

**Roofr Inc.
v.
Pictometry International Corp.**

IPR2023-00435

U.S. Patent No. 10,648,800 B2

Patent Owner's Demonstratives

April 23, 2024

Pictometry EX2037
Roofr v. Pictometry
IPR2023-00435 1

Argument Roadmap

- **Abhyanker does not disclose elements 1f, 11f, and 17d**
 - The Board should not consider Petitioner's new invalidity theory
 - Abhyanker's "marker locking" feature does not satisfy the temporal requirement of elements 1f and 11f
 - Abhyanker's "marker locking" feature does not satisfy the functional requirement of elements 1f, 11f, and 17d
 - Petitioner failed to properly resolve the level of ordinary skill in the art
- **The Board should not credit Petitioner's expert**
 - Mr. Cummings is not a POSITA
 - Mr. Cummings's opinions are conclusory and lack evidentiary support
- **Claims 2, 9, and 14 are Non-Obvious**

'800 Patent, Figures 4A-4D

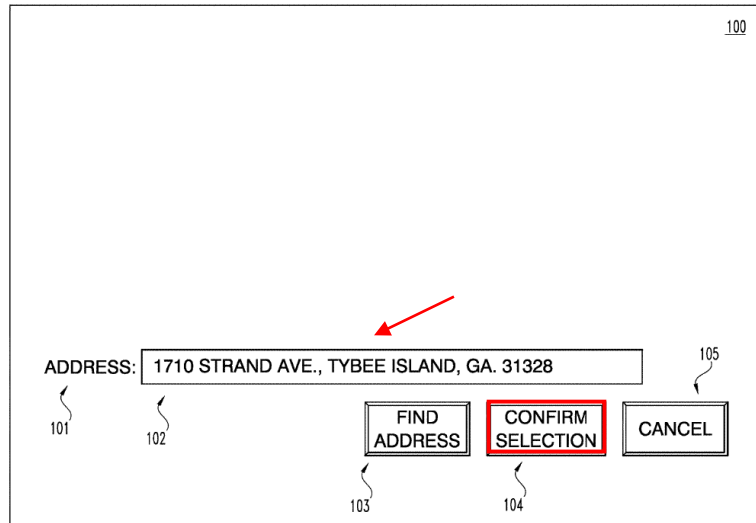


Fig. 4A

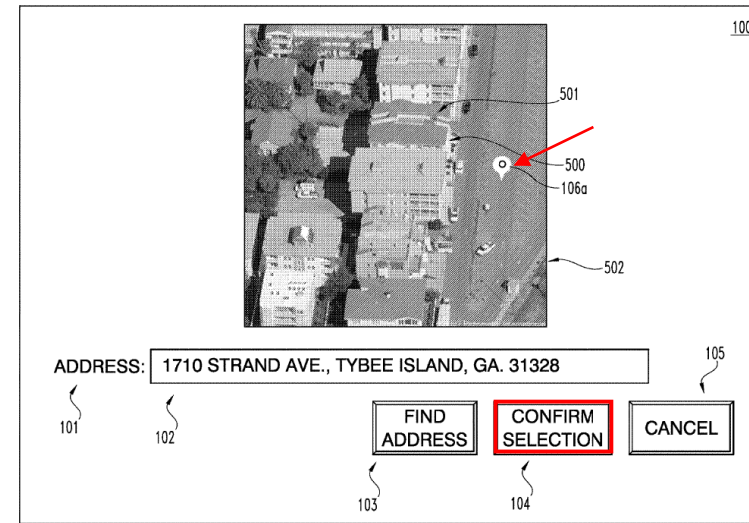


Fig. 4B

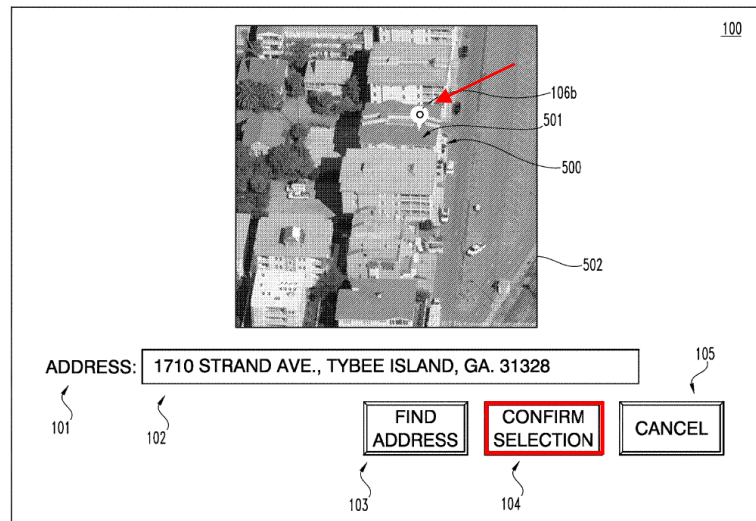


Fig. 4C

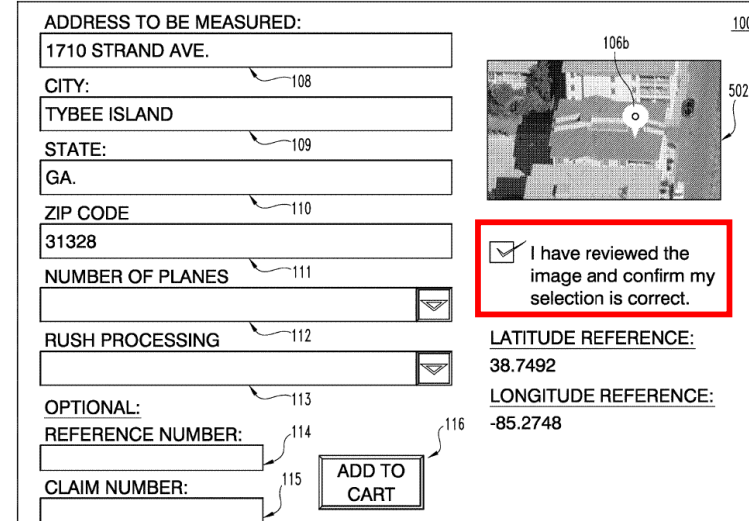


Fig. 4D

Independent Claims 1 & 11

1. A process, comprising:
receiving first location data;
providing visual access to a first image corresponding to the first location data, the first image including a roof structure of a building;
providing a first computer input capable of signaling a designation from a user of a building roof structure location within the first image, wherein the building roof structure location is a geographic position of the building roof structure and is different than the first location data;
receive a designation of the building roof structure within the first image;
responsive to receiving the designation of the building roof structure location, providing a second computer input capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and
subsequent to receiving the user-acceptance confirming the designation of the building roof structure location, providing a report for the building roof structure.

11. A non-transitory computer memory storing computer logic, that when executed by computer hardware causes the computer hardware to:
receive first location data generally corresponding to a geographic location of a building;
provide visual access to a first image corresponding to the first location data, the first image including a roof structure of the building;
provide a first computer input capable of signaling a designation from a user of a building roof structure location within the first image, wherein the building roof structure location is a geographic position of the building roof structure and is different than the first location data;
receive the designation of the building roof structure location;
responsive to receiving the designation of the building roof structure location, provide a second computer input capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and
subsequent to receiving the user-acceptance confirming the designation of the building roof structure location, providing a report for the building roof structure.

Independent Claim 17

17. A method, comprising:
receiving, by a user, visual access to a first image of a region corresponding to first location data, the first image including a roof structure of a building;
signaling, by the user, a designation from the user of a building roof structure location within the first image, wherein the building roof structure location is a geographic position of the building roof structure and is different than the first location data;
signaling, by the user, user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and
subsequent to signaling the user-acceptance confirming the designation of the building roof structure location, receiving a report for the building roof structure; and repairing or constructing a roof designated by the building roof structure location.

Petitioner Changed Theories

Petition at 34

moved[.]” *Id.* at [0053] (emphasis added). Abhyanker’s additional verifications are the claimed “second computer input capable of signaling user-acceptance of the building roof structure location within the first image.”

For example, Abhyanker teaches a user may “lock” the location of a marker, preventing unauthorized future relocation:

The locking module 220 may process a marker **locking request** when the particular user claims the wiki profile associated with the address data. In addition, the locking module 220 may enable the user(s) to control the future relocation of the marker in the mapping environment.

Id. at [0064] (emphasis added). Abhyanker’s additional verifications, such as locking the marker position, are the claimed “second computer input capable of signaling user-acceptance of the building roof structure location” within the image required by the challenged claims.

Petition at 35

building roof structure location” as recited in the claims. Abhyanker’s “additional verification,” such as its “locking request,” is the claimed “affirmative step” which “confirms designations of the building roof structure location” as recited in the claims. *Id.* at [0064].



Reply at 1

For the majority of the challenged claims, PO only disputes a single limitation: a “second computer input capable of signaling user-acceptance of [a] building roof structure location.” Most of PO’s arguments are directed to Abhyanker’s “additional verifications”—which Petitioner does not even contend discloses the limitation. PO’s arguments responsive to Petitioner’s actual theory—Abhyanker’s locking module, which locks the position of a marker designating a location—are contradicted by the express disclosures of Abhyanker, as well as the ’800 Patent itself.

Reply at 14

Although the Petition relies on Abhyanker’s marker locking request as disclosing limitations 1f, 11f, and 17f, the Petition notes in passing that the marker locking request is an example of Abhyanker’s “additional verifications” that may be performed “when any particular marker has been previously moved.” Pet. 34. PO spills much ink arguing that Abhyanker’s marker locking request and additional verifications are separate features, and that Abhyanker’s additional verifications do not independently disclose limitations 1f, 11f, and 17f. See POR 15-24. These arguments are ultimately immaterial, however. Whether or not Abhyanker’s marker locking request is

Abhyanker's "marker locking" feature does not satisfy the temporal requirement of elements 1f & 11f

EX2031, Bajaj Decl., ¶ 78

drag-and-drop feature. Abhyanker shows in Figure 9, reproduced below, the user interface element that enables a user to lock a marker in Abhyanker's system: lock pushpin option 908. EX1005, Abhyanker, ¶95, FIG. 9; EX2032, Cummings Dep. Tr., 85:17-86:19. Abhyanker is silent regarding when lock pushpin option 908 is provided on the computer interface and what, if anything, causes lock pushpin option 908 to be provided on the computer interface.

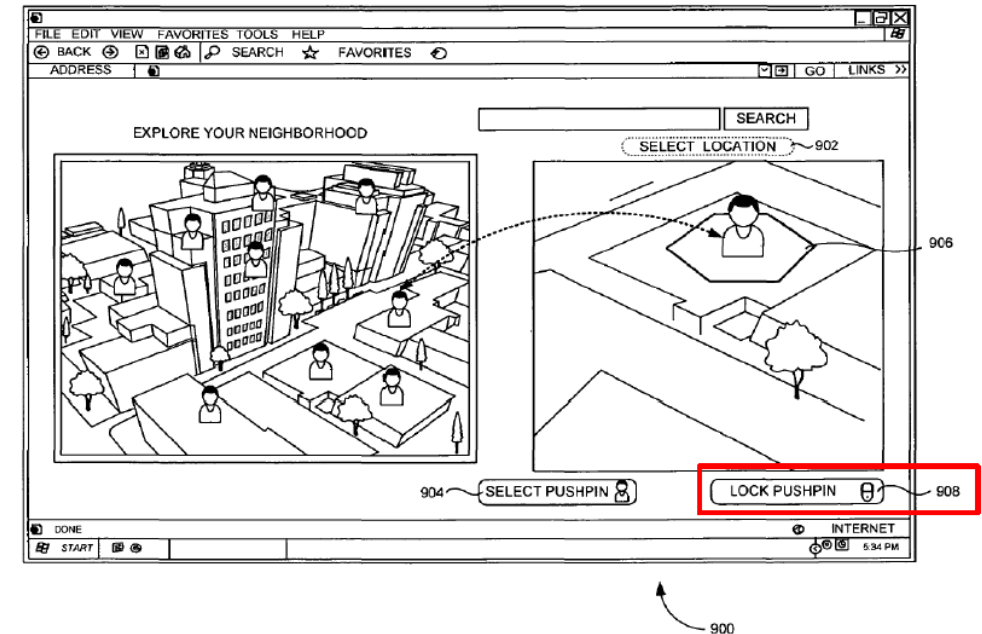


FIGURE 9

EX1005, Abhyanker, FIG. 9 (annotated).

Abhyanker's "marker locking" feature does not satisfy the temporal requirement of elements 1f & 11f

Petitioner's Reply at 22

for signaling user acceptance. *See* POR 6-7. However, the '800 patent only describes the confirm selection button in Figures 4A-4C as signaling user acceptance—not the checkbox in Figure 4D. *See* Ex. 1001, 10:36-38. In

Petitioner's Reply at 24

of that location by preventing future relocation. Indeed, Abhyanker's "lock pushpin" option that implements the marker locking feature mirrors the '800 patent's "confirm selection" button. *Compare* Ex. 1001, Fig. 4B with Ex. 1005, Fig. 9.

EX1001, '800 patent, FIGS. 4A-4C

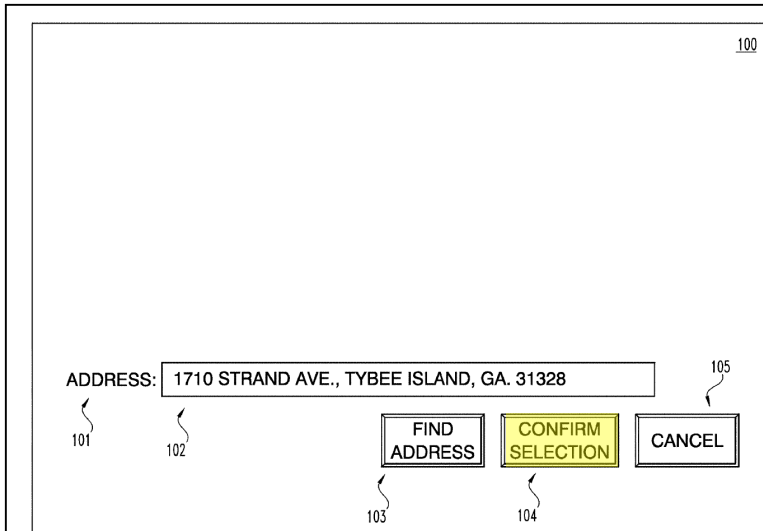


Fig. 4A

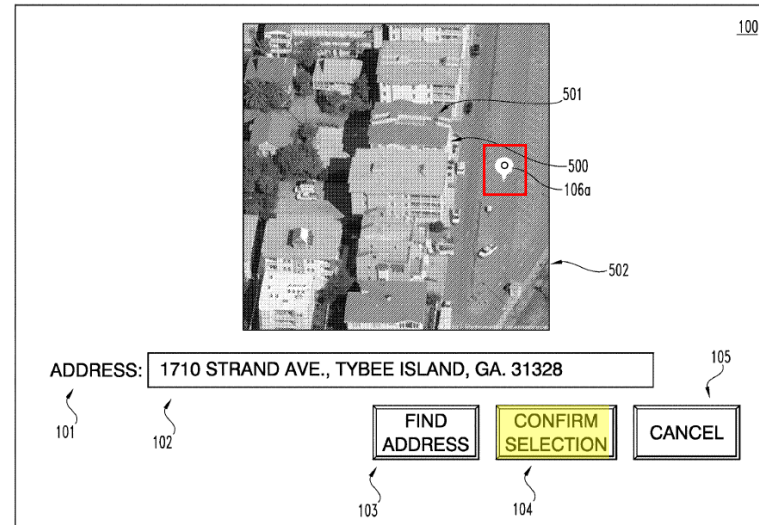


Fig. 4B

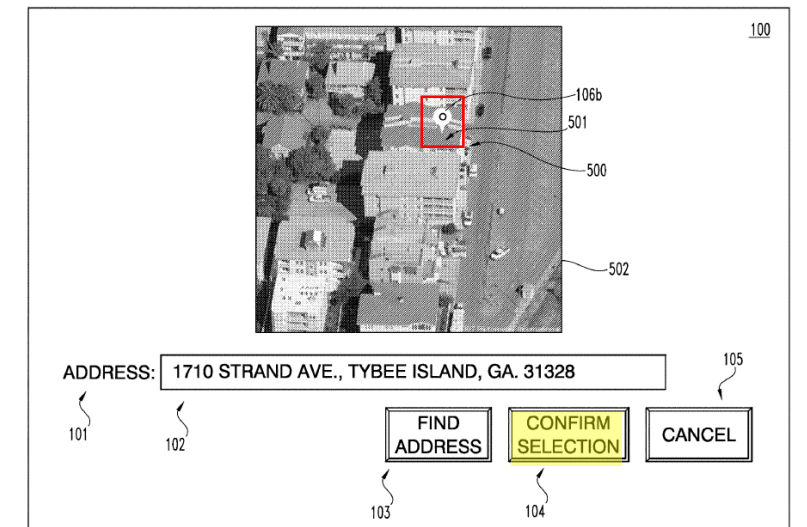
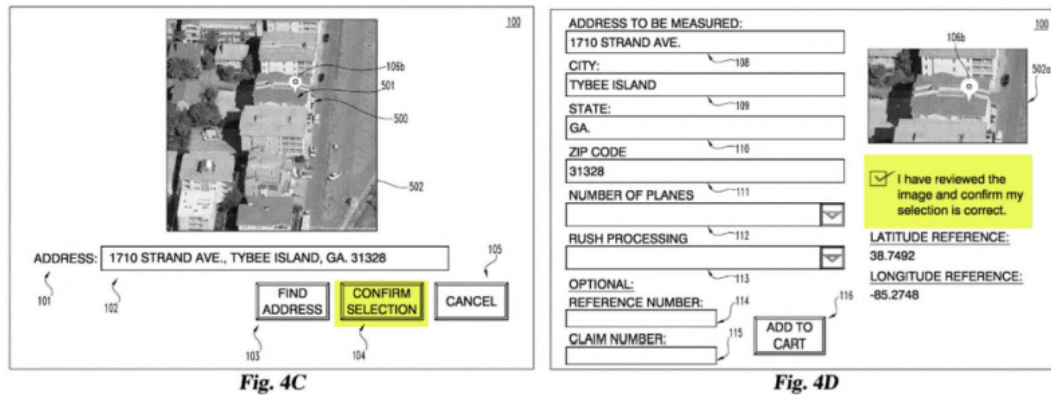


Fig. 4C

Abhyanker's "marker locking" feature does not satisfy the temporal requirement of elements 1f & 11f

Petition at 4 (highlighting by Petitioner)

Next, a "person moves the marker on the image of the building." *Id.* at 11:40-41. Then, a user signals "acceptance of that marker position"—in other words, the user confirms their selection. *Id.* at 11:41-42. These steps are shown in Figs. 4C and 4D, highlighted below:



Petitioner's Reply at 22

Apparently recognizing the contradiction in its position, PO attempts to characterize the checkbox shown in the report screen of Figure 4D as the input for signaling user acceptance. See POR 6-7. However, the '800 patent only describes the confirm selection button in Figures 4A-4C as signaling user acceptance—not the checkbox in Figure 4D. See Ex. 1001, 10:36-38. In addition, the specification makes clear that Figure 4D is only displayed *after* the "confirmed selectio button 104 or other such user acceptance is activated," and that Figure 4D shows "the final location 106b of the marker" that has already been "confirmed by the end user." *Id.*, 10:30-33, 10:61-65.

Confirm Checkbox of Figure 4D Reads on Elements 1f & 11f

EX1001, '800 patent, 10:30-42, FIG. 4D

button 105 or merely logging off. However, if confirmed selection button 104 or other such user acceptance is activated, another screen (and/or report) optionally may be provided, such as screen 100 as depicted in FIG. 4D. While this may be a wide variety in the formats, in the one example provided, some or all of the regional image 502a may be depicted showing the marker in its final location 106b. Also, a checkbox may be providing a further reconfirmation that the users reviewed the image is correct. In this way, the end user/customer will be sure that when placing an order, the vendor is measuring the correct roof structure as opposed to, for example, measuring the nearby roof structure due to mistake/miscommunication. Optionally, as shown in FIG.

ADDRESS TO BE MEASURED:
1710 STRAND AVE.
CITY: TYBEE ISLAND
STATE: GA.
ZIP CODE 31328
NUMBER OF PLANES
RUSH PROCESSING
OPTIONAL:
REFERENCE NUMBER:
CLAIM NUMBER:
ADD TO CART

100
106b
502a
105
I have reviewed the image and confirm my selection is correct.
LATITUDE REFERENCE: 38.7492
LONGITUDE REFERENCE: -85.2748
116

Fig. 4D

Abhyanker's "marker locking" feature does not satisfy the functional requirement of elements 1f, 11f, & 17d

1f responsive to receiving the designation of the building roof structure location, providing a second computer input capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and

17d signaling, by the user, user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and

Petition at 34

For example, Abhyanker teaches a user may "lock" the location of a marker, preventing unauthorized future relocation:

The locking module 220 may process a marker *locking request* when the particular user claims the wiki profile associated with the address data. In addition, the locking module 220 may enable the user(s) to control the future relocation of the marker in the mapping environment.

Id. at [0064] (emphasis added). Abhyanker's additional verifications,

Reply at 16

"marker-locking feature"). Tellingly, Abhyanker refers to the relevant module as a "locking" module and not a "profile claiming" module—because its function is to lock the position of a marker, not to claim a wiki profile.

Wrong “lens”: Petitioner fails to properly resolve the level of ordinary skill in the art

EX1003, Cummings Decl., ¶ 7

II. LEVEL OF SKILL IN THE ART

7. I understand that a person of ordinary skill in the art at the time of the alleged invention would have bachelor’s degree in architecture or an equivalent with at least five years of experience performing roof estimation. This level of skill is approximate, and more experience would compensate for less formal education, and vice versa.

EX2032, Cummings Dep. Tr., 35:22-36:5

22	Did you consider anything -- in forming
1	the opinion that you provided in paragraph 7, did
2	you consider anything other than your experience
3	as an architect and as an estimator?
4	MR. HAGIZ: Objection to form.
5	A No.

Correct “lens”

EX2031, Bajaj Decl., ¶ 35

35. A person of ordinary skill in the art (“POSITA”) of the ’800 patent would have had a bachelor’s degree in an academic area emphasizing the design of electrical, computer, or software technologies, or a similar discipline, and at least two years of experience related to computerized image analysis and three-dimensional modeling.

EX2031, Bajaj Decl., ¶ 39

39. While I agree that some experience may take the place of formal education, I would not agree that mere experience using computer software, even computer software that can perform some of the functions I described above, can be a wholesale replacement for formal education. For example, computer-aided

Mr. Cummings is not a POSITA

EX1003, Cummings Decl., ¶ 2

2. I have a Bachelor of Architecture from Kansas State University graduating in 1977. I have been a licensed, practicing architect since 1983 hold architectural licenses in 18 states, 14 are currently active. I also have

EX2032, Cummings Dep. Tr., 24:9-19

9	Q	Okay. And you -- it lists, under
10		education, that you hold a bachelor of
11		architecture from Kansas State University; is that
12		correct?
13	A	That's correct.
14	Q	Do you hold any other degrees?
15	A	No.
16	Q	Do you have any formal education in a
17		computer-related field?
18		MR. HAGIZ: Objection to form.
19	A	No, I do not.

Mr. Cummings is not a POSITA

EX1003, Cummings Decl., ¶ 6

estimating software. I have been using this software for decades. I also have experience collaborating with software developers to create new software in my field. For example, in approximately 2010 I partnered with a computer programmer to develop a photo-documentation and document control software to assist in my Owner's Representative assignments.

EX2032, Cummings Dep. Tr., 34:15-18

15	Q	Your Keystone project? Were there any
16		other times that you collaborated with software
17		developers to create new software?
18	A	No.

Mr. Cummings's Testimony is Conclusive

Cummings's Direct Testimony on Elements 1f, 11f, 17d: EX1003, Cummings Decl., ¶¶ 62-66, 107, 117, 141, 167, 177

62. Abhyanker teaches this limitation. First, Abhyander teaches “responsive to receiving the designation of the building roof structure location, providing a second computer input capable of signaling user-acceptance of the building roof structure location within the first image.” As discussed above, Abhyanker teaches that a user may “drag and drop” a marker to choose a location:

Furthermore, the method may include applying a *drag and drop* algorithm that enables the user to sequentially and/or concurrently relocate markers in the mapping environment, iteratively performing additional verifications when any particular marker has been previously moved[.]

63. Ex. 1005 at [0011] (emphasis added). Thus, a user has freedom to relocate a marker anywhere desired within the aerial image, including a location that is different from the original address entered by a user.

64. Abhyanker also discloses that “*additional verifications* may be iteratively performed when any particular marker has been previously moved[.]” *Id.* at [0053] (emphasis added). Abhyanker’s additional verifications are the claimed “second computer input capable of signaling user-acceptance of the building roof structure location within the first image.” For example, Abhyanker teaches a user may “lock” the location of a marker, preventing unauthorized future relocation:

The locking module 220 may process a marker *locking request* when the particular user claims the wiki profile associated with the address data. In addition, the locking module 220 may enable the user(s) to control the future relocation of the marker in the mapping environment.

65. *Id.* at [0064] (emphasis added). Abhyanker’s additional verifications, such as locking the marker position, are the claimed “second computer input capable of signaling user-acceptance of the building roof structure location” within the image required by the challenged claims.

66. Abhyanker also discloses “wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location” as recited in the claims. Abhyanker’s “additional verification,” such as its “locking request,” is the claimed “affirmative step” which “confirms designations of the building roof structure location” as recited in the claims. *Id.* at [0064].

107. See claim 1f. ← Ground 1, Element 11f

117. See claim 1f. ← Ground 1, Element 17d

141. As discussed with respect to Ground 1, Abhyanker teaches this limitation. See Ground 1, claim 1f. ← Ground 3, Element 1f

167. See claim 1f. ← Ground 3, Element 11f

177. See claim 1f. ← Ground 3, Element 17d

Claims 2, 9, & 14

2. The process of claim 1, further comprising providing visual access to one or more outline drawing corresponding to the roof structure of the building.

9. The process of claim 2, further comprising, providing visual access to a nadir image from an imagery database corresponding to location coordinates of the building roof structure location, and wherein the outline drawing is super-imposed on the nadir image.

14. The non-transitory computer memory of claim 12, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide visual access to a nadir image of an imagery database corresponding to location coordinates of the building roof structure location, and wherein the outline drawing is super-imposed on the nadir image.

'800 Patent, Figures 5B, 5C, & 6

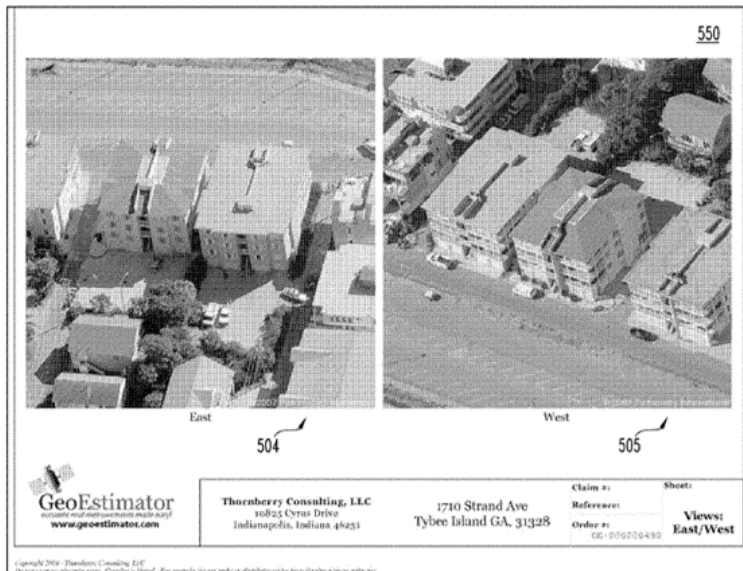


Fig. 5B

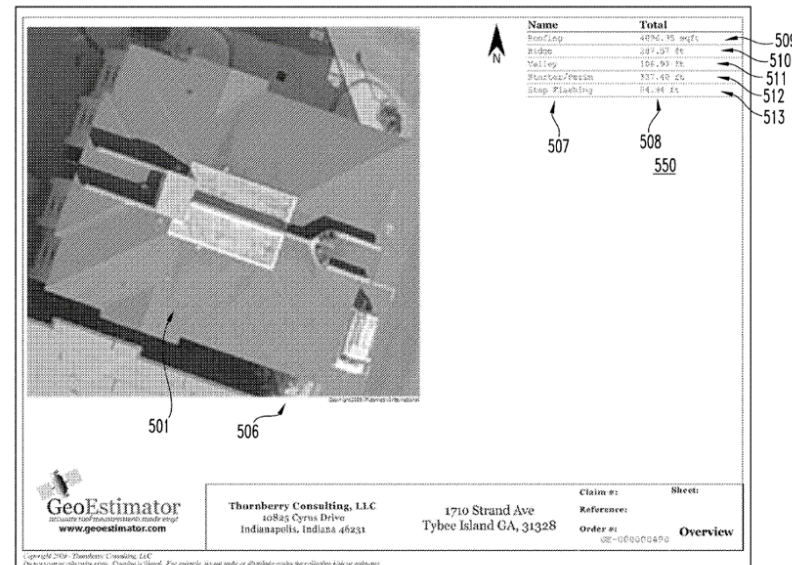


Fig. 5C

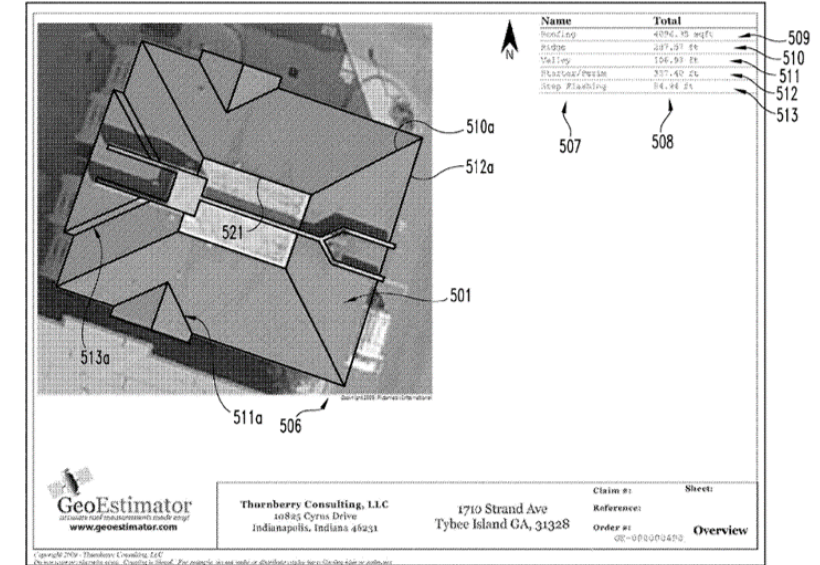


Fig. 6