

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES L. FREEBY and ALEX BOYTER

Appeal 2007-2692
Application 10/668,830
Technology Center 3600

Decided: January 28, 2008

Before TONI R. SCHEINER, DONALD E. ADAMS ,
and LORA M. GREEN, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 1-20, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

INTRODUCTION

The claims are directed to a barrier (claims 1-12 and 20) and a method for protecting an object from fire (claims 13-19). According to Appellants “[t]his invention relates to protective devices for objects and more

particularly relates to barriers which may be used to protect utility poles from encroaching elements” (Spec. ¶ 0001). “[W]ood utility poles are subject to insect infestation and fires . . . [which are] generally the result of plant growth around the base of the pole” (Spec. ¶ 0005).

Two methods are typically employed in the art to “limit damage to wood utility poles due to insects and fires” (*id.*). “The first method consists of extending the cement that anchors the utility pole to a radius of about 3 feet around the base of the utility pole” (*id.*). Appellants assert, however, that this method “is not very economical” and “may be very difficult [to implement] depending upon the location of the pole” (*id.*). “The second method for preventing growth around a pole is to spray a type of growth inhibitor around the pole” (Spec. ¶ 0006). Appellants assert, however, that “the duration of the effectiveness of the spray is limited” and “some states prohibit the use of such a spray as it may be harmful to the environment” (*id.*).

Accordingly, Appellants disclose that “the present invention has been developed to provide a method, apparatus, and system for protecting an object from encroaching elements that overcome many or all of the above-discussed shortcomings in the art” (Spec ¶ 0008). Claims 1, 11, 13, and 18 are illustrative:

1. A fire barrier protecting an object comprising:
 - an organic bentonite-based material;
 - an outer boundary surface disposed to retain the material in a selected location, the location at least partially surrounding the object;
 - wherein the organic bentonite-based material is disposed within the outer boundary surface such that a top surface of the material remains

uncovered and exposed to the aboveground environment after disposing the bentonite-based material within the outer boundary; and the organic bentonite-based material forming a region about the object, the region configured to prevent plant growth and thereby protect the object from fire.

11. The fire barrier of claim 1, wherein the boundary surface comprises a[n] annular plastic sheet.

13. A method for protecting an object from fire, said method comprising:

preparing an area surrounding an object for receiving an outer boundary surface, the area extending from the object a distance suitable to keep vegetation outside the area from igniting the object;

disposing the outer boundary surface to retain a material in a location, the location at least partially surrounding the object; and

depositing an organic bentonite-based mixture comprising at least 50% bentonite within the outer boundary surface, a top surface of the bentonite-based mixture remaining exposed to the aboveground environment after disposing the bentonite-based mixture within the outer boundary surface, the bentonite based mixture creating a hostile growing environment for vegetation.

18. The method of claim 13, wherein depositing the mixture further comprises pumping the mixture from a source.

The Examiner relies on the following prior art references to show unpatentability:

Dentler	US 237,172	Feb. 1, 1881
Stuber	US 3,946,569	Mar. 30, 1976

The rejections as presented by the Examiner are as follows:

1. Claims 1-10, 12-14, 16, 17, and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Stuber and Dentler.
2. Claims 11, 15, and 20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Stuber, Dentler, and Toon.
3. Claim 18 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Stuber, Dentler, and Fairchild.

We affirm rejections 1 and 3. We reverse rejection 2.

DISCUSSION

1. Claims 1-10, 12-14, 16, 17, and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Stuber and Dentler.

Appellants separately argue claim 13. Accordingly, the claims will stand or fall in two groups: I. claims 1-10 and II. claims 13, 14, 16, 17, and 19. Therefore, we limit our discussion to representative claims 1 and 13. 37 C.F.R. § 41.37(c)(1)(vii).

Claim 1:

Claim 1 is directed to a fire barrier protecting an object. The fire barrier comprises:

1. an organic bentonite-based material; and
2. an outer boundary surface.

Claim 1 requires that the outer boundary surface is disposed to retain the material in a selected location, the location at least partially surrounding

thereto which include a covering having a protective coating therein” (Stuber, col. 2, ll. 7-10). “Each bracelet **12** includes a perforate (e.g. burlap) or imperforate covering **20** and/or a protective coating or wrapping **22** with a swelling or elastomeric agent **24** encased therein” (Stuber, col. 2, ll. 33-36). Stuber explains that

[h]ole **16** contains a fluid **26** which may include water, acid, chemicals, or the like, for reacting and/or dissolving the protective coating **22** after a predetermined time has elapsed to allow the swelling agent **24** to come into contact with the fluid **26** and expand to hold the post **10** firmly in place in the hole **16**

(Stuber, col. 2, ll. 36-42.) Stuber teaches that the swelling agent **24** may be “a mixture of clay, such as bentonite which swells to 12 to 14 times its original volume when water is added, in conjunction with a cement” (Stuber, col. 3, ll. 51-54; *see also* Ans.3).

The Examiner recognizes, however, that “Stuber does not disclose the bentonite as being exposed to the above ground environment” (*id.*). To make up for this deficiency, the Examiner relies on Dentler to teach “a pole protector ringed around a pole and located at ground level (fig. 2: D)” (*id.*). For clarity we reproduce Dentler’s FIG. 2 below:

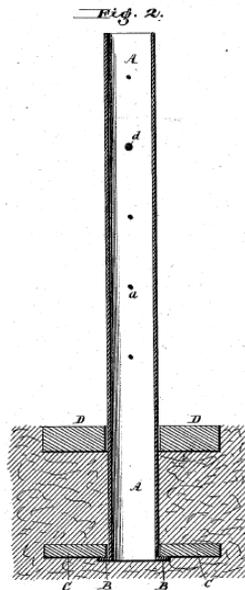


Fig. 2 is a sectional view of a post constructed according to Dentler's invention (Dentler, col. 1, ll. 24-26).

Dentler teaches a movable block C that "is generally constructed with wood treated with coal-tar or other preservative, or it may be made of metal and it is capable of sliding up and down on the post, and can be applied thereto or removed therefrom with ease and facility" (Dentler 1: 35-40). According to Dentler, the post is inserted into a hole, block C is slipped over the post and positioned at the base of the post at the bottom of the hole, earth is then packed above block C so as to nearly fill the post-hole (Dentler 1: 41-48). Dentler then places second block D onto the post (Dentler 1: 48-49). Block D is generally made heavier and thicker than block C and is constructed of metal or tarred wood (Dentler 1: 56-59). Block D is loosely fitted, or capable of sliding along the post so that it can be positioned "above the packed stratum of earth" to firmly anchor or steady the post in the ground (Dentler 1: 48-55; Ans. 4). Dentler teaches that block D "may fill the hole above the stratum of earth resting upon the lower plate or block [C], or else a layer of earth may be packed down upon said block, so as to cover the same" (Dentler 1: 66-70). Stated differently, the top surface of block D may remain uncovered and be exposed to the above ground environment or it may be underground.

Based on this evidence the Examiner concludes that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Stuber by placing the protective bentonite rings at the ground surface, as disclosed by Dentler to help firmly anchor the post to the ground" (Ans.3-4). We agree. "The combination of familiar elements

according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007). Here, the references as combined by the Examiner disclose all the elements of the claimed fire barrier and their placement, e.g., at the surface of the ground, remaining uncovered, and exposed to the above ground environment.

While the Examiner recognizes that the prior art does not specifically disclose that the structure will protect the object from fire, the Examiner finds that the combination of references teaches a structure that is equivalent to the structure set forth in claim 1 and therefore would be expected to function in an equivalent manner (Ans. 4). We agree. *See In re Wiseman*, 596 F.2d 1019, 1023 (CCPA 1979) (“A patent on such a structure would remove from the public that which is in the public domain by virtue of its inclusion in, or obviousness from, the prior art.”).

Appellants direct attention to Dentler arguing that Dentler’s block is constructed of wood treated with coal-tar, which according to Appellants is “readily combustible and therefore cannot act as a fire barrier” (App. Br. 8). We are not persuaded. As the Examiner points out, Dentler teaches that the block may be constructed of tarred wood or metal (Ans. 8). Nevertheless, Dentler is not relied upon to teach the composition of the blocks. Instead, Dentler is relied upon to teach that it was known in the art that a block may be positioned at the surface of the ground to help firmly anchor the post to the ground.

Appellants assert that since Dentler’s block is “capable of sliding up and down on the post . . . the block must necessarily comprise a void having a diameter larger than the diameter of the pole” and therefore would fail “to

prevent plant growth as required in Claim 1” (App. Br. 8). While, this may be true, it misses the point of the combination of prior art relied upon. The issue before us is not whether each of the cited references teaches Appellants’ claimed invention. To the contrary, the issue before us is whether it would have been obvious from the teachings of Dentler to position one of Stuber’s bracelets on the pole in a manner such that the top surface remains uncovered and exposed to the above ground environment. As discussed above, Dentler teaches that block D can be positioned on the pole in a manner that the top surface remains uncovered and exposed to the above ground environment or it may be underground. Accordingly, we find no error in the Examiner’s reasoning that one of “Stuber’s bracelets can be positioned in a similar manner - either underground or such that the top surface remains uncovered and exposed to the above ground environment (*see, e.g.,* Ans. 9). Therefore, we are not persuaded by Appellants’ argument that “[s]ince *Stuber*’s bracelets are located under ground, the bracelets are not capable of acting as a fire stop” (App. Br. 9).

We are also not persuaded by Appellants’ assertion that “[e]ven if some portion of a bracelet was exposed . . . the bracelet would not prevent plant growth since one of skill in the art will recognize that seeds can take root in burlap” (*id.*). Stuber teaches that “[e]ach bracelet **12** includes a perforate (e.g. burlap) *or* imperforate covering **20** and/*or* a protective coating or wrapping **22**” (Stuber, col. 2, ll. 33-35 (emphasis added)). As discussed above, Stuber teaches that the protective coating is reacted with and/or dissolved by a reagent to allow the swelling agent to expand to hold the post firmly in place in the hole (Stuber, col. 2, ll. 36-42).

Burlap is simply one exemplified covering within the scope of Stuber's disclosure. Stuber's FIG. 1 exemplifies other coverings, e.g., a "casing of soluble coated material" (Stuber, FIG. 1). Stuber teaches that a preferred "protective coating is a wax having a predetermined melting temperature" (Stuber, col. 3, ll. 5-7). In this regard, we note that Appellants recognize that according to Stuber's invention the protective coating is dissolved so that the swelling agent will be exposed to the fluid and consequently begin to swell (App. Br. 12).

Further, even if one of ordinary skill in the art would select burlap as the covering, we agree with the Examiner's assertion that burlap will dissolve when exposed to the elements, as burlap is biodegradable (Answer 9). We recognize that Appellants concede this point (Reply Br. 10). Accordingly, we are not persuaded by Appellants' argument that a seed might set root in the burlap covering of Stuber's bracelet and thereby inhibit Stuber's bracelet from acting as a fire barrier. For the same reason, we are not persuaded by Appellants' assertion that since burlap is flammable "*Stuber's* bracelets cannot act as a fire barrier" (App. Br. 9).

We are also not persuaded by Appellants' argument that the protective layer of Stuber's bracelet is dissolved or biodegraded there would be no outer boundary surface and therefore each element of the claim is not taught by the reference (Reply Br. 10). Claim 1 comprises, *inter alia*, "an outer boundary surface disposed to retain the material in a selected location" that is "at least partially surrounding the object" (Claim 1). The perimeter of the hole taught by both Stuber and Dentler is an outer boundary surface within the scope of the claimed invention. The hole is put in place (disposed) by an

auger or other device and it will retain the material in a selected location that is at least partially surrounding the pole.

Appellants also argue that if Stuber's "bracelets were placed above ground . . . the fluid would not be contained around the bracelets. Consequently, the protective covering of the bracelets would not be dissolved and the swelling agent would not swell around the post" (App. Br. 13; see also Reply Br. 9). We disagree with this argument. The combination of Stuber with Dentler does not suggest placing the bracelets above ground. To the contrary, the combination of references suggests placing the top bracelet in the hole such that the top surface will remain uncovered and exposed to the aboveground environment (*see* Dentler 1: 66-70; and FIG. 2). There is no evidence on this record to suggest that the protective covering of the bracelets would not be dissolved and the swelling agent would not swell around the post as taught by Dentler if the bracelet was placed in the hole so that the top surface remains uncovered and exposed to the aboveground environment. There is also no evidence on this record to suggest that in this configuration, fluid poured over the bracelets "would drain away from the bracelets before making sufficient contact with the bracelets to dissolve the protective covering" (App. Br. 13). While Appellants assert that pouring fluid over the rings would be impractical and dangerous, we note that Stuber expressly states that "[f]luid **26** may be placed in hole **16** either before or after post **10** is inserted" (Stuber, col. 2, ll. 54-55).

In sum, we find no error in the Examiner's prima facie case of obviousness. Accordingly, the burden of coming forward with evidence or argument was properly shifted to Appellants. *In re Rijckaert*, 9 F.3d 1531,

1532 (Fed. Cir. 1993). Appellants have failed to carry their burden. Accordingly, we affirm the rejection of claim 1 under 35 U.S.C § 103(a) as unpatentable over the combination of Stuber and Dentler. Claims 2-10 fall together with claim 1.

Claim 13:

Claim 13 is drawn to a method for protecting an object from fire. The method comprises:

preparing an area surrounding an object for receiving an outer boundary surface, the area extending from the object a distance suitable to keep vegetation outside the area from igniting the object;

disposing the outer boundary surface to retain a material in a location, the location at least partially surrounding the object; and

depositing an organic bentonite-based mixture comprising at least 50% bentonite within the outer boundary surface, a top surface of the bentonite-based mixture remaining exposed to the aboveground environment after disposing the bentonite-based mixture within the outer boundary surface, the bentonite based mixture creating a hostile growing environment for vegetation.

Appellants assert that the Examiner failed to establish that the prior art relied upon teaches “an organic bentonite-based mixture comprising at least 50% bentonite” as is required by claim 13 (App. Br. 13). According to Appellants “[t]he mixture will not effectively prevent plant growth if the mixture does not comprise sufficient bentonite since bentonite provides the mixture with the characteristic of inhibiting plant growth” (App. Br. 14).

We are not persuaded. Stuber teaches that

[o]ne use embodiment is to utilize a swelling agent **24** including a mixture of a clay, such as bentonite which swells to 12 to 14

times its original volume when water is added, in conjunction with a cement. . . . Another use embodiment is to use alternating layers of the swelling agent 24 having bentonite and the swelling agent 24 consisting of cement.

(Stuber, col. 3, ll. 51-58.) Further, Appellants recognize that Stuber teaches “that bentonite . . . may be used as a swelling agent” (App. Br. 14). Thus, Stuber teaches that the bracelets may be made of bentonite or cement alone; or they may be made of mixtures of bentonite and cement. Thus, Stuber teaches bracelets that comprise 0-100% bentonite. Claim 13 requires the use of a mixture comprising at least 50% bentonite. Thus, the claimed range falls within the range disclosed by Stuber. “[W]here there is a range disclosed in the prior art, and the claimed invention falls within that range, there is a presumption of obviousness.” *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1322 (Fed. Cir. 2004).

We recognize Appellants’ assertion that kaolin which Stuber discloses as a swelling agent² will not inhibit plant growth (App. Br. 14). In this regard, Appellants assert that “kaolin is commonly sprayed onto fruit trees to prevent insect damage to the tree without killing the tree or inhibiting the tree’s growth” (*id.*). Appellants do not, however, provide any evidence to support the position that kaolin is used to prevent insect damage to a tree at the same concentration that it is used in Stuber’s invention to anchor a post into the ground. Nevertheless, Stuber expressly discloses the use of bentonite alone or in combination with cement as a swelling agent. Thus, as discussed above, the claimed bentonite range falls within the bentonite range disclosed by Stuber. Therefore, absent evidence to the contrary we agree

² See Stuber, col. 2, ll. 56-62.

with the Examiner's conclusion that claim 13 is prima facie obvious over the combination of Stuber and Dentler.

Accordingly, we affirm the rejection of claim 13 under 35 U.S.C § 103(a) as unpatentable over the combination of Stuber and Dentler. Claims 14, 16, 17, and 19 fall together with claim 13.

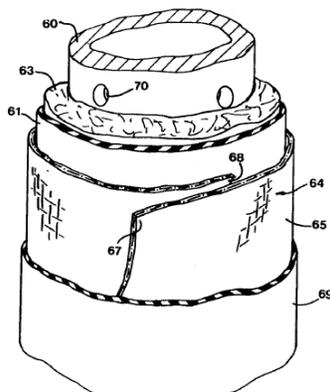
2. Claims 11, 15, and 20 stand rejected under 35 U.S.C § 103(a) as unpatentable over the combination of Stuber, Dentler, and Toon.

Each of claims 11, 15, and 20 require that the barrier comprises, *inter alia*, an annular plastic sheet.

The Examiner relies on the combination of Stuber and Dentler as discussed above. In addition, the Examiner finds that the combination of Stuber and Dentler does not teach the use of an annular plastic sheet (Ans. 6). To make up for this deficiency, the Examiner relies on Toon to teach "a pole surrounded by bentonite . . . having a plastic sheet wrapped around" (*id.*). The Examiner's characterization of the reference misses the subtlety of Toon's teaching.

Toon is directed to "packing-seals, of the kind that are used to isolate the various levels in a borehole" (Toon, col. 1, ll. 4-5). For clarity we direct attention to Toon's FIG. 2, reproduced below:

FIG 2



“FIG. 2 is a partly-cutaway view of . . . [Toon’s exemplary packing-seal], showing a detail of construction” (Toon, col. 4, ll. 12-13). As illustrated in FIG. 2, a PVC tube **60** “extends down into a borehole” (Toon, col. 4, ll. 22-23). Surrounding the tube **60** is an expandable annulus **63**, which may be made of “Dowell Chemical Seal Ring Gasket (Trademark)” or bentonite (Toon, col. 4, ll. 25-28). Surrounding the expandable annulus “**63** is a pressure sleeve **61**”, which in turn is surrounded by a supplementary containment sleeve **64** comprising a “sheet **65** of woven Kevlar material” (Toon, col. 4, ll. 31-34). The containment sleeve is then surrounded by an “outer rubber sleeve **69**” (Toon, col. 4, ll. 37-40). The pressure sleeve, supplementary containment sleeve and rubber sleeve are configured to expand in relationship to the expansion of the annulus (Toon, col. 4, ll. 50-57). According to Toon, “[a] further barrier-sleeve may be included in the packing-seal. The barrier sleeve may be placed immediately outside the inner rubber sleeve **61**, and comprises a sheet of plastic sheeting which is wrapped around with its circumferential ends overlapped, in the same manner as the Kevlar sleeve **65**” (Toon, col. 5, ll. 62-67).

As Toon explains, the purpose of the packing sleeve is to prevent chemical substances present in the Dowell material **63** from migrating through the rubber material of sleeves **61** and **69**, which would produce false positive results when one is analyzing groundwater for the presence of contaminants (Toon, col. 6, ll. 1-9). According to Toon, “[t]he barrier sleeve can provide confidence that contamination, if detected, must have been present in the groundwater, and did not come from the Dowell” (Toon, col. 6, ll. 9-12). Thus, Toon directs one to utilize a barrier-sleeve comprising a

sheet of plastic sheeting as part of a packing-seal that comprises the Dowell material when one is interested in analyzing groundwater for contamination.

Therefore, the issue is whether the teachings of Toon would have led a person of ordinary skill in the art interested in anchoring a pole into the ground as taught by the combination of Stuber and Dentler to include an annular plastic sheet as, for example, a boundary surface? We think not.

Obviousness requires a teaching that all elements of the claimed invention are found in the prior art and “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does” *KSR*, at 1741 (2007). On this record, Toon expressly teaches that the purpose of the plastic sheet is in the context of groundwater testing, where it will serve to prevent the packing-seal from contaminating the ground water being tested. There is no evidence on this record that one seeking to anchor a post in a hole as taught by the combination of Stuber and Dentler would have a similar need for Toon’s barrier-sleeve comprising a sheet of plastic sheeting.

We recognize the Examiner’s reliance on Stuber’s figure 7 and teaching of the use of a rubber material. We note, however, that this disclosure relates to another embodiment of Stuber’s invention, wherein the material expansion means is either sponge or soft rubber which is capable of being held in a compressed position and is later allowed to expand against the side of the drilled hole (Stuber, col. 3, ll. 22-37). Thus, contrary to the Examiner’s intimation, Stuber is not teaching the use of rubber as a layer on the bentonite based expansion material, but instead is utilizing rubber as the expansion material.

For the foregoing reasons, we find that the Examiner has failed to provide the evidence necessary to establish a prima facie case of obviousness. Accordingly, we reverse the rejection of claims 11, 15, and 20 under 35 U.S.C § 103(a) as unpatentable over the combination of Stuber, Dentler, and Toon.

3. Claim 18 stands rejected under 35 U.S.C § 103(a) as unpatentable over the combination of Stuber, Dentler, and Fairchild.

Claim 18 is drawn to a method for protecting an object from fire. The method comprises:

1. preparing an area, surrounding an object and extending from the object a distance suitable to keep vegetation outside the area from igniting the object, for receiving an outer boundary surface;
2. disposing the outer boundary surface to retain a material in a location at least partially surrounding the object; and
3. depositing an organic bentonite-based mixture within the outer boundary surface so that the top surface of the bentonite-based mixture remaining exposed to the aboveground environment.

Claim 18 defines the term “depositing” as comprising pumping the mixture from a source.

Claim 18 also requires that the organic bentonite-base mixture:

- A. comprises at least 50% bentonite and
- B. creates a hostile growing environment for vegetation.

The Examiner relies on Stuber and Dentler as discussed above. The Examiner recognizes however that the combination of Stuber and Dentler fails to teach depositing an organic bentonite-based mixture within the outer

boundary surface so that the top surface of the bentonite-based mixture remains exposed to the aboveground environment. To make up for this deficiency, the Examiner relies on Fairchild to teach “the pumping of a bentonite material” (Ans. 7). More specifically, Fairchild teaches “[p]umpable and flowable bentonite clay slurries having a bentonite solids content of about 50% or greater” (Fairchild, abstract).

Based on this evidence the Examiner concludes that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Stuber by using a pumpable bentonite material, as disclosed by Fairchild, in order to speed installation time” (Ans. 8).

In response, Appellants assert that “*Stuber* and *Dentler*, either alone or in combination, fail to teach or disclose a method for protecting an object from fire as described above” (Br. 17). For the reasons set forth above, we are not persuaded by this argument.

Appellants also assert that “*Fairchild* does not teach a method for protecting an object from fire including ‘preparing an area surrounding an object . . . to keep vegetation outside the area from igniting the object’” (*id.*). We are not persuaded by this argument.

Both Stuber and Dentler teach the preparation of an area surrounding an object for receiving an outer boundary surface, the area extending from the object a distance suitable to keep vegetation outside the area from igniting the object as is required by claim 18. Specifically, Stuber teaches a the preparation of an area by establishing a hole “augered in a terrane” (Stuber, col. 2, ll. 32-33). Similarly, Dentler teaches the preparation of an area by establishing a hole “in the ground with an auger or other tool” (Dentler 1: 41-42). Appellants provide no evidence on this record to

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establish that the method of preparing an area as taught by Stuber or Dentler is not sufficient to keep vegetation outside the area from igniting the object.

As Appellants make no other argument with regard to the combination of Stuber, Dentler, and Fairchild we find no error in the Examiner's prima facie case. Accordingly, we affirm the rejection of claim 18 under 35 U.S.C § 103(a) as unpatentable over the combination of Stuber, Dentler, and Fairchild.

CONCLUSION

In summary, we affirm rejections 1 and 3 and reverse rejection 2.

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

AFFIRMED-IN-PART

lp

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