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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BRIAN CURY and JAMES B. NICOLL

Appeal 2018-008372
Application 14/196,599
Technology Center 2400

Before CAROLYN D. THOMAS, MICHAEL J. STRAUSS, and
PHILLIP A. BENNETT, *Administrative Patent Judges*.

BENNETT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 6, 8–10, 21, 23, and 24. Claims 2–5, 7, 11–20, and 22 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Earthcam, Inc. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims are directed to an all-weather camera system and methods for control thereof. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. An all-weather, remote camera system comprising:
 - a weather-proof camera housing comprising a weather-proof camera housing lens cover;
 - a camera enclosed by the weather-proof camera housing, the camera comprised of a camera body configured to move within the weather-proof camera housing and a camera lens that is maintained at a fixed distance from the weather-proof camera housing lens cover while the camera body moves within the weather-proof camera housing;
 - a camera sled on which the camera body is mounted;
 - a zoom control assembly mounted on the camera sled, said zoom control assembly comprised of a track rail guide assembly mounted to the camera sled, said track rail guide assembly comprises a linear track rail, a track support on which the linear track rail slides, and a linear carriage, said camera sled connected to the track rail guide assembly by the linear carriage, said linear carriage configured to move in a forward or a backward direction by engaging the linear track rail using a plurality of rollers on a bottom of the linear carriage, wherein the linear carriage allows movement of the camera body mounted on the camera sled without any direct contact with the track rail guide assembly, wherein said camera sled, track rail guide assembly and linear carriage are enclosed by the weather-proof camera housing;
 - a device server that includes a local processor that executes software programs and instructions, wherein the device server is in communication with the camera and *instructs the camera to focus the camera while the camera lens is maintained at the fixed distance from the weather-proof camera housing lens cover* and capture an image and wherein the device server is located within the weather-proof camera housing;

a robotic actuator mounted on the camera sled and in communication with the device server, said robotic actuator engaged with a gear ring on the camera lens, wherein the device server executes software programs and instructions to instruct the robotic actuator to perform a zoom operation using the zoom control assembly that moves the camera body mounted on the camera sled back and forth on the track rail guide assembly *by the robotic actuator rotating the gear ring on the camera lens* within the weather-proof camera housing while the camera lens is maintained at the fixed distance from the weather-proof camera housing lens cover during the zoom operation;

a storage device located within the weather-proof camera housing to store the image; and

a network connector to establish a connection with a network to transmit the image to a remote Internet protocol (IP) addressable device.

Appeal Br. 25–26 (Claims Appendix).

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Choate	US 5,523,583	June 4, 1996
Johnston	US 2010/0110192 A1	May 6, 2010
Madden	US 2011/0228075 A1	Sept. 22, 2011
Applicant Admitted Prior Art (“AAPA”)		

REJECTIONS

Claims 1, 6, 9, 10, 21, 23, and 24 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over AAPA, Madden, and Choate. Final Act. 7–12.

Claim 8 stands rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over AAPA, Madden, Choate, and Johnston. Final Act. 12–13.

ISSUES

First Issue: Has the Examiner erred in finding Choate teaches or suggests a camera system in which a device server “instructs the camera to focus the camera while the camera lens is maintained at the fixed distance from the weather-proof camera housing lens cover” and also “instruct[s] the robotic actuator to perform a zoom operation using the zoom control assembly that moves the camera body . . . while the camera lens is maintained at the fixed distance from the weather-proof camera housing lens cover during the zoom operation,” as recited in claim 1?

Second Issue: Has the Examiner erred in finding performing a zoom operation by “mov[ing] the camera body mounted on the camera sled back and forth on the track rail guide assembly by the robotic actuator rotating the gear ring on the camera lens,” would have been obvious in view of the teachings of Choate?

Third Issue: Has the Examiner erred in combining the references?

ANALYSIS

First Issue

The Examiner generally summarizes the rejections as follows:

Generally, Examiner notes that it is not clear that the claimed invention is more than an obvious application of principles known in the art. According to the references cited below, it was known to enclose a zoom camera in a weather-proof housing, it was known to use a processor to control a digital camera, store images, and transmit images over the network, and it was known to construct a zoom camera by using rails, gears, and an actuator to move the imager assembly relative to the lens. Further, Examiner does not find any secondary factors that indicate non-obviousness in adaptation of these principles.

Final Act. 2. Relevant to this issue, the Examiner finds that AAPA teaches an all-weather, remote camera system including the limitation of a “weather-proof camera housing comprising a weather-proof camera housing lens cover.” Final Act. 7 (citing AAPA, Spec. 1, l. 9). The Examiner further finds AAPA teaches that it was known in the art to position a camera such that it was “enclosed by the weather-proof camera housing, the camera comprised of a camera body configured to move within the weather-proof camera housing and a camera lens that is maintained at a fixed distance from the weather-proof camera housing lens cover.” Final Act. 7 (citing AAPA, Spec. 1, ll. 7–17). The Examiner further finds that AAPA teaches generally the use of a “zoom control assembly” (Final Act. 7–8), but acknowledges that AAPA does not teach the zoom control assembly having the structural configuration recited in claim 1. The Examiner also finds AAPA deficient with respect to the “robotic actuator” limitation. Final Act. 10.

The Examiner addresses these deficiencies with the teachings of Choate, finding that Choate teaches the claimed configuration “in the context of implementing camera zoom operation.” Final Act. 9. Specifically, the Examiner finds the Choate’s description of a “carriage 29, which carries the video camera 32, [which] is adapted to be driven vertically

and selectively and in opposite directions on rail 18 by the motor 21, . . . by moving camera 32 vertically relative to the lens system 50,” teaches the recited zoom control assembly. Final Act. 9–10 (citing Choate col. 5, ll. 31–49; col. 4, ll. 18–33, and Figures 1, 3, and 4).

Appellant argues that the Examiner has erred because the cited prior art, and Choate in particular, fails to teach a camera system that allows for both zoom and focus operations to occur without any movement by the lens, which, according to Appellant, is a requirement of the claim. Appellant contends that:

Choate requires movement of the lens assembly 50 “in order to maintain focus” while the claimed invention requires that the zoom operation that moves the camera body mounted on the camera sled back and forth on the track rail guide assembly within the weather-proof camera housing while maintaining the camera lens at a fixed distance from the weather-proof camera housing lens cover. Furthermore, as Claims 1 and 21 recite “the device server is in communication with the camera and instructs the camera to focus the camera while the camera lens is maintained at the fixed distance from the weather-proof camera housing lens cover[.]” In other words, the claimed invention requires that the camera lens stay stationary with respect to the camera housing lens cover during zoom and focusing, while Choate requires vertical movement of the camera 23 and the lens assembly 50 during focusing and vertical movement of the camera 23 relative to the lens assembly during magnification (i.e., zoom).

Appeal Br. 17–18 (emphasis omitted).

We are not persuaded by Appellant’s argument. We give disputed claim terms their broadest reasonable interpretation. *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004). Appellant’s argument rests on the flawed premise that the claim requires the camera lens to remain stationary during *both zoom and focusing*. However, that is not what the claim requires. With

respect to zoom operations, Appellant is correct that the lens must remain stationary because it recites that the camera lens “is maintained at a fixed distance from the weather-proof housing lens cover while the camera body moves within the weather-proof camera housing *during the zoom operation.*” Thus, the claim expressly recites that the camera lens be maintained at a fixed distance from the housing *during a zoom operation.*

With respect to a focusing, however, the claim recites “the device server is in communication with the camera and *instructs the camera to focus the camera while the camera lens is maintained at the fixed distance from the weather-proof camera housing lens cover.*” Here, the limitation can be reasonably understood to mean that the device server *instructs* the camera to focus the camera, not that an actual focusing of the camera necessarily takes place. In that situation, it is the *instruction* to focus issued by the device server, and not the focusing action itself, that must occur while the camera lens is maintained at a fixed distance from the lens cover.

In reaching our conclusion, we note the paucity of the description of the “instructs the camera to focus the camera while the camera lens is maintained at the fixed distance” feature in the Specification. The focusing capability of the camera is discussed only in two sentences. In describing camera system depicted in Figure 1, the Specification states “[c]amera system 100 also may incorporate automatic features such as ISO film speed, shutter, white balance and focus high dynamic range imaging.” Spec. 9, l. 23–10, l. 1. In connection with the flow diagram depicted in Figure 4, the Specification further states “[c]ontrol commands include auto-focus, exposure, and other defined control commands.” Spec. 18, l. 11. There is no further discussion of any focus capability, nor is there any discussion of a

device server issuing any instruction to focus the camera—either in the Specification or the originally filed claims.²

Thus, without any meaningful guidance in the Specification to the contrary, and in view of the limited description of how a focus operation occurs in Appellant’s camera system, we conclude Appellant’s assertion that “the claimed invention requires that the camera lens stay stationary with respect to the camera housing lens cover during zoom and focusing” (Appeal Br. 18), unduly narrows the scope of claim 1 and is inconsistent with the broadest reasonable interpretation of the claim. Instead, the claim requires only that the camera lens be stationary when *an instruction* to focus is issued.

A person of ordinary skill in the art, possessing the teachings of Choate, would have understood that an instruction issued to the camera to perform a focusing operation, would take place while the camera lens is maintained at the fixed distance from the camera. That is, any movement of the camera lens would only take place after the instruction to focus was issued, and not while the instruction to focus was issued. Accordingly, we are not persuaded the Examiner erred in finding Choate teaches or suggests the argued limitation.

² Should there be further prosecution of this application, we suggest the Examiner consider whether there is sufficient written description support for the “instructs the camera to focus the camera while the camera lens is maintained at the fixed distance” limitation. The fact that we have declined to exercise our discretion and enter a new ground of rejection for lack of written description should not be construed to mean that we consider this limitation sufficiently supported in the Specification. *See* 37 C.F.R. § 41.50(b); MPEP 1213.02.

Second Issue

Claim 1 also recites “mov[ing] the camera body mounted on the camera sled back and forth on the track rail guide assembly *by the robotic actuator rotating the gear ring on the camera lens*,” The Examiner finds this limitation rendered obvious by the teachings of Choate. Final Act. 10 (citing Choate col. 4, ll. 18–33, col. 5, ll. 31–49, Figs. 1, 3, and 4) The Examiner explains that Choate does not teach an identical configuration, but its collective teachings nevertheless render the invention obvious. Specifically, the Examiner finds Choate teaches camera 32 is mounted on a carriage 29 which moves relative to the lens system 50. Final Act. 10. The Examiner further finds Choate teaches the use of a gear ring assembly on the lens. Ans. 14 (citing Choate col. 4, ll. 18–33). The Examiner explains:

Here, the location of the actuator does not modify the operation of the device in moving the assembly along the rail by driving a gear ring. And further it is known in the art and exemplified in Choate, that the actuator should be mounted to one of the two relatively moving structures, to actuate the relative motion. Thus substitution of one such actuator location for the other would be obvious under [*KSR International Company v. Teleflex Incorporated*, 550 U.S. 398, 415 (2007)].

Ans. 15.

Appellant contends Choate is deficient because “the Examiner fails to appreciate that the robotic actuator is required to be mounted on the camera sled in order for the robotic actuator to rotate the gear ring on the camera lens during a zoom operation.” Appeal Br. 19; *see also* Reply Br. 10. Appellant asserts that if the carriage 29 is considered as the recited “camera sled,” it cannot teach a robotic actuator mounted on the sled because Choate’s motor 21 is mounted on plate 16 and not on carriage 29. Appeal Br. 18. Appellant further argues the gear ring assembly identified by the

Examiner does not perform a zoom operation, but instead rotates a diaphragm adjusting ring during a concurrent zoom operation. Appeal Br. 19–20.

We are not persuaded by Appellant’s argument. Choate teaches the use of a motor 21 which turns a drive screw 22 causing drive nut 26 to move up and down the drive screw 22. Choate Fig 1, col. 3, ll. 29–60. The drive nut 26 is “connected by a bracket 27 to spacer block 28 that is fastened to the face of a carriage 29.” Choate col. 3, ll. 42–47. The rotation of the driver screw 22, and the resultant movement of the drive nut 26, imparts “movement [of the carriage 29] in response to the rotation of drive screw 22.” *Id.* Choate further teaches that the movement of the carriage 29 is relative to and independent of the lens system 50, and that zoom functionality is provided by the relative movement of the carriage-mounted camera to the lens system. Choate col. 5, ll. 44–47 (“[T]he lens system 50 employs fixed telecentric imaging lenses, and magnification variation is effected by movement camera 32 vertically relative to the lens system 50.”). Thus, Choate teaches the use of a robotic actuator (motor 21) to move the camera body (camera 32) mounted on the camera sled (carriage 29) back and forth on the track rail guide (rail 18) assembly to perform a zoom operation (magnification variation).

This configuration differs from the claimed configuration in two respects. First, the actuator is not mounted on the camera sled, but instead is mounted to plate 16, which supports both the camera and the lens system. Second, the movement of the camera is caused by the turning of the screw and not the rotation of the gear ring. However, Choate also teaches that turning the screw also imparts rotation to a gear ring on the camera lens for

carrying out the zoom operation. Choate is deficient only in that the gear ring adjusts the diaphragm in the lens system as the camera is moved, and does not itself cause the camera to be moved by the carriage/camera sled.

The standard for determining whether a claim is obvious is “an expansive and flexible approach.” *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415 (2007). We agree with the Examiner that a person of ordinary skill in the art would have found it obvious to use rotational movement of a gear ring to impart movement to the camera sled. Doing so would be a “simple substitution of one known element for another to obtain predictable results.” MPEP § 2143(I)(B). That is, Choate teaches two different ways to use a motor to affect movement by or within the camera: (1) using a drive screw and a drive nut; and (2) rotating a gear ring attached to the camera lens using drivingly engaged teeth. Substituting the rotating gear ring for the drive screw and drive nut as the mechanism for imparting movement on Choate’s carriage, as proposed by the Examiner, would have predictably resulted in movement of the camera body along the camera sled to perform Choate’s zoom operation. We further agree with the Examiner that it would have been obvious to a person of ordinary skill in the art to adjust the location of the motor/actuator in Choate from the plate 16 to the camera sled/carriage.

As explained by the Examiner:

Here, the location of the actuator does not modify the operation of the device in moving the assembly along the rail by driving a gear ring. And further it is known in the art and exemplified in Choate, that the actuator should be mounted to one of the two relatively moving structures, to actuate the relative motion.

Ans. 7.

As such, we are not persuaded the Examiner erred in concluding the argued limitation would have been obvious in view of the teachings of Choate.

Third Issue

The final issue raised by Appellant is that of combinability of references. Appellant asserts that the proffered combination is erroneous because (1) the references are non-analogous art, and (2) the Examiner relies on impermissible hindsight reasoning to arrive at the claimed invention. Appeal Br. 21–23. We address each in turn.

Appellant argues the Madden and Choate are non-analogous art because:

Madden discloses a digital camera in a watertight enclosure for capturing images underwater by a person activating the camera. Choate discloses a metrological device for making very precise measurements of manufactured goods - in essence, a microscope. Neither teach an all-weather remote camera system that captures a plurality of high-resolution still images over a period of time at varying zoom levels and transmits the images over a network or stores them locally if the network connection is lost.

Appeal Br. 21–22.

“References within the statutory terms of 35 U.S.C. § 102 qualify as prior art for an obviousness determination only when analogous to the claimed invention.” *In re Bigio*, 381 F.3d at 1325 (citing *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992)). A reference is analogous art if it satisfies one of two separate tests: (1) the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor’s endeavor, the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *Id.* (citing *In re*

Deminski, 796 F.2d 436, 442 (Fed. Cir. 1986) and *In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979)).

Here, Appellant characterizes the teachings of Madden and Choate, but does not explain why these references do not satisfy the tests described above. The Specification describes the field of invention as “all-weather camera system and methods of controlling the camera system that provide video imaging and extremely high resolution composite imaging.” Spec. 1, ll. 3–5. Madden describes the control and use of cameras in underwater environments requiring “watertight housing.” Even if not in the same field as Appellant’s invention, Madden is at least reasonably pertinent to the problems addressed by Appellant. That is, Madden teaches controlling camera operations within a watertight housing using digital components would have been useful in addressing problems of controlling all-weather camera systems contained in weather-proof enclosures. Similarly, Choate also relates to controlling high resolution cameras through manipulation of positioning of camera components. Although Choate relates to a different type of camera than Appellant’s claimed camera system, it nevertheless would have been reasonably pertinent to the problems of camera control and high-resolution imaging. Accordingly, we are not persuaded the cited references are non-analogous art.

With respect to hindsight reasoning, Appellant argues “the combination of AAPA, Madden and Choate is improper because the Office Action relies on information gleaned solely from Appellant’s specification.” Appeal Br. 22 (citing MPEP § 2142). Appellant asserts “maintaining the fixed distance between the camera lens and the weather-proof camera housing lens cover during bot, focus and zoom operations, is absent from the

cited art and is only present in Appellant's specification.” Appeal Br. 23. This argument is unpersuasive of error for two reasons. First, as we explained above, under its broadest reasonable interpretation, the claim does not require that a fixed distance be maintained during a focus operation—this requirement is only with respect to a zoom operation. Because Choate teaches maintaining a fixed distance during a zoom operation, Appellant is incorrect that the requirement of “fixed distance” is found only in Appellant’s specification. Second, Appellant does not address the actual reasoning provided by the Examiner explaining why a person of ordinary skill in the art would have combined the references in the manner claimed. The Examiner provides articulated reasoning in support of the combination with respect to both Madden (Final Act. 8–9) and Choate (Final Act. 10–11). Appellant does not address this reasoning, nor does Appellant explain why it is erroneous or deficient.

Because we discern no error in the Examiner’s rejection of claim 1, we sustain the rejection under 35 U.S.C. § 103(a). For the same reasons, we also sustain the rejection of independent claim 22, for which Appellant relies on the same arguments.

Remaining Claims

Although Appellant includes a separate section in the Appeal Brief regarding dependent claim 8, the argument presented therein merely asserts the Examiner made the same error as with claim 1. As such, we also sustain the rejection of claim 8. The remaining claims are not argued separately and fall with their respective independent claims.

CONCLUSION

The Examiner’s rejections are affirmed.

More specifically,

We affirm the rejection of claims 1, 6, 9, 10, 21, 23, and 24 under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over AAPA, Madden, and Choate.

We affirm the rejection of claim 8 under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over AAPA, Madden, Choate, and Johnston.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 6, 9, 10, 21, 23, 24	103(a)	AAPA, Madden, Choate	1, 6, 9, 10, 21, 23, 24	
8	103(a)	AAPA, Madden, Choate, Johnston	8	
Overall Outcome			1, 6, 8–10, 21, 23, 24	

TIME PERIOD FOR RESPONSE

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

AFFIRMED