

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
LUFKIN DIVISION**

CUMMINS-ALLISON CORP.,)	
an Indiana Corporation,)	
)	
Plaintiff/Counterclaim-defendant)	
)	
vs.)	Case No. 9:07-CV-196
)	(Consolidated)
SHINWOO INFORMATION &)	
TELECOMMUNICATIONS CO., Ltd.,)	Jury Trial Demanded
n/k/a SBM Co., Ltd.,)	
a Corporation of the Republic of Korea)	
and)	
AMRO-ASIAN TRADE, INC.)	
a Corporation of Hawaii)	
)	
Defendants.)	

SECOND AMENDED COMPLAINT

1. Cummins-Allison Corp. (“Cummins”) for its Second Amended Complaint against defendants Shinwoo Information & Telecommunications Co., Ltd. (referred to hereinafter as “Shinwoo”) and Amro-Asian Trade, Inc. (referred to hereinafter as “Amro”) alleges as follows:

2. This is a patent infringement action to stop Shinwoo’s and Amro’s unauthorized and infringing sale, offers to sell, use and importation of products incorporating Cummins’ patented U.S. currency denominating and counting inventions. Cummins is a leader in the design and manufacture of devices and methods for discriminating among currency bills of different denominations. Cummins seeks injunctive relief to stop Shinwoo and Amro from continuing to infringe Cummins’ valuable patent rights, as well as monetary damages.

3. Plaintiff, Cummins is a corporation existing and organized under the laws of Indiana and has its principal place of business at 891 Feehanville Drive, Mt. Prospect, Illinois 60056.

4. Defendant, Shinwoo is a corporation existing and organized under the laws of the Republic of Korea and has its principal place of business at 892-9, Hoge-dong, Dongan-gu Anyang-si Gyeonggi-do 431-080 Korea.

5. Defendant, Amro is a corporation existing and organized under the laws of Hawaii and has its principal place of business at 770 Kapiolani Blvd., Apt. 3305, Honolulu, HI 96813.

6. This action for patent infringement arises under the Patent Laws of the United States, in particular 35 U.S.C. §§ 271, 281, 283, 284 and 285. This court has jurisdiction over the subject matter of this action under 28 U.S.C. 1338(a).

7. This Court has personal jurisdiction over Shinwoo and Amro, and venue is proper in this Court pursuant to 28 U.S.C. §§ 1391 and 1400.

8. This case involves technology used to rapidly and automatically denominate stacks of U.S. currency bills. Cummins' patented technology is used by many banks and stores to process the currency they handle. Cummins has invested millions of dollars in developing the technology covered by its patents.

9. Cummins owns a number of patents relating to currency denominating. One of these patents is United States Patent No. 6,459,806 entitled "Method and Apparatus for Currency Discrimination and Counting" (hereinafter "the '806 patent"), which was duly and legally issued on October 1, 2002. Cummins is the owner of all rights to the '806 patent, and of all rights to sue and recover for infringement thereof. A copy of the '806 patent is attached as Exhibit A.

10. Another one of these patents is United States Patent No. 5,966,456 entitled “Method and Apparatus for Discriminating and Counting Documents” (hereinafter “the ‘456 patent”), which was duly and legally issued on October 12, 1999. Cummins is the owner of all rights to the ‘456 patent, and of all rights to sue and recover for infringement thereof. A copy of the ‘456 patent is attached as Exhibit B.

11. Another one of these patents is United States Patent No. 6,381,354 entitled “Method and Apparatus for Discriminating and Counting Documents” (hereinafter “the ‘354 patent”), which was duly and legally issued on April 30, 2002. Cummins is the owner of all rights to the ‘354 patent, and of all rights to sue and recover for infringement thereof. A copy of the ‘354 patent is attached as Exhibit C.

12. Another one of these patents is United States Patent No. 5,909,503 entitled “Method and Apparatus for Currency Discriminator and Authenticator” (hereinafter “the ‘503 patent”), which was duly and legally issued on June 1, 1999. Cummins is the owner of all rights to the ‘503 patent, and of all rights to sue and recover for infringement thereof. A copy of the ‘503 patent is attached as Exhibit D.

13. Defendants manufacture and sell U.S. currency denominating devices designated the “SB-1000,” the “SB-1100” and the “SB-1800” (hereinafter referred to collectively as “the Accused Devices”).

14. Through their actions including offering to sell, selling, using and importing the Accused Devices, Defendants have infringed claims of the ‘806 patent, the ‘456 patent, the ‘354 patent and the ‘503 patent and/or have contributed to the infringement and/or actively induced others to infringe the claims of the ‘806 patent, the ‘456 patent, the ‘354 patent and the ‘503 patent in the United States, including within the jurisdiction of this Court. Specifically:

(a) Defendants have literally infringed claims 1-9, 12-25, 28-34, 37-43, 46-54, 57-58, 76-78, 81-85, 88-95, 98-101, 103, 105, 108, 110-114, 120, 123-124 and 133 of the '806 Patent. The Accused Devices receive a stack of bills in an input receptacle and transport the bills, one a time, from the input receptacle along a transport path (as required by all the asserted claims) in the direction of the narrow dimension of the bills (as required by claims 8, 24, 33, 40, 54, 78, 84, 94, 101, 112). The Accused Devices automatically denominate currency bills by identifying the denominations without any external influence (as required by all the asserted claims) of a plurality of denominations (as required by claims 2, 6, 14, 22, 31, 39, 41, 90, 92, 112) by detecting light reflected off passing bills, generating a reflected light characteristic information output signal in response to detected characteristic information, and generating a denomination signal in response to the reflected light characteristic information output signal (as required by claims 4, 15, 18, 19, 29, 39, 48, 51, 81, 82, 100, 111, 124). The Accused Devices also denominate bills at speeds of 800 or 1000 bills per minutes (as required by claims 5, 9, 20, 25, 34, 43, 49, 76, 85, 95, 101, 105, 112, 120). The Accused Devices denominate U.S. currency or denominate currency independently of size (as required by claims 6, 7, 8, 22, 23, 24, 31, 32, 33, 40, 41, 42, 52, 53, 54, 77, 78, 83, 84, 94, 108, 112, 123), and have only one output receptacle that contains a stacker wheel (as required by claims 1, 2, 16, 17, 21, 30, 40, 49, 50, 76, 82, 91, 92, 103, 113), to which all the bills that are successfully denominated are delivered and re-stacked (as required by claims 1, 2, 16, 17, 21, 30, 40, 49, 50, 76, 82, 91, 92, 103, 113). The stacker wheel in the Accused Devices has flexible blades (as required by claims 3, 17, 21, 30, 40, 49, 133). The Accused Devices also are capable of printing information based on the results of the denominating

(as required by claims 12, 28, 37, 46, 57, 88, 98, 110), and are capable of displaying a total value of bills contained in the “Stacker” output receptacle, as well as the number of bills of each denomination (as required by claims 13, 38, 47, 58, 76, 89, 91, 99, 114).

(b) Alternatively, Defendants have literally infringed claims 1-9, 12-25, 28-34, 37-43, 46-54, 57-58, 76-78, 81-85, 88-95, 98-101, 103, 105, 108, 110-114, 120, 123-124 and 133 of the ‘806 Patent because the Accused Devices automatically denominate currency bills by determining the denomination by comparing master characteristic patterns for each known bill with the pattern of an unknown bill using a correlation technique. The Accused Devices compare what SBM calls “master patterns” with patterns obtained by scanning the bill to be denominated. The patterns that are compared are waveforms, which SBM also refers to as “profiles” or “features.” The technique used to compare patterns in the Accused Devices is a correlation technique because it determines how closely the compared “profiles” come to matching each other, i.e., how closely they are related by corresponding characteristics.

(c) Alternatively, Defendants have infringed claims 1-9, 12-25, 28-34, 37-43, 46-54, 57-58, 76-78, 81-85, 88-95, 98-101, 103, 105, 108, 110-114, 120, 123-124 and 133 of the ‘806 Patent under the doctrine of equivalents. The denominating technique used in the Accused Devices is equivalent to the technique that Defendants refer to as “the correlation technique” because any differences are insubstantial. Stored master characteristic patterns are compared with characteristic patterns obtained by scanning a bill to be denominated. The Accused Devices perform substantially the same function (comparing the patterns) to achieve the same result (determining the denomination) in substantially the same way (using a CPU programmed to perform the comparisons).

(d) Defendants have literally infringed claims 1, 2, 33-35, 41, 47, 53-55, 60-62 and 67-68 of the '354 Patent. The Accused Devices include a discriminating unit that denominates currency bills using a signal processing means. The term "signal processing means . . ." in these claims is to be construed under 35 U.S.C. § 112, par. 6. The functions are "comparing said retrieved characteristic information with master characteristic information associated with at least one genuine bill," and "generating an indication of the denomination of said bill based on said comparison when said retrieve" characteristic information sufficiently matches said master characteristic information." The corresponding structure is a CPU disclosed in the specification programmed to compare scanned data from the unknown bills with stored master characteristic data, and equivalents. The Accused Devices use a microprocessor (CPU) to execute an "image pattern recognition" algorithm. The CPU and algorithm used in the Accused Devices are equivalent to those described in the specification of the patent in suit. The algorithm described in the patent is also an image pattern recognition algorithm. The size of the SB-1000 and 100 is 312(W) x 321(D) x 289(H) mm (12.3 x 12.6 x 11.4 in.), which is within the size requirements of claims 1, 2, 35, 41, 47, 54, 55, 61 and 62. The Accused Devices also denominate bills of a plurality of denominations (as required by claims 1, 33, 35, 41, 47, 53, 54, 55, 60, 61, 62, 68), and can denominate bills of different denominations of a plurality of currency systems (as required by claims 1, 33, 35, 41, 47, 53, 54, 55, 60, 61, 62, 68).

(e) Alternatively, Defendants have literally infringed claims 1, 2, 33-35, 41, 47, 53-55, 60-62 and 67-68 of the '354 Patent because the Accused Devices compare what SBM calls "master patterns" with patterns obtained by scanning the bill to be

denominated. The technique used to compare patterns in the Accused Devices is a “correlation technique” because it determines how closely the compared “profiles” come to matching each other, i.e., how closely they are related by corresponding characteristics.

(f) Alternatively, Defendants have infringed claims 1, 2, 33-35, 41, 47, 53-55, 60-62 and 67-68 of the ‘354 Patent under the doctrine of equivalents. The denominating technique used in the Accused Devices is equivalent to the technique that Defendants refer to as “the correlation technique” because any differences are insubstantial. Stored master characteristic patterns are compared with characteristic patterns obtained by scanning a bill to be denominated. The Accused Devices perform substantially the same function (comparing the patterns) to achieve the same result (determining the denomination) in substantially the same way (using a CPU programmed to perform the comparisons).

(g) Defendants have literally infringed claims 1, 2, 4-7, 23-27, 35-39 and 41-44 of the ‘456 Patent. The Accused Devices include an input receptacle for receiving a stack of bills and a transport mechanism that transports the bills, one at a time, from the input receptacle along the transport path, in the direction of the narrow dimension of the bills (as required by all the asserted claims). The Accused Devices determine the denominations of currency bills of different denominations (as required by claim 35) using a discriminating unit that includes a detector positioned along the transport path (as required by all the asserted claims). The Accused Devices also denominate bills at speeds of 800 or 1000 bills per minutes (as required by all the asserted claims). The Accused Devices have a plurality of output receptacles that receive and re-stack the bills

after being discriminated (as required by all the asserted claims), and also have counting devices that keep track of the total value of denominated bills (as required by claims 4 and 41). The size of the SB-1000 and SB-1100 is 12.3 inches wide, 12.6 inches deep, and 11.4 inches high, and the volume is less than 2 cubic feet, all of which are within the requirements of claims 23-24 and 42-43. The Accused Devices also use magnetic sensors and ultraviolet sensors to determine the genuineness of bills processed by the machine (as required by claims 2 and 36), and the magnetic sensors are magnetoresistive (as required by claims 5-7 and 37-39).

(h) Alternatively, Defendants have literally infringed claims 1, 2, 4-7, 23-27, 35-39 and 41-44 of the '456 Patent because the Accused Devices automatically denominate currency bills by determining the denomination by comparing master characteristic patterns for each known bill with the pattern of an unknown bill using a correlation technique. The Accused Devices compares what SBM calls "master patterns" with patterns obtained by scanning the bill to be denominated. The patterns that are compared are waveforms, which SBM also refers to as "profiles" or "features." The technique used to compare patterns in the Accused Devices is a correlation technique because it determines how closely the compared "profiles" come to matching each other, i.e., how closely they are related by corresponding characteristics.

(i) Alternatively, Defendants have infringed claims 1, 2, 4-7, 23-27, 35-39 and 41-44 of the '456 Patent under the doctrine of equivalents. The denominating technique used in the Accused Devices is equivalent to the technique that Defendants refer to as "the correlation technique" because any differences are insubstantial. Stored master characteristic patterns are compared with characteristic patterns obtained by

scanning a bill to be denominated. The Accused Devices perform substantially the same function (comparing the patterns) to achieve the same result (determining the denomination) in substantially the same way (using a CPU programmed to perform the comparisons).

(j) Defendants have literally infringed claim 15 of the '503 Patent. The Accused Devices use both magnetic detectors and ultraviolet detectors to determine the genuineness of currency bills processed by the machine. Both types of sensors retrieve characteristic information from a bill to be authenticated and generate output signals associated with the respective types of characteristic information. The term "means for selecting . . ." in this claim is to be construed under 35 U.S.C. § 112, par. 6. The function is "selecting, for each type of characteristic information, one of a plurality of sensitivity settings," and the corresponding structure is an input device such as a keyboard or buttons referred to in the '503 specification, and equivalents. The Accused Devices have separate manually adjustable sensitivity settings for the magnetic and ultraviolet information. The term "means for storing . . ." in this claim is also to be construed under 35 U.S.C. § 112, par. 6. The function is "storing, for each type of characteristic information, reference information associated with each of said sensitivity settings," and the corresponding structure is the memory 80, and equivalents. Reference information is stored in memory in the Accused Devices for each of the sensitivity settings for both the magnetic and the ultraviolet information, using a Samsung K6X1008T20 128K x 8 RAM and on-chip flash program/data memory built into an ATMEL AT89C51RD2 8051 based microprocessor. The term "means for comparing . . . and indicating . . ." in this claim is also to be construed under 35 U.S.C. § 112, par. 6. The functions are "comparing, for

each type of characteristic information, said respective output signal to corresponding reference information associated with the one of said plurality of sensitivity settings selected by said means for selecting for said type of characteristic information” and “indicating that said bill is counterfeit if one or more of said output signals do not satisfactorily compare with said reference information.” The corresponding structure is the microprocessor 12 executing at least one of the algorithms described in the ‘503 specification, and equivalents. The Accused Devices include an ATMEL AT89C51RD2 8051 based microprocessor that compares the respective output signals generated by the magnetic and ultraviolet sensors to corresponding reference information associated with selected sensitivity settings. The Accused Devices use two magnetic sensors that produce outputs which are compared with stored “MG [magnetic] master patterns.” The user can select any of three different “sensitivity” levels refers to as “High,” “Medium” and “Low” sensitivities. The Accused Devices also use an ultraviolet light source and sensor that produces an output which is compared with a stored “reference level.” The user can select any of 16 different reference levels, by using the keypad on the machine.

(k) Alternatively, Defendants have infringed claim 15 of the '503 Patent under the doctrine of equivalents. The comparing technique used in the Accused Devices is equivalent to the technique that Defendants refer to as the “arithmetic algorithm” described in the ‘503 patent for comparing the magnetic information because any differences are insubstantial. Stored magnetic master patterns are compared with the magnetic sensor outputs obtained by scanning a bill to be authenticated. The Accused Devices perform substantially the same function (comparing the sensor output signal with the stored master pattern) to achieve the same result (determining whether a bill is a

counterfeit) in substantially the same way (using a CPU programmed to perform the comparison and indicate if the bill is a counterfeit).

14. Cummins is likely to be irreparably harmed by Defendants' aforementioned infringement of the '806 patent, the '456 patent, the '354 patent and the '503 patent. Cummins has no adequate remedy at law.

WHEREFORE, CUMMINS prays for judgment that:

A. The claims of United States Patents Nos. 6,459,806, 5,966,456, 6,381,354 and 5,909,503 have been infringed by Defendants;

B. Defendants, their officers, agents, servants and employees, and those persons in active concert and participation with any of them, be preliminarily and permanently enjoined from the infringement of the claims of United States Patents Nos. 6,459,806, 5,966,456, 6,381,354 and 5,909,503;

C. Cummins be awarded damages sufficient to compensate it for Defendants' infringement, that such damages be increased to three times the amount found or assessed pursuant to 35 U.S.C. § 284, and that such damages be awarded to Cummins with prejudgment interest;

D. Cummins be awarded its attorney fees, costs and expenses in this action; and

E. Cummins be awarded such other and further relief as the Court may deem just.

JURY DEMAND

Cummins hereby demands a trial by jury on all issues so triable.

Dated: June 9, 2008

Respectfully submitted,

/s/ Clyde M. Siebman

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 9th day of June, 2008, all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document through the Court's CM/ECF system under Local Rule CV-5(a)(3). Any other counsel of record will be served by a facsimile transmission and/or first class mail.

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