F.3d at 1375. "[S]tructure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited

in the claim." *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed.Cir.1997). Accordingly, the court reviews the specification and the prosecution history to find the structure that corresponds to the function. *Id.* The court is not permitted to "import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function." *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed.Cir.2001).

## **II. Construction of the '724 Patent**

The '724 patent contains a total of 24 claims, five of which are independent. The construction of eleven claims are disputed by the parties (four independent, seven dependant), some containing multiple disputed elements. Two elements are at the heart of the dispute: "article feeder means" and "control means." Tr. at p. 4, ll. 3-5; p. 47, ll. 5-8. The parties disagree whether "article feeder means," found in claims 1, 20, and 24, is a means-plus-function. The disagreement regarding the "control means" element has three aspects: (1) what structures correspond to the "control means" function in claims 1 and 20; (2) whether Section 112, paragraph 6 applies to the "control means" element in claims 12 and 24; and (3) what are the corresponding structures for the "control means" limitations set forth in dependant claims 2, 5, 6, 7, and 11. In addition, the parties dispute the construction of the "means for providing signals" element in claims 3 and 11.

### **A. "Article Feeder Means"**

[6] The parties dispute whether the term "article feeder means" in claims 1, 20, and 24 is governed by Section 112, paragraph 6. Goss argues the statute does not apply despite the presumption that attaches because the word "means" is used in the claim. Pl. Memo. at 11. Goss contends the term "article feeder" recites sufficient structure on its own to rebut the presumption. *Id.* In addition, Goss argues the claim sets forth sufficient structure because it contains detailed descriptions of the location and components of the article feeder means. *Id.* at 12. Goss draws support for its construction from the specification, the patent examiner's repeated use of the term "feeder" without discussion of its function, and a dictionary definition of the term. *Id.* at 13. According to Goss, a person of ordinary skill in the art would understand the term to describe a known structure. *Id.*

K & M responds that Goss has not rebutted the presumption in favor of means-plus-function analysis. K & M contends that the only structure identified to perform the function of "feeding sheet material articles to said receiving locations" is a variable speed motor. Def. Memo. at 10; Pat. at col. 14, ll. 51-53. But an article feeder requires structures in addition to a variable speed motor to move the sheet material to the pockets, such as a hopper, feed drum, sucker mechanism, gripper, variable speed feed motor, and feed motor drive circuit. *Id.* at 12; Pat. at Fig. 4 (included within the dashed line denoting the "sheet material article feeder 54" is a host of structures other than variable speed motor). K & M concludes the element is functional and falls under Section 112, paragraph 6. *Id.* at 13. Employing means-plus-function analysis, K & M argues for a construction that includes all the structures necessary to determine the position of the pockets and transport the sheet material to them. *Id.* at 13.

The "article feeder means" element is not governed by Section 112, paragraph 6. Although use of the term "means" presumes application of the statute, that presumption may be overcome if the claim recites structure sufficient to perform the claimed function. *See Altiris*, 318 F.3d at 1375. That structure is apparent. First, the term "article feeder" provides enough structural detail on its own to render Section 112, paragraph 6 inapplicable. In *MIT v. Abacus Software*, the court found means-plus-function analysis did not apply to the term "aesthetic correction circuitry." 462 F.3d 1344, 1355 (Fed.Cir.2006). The court determined the word "circuitry," by itself, connotes structure." *Id.* The court based its decision on general-usage and technical

dictionaries defining the term. *Id.* "Article feeder," like "circuitry," describes a known structure. The specification is rife with references to different types of feeders. *See e.g.*, col. 1, ll. 34-38; col. 2, ll. 46-47. None of the references are described functionally. In addition, the prosecution history makes clear that the patentees and the patent examiner understood the term "article feeder" to identify a specific item. *See* Pl. Memo. at Ex. B, PAT00185 (term is used without explanation or qualification in discussion of the Maoploski patent, which is referenced as prior art in the '724 patent). Moreover, as in *MIT*, dictionaries identify a "feeder" as a known device consistent with the '724 patent's use of the term. *Id.* at Ex. C, Ex. 7 ("feeder" defined as a "device that feeds materials into a machine for further processing"). *See also* Cole, 102 F.3d at 531 ("perforation means ... for tearing" was not means-plus-function element because the element's precise structural character was defined by its own description).

Second, aside from the element's description, the claims set forth structure sufficient to overcome application of Section 112, paragraph 6. The claims describe the location of the article feeder means ("disposed along said conveyer") and some of its components ("each one of said article feeder means includes a variable speed motor"). Pat. at col. 14, ll. 52-54. By doing so, the claims do not merely depict the article feeder means as a function, they describe the element's structure by explaining its operation. When a structural term is coupled with operational terms, "sufficient structural meaning will generally be conveyed to persons of ordinary skill in the art." *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed.Cir.2004); *see also* *MIT*, 462 F.3d at 1356 (structural term "circuit" described by reference to additional operational structure); *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1304-05 (Fed.Cir.1999) ("positioning means" was not means-plus-function element because claim recited additional structures for performing function).

[7] K & M argues the element's description does not embody all the structures necessary to perform the element's function; therefore, the presumption in favor of means-plus-function analysis is not rebutted. This argument is unavailing. "It is well established that it is not necessary to claim in a patent every device required to enable the invention to be used." *Asyst Tech., Inc. v. Empak, Inc.*, 268 F.3d 1364, 1371 (Fed.Cir.2001). Thus, it is not fatal to Goss' position that the claim recites a variable speed motor as additional structure, but fails to recite more. *Id.* The recitation of operational components and the article feeder means' location indicates the element is structural.

[8] In any event, K & M's proposed construction fails because it commits a cardinal sin of claim construction: it seeks to import structures unnecessary to perform the element's function. *See Wenger*, 239 F.3d at 1233. The majority of structures K & M includes in its construction relate to controlling the specific location sheet material is delivered to the pockets, *e.g.*, feed motor position sensor, operator advance/retard control, home position and receiving location proximity sensors, etc. Def. Memo. at 14; Pat. at Fig. 3. But these structures are not necessary for the article feeders means to perform the limited function of "feeding sheet material articles to said receiving locations." Pat. at col. 14, ll. 51-53. The structures K & M adds enable or enhance, rather than perform, the specified function. *See Asyst Tech.*, 268 F.3d at 1371. The court cannot construe claims in a way that adds unnecessary structures. *Wenger*, 239 F.3d at 1233. To be sure, the patent's drawings create some ambiguity regarding what structures are contained in the article feeder means. Pat. at Fig. 3 (item 54, identified as a "sheet material article feeder," drawn to include all structures within dotted-line); Fig 4 (item 54 points to unspecified group of structures). However, the specification clearly sets forth the element's function. Claim language, not the drawings, define the scope of the patent. *See Cummins Engine Co. v. Gen. Motors Corp.*, 299 F.Supp. 59, 88 (D.C.Md.1969).

Further, K & M's construction would violate the doctrine of claim differentiation, which requires the court

to construe independent claims in a way to avoid nullifying dependant claims. *See* Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 908 (Fed.Cir.2004). Many of the structures K & M includes as part of claim 1's "article feeder means" element are recited as separate elements in dependant claims. *See e.g.*, Pat at col. 15, ll. 62-65 (construction of claim 1 includes sensors, but "sensor means" are described in claim 9). Adopting K & M's construction would render many dependant claims redundant. Therefore, the court construes the "article feeder means" element in claims 1, 20, and 24 consistent with Goss's proposed constructions.

## **B. "Control Means"**

### **1. Claims 1 and 20**

The parties do not dispute that the "control means" element in claims 1 and 20 is subject to means-plus-function analysis. The parties agree that the function of the control means in claim 1 is to "vary[ ] the speed of operation of said variable speed motors in said plurality of article feeder means and the speed of operation of said variable speed motor in said conveyer drive means." Pat. at col. 14, ll. 62-65; Pl. Memo. at 15; Def. Memo. at 14. The parties also agree on the function recited in claim 20, which relates to changing the speed of one of the article feeders while the others operate at a different speed. Pat. at col. 18, ll. 16-38; Claim Chart at 17. The parties disagree, however, on the corresponding structure for both claims.

#### **a. Structure of claim 1**

[9] Goss argues the corresponding structure of claim 1 is "a main controller, preferably a microcomputer, and a plurality of sheet material feed controllers, such as microcomputers, which are connected to the main controller, and equivalents thereof." Pl. Memo. at 15-16. According to Goss, the specification indicates the main controller operates the sheet material feed controllers and the conveyer drive motor. *Id.* at 16-17; Pat. at col. 2, ll. 62-63. In turn, those structures control the individual feed motors in the article sheet feeders and the conveyer drive mechanism attached to the conveyer assembly. *Id.*; Pat. at col. 3, ll. 10-15, 21-23; col. 4-5, ll. 64-1, 15-18. Therefore, the main controller and a plurality of sheet material feed controllers perform the specified function because they vary the speed of the identified motors. *Id.*

K & M agrees with Goss that the only structure disclosed in the specification that varies the speed of the motors in the article feeders and the motor in the conveyer drive is the main controller. Def. Memo. at 14. However, K & M contends the term "main controller" "does not describe any particular structure" on its own, but instead refers to a microcomputer. *Id.* at 15, 25; Def. Resp. at 4-7. K & M's proposed construction substitutes the term "microcomputer" for "main controller," and includes structures that independently control the operating speed of the motors in the article feeders relative to the motors in the conveyer drive means. *Id.* at 16; Claim Chart at 3.

Goss' construction is persuasive. The function of the control means in claim 1 is to vary the speed of the motors in the article feeders and the conveyer drive. Pat. at col. 14, ll. 62-65. The specification plainly identifies two separate structures necessary to perform that dual function: the main controller and the sheet material feed controllers. Pat. at col. 4-5, ll. 64-1 ("sheet material feed controller 80 is controllably connected to the main controller 40 through a communications network"); col. 5, ll. 27-30 ("the sheet material feed controller 80 provides electrical control signals ... to the feed motor drive circuit 84 which, in turn, controls the speed of the feed motor 86"); col. 5, ll. 55-59 ("main controller 40 effects operation of the conveyer drive motor 44 ... [and] the feed motors 86 in the sheet material article feeders 54"). The patent's diagrams are consistent with the specification. Pat at Figs. 2, 3. Therefore, both structures are linked to the element's function and must be included as corresponding structure.

Goss' construction is buttressed by the language of claim 12, the last claim dependent on claim 1. Claim 12 states that the control means of claim 1 includes a main controller and a plurality of sheet material feed controllers, which together vary the speed of the motors in the conveyer drive and the article sheet feeders. Pat. at col. 16, ll. 25-32. Courts recognize that when a dependant claim lists structure included in a means-plus-function element, the patent's drafters intended to draw a "clear link or association" between the element's function and its corresponding structure. *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1313 (Fed.Cir.2001) (court explained that this drafting technique was an easy way to link function and structure). The language in claim 12 is no coincidence; it indicates that the main controller and a plurality of sheet material feed controllers are structures corresponding to the "control means" function.

K & M attempts to avoid Goss' construction by arguing that "main controller" is not a structural term. K & M substitutes "microcomputer" in its place, along with computer-related structures. This argument falls flat. "Main controller" is a known term in the art. The specification references prior art that uses the terms "controller" and "master controller" to denote devices that control motors. Pat. at col. 1, l. 9 (referencing the "Farr" patent); Pl. Memo. at Ex. B, PAT00714-18. Technical dictionaries from the time the patent was issued recognize the term as known structure. Pl. Memo. at Ex. L. K & M offers only non-probative extrinsic evidence to support its contrary construction. Def. Memo. at 15; Ex. 3 (Dr. Vacroux's purported expert opinion). Further, it offers no authority to support its double-application of means-plus-function analysis within a claim. Def. Memo. at 14-15. That is no surprise considering the convoluted construction that results from K & M's analysis. Claim Chart at 3 (K & M's proposed construction erases all references to "controller," causing a 17-line, redundant construction). Simply, the term "main controller" is recognized structure requiring no additional construction.

K & M's construction fails for an additional reason. Nothing in the element's stated function indicates its corresponding structure includes computer programs or algorithms. Yet, K & M attempts to import these structures, via its flawed construction of the "main controller" term, into the claim. Def. Resp. at 8; Claim Chart at 3. A computer algorithm is not clearly linked, and is not necessary, to the function of varying the speed of the conveyer drive and sheet feeder motors. The function can be carried out without inclusion of these structures. *See Altiris*, 318 F.3d at 1375-76. K & M's reliance on *WMS Gaming, Inc. v. International Game Technology* is misplaced because the '724 patent does not disclose a specific algorithm performed by the main controller necessary to fulfill the "control means" function. 184 F.3d 1339, 1348-49 (Fed.Cir.1999) (finding construction of claim should have been limited where a specific algorithm was disclosed in the patent's specification). K & M's construction violates the proscription against importing unnecessary structure into a claim; therefore, it must be rejected. *See B. Braun Med.*, 124 F.3d at 1424-25.

## **b. Structure of claim 20**

The "control means" function in claim 20, at its essence, is to vary the speed of a single article feeder, *i.e.*, increase its speed and then reduce it back down, while the other article feeders operate at a continuous speed. Pl. Memo. at 30; Claim Chart at 17. Goss argues the corresponding structure necessary to perform that function is the same as in claim 1, except that the main controller is excluded and "a feed adjust function" is added. Claim Chart at 17-18. Goss contends the main controller is not necessary because the element's function does not include controlling the conveyer drive motor. Pl. Memo. at 31. Changes to the speed of the article feeder motors can be controlled by the article feeder controllers, which are contained in the feeders. Pat. at col. 4, ll. 65-66 ("article feeders 54 include a sheet material feed controller 80, such as a microcomputer"). Specification language is cited in support of the construction. *See e.g.*, Pat. at col. 4, ll.

64-66; col. 7-8, ll. 63-2 ("sheet material feed controller 80 includes ... a feed motor adjust function 122"); Fig. 5. K & M argues the main controller is essential to perform the function. Def. Memo. at 18. As in claim 1, K & M's construction substitutes "microcomputer" for "main controller." Claim Chart at 18. Its construction also includes sensors and electrical structures. *Id.*

The specification indicates that the main controller is not necessary to perform the "control means" function described in claim 20. The specification states that "the sheet material feed controller 80 provides electrical control signals ... to the feed motor drive circuit 84 which, in turn, controls the speed of the feed motor 86." Pat. at col. 5, ll. 27-30. It further explains that the sheet material feed controller provides voltage or electrical signals to vary the motor's speed. Pat. at col. 5, ll. 33-37. In other words, the feed controllers, on their own, are responsible for varying the speed of the feed motors. The specification does not indicate that the main controller determines feed motor speed *independent of* the feed controllers. *See e.g.*, col. 9, ll. 59-61 ("the main controller 40 instructs the sheet material feed controllers 80 in the sheet material article feeders 54 to accelerate the feed motors 86 to a desired speed"). This contrasts with the main controller's role in operating the conveyer drive motor—a role it fulfills without the aid of other controllers. Pat. at col. 3, ll. 59-63 ("[t]he speed of the conveyer drive motor 44 is determined in the main controller ... [t]his enables the main controller 40 to control the speed of operation of the conveyer drive motor 44"). When viewed in its entirety, the specification explains that the main controller coordinates the operation of the conveyer drive and the article feeders to ensure proper delivery of the sheet material. This renders the main controller enabling or enhancing structure, rather than structure necessary to perform the "control means" function. *See Wenger*, 239 F.3d at 1233. Therefore, it should be excluded from the construction of claim 20's "control means" element.

K & M's general citation to hundreds of lines in the patent does not advance its proposed construction. In fact, some of the cited text supports Goss' construction. *See e.g.*, col. 9, ll. 31-36 (indicating main controller and feed controllers operate separately); col. 3, ll. 52-61 (describing stepped process where sheet material feed controllers, not main controller, directly control the speed of the feed motors). Further, K & M's construction suffers from the same over-inclusiveness as its interpretation of claim 1. The construction adds structures unrelated to performing the "control means" function, a violation of a principle rule of claim construction. *See B. Braun Med.*, 124 F.3d at 1424-25.

## **2. Claims 12 and 24**

[10] The parties disagree whether Section 112, paragraph 6 is applicable to the "control means" element in claims 12 and 24. Goss argues the statute does not apply to either claim because they "explicitly include[ ] the structure for performing the [recited] function." Pl. Memo. at 28, 32. According to Goss, the "control means" function varies the speed of the motors in the article feeder means and the motor in the conveyer drive means. *Id.* The claims specify the structures necessary to perform the function: a main controller and a plurality of sheet material feeder controllers which are connected with the main controller. *Id.* Goss contends these are known structures to persons of ordinary skill in the art. *Id.* at 28-29. Goss supports its argument by citing to the claim language, specification, and a technical dictionary. *Id.*

K & M argues Goss has not rebutted the presumption in favor of means-plus-function analysis. As to claim 12, K & M contends that Goss is attempting to improperly "swap out" the restrictive definition of "control means" in claim 1, for a construction that does not contain any means-plus-function elements. Def. Resp. at 11-12. K & M argues that claim 12 is limited by Section 112, paragraph 6, because it is dependant on claim 1, which is governed by means-plus-function analysis. *Id.* Goss' construction is an attempt to broaden the

claim beyond the specification. *Id.* As for claim 24, K & M contends the "control means" element is described in the "classic 'means for' format." Def. Resp. at 12. K & M asserts the claim does not recite sufficient structure to perform the specified function. *Id.* at 13. "Main controller" and "a plurality of sheet material feed controller" are functional terms; they provide no indication of their structure to a person of ordinary skill in the art. *Id.*

The "control means" element in claims 12 and 24 is not governed by Section 112, paragraph 6. Although inclusion of the term "means" creates a presumption in favor of the statute's application, that presumption is overcome by the claims' "detailed recitation of structure." Cole, 102 F.3d at 531. Both claims state that the "control means" element "*includes* a main controller ... and a plurality of sheet material feed controllers," and then describe the operation of the controllers. Pat. at col. 16, ll. 26-29; col. 20, ll. 19-24 (emphasis added). As stated above, a main controller is a known structure in the art. *See supra*, sec. II(B)(1)(a). A sheet material feed controller is no different. A person of ordinary skill in the art understands the term to mean a device used to control the operation of a sheet feeder. Pat. at col. 1, l. 9 (specification references the "Farr" patent, which uses the term "controller" to denote a device that controls motors); Pl. Memo. at Ex. B, PAT00714-18; Pl. Memo. at Ex. L (technical dictionary defines "controller" as a "device or group of devices that serves to control in predetermined manner the apparatus to which it is connected"). A recent decision supports Goss' construction. *See AVID Identification Sys., Inc. v. Philips Elecs. N. Am. Corp.*, No. Civ. A. 2:04CV183, 2006 WL 278265, at \*5-6 (E.D.Tex. Feb. 3, 2006) (holding that "[t]he corresponding structure is a controller"). In other words, claims 12 and 24 describe the "control means" element by stating that it consists of two definite structures. When a claim's language includes structure to perform an element's function, the element is no longer a means-plus-function term. *See MIT*, 462 F.3d at 1356; *Rodime*, 174 F.3d at 1304-05. K & M's construction of claims 12 and 24 rests on the premise that "main controller" and "sheet material feed controller" are not structural terms; that premise is incorrect.

K & M's argument that Goss' construction of claim 12 is contrary to settled law is similarly unavailing. K & M relies on *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed.Cir.1991), to argue that Goss' construction renders dependant claim 12 broader than independent claim 1. Def. Resp. at 10-11. While K & M is generally correct that a dependant claim cannot be construed more broadly than the claim on which it depends, that is not a concern here. Application of Section 112, paragraph 6 to claim 1's "control means" element results in a construction "cover[ing] the structure described in the specification [*i.e.*, a main controller and a plurality of sheet material feed controllers] *and equivalents* thereof." *Laitram*, 939 F.2d at 1538 (emphasis in original). Because Section 112, paragraph 6 does not apply to claim 12's "control means," the element is not construed to include equivalents. Thus, claim 12 is "literally" narrower than claim 1. *Id.* The *Laitram* case weakens, rather than strengthens, K & M's position.

### **3. Claims 2, 5, 6, 7, and 11**

The parties agree that the "control means" element in dependant claims 2, 5, 6, 7, and 11 modifies the "control means" element in claim 1. FN1 Def. Memo. at 16-17; Pl. Resp. at 9-11. The function of each element is the function of the "control means" of claim 1, plus additional functions specified in each dependant claim. *See e.g.*, Claim Chart at 3-4 (agreed upon function is the "control means" function of claim 1, plus function to "vary the speed of operation" as set forth in dependant claim 2). The parties do not dispute any of the functions of the dependant claims, only the corresponding structures.

FN1. Goss contends K & M should be barred from offering its proposed constructions for claims 2, 5, and 7 because K & M did not separately identify the "control means" element in its initial disputed claims list. Pl.

Resp. at 9. Setting aside whether K & M's actions constituted gamesmanship, which the court does not condone, *Avocent Huntsville Corp. v. ClearCube Tech., Inc.*, 443 F.Supp.2d 1284, 1322 (N.D.Ala.2006), it is clear Goss has not been prejudiced. Goss offered constructions for all the disputed claims in its construction briefs, claim construction chart, and extensive argument at the hearing. *See e.g.*, Tr. at 3-46. Goss cites no authority for its assertion that the court must deny K & M's proposed constructions in the absence of prejudice.

Goss' overarching argument regarding all the dependant claims is that K & M's constructions improperly import structures not supported by the specification, such as adding feed motor position sensors, an operator advance/retard control, a misfeed sensor, a home position proximity sensor, receiving location proximity sensors, and microcomputers running specific algorithms. Pl. Resp. at 10. K & M responds that claims 2, 5, 6, 7, and 11 describe functions related to varying the speed of motors in the article sheet feeders. Def. Memo. at 17. The sheet material feed controllers operate these variable speed motors. *Id.* K & M contends that the term "sheet material feed controller" "does not, by itself, disclose a structure." *Id.* K & M's constructions exclude mention of any controllers; instead, they refer to microcomputers and include related "programming to adjust the operating speed of the feed motor." *Id.* at 18.

K & M's constructions fail for the reasons previously discussed. First, the term "sheet material feed controller" does not require additional construction. K & M's attempt to substitute "microcomputer" in the place of "controller," and thus include computer algorithms as corresponding structure, is not supported by the patent's record. *See supra*, sec. II(B)(2). Second, K & M's constructions of the dependant claims suffer from the same over-inclusiveness discussed regarding the independent claims. For example, the additional function added by claim 5's "control means" element is varying the speed of one article feeder motor relative to the other feeder motors. Claim Chart at 6. K & M asserts the corresponding structure necessary to perform the additional function is an array of sensors, advance/retard controls, and computer programs. Def. Memo. at 18; Claim Chart at 7 (referring to construction of claim 2, which adds to construction of claim 1). But K & M provides no support for its position that a "home position proximity sensor" and an "operator advance/retard control" are linked to the function. These structures may enable or enhance the operation of claim 5's "control means" element, but they are not necessary to perform the recited function. K & M's other constructions are equally over-inclusive and must be rejected. *See e.g.*, Claim Chart at 9 (construction of claim 6 includes "operator advance/retard control" and "misfeed sensor" as structures corresponding to a limited function of varying article feeder motor speed based on signals from the feeder).

### **C. "Means for Providing Signals"**

[11] The parties' dispute regarding claims 3 and 11 is narrow. The parties agree that the "means for providing signals" element is governed by Section 112, paragraph 6. Pl. Memo. at 21, 27; Def. Resp. at 14. They also agree the element's function is to provide signals to the control means indicating the position of the pockets relative to the article sheet feeders. Claim Chart at 5, 12-13. Additionally, the parties agree on part of the corresponding structure for claim 3, *i.e.*, "a receiving location sensor associated with each of the receiving locations ... and each of the article feeder assemblies." *Id.* at 5, 12. They also agree on part of the structure corresponding to claim 11. *Id.* Goss contends, however, that a "conveyer home position sensor" should be included as corresponding structure in both claims. *Id.* Goss cites the specification in support of its construction, which states, the "home position sensor 45 provides an output to the main controller 40 when the conveyer assembly 22 is in a home or initial position relative to the sheet material article feeders 54." Pat. at col. 3, ll. 15-18. K & M argues Goss' construction is overly broad because the home position

sensor does not perform the recited function. Def. Resp. at 15. According to K & M, the home position sensor performs the separate function of locating the home position of the conveyer assembly. *Id.* Therefore, it is excluded from the corresponding structure. *Id.*

The court construes the "means for providing signals" element consistent with K & M's construction. The "home position sensor" element is directly referenced in the specification's text only once: it is described as providing a signal to the main controller when the conveyer assembly is in the home position. Pat. at col. 3, ll. 15-18. The only other reference to the element is in Figure 3, where it is depicted as linked to the main controller and the conveyer motor drive circuit, which in turn operates the conveyer drive motor. Pat at Fig. 3. Both references indicate its role is to signal the starting position of the conveyer. The function of the "means for providing signals" element, however, is to signal the position of the pockets relative to the article feeders. Claim Chart at 5, 12. This function is not carried out by the home position sensor, but rather by a receiving location sensor assembly. Pat. at col. 4, ll. 26-37; Fig. 4. While the home position sensor may aid the function by setting an initial start position, it is not necessary to perform the element's function. *See Wenger*, 239 F.3d at 1233. Therefore, the home position sensor should not be included in the construction of claims 3 and 11.

#### **D. Undisputed Terms**

[12] The construction of many claims, and elements within the claims, are undisputed by the parties. The court may construe undisputed terms in the manner agreed to by the parties. *See PSC Computer Prods., Inc. v. Foxconn Intl., Inc.*, 355 F.3d 1353, 1357 (Fed.Cir.2004) ("[a]lthough an infringement analysis typically begins with claim construction, the district court here did not construe the claims ... because their meaning is not disputed"). Therefore, all undisputed claims and elements are construed as set forth in the parties' briefs and revised joint claim construction chart.

### **CONCLUSION**

The court construes the claims as follows: the "article feeder means" element in claims 1, 20, and 24 is construed consistent with Goss' proposed constructions; the "control means" element in claims 1, 2, 5-7, 11, 12, 20, and 24 is construed consistent with Goss' proposed construction; and the "means for providing signals" element in claims 3 and 11 is construed consistent with K & M's proposed constructions. All undisputed claims and elements are adopted by the court.

N.D.Ill.,2006.

Goss Intern. Americas, Inc. v. K & M Newspaper Services, Inc.

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