Slip Op. 02-9
United States Court of International Trade

KANEMATSU USA INC., Plaintiff, v. UNITED STATES, Defendant.	Before: Pogue, Judge Court No. 95-04-00405

[Customs ruling affirmed.]

Decided: January 29, 2002

Serko & Simon LLP, (Daniel J. Gluck, David Serko, Jerome L. Hanifin) for Plaintiff.

Robert D. McCallum, Jr., Assistant Attorney General, John J. Mahon, Attorney-in-Charge, International Trade Field Office, Bruce N. Stratvert, Attorney, Commercial Litigation Branch, Civil Division, U.S. Department of Justice; Chi S. Choy, Office of Assistant Chief Counsel, International Trade Litigation, U.S. Customs Service, Of Counsel, for Defendant.

OPINION

Pogue, Judge: This case is before the court after trial de novo. Kanematsu USA Inc. ("Plaintiff") challenges a decision of the United States Customs Service ("Customs") denying Plaintiff's protests filed in accordance with section 514 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1514 (1994).[1] At issue is the proper

[1]Jurisdiction does not exist for Entry Number 335-0212028-1 because Protest Number 3001-93-100254 was not timely filed. See

tariff classification under 19 U.S.C. § 1202 (1993), Harmonized Tariff Schedule of the United States ("HTSUS"), of Plaintiff's importation of electromagnetic Power Take Off ("PTO") clutch/brakes.[2]

Background

Upon importation, Customs classified the subject merchandise under subheading 8505.20.00. This subheading covers "electromagnetic couplings, clutches, and brakes[,]" and resulted in the assessment of a 3.9% ad valorem duty.[3] Customs' classification was based on its belief that the subject merchandise contained both an electromagnetic clutch and an electromagnetic

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Revised Pretrial Order, Schedule C, Uncontested Facts ¶ 1.

[2] The PTO clutch/brake at issue was manufactured by Ogura. The subject merchandise was imported during 1992 and 1993 and liquidated in 1993. At all times the HTSUS for those years are used.

[3] Subheading 8505.20.00, HTSUS, in relevant part provides:

8505.	Electromagnets; permanent magnets and articles intended to become permanent magnets after magnetization; electromagnetic or permanent magnet chucks, clamps and similar holding devices; electromagnetic couplings, clutches and brakes; electromagnetic lifting heads; parts thereof:
* * *	
8505.20.00.	Electromagnetic couplings, clutches and brakes

brake.[4]

Plaintiff claims, however, that the subject merchandise is classifiable as "parts of tractors suitable for agricultural use," under subheading 8708.99.10, where it is eligible for duty-free treatment.[5] Plaintiff argues that the subject merchandise is a "unique device," containing two components, an electromagnetic clutch and a mechanical brake. According to Plaintiff, the brake

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[4]In the HQ Ruling Letter and summary judgment papers, Customs appeared to argue that neither the clutch nor the brake performed the principal function. See HQ 957778 (July 10, 1995). Customs classified the subject merchandise in accordance with Note 3 to Section XVI which states that "composite machines . . . are to be classified as if consisting only of that component or as being that machine which performs the principal function," unless the context otherwise requires. Section XVI, Note 3, HTSUS. Customs previously argued that the PTO clutch/brake does otherwise require, because neither the electric clutch nor the electric brake perform the principal functions. Customs further argued that subheading 8505.20.00 provides eo nomine for both aspects of the subject merchandise. In its pretrial papers and at trial, however, Customs changed its argument, claiming that if the court found that the clutch was electric but the brake was mechanical, it should still be classified in subheading 8505 because the electric clutch performed the subject merchandise's essential function. See Def.'s Pre-Trial Stmt. at 2-3.

[5] Subheading 8708.99.10 provides:

8708.	Parts and accessories of the motor vehicles of headings 8701 to 8705:
* * *	
8708.99.	Other:
* * *	
8708.99.10.	Parts of tractors suitable for agricultural use

Based on Plaintiff's argument, the PTO clutch/brake would be classified under 8708.99.10 because it is a part of a subheading 8701.90.10.01 power take off tractor.

portion of the subject merchandise is specifically excluded from chapter 85 by Explanatory Note 85.05[6] and, following a GRI 1 analysis, the PTO clutch/brake is classifiable in Chapter 87.[7]

Uncontested Facts

Both Plaintiff and Customs agree that the merchandise at issue is a good, known as the PTO clutch/brake. See Revised Pretrial Order, Schedule C, Uncontested Facts ¶ 3. The PTO clutch/brake is principally used in lawn and garden tractors. Id. ¶ 7. It is not, however, used in propulsion of the tractor. Id. ¶ 4. Rather, power is transferred through the subject merchandise from the

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[6] Explanatory Note 85.05(5) contains a general discussion of electro-magnetic brakes:

> These generally consist of shoes which, under the influence of electro-magnets, act on the rim of a wheel or on the rail. Others are based on the principle of electro-magnetic induction, a soft steel disc mounted on the shaft being braked by the action of eddy currents induced in it by electro-magnets. The heading does not, however, cover mechanical hydraulic or pneumatic brakes controlled by electro-magnetic devices.

Harmonized Commodity Description and Coding System, Explanatory Notes (1st ed. 1986) at 85.05(5)("Explanatory Notes").

While the Explanatory Notes "do not constitute controlling legislative history," Lonza, Inc. v. United States, 46 F.3d 1098, 1109 (Fed. Cir. 1995), they are instructive, offering "guidance in interpreting HTS[US] subheadings." Id.

[7] General Rule of Interpretation 1 provides for classification "according to the terms of the headings and any relative section or chapter notes . . . ." GRI 1, HTSUS.

engine to operate various instruments attached to the tractor.[8] See id. ¶ 5. The clutch and brake alternate in performing their functions: when the brake is engaged, the clutch must be disengaged and when the clutch is engaged, the brake must be disengaged. See id. ¶ 16.[9]

The parties also agree as to the general mechanics of the PTO clutch/brake. The brake is engaged as a result of internal spring forces. In the absence of an electrical current, the pre-loaded leaf springs pull the armature away from the rotor and into contact with the brake plate. See id. ¶ 16(C). Once the electrical current flows to the coil, the magnetic field attracts the armature to the rotor. See id. ¶ 16(B). The armature rotates with the rotor and torque is transferred from the armature to the pulley, from the pulley to the belt and ultimately to the implement attached to the tractor. See id.

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[8] Examples of implements that can be attached to the tractor include a rotary tiller, plow, disc harrow, spring tooth cultivator, sprayers, rear rake, fertilizer spreader, spiker, trencher, snowblowers, stump grinders and carts. See Ogura's General Purpose & PTO Clutch/Brake Brochure, Pl.'s Ex. 13 at 7; see also Dixon ZTR Riding Mower Catalog, Pl.'s Ex. 3; Bolens Garden Tractors Catalog, Pl.'s Ex. 5; The Steiner Catalog, Pl.'s Ex. 7; Lawn-Boy Tractors, Riders and Tillers Catalog, Pl.'s Ex. 9; John Deere Lawn and Garden Tractor Catalog, Pl.'s Ex. 10.

[9] Plaintiff, at trial, argued that the PTO clutch/brake only operated in an engaged/engaged state – either the clutch was engaged or the brake was engaged – as opposed to alternating between engaged and disengaged states. Regardless either the clutch or brake is always engaged and neither the clutch nor the brake is engaged at the same time.

The parties disagree, however, on whether the brake is a mechanical brake and whether one of the components of the PTO clutch/brake performs a principal function.

Standard of Review

The court's jurisdiction is predicated on 28 U.S.C. § 1581(a)(1994). "The Court must determine 'whether the government's classification is correct, both independently and in comparison with the importer's alternative.'" H.I.M./Fathom, Inc. v. United States, 21 CIT 776, 778, 981 F. Supp. 610, 613 (1997)(quoting Jarvis Clark Co. v. United States, 733 F.2d 873, 878 (Fed. Cir. 1984)). Following the Supreme Court's holding in Mead Corp. v. United States, 533 U.S. 218 (2001), the Court does not afford the deference articulated in Chevron U.S.A. Inc. v. Natural Resources Defense Council, 467 U.S. 837, 842-43 (1984), to Customs' standard classification rulings such as that at issue here.

The analysis of a Custom's classification involves a two-step process. First, the court must ascertain "the proper meaning of specific terms in the tariff provision." David W. Shenk & Co. v. United States, 21 CIT 284, 286, 960 F. Supp. 363, 3654 (1997). This aspect of Customs' classification is subject to de novo review, pursuant to 28 U.S.C. § 2640 (1994), because it is a question of law. See Russell Stadelman & Co. v. United States, 23 CIT __, __, 83 F. Supp. 2d 1356, 1357 (1999), aff'd, 242 F.3d 1044

(Fed. Cir. 2001). Then the court determines whether the goods come "within the description of such terms as properly construed." Shenk, 21 CIT at 286, 960 F. Supp. at 365. This is a question of fact.

The trial beings with a presumption of correctness. See, e.g., Salant Corp. v. United States, 24 CIT __, __, 86 F. Supp. 2d 1301, 1303 (2000)(quoting Universal Elecs. Inc. v. United States, 112 F.3d 488, 492 (Fed. Cir. 1997)(holding that "although the presumption of correctness applies to the ultimate classification decision . . . the presumption carries no force as to questions of law")). To overcome the presumption, the party challenging the classification must produce a preponderance of evidence on the disputed factual question. See Universal Elecs. Inc., 112 F.3d at 492.

Findings of Fact and Conclusions of Law

The HTSUS consists of (A) the General Notes; (B) the General Rules of Interpretation; (C) the Additional U.S. Rules of Interpretation; (D) sections I to XXII, inclusive (encompassing chapters 1 to 99, and including all section and chapter notes, article provisions, and tariff and other treatment accorded thereto); and (E) the Chemical Appendix.

The General Rules of Interpretation ("GRI") of the HTSUS govern the proper classification of merchandise. See Orlando Food

Corp. v. United States, 140 F.3d 1437, 1439 (Fed. Cir. 1998). Both parties argue that classification of the PTO clutch/brake should be made in accordance with GRI 1. Pursuant to GRI 1, "classification shall be determined according to the terms of the headings and any relative section or chapter notes." GRI 1, HTSUS; see also Orlando Foods, 140 F.3d at 1440.

Plaintiff claims that the entire unit, the PTO clutch/brake, is classified as other parts of tractors. Customs claims that GRI 1 directs it to Section XVI, Note 3. According to this note composite goods are classified in accordance with their principal function, unless the circumstances otherwise require. In this case Customs claims that the Court could make one of two findings. According to Customs, the Court could either determine that (1) both components of the PTO clutch/brake are classifiable in the same subheading in Chapter 85, making a principal function analysis unnecessary, or (2) the brake is classifiable in Chapter 84 and the clutch in Chapter 85 with the clutch performing the principal function resulting in the PTO clutch/brake unit's classification in Chapter 85.

I. Type of Brake

Although the parties agree on the general mechanics of the PTO clutch/brake, they do not agree on the type of brake used in the subject merchandise or how to define it. The parties also disagree

on the mechanics of spring-set or fail-safe brakes and whether the brake at issue can be described as spring-set or fail-safe.[10] Whether the brake at issue can be considered a spring-set brake helps determine how it is classified.

According to Plaintiff, the brake portion of the PTO clutch/brake is not a fail-safe brake, and this is demonstrated by its description of fail-safe brakes as well as the testimony and evidence introduced at trial. Plaintiff describes the operation of an electromagnetic spring-applied fail-safe brake as follows:

> A. When no current is applied to an electromagnetic spring set brake, a series of compression coil springs push against the armature.
> B. The force against the armature produced by the series of coil springs clamp [sic] the friction disk or rotor between the pressure plate and the armature.
> C. The frictional clamping force is transferred to the hub which is mounted to a shaft.
> D. When the brake is required to release, voltage/current is applied to the field coil creating a magnetic field.
> E. The magnetic field pulls in the armature against the compression coil springs creating an air gap between the armature, the friction disk or rotor and the pressure plate. This allows the friction disk or rotor to turn freely with the shaft.

[10] Spring-set, fail-safe, and spring-applied are used interchangeably throughout this opinion. Although fail-safe is a term that is no longer in favor in the industry because of the implications for a manufacturer's liability, the term was frequently used by the trial witnesses and in several of the exhibits presented at trial.

Revised Pretrial Order, Schedule C-1, Contested Facts ¶ 19. Plaintiff contends that the brake portion of the subject merchandise does not operate in this manner.

This description, however, is similar to the brake portion of the subject merchandise. Scott Fuller,[11] one of Customs' witnesses, testified at trial that the fail-safe brake described by Plaintiff is "analogous" to the brake portion of the PTO clutch/brake. See Trial Tr. at 353 ("[W]hile some of the terms, some of the components are called different names, between the [fail-safe brake and the brake at issue] they're very similar in operation."); see also Trial Tr. at 300-08 (testimony of Sekella). It appears that the only difference between fail-safe brakes as described by the Plaintiff and the brake at issue are the number of clamps. Fuller explained that even though Step B describes a "clamping on two sides" and the brake portion of the subject merchandise is only clamped on one side, Trial Tr. at 351-52, these differences are merely attributable to the fact that the subject merchandise is a combination clutch/brake and not a stand alone brake. See id. at 394 (testifying that "this one only happens to have one set of action friction surfaces, but it's common in clutch and brake

[11]Scott Fuller works for Warner Electric Co., Ogura's largest competitor for PTO clutch/brakes. See Trial Tr. at 31 (stating that Ogura and Warner "make up a majority of the market"). Fuller works in the field of clutches and brakes, specifically in the area of design and application of clutches and brakes for the outdoor power equipment industry. He was admitted as an expert witness.

design. You can add multiple friction surfaces to an electric clutch or an electric brake, and you – they're still called 'electric clutches or brakes.'"). As a result of the combination of the two components some of the elements needed to be modified in order for the clutch and brake to properly alternate in their engagement.

T. Curran Sekella,[12] another witness for Customs, agreed with Fuller's comparison of electric spring-engaged brakes and the brake portion of the PTO clutch/brake, focusing on a fail-safe brake manufactured by Ogura. See Trial Tr. at 298-302. Similar to Plaintiff's fail-safe brake description, the Ogura fail-safe brake uses a disk that has friction on both sides, while the brake at issue uses a single surface. According to Sekella, "torque is generated in the same manner. [T]he brake is actuated, in this case released, through the same rules of physics that define generating a magnetic force." Id. at 302; see also Def.'s Pre-Trial Stmt. at Ex. 1, Comparison of an Electric Spring-Engaged Brake and the Electric Clutch/Brake "Brake"; Herbert S. Peterson, et. al., "Sure-fire Stopping Power with Failsafe Brakes", Machine Design, Apr. 26, 1979, Def.'s Ex. V2 at 171 ("The most common friction element in fail-safe brakes today is the disc, which may be used singly or in

[12]Sekella is a mechanical engineer and the president of a small clutch company. His experience included design and development, manufacturing, and management of the clutch and brake business. He was admitted as an expert witness in the area of clutches and brakes.

multiples.")("Def.'s Ex. V2").

Although Plaintiff claims that it is not possible to use a fail-safe brake in a combination clutch/brake, the Court is not persuaded by Plaintiff's testimony. Gary Partridge,[13] one of Plaintiff's expert witnesses, testified that fail-safe brakes could only be used for "low cycle engagement," see Trial Tr. at 211, and the implements attached to the PTO clutch/brake require high cycle engagement. Partridge further argued that, although one manufacturer tried to incorporate a fail-safe brake in a combination clutch/brake, the attempt was unsuccessful because the brake "stopped the rotating cutting blades so abruptly that the blades were coming loose from the tractor." Pl.'s Draft Findings of Fact and Conclusions of Law at 21; see also Trial Tr. at 211-12. Partridge, as a result, concluded that "fail-safe brakes really don't have any application in outdoor power equipment." Trial Tr. at 211-12.

Customs, however, introduced articles and testimony refuting this suggestion. One article not only describes a brake that is similar to the one at issue but also calls it "the most common type of fail-safe brake." Def.'s Ex. V2 at 170. This type of fail-safe

[13]Gary Partridge worked for a number of major companies in the lawn and garden business before starting his own company for manufacturing commercial mowers. Since 1990 he has worked as a product design consultant for companies in this industry. Partridge was designated as an expert in the outdoor power equipment industry and on clutches, brakes, and clutch/brake combinations.

brake is an "energy absorbing or dynamic brake that decelerates a rotating shaft or other machine part until it comes safely to rest." Id. Furthermore, "[b]ecause of OSHA restrictions, fail-safe brakes are being used increasingly on consumer-operated power equipment such as garden tractors, lawn mowers, and golf carts." Id. at 171. Such consumer equipment is precisely the type of equipment that utilizes the PTO clutch/brakes at issue.

The persuasive power of Plaintiff's evidence was further undermined by the introduction of conflicting and misleading statements. Although Plaintiff argued that the brake at issue was not a fail-safe brake, it did not introduce evidence to explain how the brake differed from fail-safe brakes found in Plaintiff's own exhibits. See, e.g., George Riesselmann, "Applying Fail-Safe Brakes to Stop and Hold", PT Design, Feb. 1996, Pl.'s Ex. 54 at 31; Robert L. Mott, Machine Elements in Mechanical Design (3d ed. 1999), Pl.'s Ex. 45 at 759. Machine Elements in Mechanical Design, one of Plaintiff's exhibits, defines a fail-safe brake as a "brake that is spring-applied automatically in the absence of an overt action . . . [w]hen the power goes off, the brake goes on." See Pl.'s Ex. 45 at 759; see also Trial Tr. at 286. Machine Elements in Mechanical Design continued, explaining that the springs in a fail-safe brake apply the brake "if power fails, or if air pressure or hydraulic pressure is lost . . . . [and this] concept may also be used to engage or disengage a clutch." Id. at 761. Here, the

brake portion of the subject merchandise is applied in the absence of power and is also used to disengage the clutch. See, e.g., Trial Tr. at 286-87.

Fail-safe brakes are brakes "engaged by internal stored energy in springs, [and] disengaged by externally-supplied electric energy which is converted into an electromagnetic field to release the brake." Def.'s Proposed Findings of Fact and Conclusions of Law at 13; see also Trial Tr. at 353-54. Both electromagnetic spring-applied fail-safe brakes and the brake portion of the clutch/brake at issue function in the described manner, further demonstrating that the brake is a type of fail-safe brake.

II. Actuation Method

Plaintiff also argues that even if the brake were considered a fail-safe brake, it is still classifiable as a mechanical rather than electric brake.

Brakes and clutches are organized by both their methods of engagement[14] and actuation.[15] See Joseph L. Foszcz, "Selection

[14]Engagement is defined as "the act or state of interlocking." The Random House Dictionary of the English Language 644 (2d ed. 1987).

[15]The Random House Dictionary defines "actuate" as "to put into action; start a process; turn on: to actuate a machine." Random House Dictionary 21. The American Heritage Dictionary also defines actuate as "to put into motion or action; to move to action." American Heritage Dictionary of the English Language 18 (3d ed. 1996).

Factors for Clutches and Brakes," Plant Engineering, Oct. 1, 1999, available at http://www.manufacturing.net/magazine/planteng; Motion Systems Handbook, PT Design (1999), Def.'s Ex. Y at A125 (classifying brakes by both the "technique used to engage or stop the load . . . and by the method used to actuate them")("Def.'s Ex. Y").[16] Methods of engagement include friction, mechanical lock-up, and electromagnetic. See Def.'s Ex. Y at A125. Actuation methods include mechanical, electric, pneumatic and hydraulic. See id.

Plaintiff argues that the brake is mechanical for two reasons. First, Plaintiff claims that the actuating mechanism of the brake portion of the subject merchandise is the spring, a mechanical device, and therefore the brake is a mechanical brake. Second, Plaintiff contends that because the braking torque[17] is a result of friction, which is a mechanical function, the brake at issue is a

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[16]This is an annually published handbook by the trade publication PT Design, an authoritative resource issued in the field of clutches, brakes, gears, and couplings. See Trial Tr. at 281.

[17]Torque is defined as

> the tendency of a force applied to an object to cause the object to rotate about a given point; this tendency expressed by the equation $t = r \times F$, where t is the torque, F is the vector of the force, and r is the position vector from the point of origin to the point of application of the force; this expression of force acting in a rotational sense, used as a basic measure of the propulsive effect of a powered wheel.

Academic Press Dictionary of Science and Technology, available at http://www.harcourt.com/dictionary.

mechanical brake. See Trial Tr. at 143.

Neither Customs nor the Court disagree with Plaintiff's description of the brake's engagement force. See, e.g., Trial Tr. at 146. In the case of the brake at issue the force used to hold the load is friction. Specifically, the braking action is due to friction generated by the mechanical engagement of the armature with the brake plate. See Pretrial Order, Schedule C, Uncontested Facts ¶ 16(C).

However, contrary to Plaintiff's argument, the spring is not the brake actuator. Brakes are arranged "so that [they are] normally either released or applied, a spring usually forcing it into the normal condition." McGraw-Hill Encyclopedia of Engineering (2d ed. 1992), Def.'s Ex. F at 105 ("Def.'s Ex. F"). The brake at issue is arranged to be released after which it is then forced into position by the spring. See Def.'s Ex. V2 at 171 (In fail-safe brakes "[t]he engagement force element that applies pressure to the friction elements and 'sets' the brake, usually consists of one or more compression springs."). The spring plays a role in the engagement but it is not actuating the brake. Moreover, mechanical actuation is generally defined as requiring hand or foot operated linkages or cables, not the mere existence of a spring, see "Basics of Design Engineering", Machine Design, June 1993, Pl.'s Ex. 17 at

34;[18] Trial Tr. at 290-91, none of which are contained in the brake at issue.

In the brake at issue, the actuation force - the force that puts the brake into action, starts the process, and turns on the brake - is the electromagnetic force that releases the brake and allows the spring to operate. Generally, brakes are actuated by an overt action. In the case of a spring-applied fail-safe brake, however, the brake is applied automatically in the absence of overt action. See Pl.'s Ex. 45 at 759, 761. In this context the actuation method refers to the source of external energy utilized for the brake operation. See Trial Tr. at 287-89; see also Def.'s Ex. F at 105 ("A controllable external force then applies or releases the brake."). Here, that energy is the electric current because the discontinuation of the electric current releases the brake, putting it into action. Therefore, the Court finds that the actuating mechanism, a necessary aspect of brake classification, is electric.

Plaintiff further argues that electric friction brakes do not exist and that only three types of electric brakes are recognized; those that operate by way of hysteresis, eddy current, or magnetic

[18] Machine Design is an authoritative trade journal and one of the most widely circulated magazines in the design engineering trade. Although the cited pages are from Pl.'s Ex. 17, Customs also submitted different pages of the same article in Def.'s Ex. D. The entire article will be referred to as "Basics in Design Engineering" throughout this opinion.

particle. See Trial Tr. at 164. According to Plaintiff, therefore, the classification of a friction brake is necessarily mechanical. But electric friction brakes do exist. See Basics of Design Engineering at 96; Trial Tr. at 293-95. Such brakes use the friction developed between two surfaces to engage or stop the load but are actuated electrically. Furthermore, the only electrical brake suitable for fully stopping a load is one "electrically actuated but rely[ing] on mechanical friction for stopping action." Basics of Design Engineering at 96.

Moreover, the evidence presented at trial clearly demonstrates that, contrary to Plaintiff's claim, electric fail-safe brakes, similar to the brake at issue, are made. See Warner Clutches, Brakes and Controls Master Catalog, Def.'s Ex. H; Kebco Spring-set Brakes Catalog, Def.'s Ex. I; Stearns Electromagnetic Clutches and Brakes Catalog, Def.'s Ex. J; Hilliard Electric Brakes Catalog, Def.'s Ex. K; Lenze GmbH & Co., Def.'s Ex. L; Carlyle Johnson Brakes Catalog, Def.'s Ex. U ("Def.'s Ex. U").[19] Customs introduced into evidence several manufacturer catalogs that illustrate spring-

[19]At trial Francis Flemming, one of Plaintiff's witnesses, agreed that electric brakes engaged by springs exist. Flemming stated that such brakes are referred to as "spring-applied," "spring-set," or "fail-safe" brakes. Trial Tr. at 100-01. When further questioned, however, Flemming appeared to recant this testimony, responding that "those are brakes that are applied mechanically." Id. at 101-02. Still Flemming agreed that such brakes would be under "an electric brake or electromagnetic brake heading, but they're always called out as 'fail-safe,' 'spring-set,' [or] 'power off.'" Id. at 102.

set brakes. When these catalogs mention brakes that operate like the brake at issue, the brakes are always referred to as electric or electromagnetic. For example, the index for the catalog of German supplier Ortlinghaus, specifically lists "mechanically actuated", "electromagnetically actuated", etc. See Ortlinghaus Clutch Plates, Clutches and Brakes Catalog, Def.'s Ex. T. Under the category for electromagnetically actuated brakes are sub-categories, including one for spring-applied brakes. See id.; Trial Tr. at 307-08. The catalog for Carlyle Johnson is another such example. It lists two types of electric brakes, energy-applied and spring-applied. See Def.'s Ex. U; Trial Tr. at 308. Furthermore, the description of actuation methods for mechanical spring-applied brakes in the catalogs is different than that for the brake at issue. The spring-applied mechanically actuated brakes described in the catalogs have hand levers and manual touch controls, see Trial Tr. at 306; see also Carlyle Johnson Brakes & Clutches Catalog, Def.'s Ex. V, none of which are found in the subject merchandise.

Ogura even manufactures a brake marketed as a fail-safe electric brake. The description given of the operation of this brake is similar to the brake at issue here. In Ogura's fail-safe electric brake, when "the field [is] de-energized the spring forces the armature and friction disc against the stationary pressure plate. [Then] when the field is energized the armature is attracted

to the field, releasing the friction disc and hub to rotate." Ogura's MNB Fail-safe Electric Brake Catalog, Def.'s Ex. W2. Further, like the brake at issue, Ogura's electric fail-safe brake "is applied when electric power is off." Id. Plaintiff claims that the description of this brake as electric is incorrect, arguing that such a brake should technically be referred to as "electromagnetic or electro-mechanical." Trial Tr. at 105. Previously, however, the parties agreed that the terms electric and electromagnetic are used interchangeably. See Revised Pretrial Order, Schedule C, Uncontested Facts ¶ 9 ("Electric brake and electromagnetic brake are synonymous terms."). As a result, the Court finds Plaintiff's argument unpersuasive.

Plaintiff further argues that regardless of Customs' catalog exhibits, catalogs that refer to clutch/brake combinations like those at issue call the brake portion mechanical. Plaintiff admitted into evidence catalogs from Warner, Ogura's only competitor of PTO clutch/brake combinations, and a powerpoint presentation on Ogura clutch/brakes used within the company.[20] The Warner catalog differentiates between the clutching operation of a clutch-only from a clutch/brake combination, stating that "[t]he

[20]Although the overhead presentation described the brake portion of the subject merchandise as mechanical the presentation was made after litigation had been commenced, greatly reducing its credibility. Furthermore, it specifically refers to the "braking torque" as mechanical, not the entire brake. See Powerpoint Presentation "Ogura PTO Clutch/Brakes," Pl.'s Ex. 42 at 12.

difference is the absence of a mechanical brake." Warner GT Clutch Application Guide, Pl.'s Ex. 26 at 8. It further states that "the mechanical brake in a clutch/brake assembly" is found in the armature assembly. Id. at 7. When these catalogs, however, refer to a "mechanical brake" they are actually only referring to a portion of the brake assembly, the brake plate. See id. at 2 ("The mechanical brake is a plate that fits against the back side of the armature."); Warner Power Take-Off Clutches Catalog, Pl.'s Ex. 27 at 7("The mechanical brake is a plate that engages against the back side of the armature."); Trial Tr. at 346.

Customs does not disagree with Plaintiff that the brake plate is mechanical. See Trial Tr. at 349-50. Rather, Customs argues that it takes more than just the brake plate to accomplish the braking function. See id. at 347-48. Even Plaintiff's testimony did not claim that the brake plate was synonymous with the brake. See id. at 78. In order to function, the brake must include not only the brake plate but also the armature, springs, studs, coil, and rotor. See id. at 347.

The brake at issue is an electromagnetic fail-safe, spring-set, or spring-applied brake. These spring-applied fail-safe brakes are a sub-category of electromagnetic fail-safe brakes. There are two methods of operating electric friction brakes; either the electrical force applies the brake and a spring returns it to disengagement when the current is removed or the electrical force

is used to disengage the brake. See Standard Handbook of Machine Design (Joseph E. Shigley & Charles R. Mischke eds., 1986), Pl.'s Ex. 46, at 30. Here, the brake generates torque through a friction surface but is still electrically actuating because the actuation method is the application of the electric current, even though the effect of the current is to release the brake. Id. (stating in the case of fail-safe brakes the method of actuation "releases or holds off the brake.").[21]

Finally, the brakes are not excluded from Chapter 85 because of the explanatory notes. The explanatory notes to 8505 help define electromagnetic brakes. Although the definition does not specifically include the type of brake at issue the list is not exclusive as it merely includes what electromagnetic brakes "generally consist of." Explanatory Note 85.05(5).

Neither does the explanatory note specifically exclude the brake. The explanatory notes explains that heading 8505 "does not, however, cover mechanical [sic] hydraulic or pneumatic brakes

[21]The categorization of railroad brakes is a good illustration. See generally Def.'s Ex. F at 105. Railroad brakes are released due to air and applied due to a spring force. Even though they are applied by the mechanical spring they are still considered and referred to as air brakes or pneumatic brakes. See id.; see also Trial Tr. at 162 (testimony of Plaintiff's witness James Rice agreeing that "typically they may be referred to as 'air brakes'"). Plaintiff's witness James Rice maintained that railroad brakes are, without doubt, "mechanical brakes," Trial Tr. at 162, even though he also agreed that dictionaries and encyclopedia's refer to such brakes as air or pneumatic brakes. Id. at 163-64.

controlled by electro-magnetic devices." Id. As previously determined, the brake at issue is not a mechanical brake. Because the brake is not a mechanical brake it cannot be a mechanical brake controlled by an electromagnetic device. Furthermore, both Plaintiff's and Defendant's witnesses at trial testified that the brake was not controlled by an electromagnetic device. See Trial Tr. at 182-83 (testimony of Plaintiff's expert witness Rice), 210 (testimony of Plaintiff's witness Partridge), 317-18 (testimony of Defendant's witness Sekella).

Therefore, the brake portion of the subject merchandise is classifiable within subheading 8505 as an electromagnetic brake.

III. Classification of the Entire Clutch/Brake

The PTO clutch/brake consists of an electric clutch and an electromagnetic brake. Plaintiff argues that even if the court determines that the brake is an electromagnetic brake, the entire PTO clutch/brake unit is classifiable under subheading 8543, HTSUS. This subheading covers other "electrical machines and apparatus, having individual functions, not specified or included elsewhere in this chapter." Subheading 8543, HTSUS.

Section XVI, Note 3, however, states that

> [u]nless the context otherwise requires, composite machines consisting of two or more machines fitted together to form a whole and other machines adapted for the purpose of performing two or more complementary or alternative functions are to be classified as if consisting only of that component or as being that

machine which performs the principal function.

Section XVI, Note 3, HTSUS. The PTO clutch/brake is a machine within the meaning of section XVI. "For the purposes of [Section XVI's notes], the expression "machine" means any machine, machinery, plant, equipment, apparatus or appliance cited in the headings of chapter 84 or 85." Section XVI, Note 5, HTSUS. The PTO clutch/brake consists of two components, the clutch and the brake, both of which are classifiable within subheading 8505. Therefore, Section XVI, Note 5, HTSUS applies. At the very least each component is an "apparatus." An apparatus is "a compound instrument designed to carry out a specific function." McGraw-Hill Dictionary of Scientific and Technical Terms 116 (5th ed. 1994). Each component of the subject merchandise carries out a specific function - the clutch performs a clutching function and the brake performs a braking function.

Furthermore, the clutch and brake are "adapted for the purpose of performing two . . . alternative functions." Section XVI, Note 3, HTSUS. As a result, the PTO clutch/brake is a composite machine composed of two machines. As both components are classifiable within the same subheading, 8505, it is unnecessary to consider which if any of the two machines performs the principal function. Under any such analysis the resulting classification would remain

subheading 8505.[22]

Because the PTO clutch/brake is classifiable within subheading 8505 it cannot be classified in subheading 8543, as argued by Plaintiff. According to the Explanatory Notes for subheading 8543, "[t]his heading covers all electrical appliances and apparatus, not falling in any other heading of this Chapter, nor covered more specifically by a heading of any other Chapter of the Nomenclature, nor excluded by the operation of a Legal Note to Section XVI or to this Chapter." Explanatory Note 85.43. The PTO clutch/brake is excluded from subheading 8543 because of Section XVI, Note 3, as previously discussed. As a result, the PTO clutch/brake cannot be classified under the 8543 subheading due to its "inclu[sion] elsewhere in this chapter." Subheading 8543, HTSUS.

[22]The Court's analysis makes it unnecessary to consider testimony on the type of lawn and garden tractors PTO clutch/brakes are attached to and the principal function of the PTO clutch/brake.

Conclusion

The court finds that both the clutch portion and the brake portion of the subject merchandise are electric and classifiable in subheading 8505. The court also holds that the PTO clutch/brake is a composite machine in accordance with the section notes for Chapter 85. Customs' classification is, therefore, affirmed.

Donald C. Pogue
Judge

Dated: January 29, 2002
New York, New York