

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL S. COLLINS

Appeal No. 2005-0832
Application 10/039,015¹

ON BRIEF

Before BARRETT, DIXON, and LEVY, Administrative Patent Judges.
BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1, 2, and 10-17.

We affirm.

BACKGROUND

The invention relates to a mechanism for spring biasing an extensible antenna in a personal computer (PC) card.

¹ Application for patent filed January 2, 2002, entitled "Coil Spring Extension Mechanism for a PC Card."

Claim 1 is reproduced below.

1. A personal computer card comprising:

an extensible antenna;

a coil spring to push the antenna from a retracted position to an extended position;

a track laterally displaced with respect to the coil spring to guide the antenna as it is pushed to its extended position; and

a catch that retains the antenna in the retracted position in said track, said catch being spring biased.

THE REFERENCES

The examiner relies on the following references:

Ishida et al. (Ishida)	5,536,180	July 16, 1996
Johnson et al. (Johnson)	6,375,479	April 23, 2002
		(filed August 31, 2000)

THE REJECTION

We refer to the final rejection entered December 2, 2003, (pages referred to as "FR__") and the examiner's answer entered April 7, 2004, (pages referred to as "EA__") for a statement of the examiner's rejection, and to the brief received February 23, 2004, (pages referred to as "Br__") for a statement of appellant's arguments thereagainst.

Claims 1, 2, and 10-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson and Ishida. The examiner finds that Johnson teaches the claimed subject matter except for the catch being spring biased as recited in claim 1

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and a track engaging member being a cantilevered leaf spring as recited in claim 16 (FR2). The examiner finds that Ishida teaches a catch being spring biased by the cantilevered leaf spring 28 and concludes that it would have been obvious for the catch in Johnson to be spring biased by a cantilevered leaf spring in view of Ishida to prevent jamming (FR2). The examiner concludes that the structure of Johnson as modified by Ishida discloses the steps of claim 11 (FR3).

OPINION

Grouping of claims

The dependent claims are grouped to stand or fall together with their respective independent claim (Br5).

Content of Johnson and Ishida

Johnson discloses a personal computer (PC) card having an extensible antenna (e.g., antenna 80 on retractable connector 24 in Fig. 2, but the antenna can be on any embodiment), a coil spring (e.g., compression spring 76 in Figs. 2-5 and 8 and compression spring 92 in Figs. 3 and 8), and a track to guide the antenna (Figs. 8 and 9; col. 11, lines 56-62; guide rails 90 in Fig. 9 (96 in specification) and 98 on the retractable connector 24 fit within grooves in the communication card--the grooves in which guide rails 96 and 98 move are considered to be the track). Johnson discloses a cam system 102 having a cam follower 104 pivotable about an axis 108 which rides in a cam track 106 in the

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communication card (Figs. 9 and 10; col. 11, line 66, to col. 12, line 16). The cam follower 104 acts against the stop 118 to hold retractable connector 24 in the retracted position (col. 12, lines 37-41). The end of the cam follower 104 is considered to be a "catch" as recited in claim 1. However, the cam follower in Johnson is not described to be "spring biased," as recited in claim 1, or "resiliently biased," as recited in claim 11, or a "leaf spring," as recited in claim 16.

Ishida discloses a locking mechanism for a PC card having a cantilevered spring 28, which may be a leaf spring (col. 3, lines 63-67), which rides in a cam channel 58 around a cam island 57 (col. 2, line 59, to col. 3, line 4). The cam locking mechanism of Ishida is almost identical to Johnson except it discloses that the cam follower is a spring.

Claims 1, 2, and 10

The disputed portion of claim 1 recites "a catch that retains the antenna in the retracted position in said track, said catch being spring biased" (emphasis added).

Appellant argues that Ishida relates to a locking a button in place, not locking an antenna or even the PC card, and, therefore, the rejection of claim 1 should be reversed (Br5-6).

The examiner responds: (1) the catch 102 of Johnson is spring biased, referring to column 12, lines 37-41 (EA4); (2) the

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catch 102 of Johnson inherently possesses spring properties (EA5); and (3) Ishida discloses a spring biased catch (EA5).

We do not agree with the examiner's reasons (1) and (2). As to (1), the retractable connector 24, not the cam follower 104, is spring biased by the compression spring 92. As to (2), we agree that the cam follower inherently has spring properties because of its thin cross section, but this does not inherently meet the limitation of "biased" which requires some deflection.

However, we agree with the examiner's conclusion that one skilled in the art would have been motivated to make the cam follower 104 in Johnson a biased spring given the teaching in Ishida that cam followers in locking mechanisms can be biased springs. Ishida is clearly relevant to the problem of locking mechanisms in the environment of PC cards although it is not directed to locking a retractable antenna in a PC card. The cam locking structure in Ishida would have suggested to one of ordinary skill in the art its use in similar situations, of which Johnson is an example. We are not persuaded of any error in the examiner's rejection. Accordingly, the rejection of claims 1, 2, and 10 is affirmed.

Claims 11-15

The disputed portion of claim 11 recites "providing a resiliently biased follower to ride in said track and to control the position of said antenna as it moves between retracted and extended positions" (emphasis added).

Appellant's specification describes that the catch end 36a moves in a "groove" 44 in the edge of the traveler (spec. at 6) whereas the traveler 20 is described to have a U-shaped housing 30 with a cantilevered, L-shaped resilient arm 30 on each side of a "track" 28 (spec. at 5). We interpret the claimed "track" to actually refer to the described "groove." Compare claim 1 where the claimed "track" refers to the disclosed "track." The limitation that the "resiliently based follower" acts to "control the position of said antenna as it moves between retracted and extended position" seems misdescriptive inasmuch as the follower ("catch") only retains the antenna in the retracted position and does not appear to "control the position of said antenna as it moves between retracted and extended position" (emphasis added).

The cam follower 104 in Johnson corresponds to the "follower" in claim 11, but it is not disclosed as being "resiliently biased." We agree with the examiner that one skilled in the art would have been motivated to make the cam follower 104 in Johnson "resiliently biased" given the teaching in Ishida that cam followers in locking mechanisms can be spring

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biased. Appellant's argument that the spring element 28 in Ishida does not control the position of the antenna as it rides in the track, but locks the position of the button is not persuasive for the reason stated in connection with claim 1. The rejection of claims 11-15 is affirmed.

Claims 16 and 17

The disputed portion of claim 16 recites "a track engaging element, said element laterally spaced with respect to the coil spring to enable the antenna to be guided as it is pushed to its extended position, said track engaging element being a cantilevered leaf spring" (emphasis added).

Appellant argues (Br6):

The so-called track engaging element in Ishida does not enable the antenna to be guided as it is pushed to the extended position. The element in Ishida simply locks the button or unlocks the button, but has no guiding function. In other words, the card is in no way guided by an track engaging element.

The examiner notes that Ishida states that "the follower end 30 of the line spring 28 slidably engages with the cam channel 58" (emphasis added) (col. 4, lines 66-67) and operates similarly to the disclosed cam mechanism and Johnson (EA5). The examiner states (EA5):

The track engaging element (28) guides movement of the ejector button section 20 of the ejector (the lower part of Fig. 9 and col. 5, lines 15-17). To lock or unlock the button Ishida's track engaging element (28) guides the ejector button section 20 to the specified fixed positions.

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The problem is that the claim limitation is misdescriptive of the described invention. As discussed in connection with claim 11, we interpret the claimed "track" to actually refer to the described "groove" 44. That must be the case here because the limitation recites "said track engaging element being a cantilevered leaf spring," whereas the disclosed track engaging elements, L-shaped resilient arms 30 on each side of the track 28 (spec. at 5, lines 17-21), are not leaf springs. The claim limitation is misdescriptive because the end 36a of the catch 36, the "track engaging element," does not "enable the antenna to be guided as it is pushed to its extended position." Guiding of the antenna is performed as the U-shaped housing 30 is guided by the track (spec. at 5, lines 19-21). In addition, claim 16 is misdescriptive because it is directed to a "traveler" in the preamble, and the coil spring and track engaging element are not part of the traveler. We leave it to appellant and the examiner to fix these problems.

Nevertheless, we affirm the rejection because the combination of Johnson and Ishida teaches as much as disclosed. The cam follower 104 corresponds to the "track engaging element" in claim 16, except that it is not a "cantilevered leaf spring." We agree with the examiner that one skilled in the art would have been motivated to make the cam follower 104 in Johnson as a "cantilevered leaf spring" given the teaching in Ishida that cam

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followers in locking mechanisms can be cantilevered leaf springs.
The rejection of claims 16 and 17 is affirmed.

CONCLUSION

The rejection of claims 1, 2, and 10-17 is affirmed.

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a). See 37 CFR § 1.136(a)(1)(iv) (2004).

AFFIRMED

LEE E. BARRETT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JOSEPH L. DIXON)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
STUART S. LEVY)	
Administrative Patent Judge)	

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Timothy N. Trop
TROP, PRUNER & HU, P.C.
STE 100
8554 KATY FWY
HOUSTON, TX 77024-1805