

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BELDEN INC. and PPC BROADBAND, INC.
Petitioners,

v.

COMMSCOPE TECHNOLOGIES LLC,
Patent Owner.

IPR2025-00833
U.S. Patent 9,266,697

DECLARATION OF DR. CHARLES A. ELDERING

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I. INTRODUCTION

1. I, Dr. Charles Eldering, submit this declaration to state my opinions on the matters described below.

2. I have been retained on behalf of Belden Inc. (“Belden”) and PPC Broadband, Inc. (“PPC”) (collectively “Petitioners”) as an independent expert for the above-identified *inter partes* review (“IPR”) proceeding involving U.S. Patent No. 9,266,697 (“the ’697 patent”). Although I am being compensated at a rate of \$475 per hour and reimbursed for reasonable out-of-pocket expenses, no part of my compensation depends on the outcome of this proceeding, and I have no other interest in this proceeding.

3. I have been asked to provide my technical review, analysis, and opinions regarding the ’697 patent.

II. QUALIFICATIONS AND BACKGROUND

4. I believe that I am well qualified to serve as a technical expert in this matter based upon my educational and work experience.

5. I have degrees in both physics and electrical engineering, as well as extensive experience in the telecommunications industry. My experience in coaxial cables and coaxial cable connectors started early in my career, during summer and part-time jobs as a lab technician while an undergraduate. These positions included working at Friden Mailing Equipment in Oakland, CA, the particle physics lab at

Carnegie Mellon University, and at the nuclear geochemistry lab at the Mellon Institute (jobs I held in the period of 1979–1981). In these positions, I was frequently responsible for installing connectors on coaxial cables that were used for interconnecting laboratory equipment. My later experience in the cable industry was gained during my time at General Instrument Corporation from 1993–1995. General Instrument was a significant supplier of equipment to the Multiple System Operators (MSOs). My work at General Instrument included research on noise in the return path of the cable plant, which is related in large part to the quality of the connectors and coaxial cable in the plant. My relevant experience also includes work with John Mezzalingua Associates, Inc. (d/b/a PPC Broadband and now part of Belden), where I have been involved with numerous aspects of cable connectors from approximately 2004 to the present, including the installation of cable and cable connectors on various types of coaxial cable, as well as measuring the performance characteristics (e.g., return loss and insertion loss) of installed connectors. In addition to this professional experience, I am a licensed amateur radio operator, holding a General Class license issued by the Federal Communications Commission (FCC) and having the call sign of N3YRB, and having had the prior call signs of KB6ZIR and KD2WWP. I have been an amateur radio operator since approximately 1988, with a lapse in my license from

approximately 2014 to 2021. Being an amateur radio operator frequently requires the deployment of antennas on a temporary or permanent basis, and generally necessitates the use of extended runs of coaxial cable. I have personally been involved with the installation of numerous permanent and temporary antennas in locations ranging from roofs to tree branches.

III. MATERIALS CONSIDERED

6. In forming my opinions, I have reviewed, among other things, the following materials:

Exhibit	Description
Ex. 1001	U.S. Patent No. 9,266,697 to Houston et al. (“the ’697 patent”)
Ex. 1003	Prosecution History of the ’697 patent
Ex. 1004	U.S. Patent No. 3,150,769 to Cohn (“ <i>Cohn</i> ”)
Ex. 1005	U.S. Patent Application Publication No. US 2004/0016666 A1 to Redzisz (“ <i>Redzisz</i> ”)
Ex. 1006	U.S. Patent Application Publication No. US 2007/0062997 A1 to Thurner (“ <i>Thurner</i> ”)
Ex. 1007	U.S. Patent No. 4,650,073 to Young (“ <i>Young</i> ”)
Ex. 1008	U.S. Patent No. 5,704,479 to Barnett et al. (“ <i>Barnett</i> ”)
Ex. 1009	U.S. Patent No. 5,529,186 to Bass (“ <i>Bass</i> ”)
Ex. 1010	U.S. Patent Application Publication No. US 2002/0125161 A1 to Cote (“ <i>Cote</i> ”)
Ex. 1011	U.S. Patent No. 7,534,041 to Godshaw et al. (“ <i>Godshaw</i> ”)

Exhibit	Description
Ex. 1012	U.S. Patent No. 6,145,780 to Fontana (“ <i>Fontana</i> ”)
Ex. 1013	U.S. Patent No. 2,400,417 to Hickey (“ <i>Hickey</i> ”)
Ex. 1014	U.S. Patent No. 3,693,784 to Holmes (“ <i>Holmes</i> ”)
Ex. 1015	U.S. Patent Application Publication No. US 2004/0178100 A1 to Ho (“ <i>Ho</i> ”)
Ex. 1016	U.S. Patent Application Publication No. US 2008/0179370 A1 to Williams (“ <i>Williams</i> ”)
Ex. 1017	U.S. Patent No. 7,320,445 to Eastwood et al. (“ <i>Eastwood</i> ”)
Ex. 1018	U.S. Patent No. 6,145,781 to Kawabe et al. (“ <i>Kawabe</i> ”)
Ex. 1019	Internet Archive copy of “ http://www.wapitistraps.com/ ” captured on February 3, 2009
Ex. 1020	U.S. Patent No. 6,427,839 to Helfer-Grand
Ex. 1021	Complaint in <i>CommScope, Inc. of North Carolina v. Belden Inc. et al.</i> , No. 1:24-cv-00427 (D. Del. Apr. 4, 2024).
Ex. 1022	Joint Claim Construction Chart filed in <i>CommScope, Inc. of North Carolina v. Belden Inc. et al.</i> , No. 1:24-cv-00427 (D. Del. Apr. 18, 2025).
Ex. 1023	U.S. Patent No. 5,337,933 to Nunez (“ <i>Nunez</i> ”)

IV. RELEVANT LEGAL STANDARDS

7. In preparing this declaration and forming my opinions, I am relying on certain legal principles that counsel explained to me. My understanding of these concepts is summarized below.

8. I have been asked to provide my opinions regarding whether claims 9-13 (“the Challenged Claims”) of the ’697 patent are unpatentable, either because they are anticipated or would have been obvious to a person having ordinary skill in the art at the time of the alleged invention, in light of the prior art. It is my opinion that the Challenged Claims would have been obvious to a person having ordinary skill in the art at the earliest claimed priority date of the ’697 patent.

9. In forming my opinions expressed below, in addition to my own knowledge and experience based upon my work in the field of cable technology as described below, I have considered the documents listed in the Table in Section III above.

10. I have been informed by counsel that a patent claim is unpatentable as anticipated if each element of that claim is present either explicitly or inherently in a single prior art reference. I have also been informed that, to be an inherent disclosure, the prior art reference must necessarily disclose the limitation, and the

fact that the reference might possibly practice or contain a claimed limitation is insufficient to establish that the reference inherently teaches the limitation.

11. I have been informed by counsel that a claimed invention is unpatentable under 35 U.S.C. § 103 if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. I have also been informed by counsel that the obviousness analysis takes into account factual inquiries including the level of ordinary skill in the art, the scope and content of the prior art, and the differences between the prior art and the claimed subject matter.

12. I have further been informed by counsel that the Supreme Court has recognized several rationales for combining references or modifying a reference to show obviousness of claimed subject matter. Some of these rationales include the following: (a) combining prior art elements according to known methods to yield predictable results; (b) simple substitution of one known element for another to obtain predictable results; (c) use of a known technique to improve a similar device (method, or product) in the same way; (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (e) choosing from a finite number of identified, predictable solutions, with a

reasonable expectation of success; and (f) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

13. When considering the issue of obviousness, I understand that I should consider (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) evidence of secondary indicia of nonobviousness. I have been informed that secondary indicia of nonobviousness include (i) “long-felt need” for the claimed invention, (ii) commercial success attributable to the claimed invention, (iii) unexpected results of the claimed invention, and (iv) “copying” of the claimed invention by others.

A. Level of Ordinary Skill in the Art

14. I understand that a person of ordinary skill in the art is determined by considering (1) the type of problems encountered in the art, (2) prior art solutions to those problems, (3) the rapidity with which innovations are made, (4) the sophistication of the technology, and (5) the educational level of active workers in the field.

15. I understand that I must evaluate the '697 patent from the perspective of a person of ordinary skill in the art. That is, the '697 patent must be evaluated through the eyes of a person with ordinary skill in the relevant art at the time of the invention of this patent. It is my opinion that such a person of ordinary skill in the art as related to the '697 patent would hold at least a bachelor's degree in physics or engineering and experience with the installation of cable as of the date of invention of the '697 patent. If a person did not have a bachelor's degree, sufficient relevant experience with cable as used in the telecommunications industry could provide an acceptable substitute. Likewise, further education beyond a bachelor's degree could compensate for a deficiency in practical experience.

16. Based on my educational background and experience, I am qualified as at least a person of ordinary skill in the art with respect to the '697 patent. Thus, I am familiar with the knowledge of the person of ordinary skill in the art as of the date of invention of the '697 patent. I am able to opine on how a person of ordinary skill in the art would have understood the disclosure and claims of the '697 patent, the disclosures of the prior art, the motivation to combine the prior art, and what combinations would have been obvious and not have been obvious to one of ordinary skill in the art.

B. Claim Construction

17. I have been informed that in an IPR, claim terms should be construed under the same standard applied in federal district court cases. Under this standard, I have been informed that claim terms are generally given their ordinary and customary meaning as understood by one of ordinary skill in the art in light of the specification and the prosecution history pertaining to the patent. I understand, however, that claim terms are generally not limited by the embodiments described in the specification.

18. I understand that in addition to the claims, specification, and prosecution history, other evidence may be considered to ascertain the meaning of claim terms, including textbooks, encyclopedias, articles, and dictionaries. I have been informed that this additional evidence is often less significant and less reliable than the claims, specification, and prosecution history.

19. I have also been informed that claims should only be construed to the extent necessary to resolve any controversy.

20. I understand that a patent claim may describe a particular limitation in a “means-plus-function” format. I understand that a “means-plus-function” limitation recites a structural component solely in terms of the function it performs. In other words, a patent claim may recite a structural element that is essentially a

generic placeholder word (for example, the word “means”) presented in terms of the function it performs (e.g., a claim reciting a “means for [function]”).

21. I understand that a claim limitation can be a means-plus-function term, even if it does not explicitly use the word “means” or “means for.” In that case, a claim limitation can be a means-plus-function term if it, for example, recites a generic placeholder word, such as “member,” “element,” “device,” “unit,” that serves as a substitute for the word “means” and does not provide sufficiently definite meaning as the name for a structure.

22. I further understand that construing a means-plus-function claim limitation is a two-step process. First, the claimed function is identified. Second, the corresponding structure for performing the recited function must be identified in the specification. I have been informed that in this second step, the structure disclosed in the specification is a corresponding structure only if the specification (or prosecution history) clearly links the structure to the function recited in the claim.

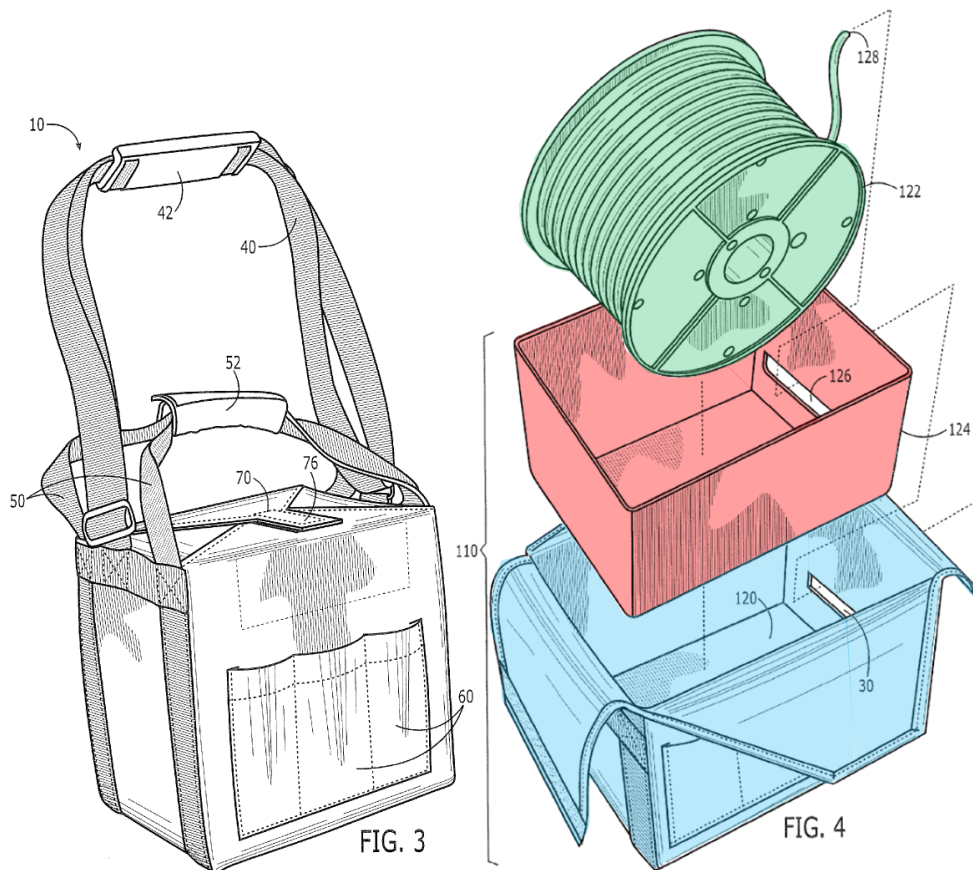
23. Counsel for Petitioners has informed me that for means-plus-function limitations, a prior art reference or combination of references must disclose the identical function in the claim limitation and must disclose a structure that performs the function that is either identical to or the equivalent of the structure in

the specification of the challenged patent that performs the claimed function. I understand that a structure is equivalent if it performs the identical function in substantially the same way to achieve substantially the same result as the claim limitation at issue.

V. THE '697 PATENT

A. Overview of the '697 patent

24. The '697 patent claims priority to June 15, 2009, and issued on February 23, 2016. Ex. 1001. As such, I understand that the earliest claimed priority date of the '697 patent is June 15, 2009. For the purposes of this proceeding, I have been asked to assume that the invention date of the '697 patent claims is June 15, 2009.



Id., FIGS. 3-4 (annotated).

25. The '697 patent discloses a communication cable payout bag 110 having a main compartment 120 and an adjustable shoulder strap 40. Ex. 1001, 1:5-59, 3:28-53, 4:56-64, 5:39-44, FIGS. 1-7. As shown above, it also discloses a removable insert 124 that fits within the interior of main compartment 120, has an open top, and holds a reel of cable 122. *Id.*, 4:60-67, FIGS. 3-4. It further discloses that removable insert 124 may be constructed of solid plastic, corrugated plastic, or corrugated cardboard. *Id.*, 5:1-4. It still further discloses that bag 110 include a cable payout passageway 30 aligned with an opening 126 of removable insert 124

such that a cable loose end 128 passes through opening 126 and passageway 30 to be paid out from the main compartment 120 to the exterior of the bag 110. *Id.*, 5:19-67, FIG. 4.

26. Bag 110 also has a closure mechanism 70 to close main compartment 120 and removable insert 124 therein. *Id.*, 4:13-40, 5:39-44, 6:1-4, FIGS. 3-4. Bag 110 is constructed of a flexible material, such as nylon or canvas, and has a rectangular profile. *Id.*, 2:44-50, 2:66-3:5, 4:13-29, 5:39-44, FIGS. 3-4.

B. Claims of the '697 patent

27. The '697 patent has 13 claims. Among these claims, claims 1, 9, and 10 are in independent form. Claims 2-8 depend from independent claim 1. Claims 11-13 depend from independent claim 10.

28. Independent claim 9 recites:

A method of paying out communications cable from a bag that includes a main compartment and a cable payout passageway, the method comprising:

inserting a removable plastic insert and a cylindrical reel of communications cable supported by the removable insert in the main compartment, wherein the reel of communications cable has a loose

end of cable at an outer portion thereof, and wherein the main compartment is constructed of a flexible material;

aligning the loose end of cable from the outer portion of the reel of communications cable with the cable payout passageway; and

pulling the loose end of cable through the cable payout passageway.

29. Independent claim 10 recites:

A communications cable payout bag, comprising:

a main compartment constructed of a flexible material, the main compartment having an interior and an exterior, the main compartment being openable and closable;

a removable insert within the interior of the main compartment;

a reel of communications cable that is supported by the removable insert, the reel of communications cable having a loose end of cable at an outer portion thereof;

a shoulder strap attached to the exterior of the main compartment;

a cable payout passageway defined between the interior and the exterior of the main compartment, the cable payout passageway

configured to receive therethrough the loose end of cable from the outer portion of the reel of communications cable; and

a closure mechanism configured to close the main compartment to thereby close the removable insert and the reel of communications cable in the interior of the main compartment;

wherein the main compartment has a substantially rectangular profile when the removable insert and the reel of communications cable are closed in the interior thereof.

C. Summary of the Prosecution History of the '697 patent

30. The '697 patent issued from U.S. Patent Application No. 12/484,393, filed on June 15, 2009. Ex. 1001, cover. The Office repeatedly rejected Applicant's claims in multiple Office Actions based on various combinations of prior art (Ex. 1003, 96-105, 139-148, 181-192, 223-232) despite Applicant's narrowing amendments to the claims, including amending the claims to recite "a flexible material" and "cable payout passageway configured to receive therethrough the loose end of cable from the outer portion of the reel of communications cable." *Id.*, 113-118, 200-204. Applicant appealed the Office's second final rejections to the Board. *Id.*, 59-80. The Board affirmed the Examiner's rejections in part, finding the Examiner erred in reading a cardboard box in *Cote* (Ex. 1010) as made of a

flexible material (Ex. 1003, 27-29) and thus reversed the Examiner's rejections that were based on such erroneous reading (*id.*, 29-30, 33). The Board affirmed the Examiner's rejections of claims 11, 13, 15, 18, 27, and 30, as obvious over *Cote* that teaches a removable insert and *Godshaw* (Ex. 1011) that teaches a duffle bag with a shoulder strap. Ex. 1003, 30-34, 97-104. The Office subsequently canceled these claims and allowed the application. *Id.*, 12. The rejected and cancelled claims 11 and 30 are substantially similar to challenged independent claim 10 (amended claim 21 during prosecution), as shown below (*id.*, 114-118):

Rejected Claims	Challenged Claim 10
11. A communications cable payout bag, comprising:	A communications cable payout bag, comprising:
a main compartment having an interior and an exterior, the main compartment being openable and closable;	a main compartment constructed of a flexible material , the main compartment having an interior and an exterior, the main compartment being openable and closable;
a removable insert within the interior of the main compartment;	a removable insert within the interior of the main compartment;

a reel of communications cable that is supported by the removable insert, the reel of communications cable having a loose end of cable at an outer portion thereof;	a reel of communications cable that is supported by the removable insert, the reel of communications cable having a loose end of cable at an outer portion thereof;
a shoulder strap attached to the exterior of the main compartment;	a shoulder strap attached to the exterior of the main compartment;
a pair of handle straps attached to the exterior of the main compartment, wherein each handle strap is shorter than the shoulder strap;	

a cable payout passageway defined between the interior and the exterior of the main compartment, wherein the cable payout passageway is configured to receive therethrough the loose end of cable from the outer portion of the reel of communications cable; and	a cable payout passageway defined between the interior and the exterior of the main compartment, the cable payout passageway configured to receive therethrough the loose end of cable from the outer portion of the reel of communications cable; and
a closure mechanism configured to close the main compartment to thereby close the removable insert and the reel of communications cable in the interior of the main compartment.	a closure mechanism configured to close the main compartment to thereby close the removable insert and the reel of communications cable in the interior of the main compartment;
30: The communications cable payout bag of Claim 11, wherein the main compartment has a substantially rectangular profile when the removable insert and reel of communications cable are closed in the interior thereof.	wherein the main compartment has a substantially rectangular profile when the removable insert and the reel of communications cable are closed in the interior thereof.

31. The only additional limitation of challenged claim 10 relative to the rejected and cancelled claims is the “a main compartment constructed of a flexible material” limitation. During prosecution, the Office found that “*Godshaw* teaches a bag clearly made of flexible material” (Ex. 1003, 190), and that “*Young* [(Ex. 1007)] discloses a communications cable payout bag, comprising a main compartment ... constructed of a flexible material” (Ex. 1003, 140). Despite these findings, the Office allowed claim 10 (claim 21 during prosecution), but rejected claim 11 over the same combination of *Cote* and *Godshaw*. *Id.*, 29-32, 97-102. The Office materially erred by not rejecting challenged claim 10 and its dependent claims 11-13 over *Cote* and *Godshaw*. The Office also materially erred by not rejecting challenged claim 9, which is a method claim reciting limitations similar to those of claim 10, over *Cote* and *Godshaw*.

VI. CLAIM CONSTRUCTION

32. As I discussed above, I have been informed that for purposes of IPRs, the standard for claim construction is the same as that applied in federal district court litigation. I have been asked to consider the plain and ordinary meaning of each claim term to a person of ordinary skill in the art in light of the specification and the prosecution history of the '697 patent. I have also been advised that the

most persuasive evidence on claim construction is generally within the words of the claim itself and the disclosure of the specification, including any express definitions set forth in the written description of the invention. I have also been asked to consider whether any claim term is a means-plus-function limitation.

33. Here except for the means-plus-function limitations discussed below, I have applied the plain and ordinary meaning of each claim term throughout this declaration as they would have been understood by one skilled in the art at the time of the alleged invention and consistent with the specification.

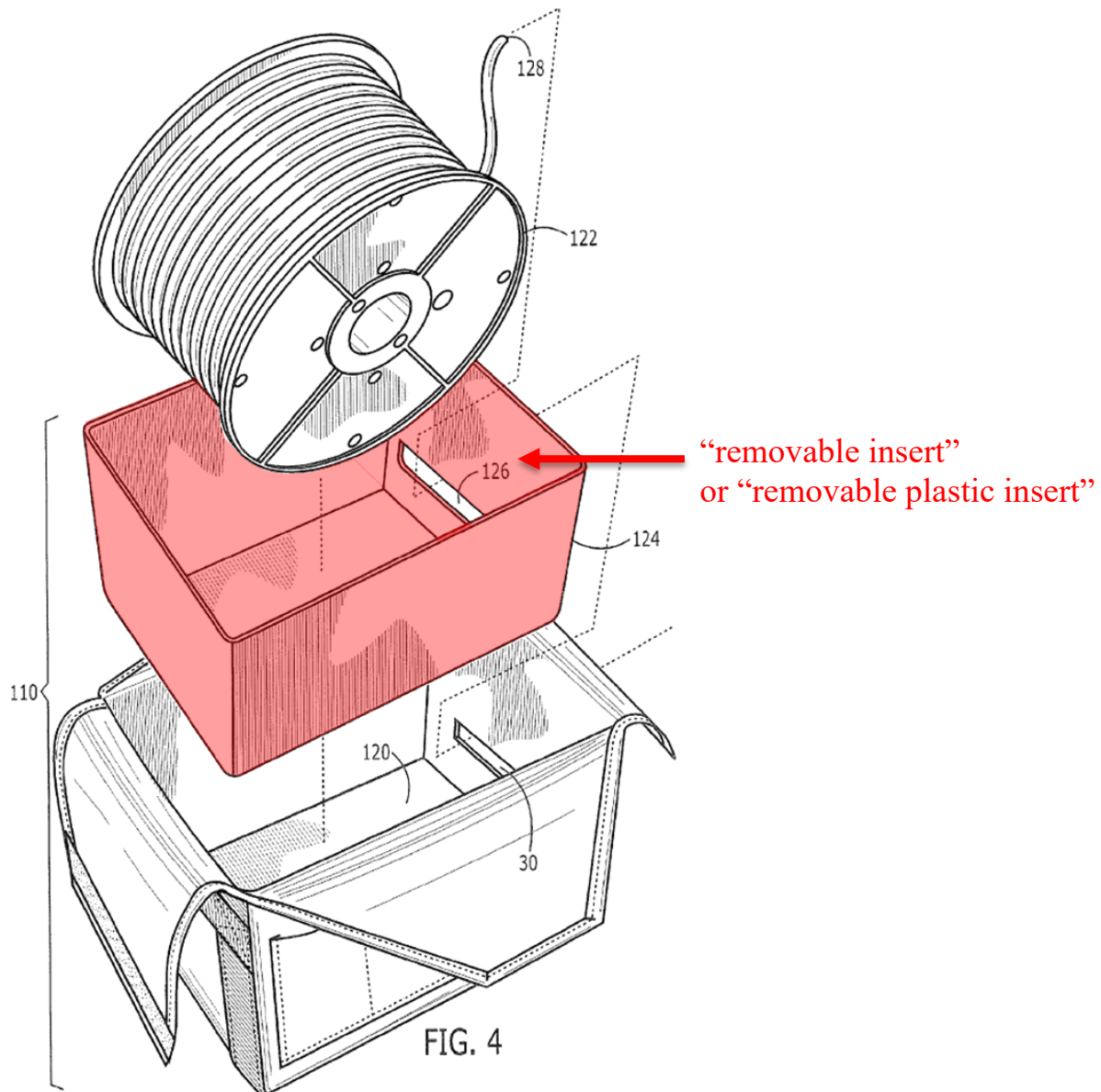
“removable insert” and “removable plastic insert”

34. In reviewing the claim terms of the '697 Patent, it is my opinion that the terms “removable insert” and “removable plastic insert” are means-plus-function terms. The term “removable insert” or “removable plastic insert” recites a generic word “insert” modified by functional language “removable.” The term does not provide sufficiently definite meaning as the name for a structure. The claim describes the “removable insert” or “removable plastic insert” solely in relation to its location in the main compartment and its function: “within the interior of the main compartment” or “in the main compartment”, and a reel of communication cable is “supported by the removable insert.” Although the claims suggest that the “removable insert” or “removable plastic insert” must have some

structure to perform the function of being removable and supporting the cable reel, the terms “removable insert” and “removable plastic insert” do not convey to a person of ordinary skill in the art any structure for the function of “being able to support a cable reel” and “being able to be removed from the main compartment.” The claim language surrounding these terms do not describe structural detail either. Indeed, many structures, including plastic structures, can be removably placed in a bag and support a cable reel, and there is no well-understood structural meaning for “insert,” such as the name of a certain structure or a class of structures. As such, the terms “removable insert” and “removable plastic insert” should be interpreted means-plus-function terms.

35. The function of the “removable insert” is being able to support a cable reel, while also being able to be removed from the main compartment. The structure corresponding to this function, as described in the ’697 specification, is a structure that includes a box made of solid formed plastic, corrugated plastic, or corrugated cardboard with an open top, or equivalents thereof. Ex. 1001, 2:3-6, 4:56-65, FIG. 4. Similarly, the function of the “removable plastic insert” is being able to support a cable reel, while also being able to be removed from the main compartment. The corresponding structure, as described in the ’697 specification,

is a plastic structure that includes a box made of solid formed plastic or corrugated plastic with an open top, or equivalents thereof. Ex. 1001, 2:3-6, 4:56-65, FIG. 4.



Ex. 1001, FIG. 4 (annotated). The '697 patent describes three main embodiments of a cable communication payout bag. In the first embodiment, the bag has a rectangular profile and holds a cable package comprising a coil or reel of cable,

without any insert. *Id.*, 2:44-3:8, FIG. 1. In the second embodiment, the bag includes a structure having a box with an open top, and the box fits within the main compartment and holds a cable reel. *Id.*, 4:56-5:18, FIG. 4. In the third embodiment, the bag has a circular profile and snugly holds coils or a reel of cable, without any insert. *Id.*, 6:5-40, FIGS. 5-6. Only the second embodiment describes the “removable insert” or “removable plastic insert” and has a structure that is linked to the claimed function. The ’697 patent describes the “removable insert” may be constructed of solid formed plastic, corrugated plastic or corrugated cardboard. *Id.*, 5:1-4. Thus, the only structure or plastic structure disclosed in the ’697 patent that performs the claimed function includes the box with an open top, as shown in Figure 4.

36. I was informed that in the parallel district court litigation, Patent Owner argues the “removable [plastic] insert” is not a means-plus-function term, and means “a [plastic] part that fits within the main compartment and is removable from it.” Ex. 1022, 3. Patent Owner also argues, in the alternative, that “removable [plastic] insert” may correspond to the function of “being insertable and removable from the main compartment” and the following structures:

- **Claim 9:** a plastic part sized to fit within the main compartment and not integral with the main compartment, or equivalents thereof.

- **Claim 10:** a part made of solid formed plastic, corrugated plastic, or corrugated cardboard that is sized to fit within the main compartment and not integral with the main compartment, or equivalents thereof.

In my opinion, the claims are unpatentable based on the prior art and grounds discussed below even under Patent Owner's proposed constructions. *See below* Sections VIII-XII.

VII. GROUND OF UNPATENTABILITY

37. Based on my review of the materials set forth above, including my application of the knowledge of a person of ordinary skill in the art, it is my opinion that the Challenged Claims of the '697 patent would have been obvious to one of ordinary skill in the art based on the grounds shown below:

Ground	Claims	Basis Under 35 U.S.C. § 103
1	9-12	Obvious over <i>Cohn</i> in view of <i>Redzisz</i>
2	13	Obvious over <i>Cohn</i> in view of <i>Redzisz</i> and <i>Eastwood</i>
3	9-11	Obvious over <i>Young</i> in view of <i>Bass</i>
4	12	Obvious over <i>Young</i> in view of <i>Bass</i> and <i>Redzisz</i>
5	13	Obvious over <i>Young</i> in view of <i>Bass</i> and <i>Eastwood</i>
6	9-11	Obvious over <i>Young</i> in view of <i>Barnett</i>
7	12	Obvious over <i>Young</i> in view of <i>Barnett</i> and <i>Redzisz</i>
8	13	Obvious over <i>Young</i> in view of <i>Barnett</i> and <i>Eastwood</i>

VIII. [GROUND 1] COHN IN VIEW OF REDZISZ RENDERS OBVIOUS CLAIMS 9-12

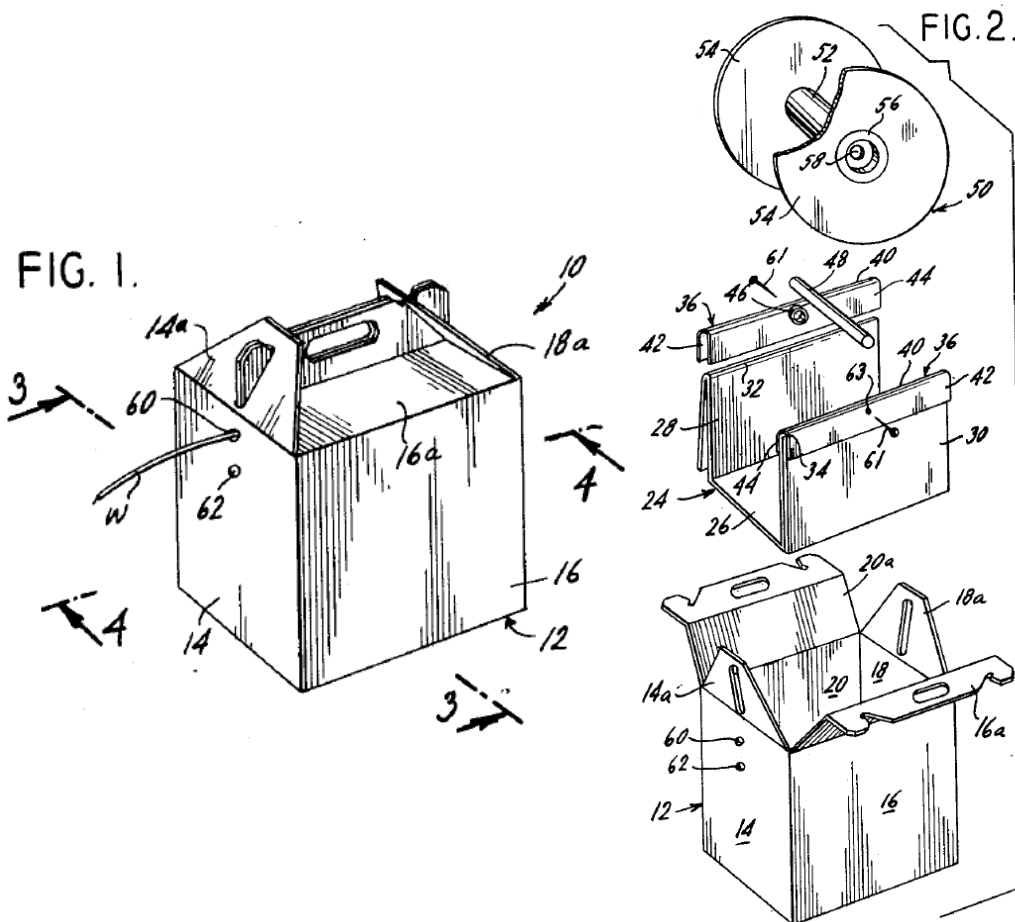
38. In my opinion, *Cohn* in view of *Redzisz* renders obvious claims 9-12.

A. *Cohn* in View of *Redzisz*

1. Overview of *Cohn* (Ex. 1004)

39. *Cohn* was filed on September 6, 1962, and granted on September 29, 1964 (*Cohn*, cover), over one year before the priority date of the '697 patent. I have thus been informed that *Cohn* qualifies as prior art to the '697 patent under at least 35 U.S.C. § 102 (b).

40. *Cohn* discloses a device 10 for transporting and paying out wire wound on a reel. *Cohn*, 1:9-67, FIGS. 1-4. As shown below, device 10 includes a rectilinear box 12 having four side walls 14, 16, 18, 20; a bottom 22; and top flaps 14a, 16a, 18a, and 20a, extending from the respective side walls. *Id.*, 2:15-30, FIGS. 1-4. The top flaps engage with each other to provide both a closure for box 12 and a carrying handle. *Id.* Device 10 includes a cradle 24 that supports a spindle 48 that inserts through and rotatably supports a reel 50. *Id.*, 2:31-3:5, FIGS. 1-4. Assembling the spool of wire into device 10 includes assembling reel 50 and cradle 24 and placing the entire assembled cradle 24 and spool 50 in box 12. *Id.*, 3:6-20, FIGS. 3-4.



Id., FIGS. 1-2.

41. Box 12 includes a wire opening 60 through which the wire can be paid out outwardly from reel 50. *Id.*, 3:20-27, FIGS. 3-4. Box 12 also includes a wire securement opening 62 adjacent the wire opening 60 through which the wire can be folded around and tucked back to the box to prevent unwinding. *Id.*

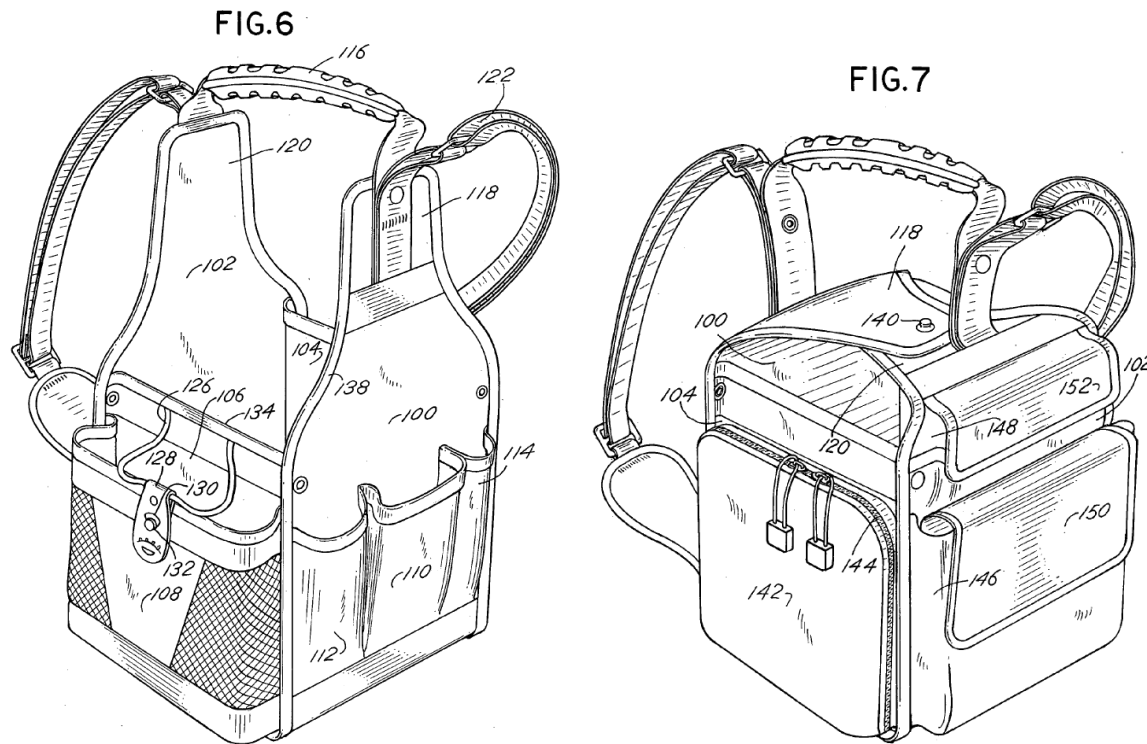
Cohn is analogous to the '697 patent because they both relate to an apparatus and method for carrying and paying out cable. *Id.*, 1:9-67; Ex. 1001, 1:5-59; *see*

Section V.A (Overview of the '697 Patent).

2. Overview of *Redzisz* (Ex. 1005)

42. *Redzisz* was filed on March 20, 2003, and published on January 29, 2004 (*Redzisz*, cover), over one year before the priority date of the '697 patent. I have thus been informed that *Redzisz* qualifies as prior art to the '697 patent under at least 35 U.S.C. § 102 (b).

43. *Redzisz* discloses a storage bag or case for carrying tools and other items. *Redzisz*, [0003], [0005], [0028], [0037]-[0038], FIGS. 6-9. The bag includes a first end panel 100, a second end panel 102, a back panel 104, a front panel 106, and a bottom panel 24, all joined together forming a container. *Id.*, [0026]-[0027], [0030]-[0031], [0037], FIGS. 1, 6-9. Back panel 104 and front panel 106 are comprised of flexible material such as canvas. *Id.*, [0028], [0030]-[0031], [0035]. First end panel 100, second end panel 102, and bottom panel 24 each include a reinforcing board covered by a fabric material, such as canvas. *Id.*, [0026]-[0027], [0031], [0039], [0041]. Upper sections 118 and 120 of end panels 100 and 102 can be folded over and joined together by a fastening mechanism 140 to enclose and facilitate retention of the bag's contents in the bag. *Id.*, [0035], [0038], [0041], FIGS. 6-7.



Redzisz, FIGS. 6-7.

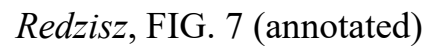
44. The bag also includes a carry handle 116 and a shoulder strap 122, both connecting between upper section 118 of first end panel 100 and upper section 120 of second end panel 102. *Id.*, [0035], FIGS. 6-9. The bag further includes multiple auxiliary pouches, including an auxiliary pouch 108 on the outside of the front panel 106, pouch 142 on the outside of backside panel 104, auxiliary pouches 110, 112 and 114 on the outside of first end panel 100, and pouches 146 and 148 on the outside of second end panel 102. *Id.*, [0033], [0035], FIGS. 6-9.

45. *Redzisz* is analogous to the '697 patent because both relate to bags for carrying tools and other items. *Redzisz*, [0001]-[0004]; Ex. 1001, 1:5-59; *see* Section V.A (Overview of the '697 Patent).

3. A Person of Ordinary Skill in the Art Would Have Found It Obvious to Combine *Cohn* and *Redzisz*.

a. It Would Have Been Obvious To A Person of Ordinary Skill in the Art To Use *Redzisz*'s Bag To Carry *Cohn*'s Device.

46. *Cohn* discloses a device for transporting and paying out wire from a reel. *Cohn*, 1:9-67, FIGS. 1-4. *Cohn*'s device provides a carrying handle formed by inter-engaging top flaps for transporting the device from one location to another during installation, e.g., installing television sets and wires. *Id.*, 1:17-23, 2:26-30. *Redzisz* discloses a bag with both a carry handle and a shoulder strap for carrying tools and/or equipment. *Redzisz*, Abstract, [0001]-[0005], [0028], [0037]-[0038], FIGS. 6-9. A person of ordinary skill in the art would have been motivated to use *Redzisz*'s bag to carry *Cohn*'s device to allow free use of both hands, provide more mobility and flexibility, and reduce risk of injury for cable installers in the field, as shown below.



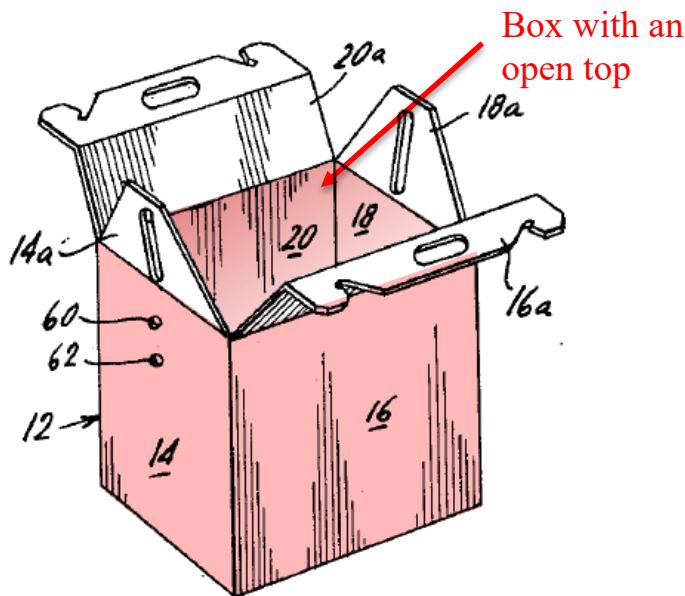
48. Also, freeing up both hands of the installer would allow the installer to handle other tasks, such as climbing ladders, while working in the field. *See*

Young, 4:28-32 (teaching an adjustable strap of a cable payout bag is “a particularly desir[un]able feature when the user is working at an elevation, for example, while standing on a ladder”); *Fontana*, 1:27-32 (“The known systems are also not practical for the user or installer, which is often obliged to work in uncomfortable positions, like on ladder[] top[s], and to carry a cable spool having at least one hand busy: it goes without saying that in this case the user equilibrium on the ladder is really unstable to the detriment of his safety.”), 2:31-36 (teaching using a belt or shoulder strap makes it easier for the user to carry the container when he has to climb up ladders or is working in uncomfortable or impractical places).

b. It Would Have Been Obvious to Use an Open-Topped Insert with *Redzisz*’s Bag.

49. In my opinion, a person of ordinary skill in the art also would have been motivated to use *Redzisz*’s bag to carry *Cohn*’s device in place of its carrying handle to allow for more mobility for the cable installers. A person of ordinary skill in the art would have understood that a bag having a shoulder strap for carrying a cable payout device, as compared to a single-handed handle, would make it easier for an installer to move around, especially in tight or elevated spaces, where maneuvering a large and heavy reel might be difficult, and may require using hands to stay balanced or stable. *See Cohn*, 1:23-26 (a reel of wires

used by television installer could weigh twenty-two pounds). Also, using a shoulder strap as in *Redzisz* would help prevent accidents, such as dropping the reel or tripping, which may occur from trying to carry a heavy reel by hand. And when using *Redzisz*'s bag to carry *Cohn*'s device, a person of ordinary skill in the art would have found it obvious to retain the side and bottom of *Cohn*'s box (red below) but the top flaps 14a, 16a, 18a, and 20a (white below).



Cohn, FIG. 2 (excerpted, annotated).

This is because using *Redzisz*'s bag with a carry handle and shoulder strap would eliminate the need for *Cohn*'s carrying handle formed by the top flaps 14a, 16a, 18a, and 20a. And *Redzisz*'s panels enclose its contents within the bag, which would also eliminate the need to use *Cohn*'s top flaps engage to provide both a closure. *Redzisz*, ¶ [0038]; *Cohn*', 2:15-30. As such, using *Redzisz*'s bag to carry

Cohn's device would allow for an open-topped insert. A person of ordinary skill in the art would have found that eliminating *Cohn*'s carrying handle would make it easier to insert and remove reels from *Redzisz*'s bag, eliminate box-manufacturing steps, and use less material. And I agree with the Board and the Examiner's similar finding that "[o]ne of ordinary skill in the art would recognize adding or substituting the handles and shoulder strap of Godshaw for the integral handles of Cote would make the device easier to carry and more versatile with different ways of carrying it". Ex. 1003, 32.

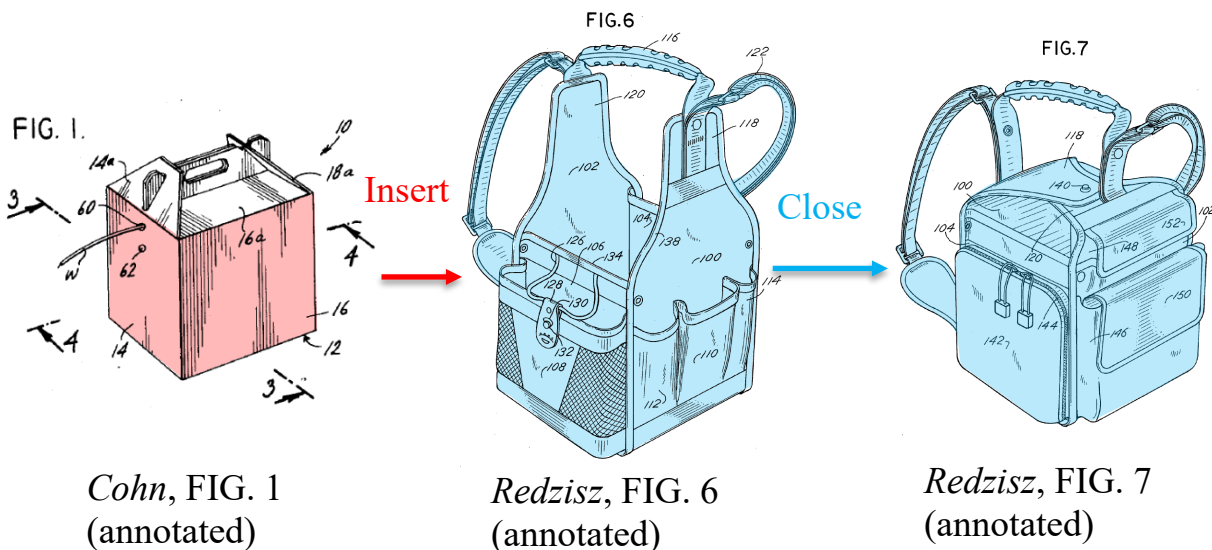
50. Further, carrying and handling heavy reels of cable was known to be physically demanding. Using a bag with a shoulder strap to carry the reel, freeing the hands and arms, allows for distributing the weight of the cable reel more evenly across the installer's body. Such weight distribution would reduce strain on the back and arms, thus reducing the risk of injury.

c. A Person of Ordinary Skill in the Art Would Have Had A Reasonable Expectation Of Success In Using *Redzisz*'s Bag To Carry *Cohn*'s Device.

51. In my opinion, a person of ordinary skill in the art would have known how to use *Redzisz*'s bag to carry *Cohn*'s device because this would have required nothing more than ordinary skill. *Redzisz* discloses that its bag is intended to carry tools and other items. *Redzisz*, [0001]-[00012]; [0035]. *Cohn* discloses that its

device is for carrying and paying out cable or wire from reels, such as during the installation of television antennas. *Cohn*, 1:1-19. A person of ordinary skill in the art would have understood that *Redzisz*'s bag would have been a suitable option for cable installers to carry a telecommunication article like *Cohn*'s device.

52. A person of ordinary skill in the art also would have understood how to place *Cohn*'s device in *Redzisz*'s bag by opening *Redzisz*'s bag's end panels, placing *Cohn*'s device in the interior of the bag, and folding and joining the upper sections of the end panels to secure the device within the bag using basic practical skills, as illustrated below. *Redzisz*, [0035], [0038], [0041], FIGS. 6-7.



53. Indeed, boxes with handles and bags (e.g., carrying or tote bags) were common objects at the time of the purported invention. Carrying boxes within a bag, such as a tote bag, through the use of straps, handles (e.g. made of string, rope

or tape), and other mechanisms were commonplace. For example, consumers frequently had to transport boxes or bags containing purchased items (e.g. groceries, department store goods). Transporting a box in a bag with a shoulder strap makes it easier to carry the box, which was commonplace for decades. As such, a person of ordinary skill in the art would have known how to make it easier to carry *Cohn*'s box and cable reel therein with *Redzisz*'s bag having a shoulder strap.

54. When using *Redzisz*'s bag to carry *Cohn*'s device, a person of ordinary skill in the art would have modified *Cohn*'s device to eliminate the top flaps forming the carrying handle, saving cardboard material and adjusting the profile of the device to be similar to that of *Redzisz*'s bag, or vice versa, when the function of the handles has already been replaced by *Redzisz*'s carry handle and shoulder strap and the folding end panels. A person of ordinary skill in the art also would have known to adjust the size of *Redzisz*'s bag or the size of *Cohn*'s device such that *Cohn*'s device forms a proper and snug fit in the bag. A person of ordinary skill in the art would have understood that such modifications are routine optimizations that would help prevent *Cohn*'s device from shifting or tipping over during transportation and cable installation, which can affect cable payout, such as from tangling or snagging of the cable, and can even cause injury to the installer.

And a proper and snug fit between *Redzisz*'s bag and *Cohn*'s device would allow the bag and device to last longer by reducing unnecessary wear and tear on both the bag and the device. Implementing these optimizations would only require ordinary skills, such as measurement skills, of a person of ordinary skill in the art. As such, using *Redzisz*'s bag to carry *Cohn*'s device to payout cable would have been applying a known technique to improve a known device and yield predictable results of an improved system and method for transporting and paying out cable from a cable reel.

B. Independent Claim 10

55. In my opinion, *Cohn* in view of *Redzisz* renders obvious claim 10.

1. 10[pre]: “A communications cable payout bag, comprising:”

56. The combination of *Cohn* and *Redzisz* described above renders obvious limitation 10[pre].

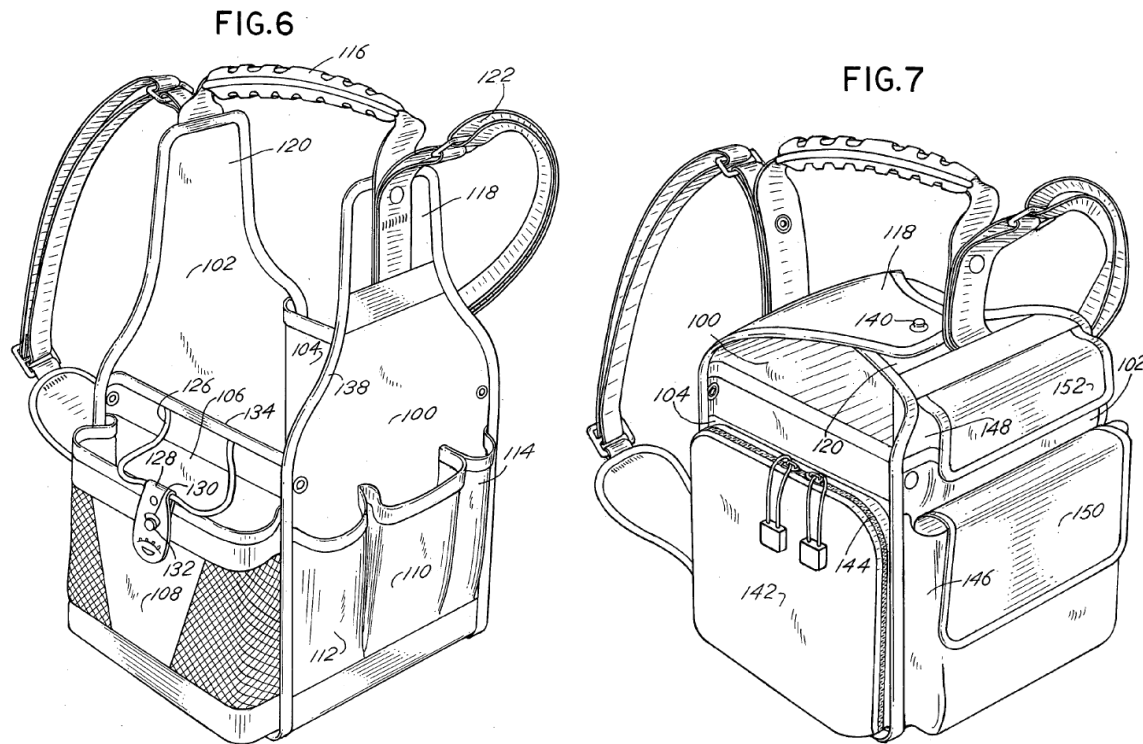
57. *Cohn* discloses its packaging device is for items wound on reels such as wire. *Cohn*, 1:9-13. A person of ordinary skill in the art would have understood that *Cohn*'s device would have been suitable for paying out communication cable because communication cable and wire are similar, and both were often wound on reels to facilitate payout. *See Bass, Barnett, Holmes, Fontana*. As discussed above, a person of ordinary skill in the art would have found it obvious to use *Redzisz*'s

bag with both a carry handle and a shoulder strap to carry *Cohn*'s device. *See* Section VIII.A.3. When *Redzisz*'s bag is used for carrying *Cohn*'s device for cable payout, *Redzisz*'s bag would be “a communications cable payout bag” because it would carry a device for paying out wire-like items wound on reels, such as communication cable.

2. **10[a]: “a main compartment constructed of a flexible material, the main compartment having an interior and an exterior, the main compartment being openable and closable;”**

58. In my opinion, the combination of *Cohn* and *Redzisz* described above renders obvious limitation 10[a].

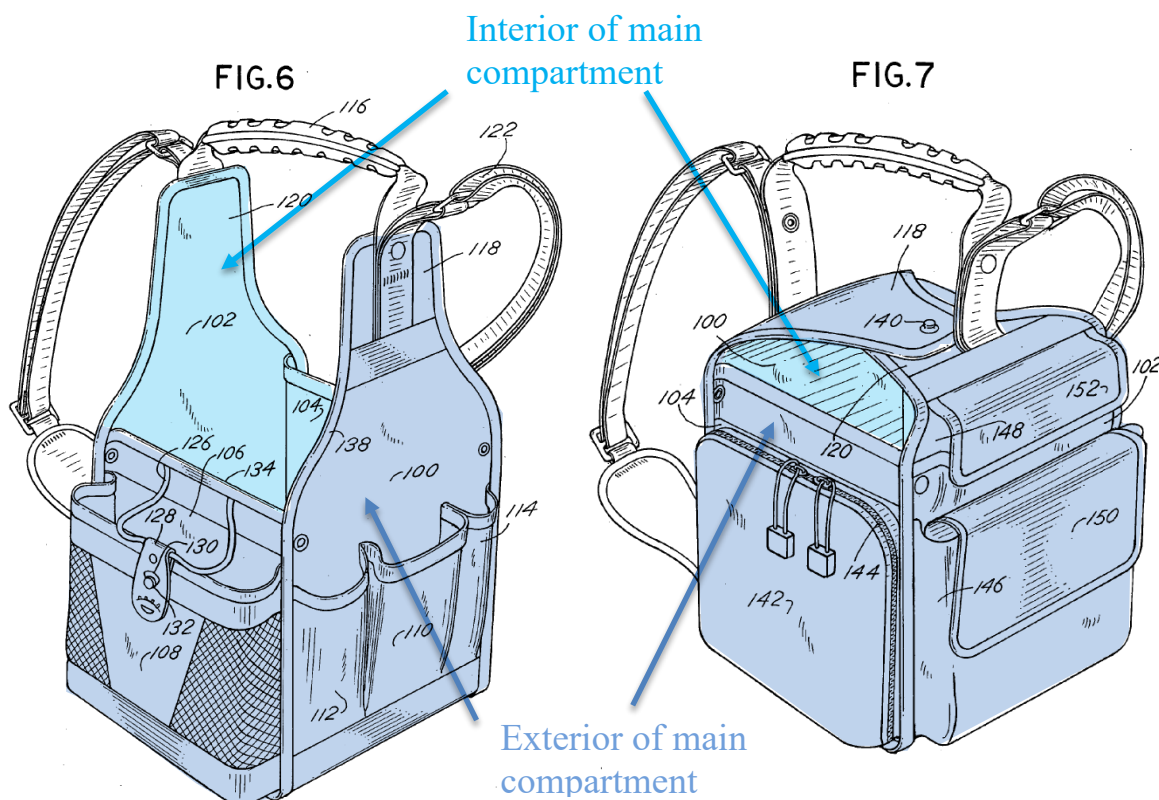
59. *Redzisz*'s bag is constructed of a “flexible material such as canvas, plastic or the like.” *Redzisz*, [0028], [0037]; *see above* Section VIII.A.2. The bag's panels—first end panel 100, second end panel 102, back panel 104, front panel 106, and bottom panel 24—form a “bag or case,” into which contents may be placed, as shown below:



Redzisz, FIGS. 6-7; *see also id.*, [0035].

60. *Redzisz* discloses that upper sections 118 and 120 of the bag's end panels 100 and 102 can be folded over and attached together by a fastener 140 to "enclose the contents of the bag." *Id.*, [0038]. *Redzisz* confirms that the bag's contents are retained "within the bag case or container." *Id.*, [0035]. Thus, a person of ordinary skill in the art would have understood that *Redzisz*'s bag provides a main compartment formed by the panels, and *Redzisz*'s fastener 140 and upper sections 118 and 120 are openable and closeable. As such, a person of ordinary skill in the art would have understood that *Redzisz* discloses a bag with an "openable and closeable" "main compartment" like that recited in limitation 10[a].

61. A person of ordinary skill in the art would have understood that the main compartment of *Redzsiz*'s bag also has an **interior** (inside of the panels) within which items are retained and an **exterior** (outside of the panels) surrounding them, as illustrated below. *Redzsiz*, [0035], [0038], FIGS. 6-7; *see also id.*, [0026] (describing inner and outer surfaces of panels for embodiment of Fig. 1).



Redzsiz, FIGS. 6-7 (annotated).

62. Indeed, *Redzsiz*'s bag has a “openable and closeable” “main compartment” like the bag of the '697 patent. The '697 patent similarly describes

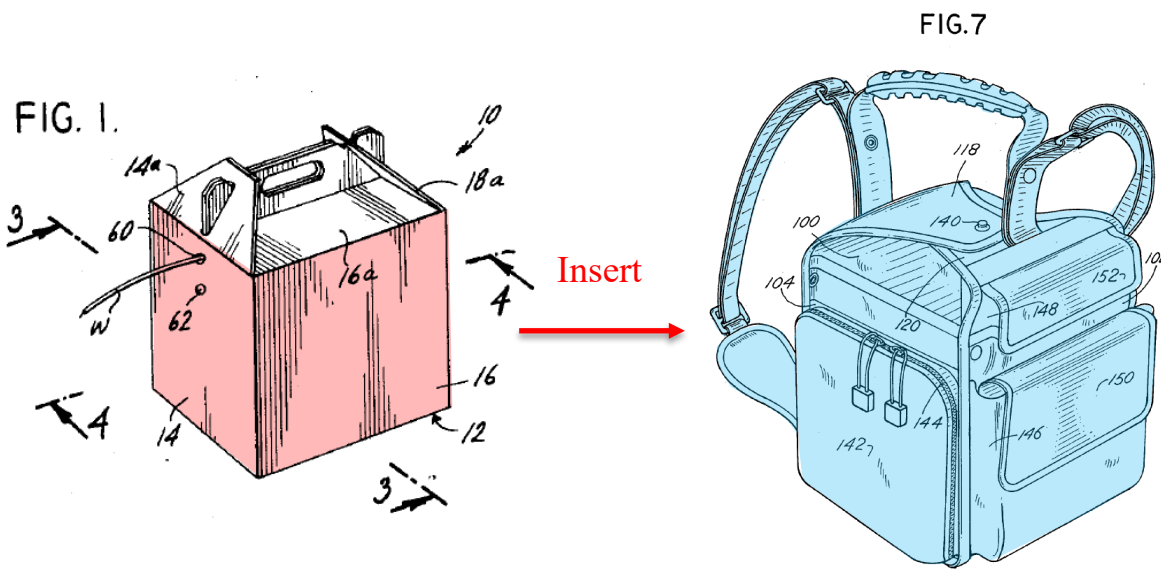
that its bag has opposing flaps 72 and 74 that can be brought together and with fasteners, such as hook and loop fasteners. Ex. 1001, 4:14-40, 7:29-31, FIGS. 1, 3.

3. 10[b]: “a removable insert within the interior of the main compartment;”

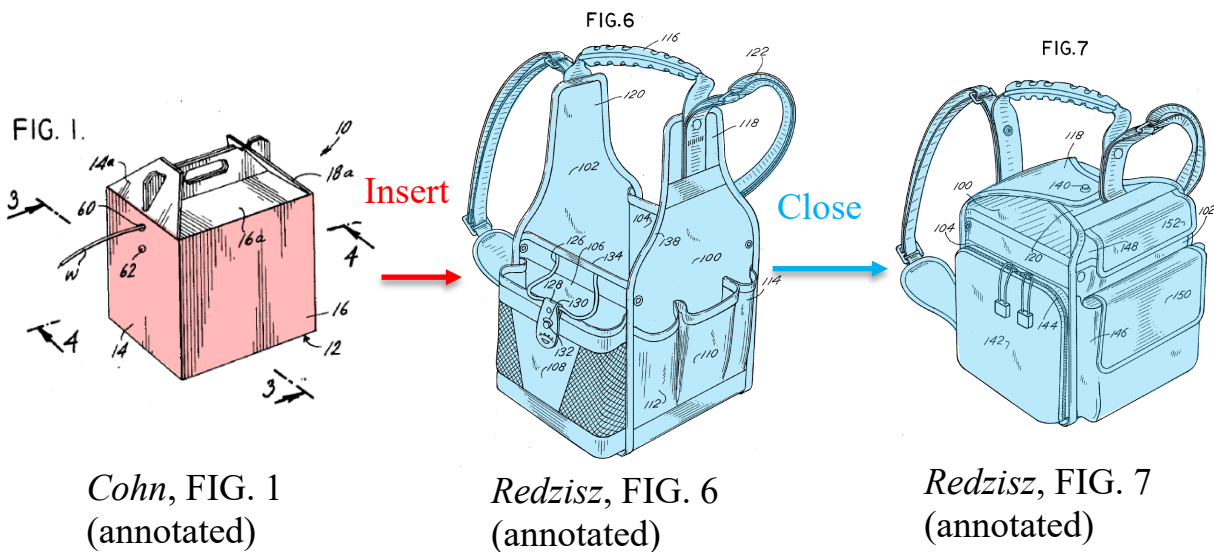
63. In my opinion, the combination of *Cohn* and *Redzisz* described above renders obvious limitation 10[b].

64. As discussed in Section VI (Claim Construction), the claimed “removable insert” should be construed as means-plus-function limitation that has the function of being able to support a cable reel and being able to be removed from the main compartment, and the structure in the specification that corresponds to the function is a structure that includes a box made of solid formed plastic, corrugated plastic, or corrugated cardboard with an open top, or equivalents thereof. Ex. 1001, 2:3-6, 4:56-65, FIG. 4. As shown below, *Cohn* in view of *Redzisz* renders obvious the function and structure as required by this construction. Alternatively, *Cohn* in view of *Redzisz* also renders obvious the claimed “removable insert” if plain and ordinary meaning is applied or under Patent Owner’s constructions.

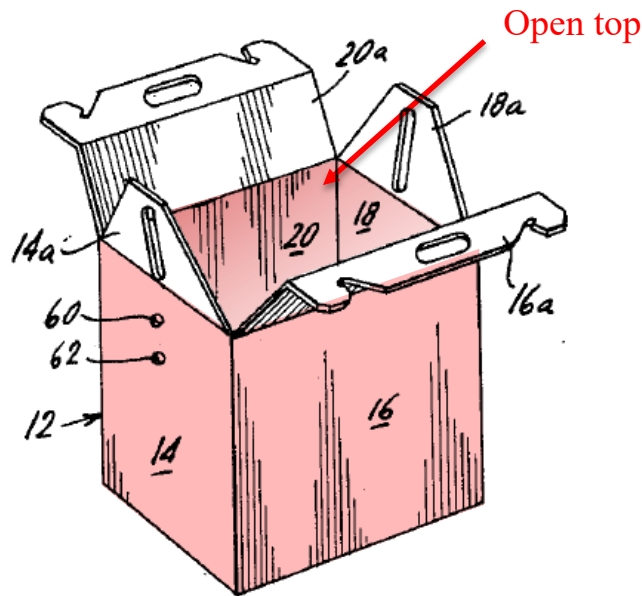
65. As discussed above, a person of ordinary skill in the art would have found it obvious to use *Redzisz*’s bag to carry *Cohn*’s device, as shown below. See Section VIII.A.3.

*Cohn*, FIG. 1 (annotated)*Redzsiz*, FIG. 7 (annotated)

66. *Cohn*'s device would constitute a "removable insert" fit in *Redzsiz*'s bag. A person of ordinary skill in the art would disengage sections 118 and 120 of *Redzsiz*'s bag, insert *Cohn*'s device ("removable insert") into *Redzsiz*'s bag (into the "interior of the main compartment"), and re-engage sections 118 and 120 to re-close the bag, as illustrated below. As such, *Cohn*'s device would be within the interior of the main compartment of *Redzsiz*'s bag.

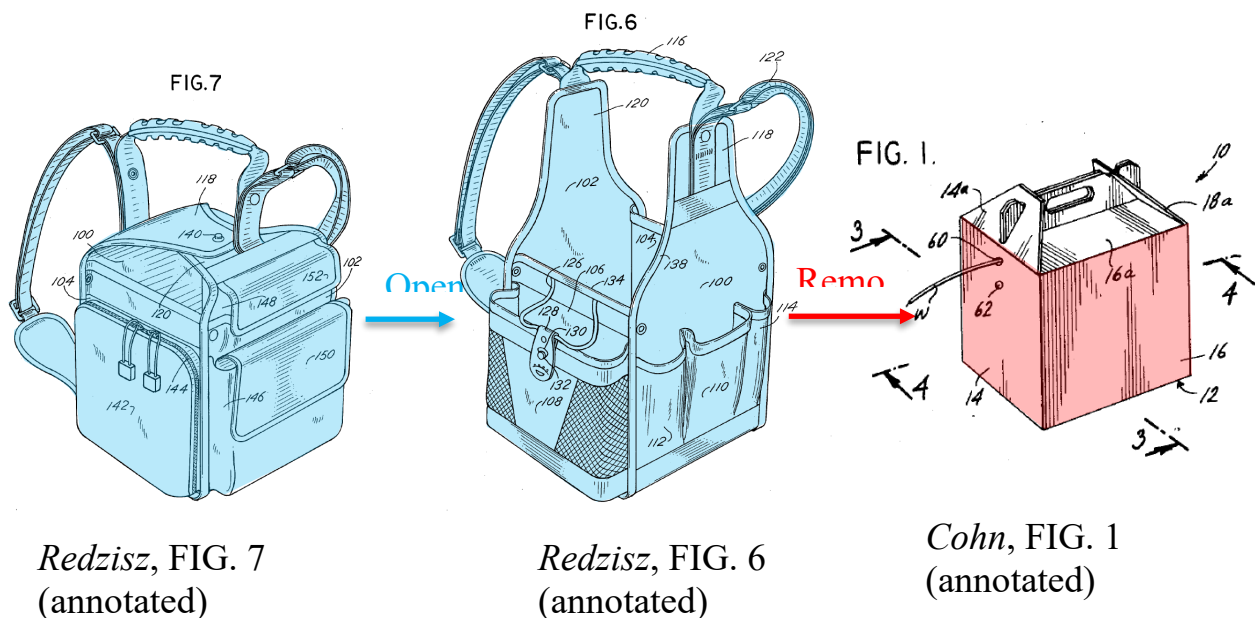


67. Cohn's device includes a box 12 and a cradle 24 that rotatably supports a reel 50 in the box. *Cohn*, 2:15-3:5, FIGS. 1-4. Box 12 and cradle 24 are formed of cardboard, plastic, fiber board, wood, or other material. *Id.*, 3:28-33. As discussed above, when using Redzisz's bag to carry Cohn's device, a person of ordinary skill in the art would have found it obvious to retain the side and bottom of Cohn's box (red below) but eliminate top flaps 14a, 16a, 18a, and 20a. See Section VIII.A.3. As such, Cohn's box 12 would have an open top when the flaps when Cohn's box 12 is carried in Redzisz's bag that has both a carry handle and a shoulder strap, as illustrated below:



Cohn, FIG. 2 (excerpted, annotated).

68. When the cable is paid out, a person of ordinary skill in the art would have known to remove *Cohn*'s device from *Redzsiz*'s bag such that the reel may be replenished or replaced with a fully loaded reel. A person of ordinary skill in the art would have understood that *Cohn*'s device would be removable from *Redzsiz*'s bag by disengaging fastener 14 and sections 118 and 120 to open the bag, and then taking box 12 out of the bag. In other words, *Cohn*'s device ("insert") would be "removable" from the main compartment of *Redzsiz*'s bag as claimed. A person of ordinary skill in the art would have expected success in inserting *Cohn*'s device into and removing it from *Redzsiz*'s bag because such modification merely involves basic practical skills of a person of ordinary skill in the art, as illustrated below. *See* Section VIII.A.3.



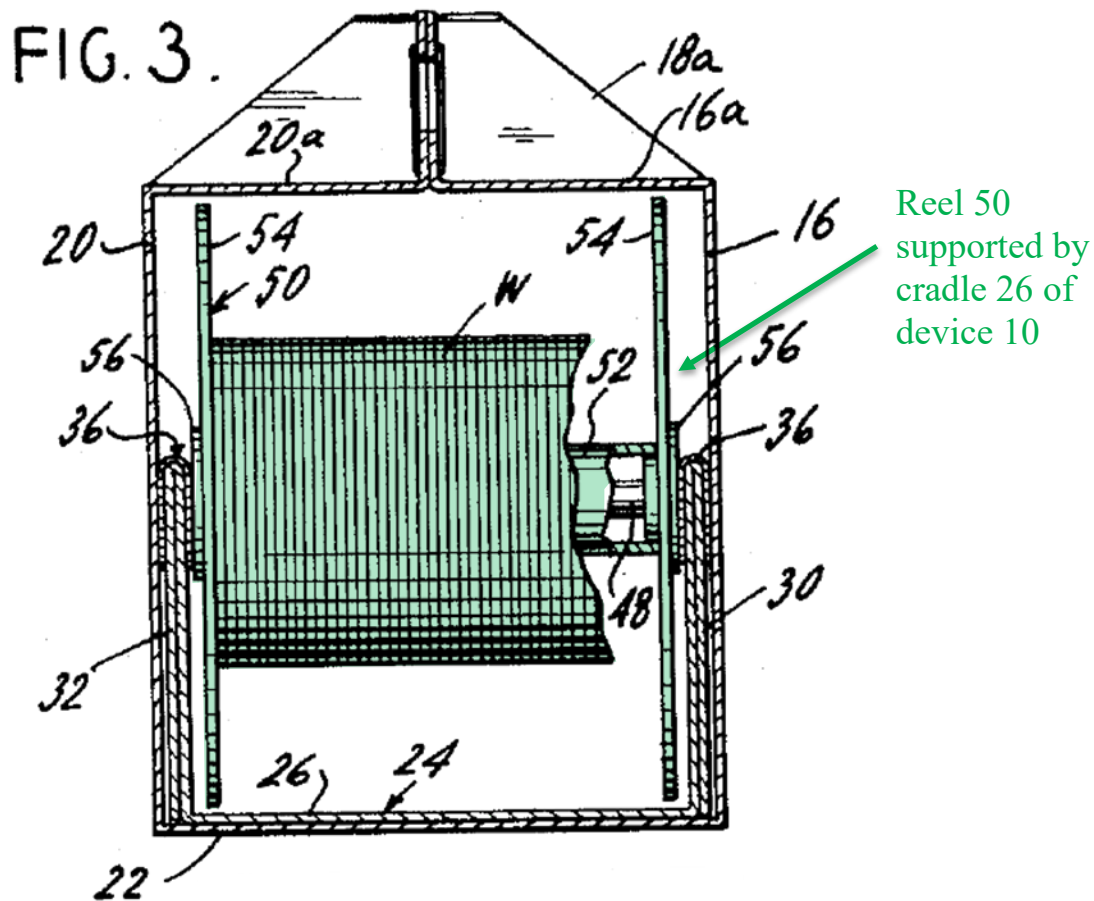
69. *Cohn* and *Redzisz* also render obvious element 10[b] under Patent Owner's proposed claim constructions. *Cohn*'s device, including box 12 and cradle 24, are formed of cardboard, plastic, fiber board, wood, or other material, meeting the requirements of Patent Owner's means-plus-function proposal and alternative plain and ordinary meaning construction. *Cohn*, 3:28-33; see Section VI. As discussed above in Section VIII.A.3.c, a person of ordinary skill in the art would have adjusted the size of *Redzisz*'s bag or the size of *Cohn*'s device such that *Cohn*'s device forms a proper and snug fit in the bag. See Ex. 1022 at 3 ("sized to fit within the main compartment"). And as discussed above, a person of ordinary skill in the art would have known how to insert *Cohn*'s device into or remove it

from *Redzsiz*'s bag. As such, *Cohn*'s device would remain “removable from” and thus not integral with the main compartment of *Redzsiz*'s bag.

4. 10[c]: “a reel of communications cable that is supported by the removable insert, the reel of communications cable having a loose end of cable at an outer portion thereof;”

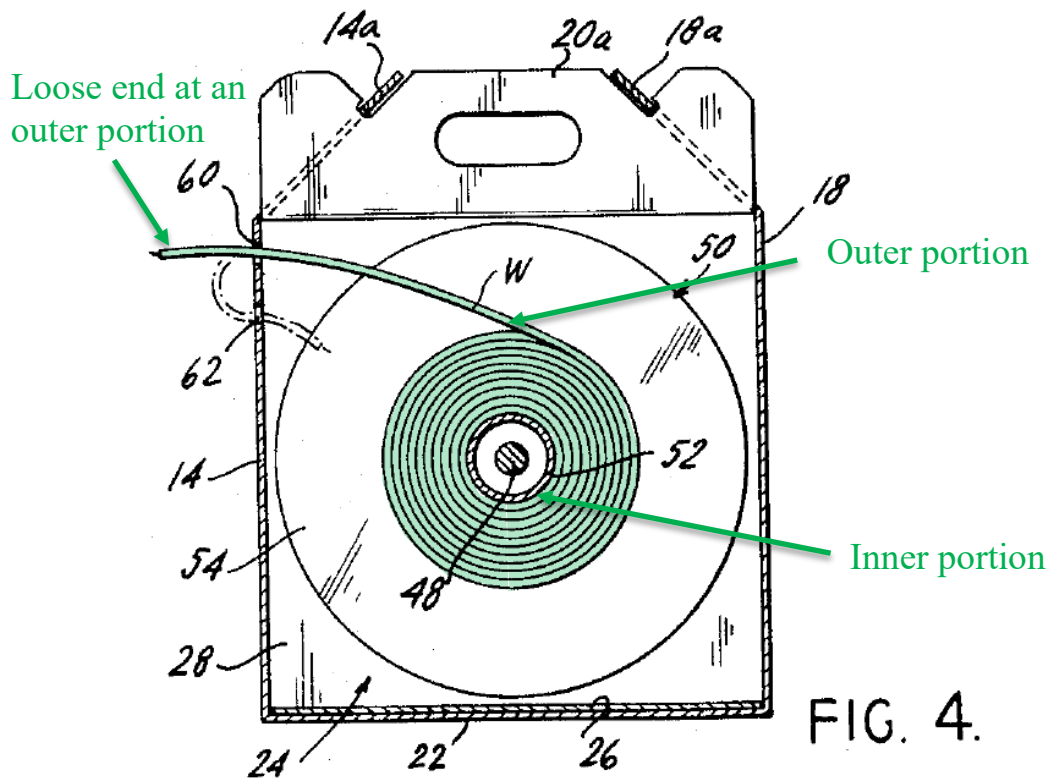
70. In my opinion, the combination of *Cohn* and *Redzsiz* described above renders obvious limitation 10[c].

71. As discussed above in limitation 10[b], *Cohn* in view of *Redzsiz* renders obvious the claimed “removable insert” under the means-plus-function construction discussed in Section VI as well as Patent Owner's constructions. *Cohn*'s device—removable insert—supports reel 50 provided with a load of wire. *Cohn*, 2:15-3:13, FIGS. 1-4. As shown below, *Cohn*'s device 10 supports reel 50 by a cradle 24 provided in box 12 and proportioned to cooperate with box 12 to support spindle 48 of the reel. *Id.*, 2:31-3:20, FIGS. 1-4.



Id., FIG. 3 (annotated).

72. *Cohn* describes that the device is used for items wound around reels, such as wire. *Id.*, 1:1-13. As shown below, *Cohn* discloses that the reel of wire has a loose end at an outer portion thereof and the wire is paid out from the reel outwardly through a wire opening 60. *Id.*, 3:20-22, FIGS. 1, 3-4.



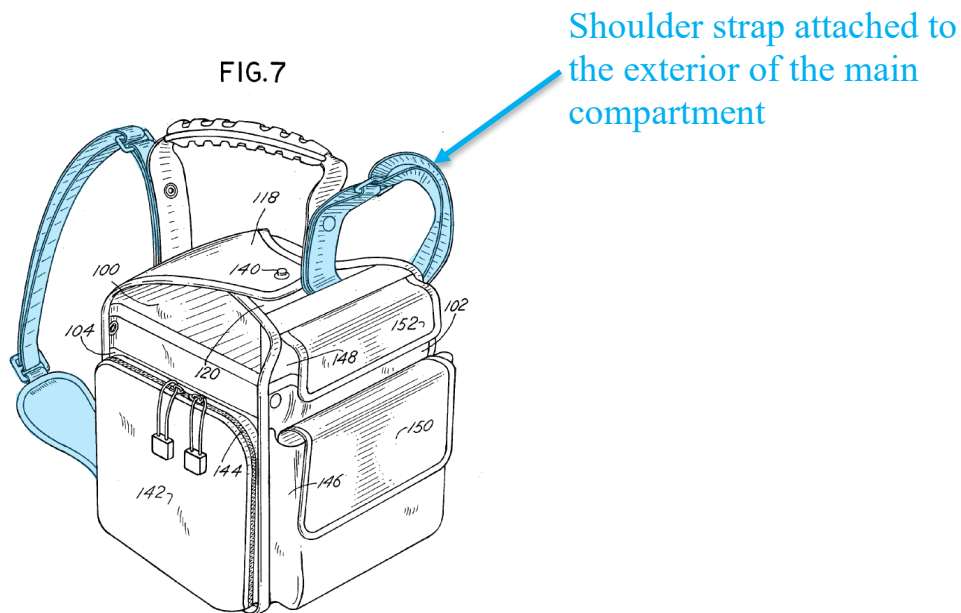
Id., FIG. 4 (annotated).

73. A person of ordinary skill in the art would have understood communication cables often would be wound on a reel for easy payout like wires (see *Bass, Barnett, Holmes, Fontana*), and would have found it obvious to use *Cohn's* device for paying out communication cables wound around a reel similar to *Cohn's* wire. A person of ordinary skill in the art would have understood that paying out cable from a rotatably supported reel from the outer portion instead of the inner portion prevents twists or kinks during cable payout. See *Holmes*, 1:40-65; see below Sections IX.A.3, X.A.2.

5. 10[d]: “a shoulder strap attached to the exterior of the main compartment;”

74. In my opinion, the combination of *Cohn* and *Redsziz* described above renders obvious limitation 10[d].

75. *Redsziz*'s bag has a shoulder strap 122 attached to the exterior of the main compartment, just outside the upper ends 118, 120 of first and second panels 100, 120. *Redsziz*, [0035], FIGS. 6-7.

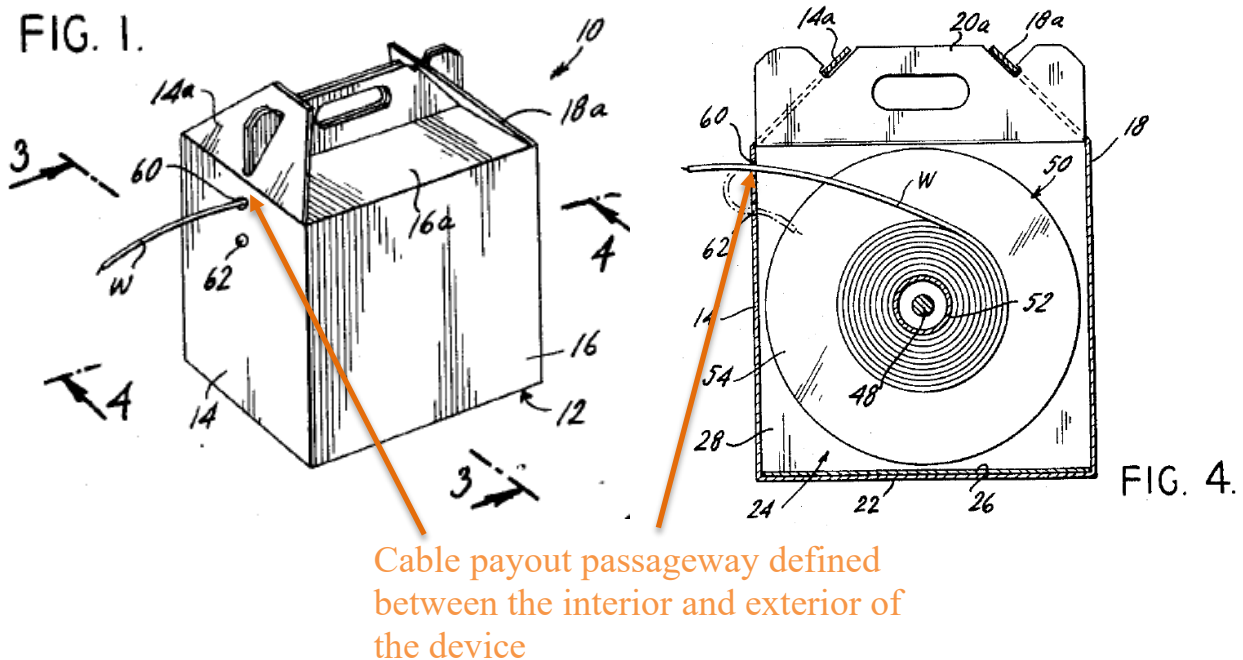


Id., FIG. 7 (annotated).

6. **10[e]: “a cable payout passageway defined between the interior and the exterior of the main compartment, the cable payout passageway configured to receive therethrough the loose end of cable from the outer portion of the reel of communications cable; and”**

76. In my opinion, the combination of *Cohn* and *Redzsiz* described above renders obvious limitation 10[e] in two ways.

77. First, as shown below, *Cohn* discloses that the device includes a wire opening 60 through which the wire can be paid out outwardly from the reel. *Cohn*, 3:20-22, FIGS. 1, 4. *Cohn*'s wire opening 60 constitutes, or at least renders obvious, a cable payout passageway defined between the interior and exterior of the device, through which the loose end of the cable wound on the reel passes through from the outer portion of the reel.

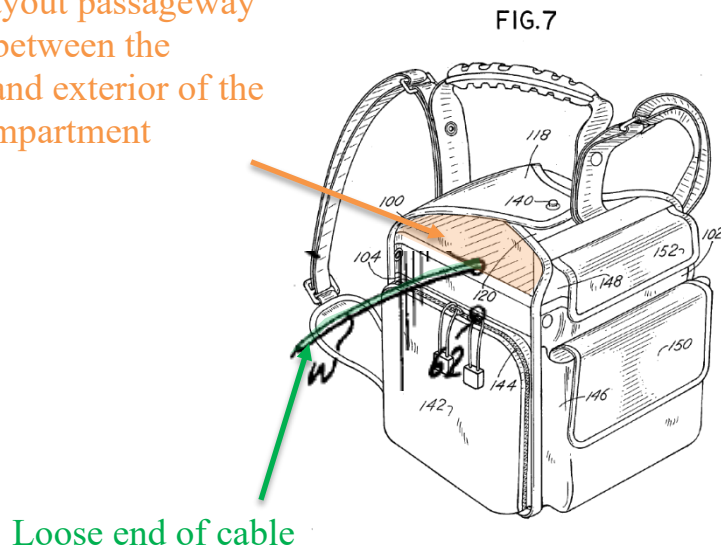


Id., FIGS. 1, 4 (annotated).

78. In *Cohn* combined with *Redzsiz*, a person of ordinary skill in the art would have been motivated to modify *Redzsiz*'s bag to have an opening that aligns with *Cohn*'s wire opening to receive the loose end cable exiting *Cohn*'s device. This would allow cable to payout from the reel and bag without additional twisting or hindrance. A person of ordinary skill in the art would have known how to create such corresponding opening in *Redzsiz*'s bag, such as by measuring and marking the location of the opening of *Cohn*'s device when it is placed in *Redzsiz*'s bag and using a punch or cutting tool to create the opening using ordinary skill. A person of ordinary skill in the art would have understood that such an opening in *Redzsiz*'s bag would constitute "a cable payout passageway defined between the interior and the exterior of the main compartment" because the loose end of the cable would pass through it from the interior to the exterior of the bag.

79. Second, as an alternative option and as illustrated below, a person of ordinary skill in the art would have been motivated to use the opening ("cable payout passageway") at the top of *Redzsiz*'s bag—after the upper sections of the panels are folded over and joined together—to allow the loose end of the cable passes from the interior to the exterior of the bag. Such use of the *Redzsiz*'s bag would be within the basic practical skill of a person of ordinary skill in the art.

Cable payout passageway
defined between the
interior and exterior of the
main compartment



Cohn, FIG. 1 (excerpted, annotated); *Redzisz*, FIG. 7 (modified, annotated).

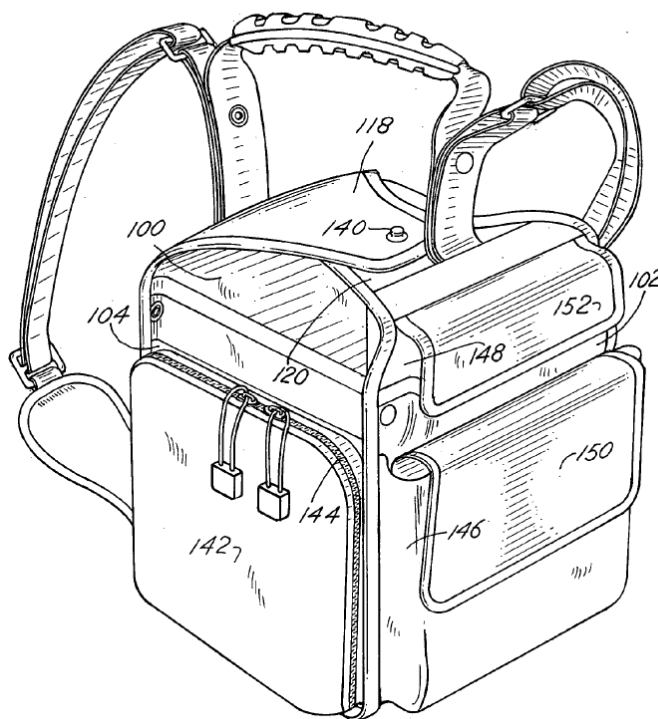
7. **10[f]: “a closure mechanism configured to close the main compartment to thereby close the removable insert and the reel of communications cable in the interior of the main compartment;”**

80. In my opinion, the combination of *Cohn* and *Redzisz* described above renders obvious limitation 10[f].

81. *Redzisz*’s bag is designed to close. *Redzisz*, [0038], FIG. 7. As shown below in *Redzisz* Figure 7, upper sections 118 and 120 of first and second panels 100, 102 can be folded over and attached together by a fastener 140 “to enclose the contents of the bag or case.” *Id.* A person of ordinary skill in the art would have understood these components of *Redzisz*’s bag were a “closure mechanism” configured to close the bag’s contents in the “interior of the main compartment,” as claimed. *Id.*; *see also id.*, [0035] (“those end panels to be folded one over the other

and fastened together to thereby facilitate retention of tools or other items within the bag case or container”).

FIG. 7



Redzsiz, FIG. 7.

82. As discussed above in Section VIII.A.3, a person of ordinary skill in the art would have been motivated to use *Redzsiz*’s bag to carry *Cohn*’s device. In *Cohn* combined with *Redzsiz*, after *Cohn*’s device is assembled and inserted into *Redzsiz*’s bag, closing *Redzsiz*’s bag would have closed *Cohn*’s device (“removable insert”) and reel of wound material, e.g., communication cable (“the reel of

communications cable”), in the interior of *Redzsiz*’s “main compartment” formed by the bottom portion and flaps. *Cohn*, 3:6-20, FIGS. 3-4; *Redzsiz*, [0038], FIG. 7.

8. 10[g]: “wherein the main compartment has a substantially rectangular profile when the removable insert and the reel of communications cable are closed in the interior thereof.”

83. In my opinion, the combination of *Cohn* and *Redzsiz* described above renders obvious limitation 10[g].

84. *Redzsiz*’s bag has a generally rectangular shape in each of its dimensions. *Redzsiz*, FIGS. 6-9. So does *Cohn*’s device. *Cohn*, FIG. 1. Indeed, *Cohn* describes its device as “a generally rectilinear box having a bottom and four side walls as well as a customary top.” *Cohn*, 1:48-52, *see also id.*, 2:22-30. A person of ordinary skill in the art would therefore have understood that *Redzsiz*’s bag and *Cohn*’s rectilinear box both had a substantially rectangular profile. A person of ordinary skill in the art would have understood that a generally rectilinear box has a substantially rectangular profile because a rectilinear box would have straight edges meeting at right angles, forming a rectangular profile.

85. In *Cohn* combined *Redzsiz*, *Cohn*’s device, including its rectilinear box (“removable insert”) and reel (“the reel of communications cable”) would be inserted into and closed in the interior of *Redzsiz*’s bag. A person of ordinary skill in the art would have adjusted the size of *Redzsiz*’s bag such that *Cohn*’s device

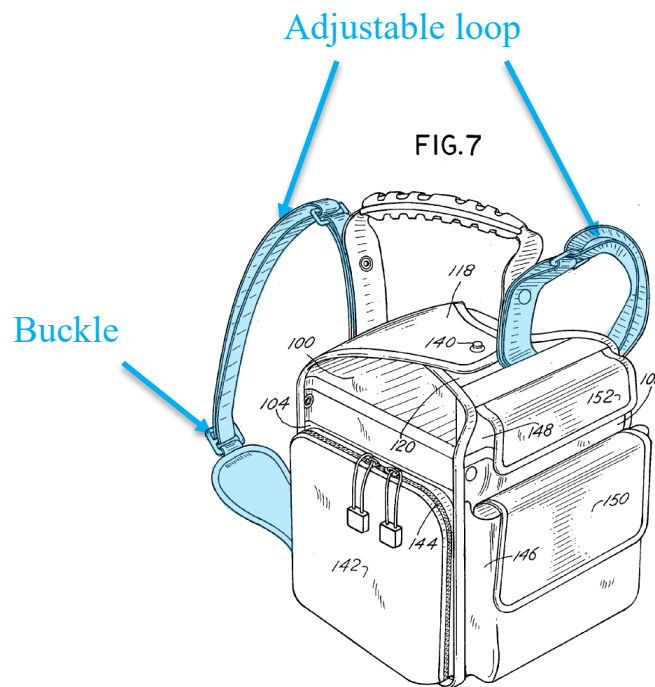
forms a proper and snug fit in the bag, thereby maintaining the rectangular profile of the bag. A person of ordinary skill in the art would have understood that a proper and snug fit would allow for smooth and even payout of the cable by, for example, preventing the device from shifting during transportation and cable installation, and also would reduce wear and tear of *Redzsiz*'s bag and *Cohn*'s box. *See* Section VIII.A.3. A person of ordinary skill in the art would have a reasonable expectation of success in fitting these components to arrive at a main compartment with a substantially rectangular profile because such routine optimizations would only require ordinary skills of one skilled. *See* Section VIII.A.3.

C. Dependent Claim 11: “The communications cable payout bag of claim 10, wherein the shoulder strap comprises a single adjustable shoulder strap, and wherein the shoulder strap can be adjusted to a length of at least 37 inches.”

86. As discussed above, *Cohn* and *Redzsiz* render obvious claim 10. In my opinion, the combination of *Cohn* and *Redzsiz* described above renders obvious claim 11.

87. *Redzsiz*'s bag has a shoulder strap 122 with buckles and loops, as shown below. *Redzsiz*, [0038], FIGS. 6-9. A person of ordinary skill in the art would have understood that the length of the shoulder strap may be adjusted by moving the buckle and adjusting the length of the loops and would have had a reasonable expectation of success in making such adjustment using ordinary skill.

See Nunez, 2:48-50, 3:20-47, FIGS. 1-3. And a person of ordinary skill in the art would have found it obvious to make this shoulder strap adjustable to a length of at least 37 inches so that the bag could be held over different users' shoulders.



Redzsiz, FIG. 7 (annotated).

88. A person of ordinary skill in the art would have understood that the length of the shoulder strap would be a result-effective variable that affects the comfort and ease of carrying the bag. A person of ordinary skill in the art would have known to select a range of lengths, through routine experimentation, to optimize support from the back, relieve weight on the shoulder, and thereby reduce effort and risk of injury to the cable installer. For example, a person of ordinary

skill in the art would have known how to make the length of the shoulder strap adjustable using common components, such as adjustable buckles, which would have been within the ordinary skills of a person of ordinary skill in the art. *See Nunez*, 2:48-50, 3:20-47, FIGS. 1-3.

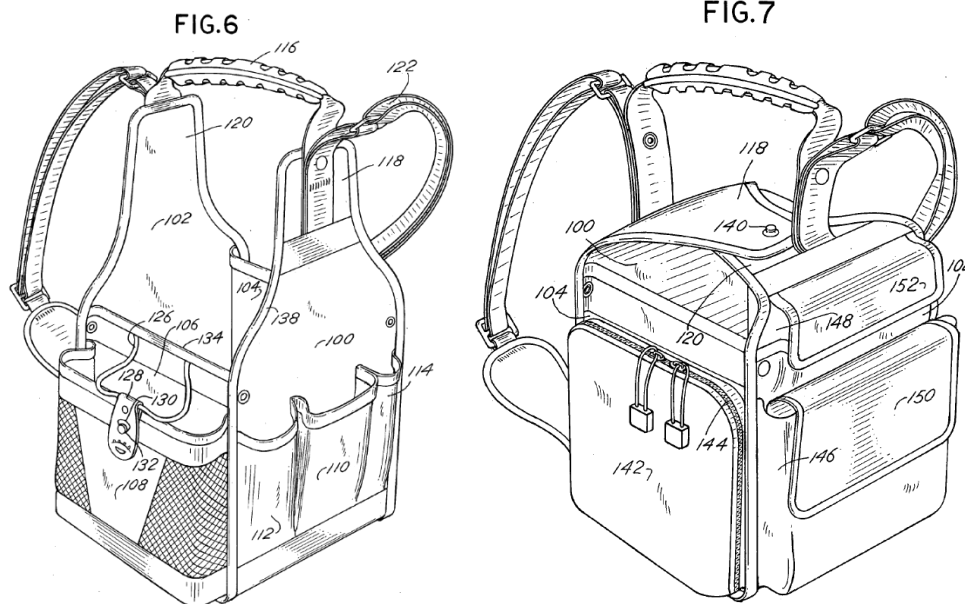
89. The design of an adjustable shoulder strap that can be adjusted to at least 37 inches in length would have been well known to a person of ordinary skill in the art at the time. Adjustable shoulder straps are designed to accommodate a wide range of user heights. Such a length falls squarely within the commonly used size spectrum for adjustable straps. Ex. 2019 (“[S]trap is adjustable from 32 to 50 inches in length.” “General sizes are 32, 36, and 40 inch”); Ex. 2020, 11:22-26 (teaching a pair of adjustable, removable extension straps that provides extension of total strap length up to approximately 48 inches); 19:62-65 (teaching “vertically from a shoulder for a maximum strap length adjustability of approximately forty-eight inches”). A person of ordinary skill in the art would have been aware of the standard range of adjustable strap length and standard height variations and would have chosen an adjustable length including 37 inches to account for a wide range of user heights. The prevalence of shoulder straps with adjustable length in the market demonstrates their utility. A length of at least 37 inches would have been an

intuitive choice for inclusion in an adjustable shoulder strap design and nothing more than an expected and commonplace design choice.

D. Dependent Claim 12: “The communications cable payout bag of claim 10, further comprising at least one storage pouch on the exterior of the main compartment.”

90. As discussed above, *Cohn* and *Redzsiz* render obvious claim 10. In my opinion, the combination of *Cohn* and *Redzsiz* renders obvious claim 12.

91. *Redzsiz* discloses adding “auxiliary pouches” on the outside of its bag (“on the exterior of the main compartment”), such as, for example, pouches 108, 110, 112, and 144 shown in Figure 6 and pouches 142, 146, 148 shown in Figure 7. *Redzsiz* [0035], [0038], FIGS. 6-7. These pouches accommodate storage of tools or other items. *Redzsiz* [0035], [0036], [0038]; *see above* Section VIII.A.2.



Redzsiz, FIGS. 6-7.

E. Independent Claim 9

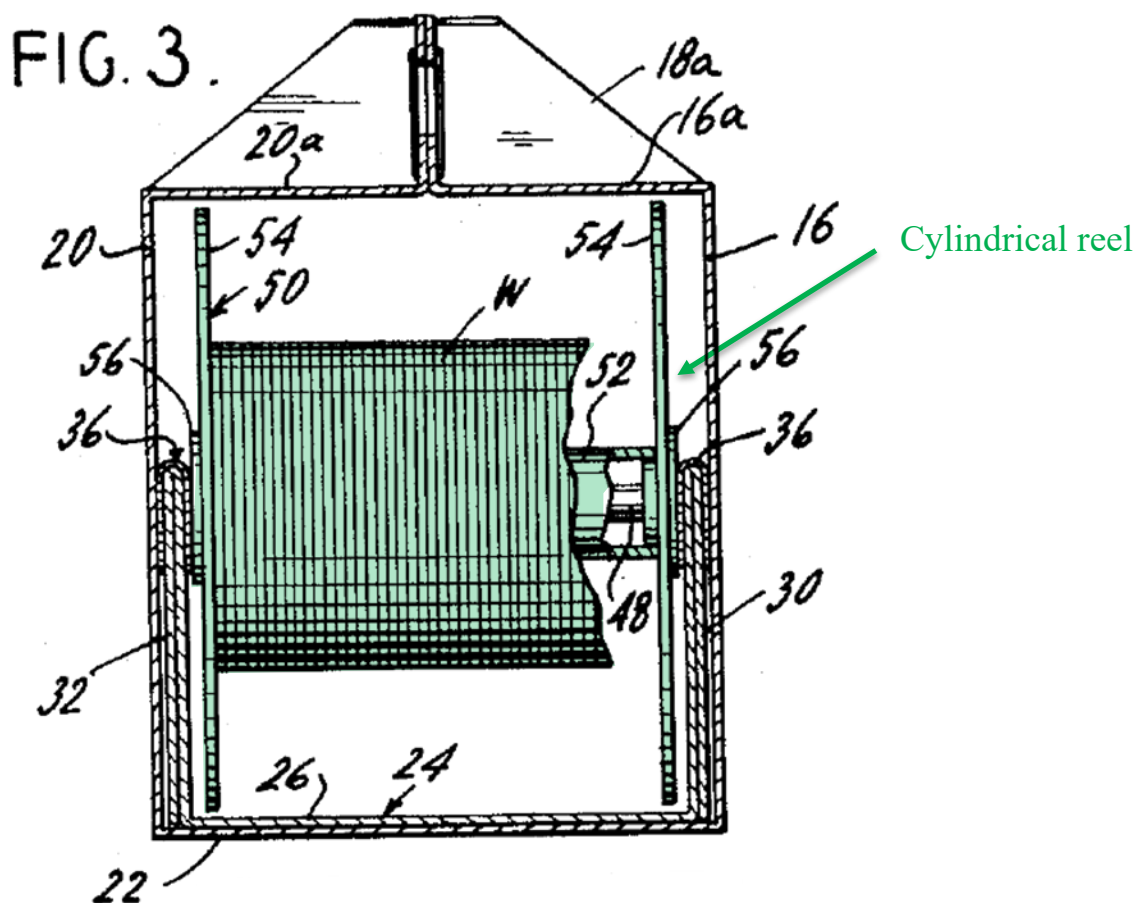
- 1. 9[pre]: “A method of paying out communications cable from a bag that includes a main compartment and a cable payout passageway, the method comprising:”**

92. The combination of *Cohn* and *Redzisz* described above renders obvious limitation 9[pre]. As discussed above in limitations 10[pre], 10[a], and 10[e], the combination of *Cohn* and *Redzisz* renders obvious a communications cable payout bag that includes a main compartment and a cable payout passageway. *See above* Sections VIII.B.1, VIII.B.2, VIII.B.6. A person of ordinary skill in the art would have understood that using *Redzisz*’s bag for carrying *Cohn*’s device for cable payout would be a method of paying out communications cable from a bag that includes a main compartment and a cable payout passageway.

- 2. 9[a]: “inserting a removable plastic insert and a cylindrical reel of communications cable supported by the removable insert in the main compartment,”**

93. The combination of *Cohn* and *Redzisz* described above renders obvious limitation 9[a]. As discussed above in limitation 10[b], in *Cohn* combined with *Redzisz*, *Cohn*’s device would constitute a “removable insert” to fit in *Redzisz*’s bag. *See above* Section VIII.B.3. *Cohn* further discloses that the device includes a box 12 and a cradle 24 that are formed of cardboard, plastic, fiber board, wood, or other material. *Cohn*, 2:15-3:5, 3:28-33, FIGS. 1-4. Thus, *Cohn*’s device, when formed of plastic, would constitute a “removable plastic insert.” And as

discussed above in limitation 10[c], the combination of *Cohn* and *Redzisz* renders obvious “a reel of communications cable that is supported by the removable insert.” See above Section VIII.B.4. Also as shown below, a person of ordinary skill in the art would have understood that *Cohn*’s reel is a cylindrical reel because it has a cylindrical hub connecting two parallel disks that allow cable to be wound and stored on the reel.



Cohn, FIG. 3 (annotated).

94. A person of ordinary skill in the art would have understood that when using *Redzisz*'s bag for carrying *Cohn*'s device for cable payout, *Cohn*'s device ("removable plastic insert") would be supporting its reel ("cylindrical reel of communications cable") and be inserted into the interior of *Redzisz*'s bag ("main compartment") via the open top of the bag. *See above* Sections VIII.A.3 VIII.B.3. *Cohn* and *Redzisz* also render obvious limitation 9[a] under Patent Owner's proposed claim constructions. *Cohn*'s devices, including box 12 and cradle 24, can be formed of plastic, meeting the requirements of Patent Owner's means-plus-function proposal. *Cohn*, 3:28-33. And as discussed in limitation 10[b], *Cohn*'s devices would be "sized to fit within the main compartment" of *Redzisz*'s bag and would remain "removable from" and "not integral with" the main compartment. And a person of ordinary skill in the art would have understood how to fit *Cohn*'s device in *Redzisz*'s bag and how to remove *Cohn*'s device from *Redzisz*'s bag during ordinary skills and would have had a reasonable expectation of success in doing so. *See above* Section VIII.B.3.

3. 9[b]: "wherein the reel of communications cable has a loose end of cable at an outer portion thereof, and"

95. This limitation is encompassed by limitation 10[c]. The combination of *Cohn* and *Redzisz* described above renders obvious limitation 9[b] for the reasons discussed in limitation 10[c]. *See above* Section VIII.B.4.

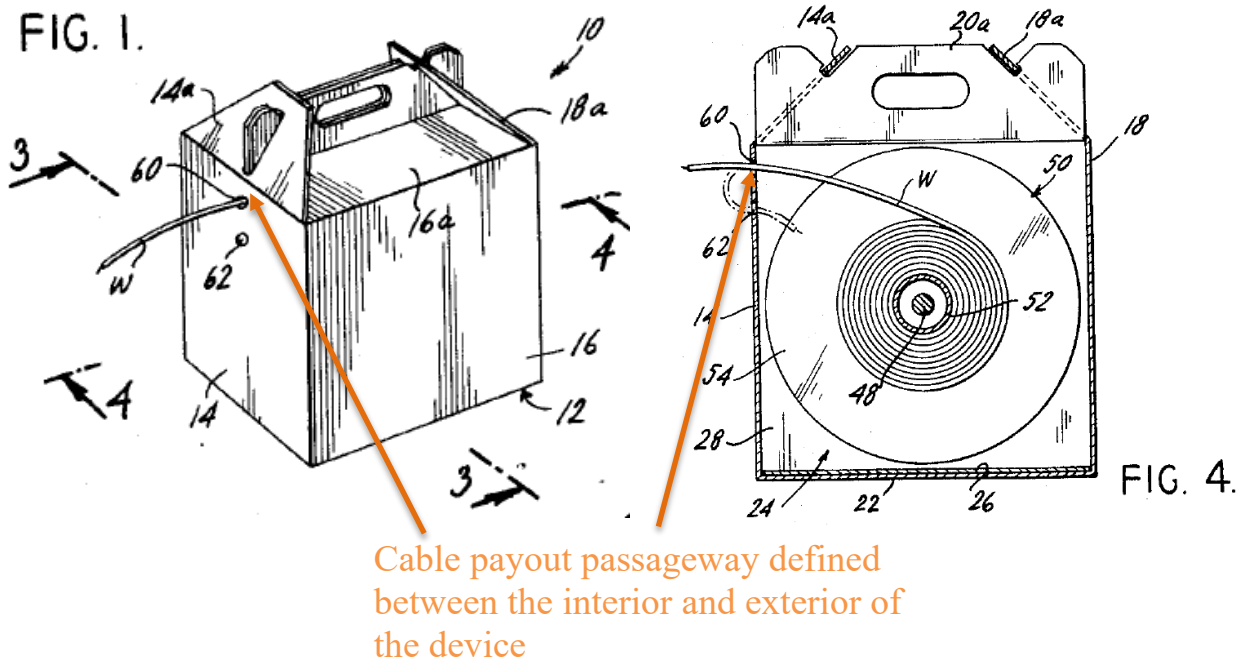
4. 9[c]: “wherein the main compartment is constructed of a flexible material;”

96. This limitation is encompassed by limitation 10[a]. The combination of *Cohn* and *Redzisz* described above renders obvious limitation 9[c] for the reasons discussed in limitation 10[a]. *See above* Section VIII.B.2.

5. 9[d]: “aligning the loose end of cable from the outer portion of the reel of communications cable with the cable payout passageway; and”

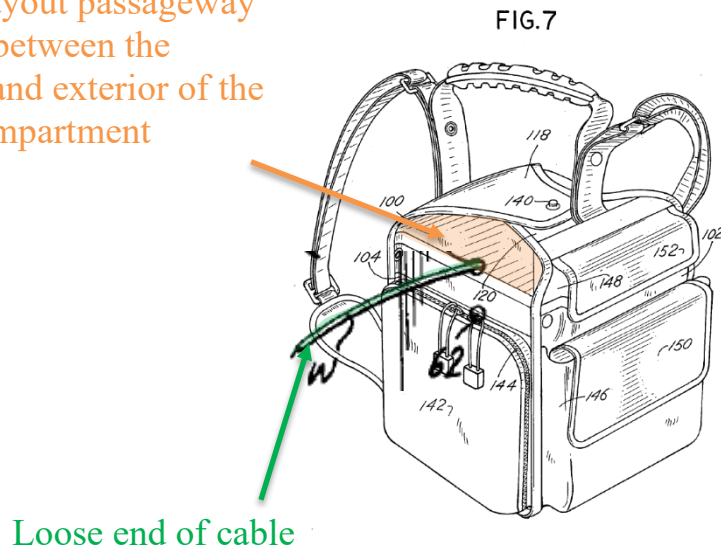
97. The combination of *Cohn* and *Redzisz* described above renders obvious limitation 9[d]. As discussed above in limitations 9[pre] and 9[b], the combination of *Cohn* and *Redzisz* renders obvious “a cable payout passageway” and “a loose end of cable at an outer portion” of the reel of communications cable. *See above* Sections VIII.D.1, VIII.D.3; *see also* Sections VIII.B.4, VIII.B.6. And as discussed above, in *Cohn* combined with *Redzisz*, a person of ordinary skill in the art would have been motivated to modify *Redzisz*’s bag to have a cable payout passageway that aligns with *Cohn*’s wire opening, which receives the loose end cable from the outer portion of the reel exiting *Cohn*’s device, as shown below in *Cohn*’s Figures 1 and 4. A person of ordinary skill in the art would have understood that such alignment would allow cable to be paid out from the outer portion of the reel and from the bag without additional twisting or hindrance. And, when using *Redzisz*’s bag for carrying *Cohn*’s device for cable payout, a person of

ordinary skill in the art would have aligned the loose end of cable from the outer portion of the reel of communications cable with the cable payout passageway of Redzisz's bag such that the cable would exit from the interior of the bag to the exterior of the bag to be paid out.



Id., FIGS. 1, 4 (annotated). Alternatively, a person of ordinary skill in the art would have found it obvious to use the opening at the top of Redzisz's bag to allow the loose end of the cable to pass from the interior to the exterior of the bag, as shown below.

Cable payout passageway
defined between the
interior and exterior of the
main compartment



Cohn, FIG. 1 (excerpted, annotated); *Redzisz*, FIG. 7 (modified, annotated).

6. 9[e]: “pulling the loose end of cable through the cable payout passageway.”

98. The combination of *Cohn* and *Redzisz* described above renders obvious limitation 9[e]. When using *Redzisz*’s bag for carrying *Cohn*’s device for cable payout, a person of ordinary skill in the art would have known to pull the loose end of cable through the cable payout passageway of *Redzisz*’s bag to draw out a length of the cable. See *Bass*, 8:36-42 (pulling a desired length of cable through payout passage); *Fontana*, 4:14-19 (pulling the free end of cable to unwind the cable coil on a spool). A person of ordinary skill also would have known that such pulling allows the reel to rotate to facilitate cable payout. *Holmes*, 4:12-16 (pulling a cable at a tangent with respect to the cable causes the reel to rotate).

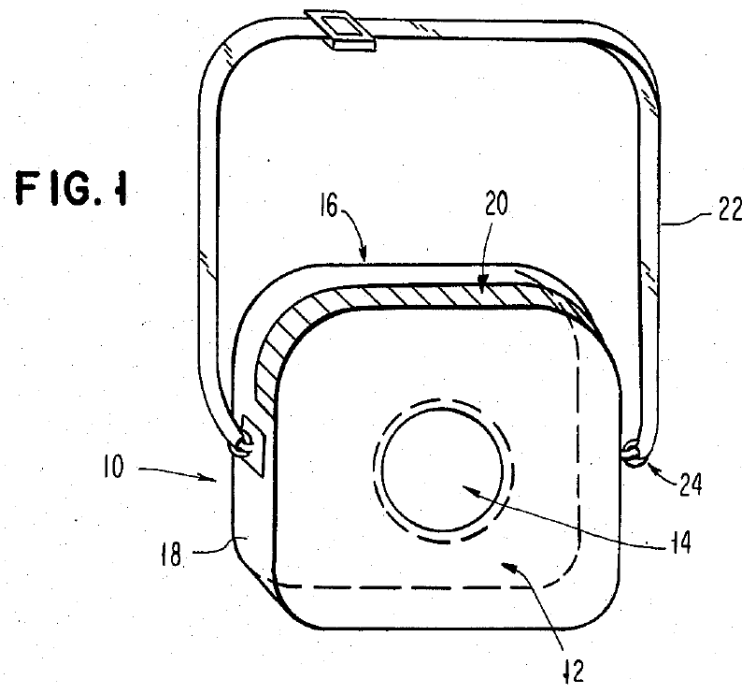
IX. [GROUND 3] YOUNG IN VIEW OF BASS RENDERS OBVIOUS CLAIMS 9-11

99. In my opinion, *Young* in view of *Bass* renders obvious claims 9-11.

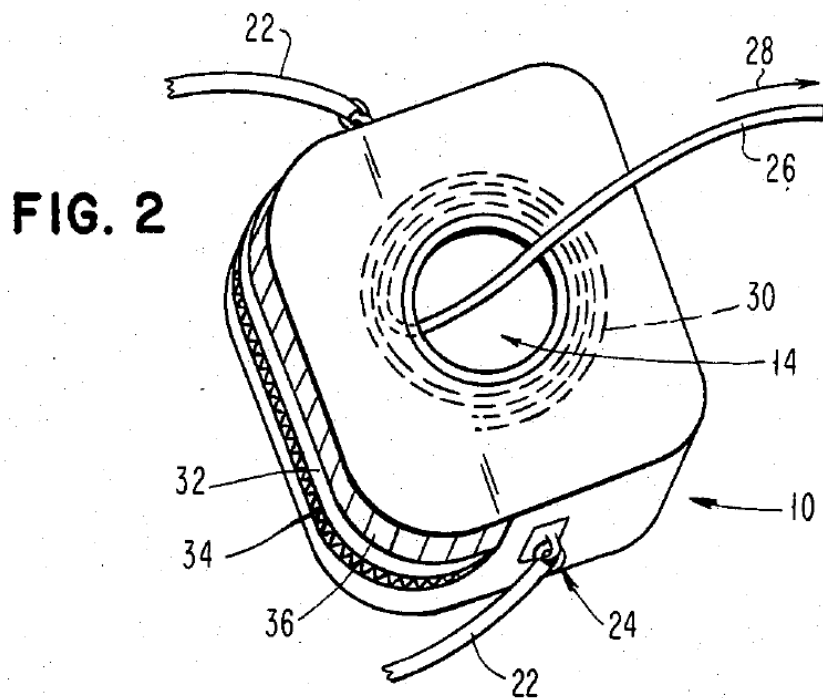
A. *Young* in View of *Bass***1. Overview of *Young* (Ex. 1007)**

100. *Young* was filed on August 9, 1985, and granted on March 17, 1987 (*Young*, cover), over one year before the priority date of the '697 patent. I have thus been informed that *Young* qualifies as prior art to the '697 patent under at least 35 U.S.C. § 102 (b).

101. *Young* discloses a cable payout container 10 for carrying and dispensing electrical cable. *Young*, 1:6-12, 4:21-32, 5:1-8, FIGS. 1-2. As shown below, container 10 is made of a strong and flexible material, such as nylon, sailcloth, canvas, etc. *Id.*, 1:6-12, 3:41-44, 4:17-20, 4:60-68, 6:10-15. Container 10 includes a front face 12, a rear face 16, sides 18, and a closable opening for inserting and removing cable from the interior of container 10. *Id.*, 5:1-8, 5:45-50, FIGS. 1-2. The opening can be closed by Velcro closure, zipper, or closure snaps. *Id.*, 5:8-14, FIGS. 1-2. Container 10 includes an adjustable strap 22 for carrying the container during use. *Id.*, 5:27-30. Front face 12 includes an exit opening 14 for cable payout from the inner portion of a coil in the container. *Id.*, 5:1-4, 5:50-58.



Id., FIG. 1.



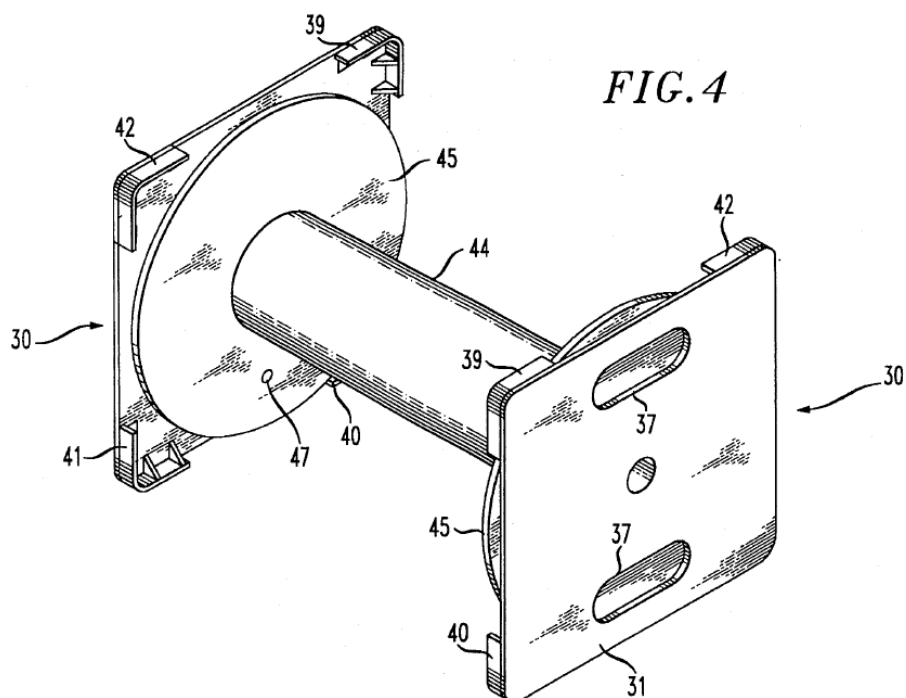
Id., FIG. 2.

102. *Young* is analogous to the '697 patent because they both relate to providing a container for carrying and paying out cable. *Id.*, 1:6-12; Ex. 1001, 1:5-59; *see* Section V.A (Overview of the '697 Patent).

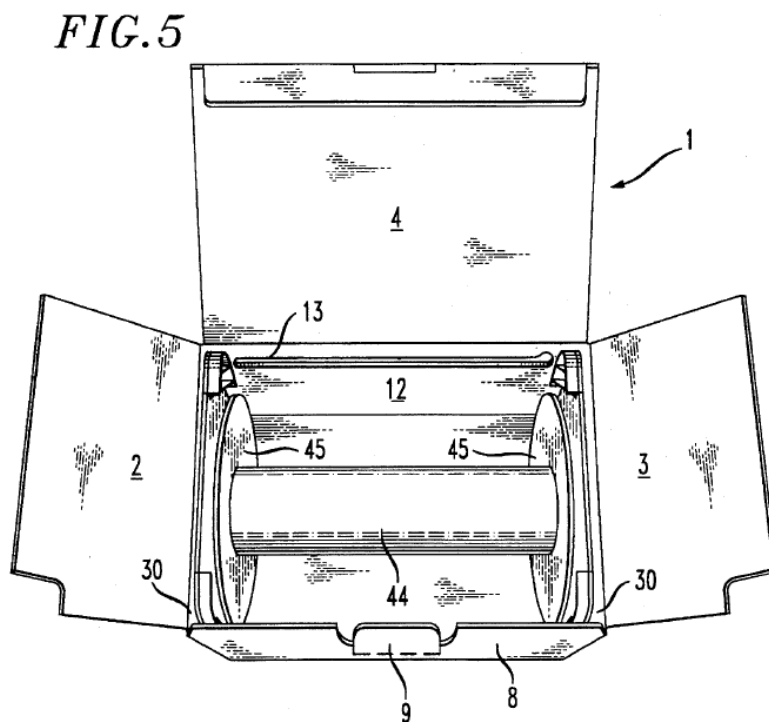
2. Overview of *Bass* (Ex. 1009)

103. *Bass* was filed on December 9, 1994, and granted on June 25, 1996 (*Bass*, cover), over one year before the priority date of the '697 patent. I have thus been informed that *Bass* qualifies as prior art to the '697 patent under at least 35 U.S.C. § 102 (b).

104. *Bass* discloses a boxed spool assembly that includes a reel 44 with two flanges 45, a pair of end plates 30 for rotatably supporting the reel, and a box 1 in which the spool assembly and end plates are placed. *Bass*, 2:7-17, 7:39-67, 8:1-23, FIGS. 4-5. End plates 30 have corner supports 39-42 that maintain the box in the proper configuration and prevent the corners of the end plates from cutting through the box. *Id.*, Abstract, 2:67-3:9, 6:61-7:23.



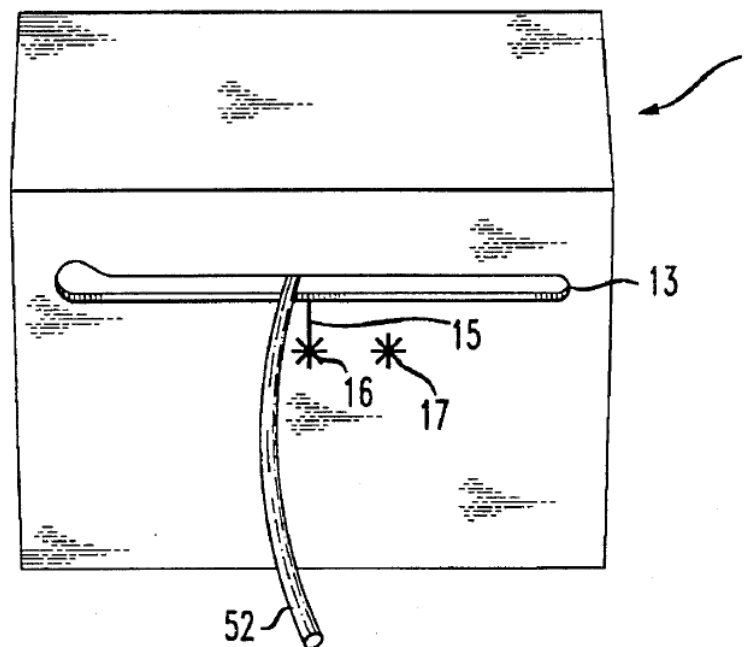
Id., FIG. 4.



Id., FIG. 5.

105. *Bass's* box 1 includes two starburst cuts 16 and 17. *Id.*, 4:9-26, 8:23-25, FIG. 6. Reel 44 wound with optic fiber cable together with supporting end plates 30 are placed inside of the box. *Id.*, 4:62-65, 8:1-23, FIGS. 4-5. The loose end of the optic fiber cable is fed out of the box through starburst cut 16 and then back into box 1 through starburst cut 17 to hold the loose end and prevent it from retracting to the box or from dangling. *Id.*, 4:9-26, 8:23-25. Box 1 further includes a horizontal slot 13 from where cable is paid out. *Id.*, 4:1-11, 8:32-40.

FIG. 6

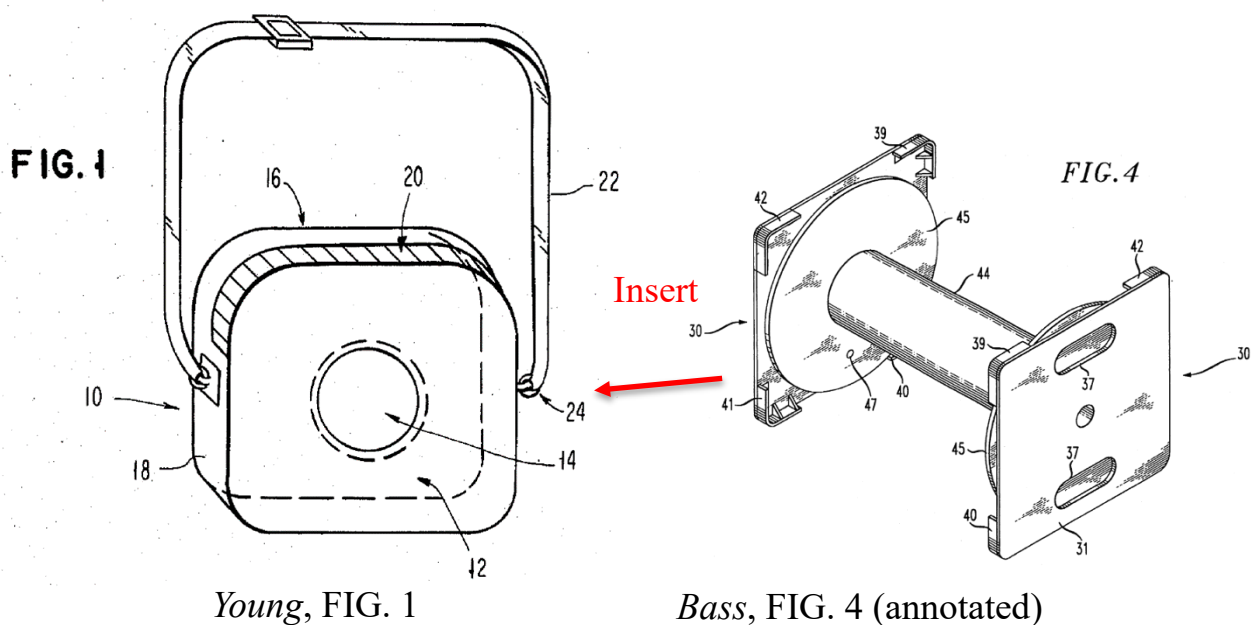


Id., FIG. 6.

106. *Bass* is analogous to the '697 patent and *Young* because it also relates to an apparatus and method for carrying and paying out cable. *Id.*, Abstract, 1:9-10; Ex. 1001, 1:5-59; *see* Section V.A (Overview of the '697 Patent).

3. A Person of Ordinary Skill in the Art Would Have Found It Obvious to Combine *Young* and *Bass*.

107. A person of ordinary skill in the art would have found it obvious to use *Bass*'s reel and end plates supporting the reel in *Young*'s cable payout bag to facilitate cable payout and prevent cable damage, as shown below.



108. A person of ordinary skill in the art would have understood that using *Bass*'s reel and end plates supporting the reel would address the design deficiencies of *Young*'s bag for paying out cable. *Young* discloses paying out cable from the center of the coil of cable, the loose end of which exits the bag through an

exit opening. *Young*, 4:36-38, 5:45-58. A person of ordinary skill in the art would have known that paying out cable from the center of coil without a reel can cause twists or kinks of the cable, adding difficulty in cable payout and installation. *Holmes*, 1:4-37; *see also Kawabe*, 1:16-25, FIG. 11 (teaching paying out cable from a center extracting opening causes the cable to be bent or kinked). The twists and kinks can cause breaking in the conductors or damage in the insulation around the conductors of electric cables. *Holmes*, 1:31-37. Also, communicable cables can contain fragile optic fibers, and twists or kinks can damage the optic fibers and render the cable unusable. *Bass*, 1:20-25 (teaching that “[O]ptical fiber cable ... contains relatively fragile optic fibers”), 1:34-39 (teaching that “[A] rough pay-out can be damaging to fragile optic fibers.”); *Eastwood*, 1:54-2:15 (teaching that entanglement can cause damage to the insulator of cable, such as electrical or optical fiber cable, which may subsequently result in arcing of electrical conductors or interferer with the transmission properties of the cable or fiber).

109. A person of ordinary skill in the art would have understood that using *Bass*’s reel and end plates supporting the reel in *Young*’s bag would allow for smooth cable payout. *Bass*’s reel and end plates would allow the reel to rotate inside the bag, unwinding the cable smoothly and progressively from the outer portion of the reel, thereby preventing twists and kinks that could damage the

cable. *See Bass*, 2:52-67; *see also Holmes*, 1:55-65. The four rounded corners of *Bass*'s end plates would also support the flexible material of *Young*'s bag and prevent the flexible material from hindering cable payout, such as by flexing on and rubbing against the cable. *Bass*, 7:17-23.

110. Furthermore, a person of ordinary skill in the art would have understood that cable payout from a supported reel would be more effective and expedient than paying out cable from the center of a coil without a reel and its support. *See Holmes*, 1:55-2:2. Using *Bass*'s reel and end plates supporting the reel in *Young*'s bag would provide better control over cable payout by allowing the installer to adjust the speed of payout. And using the reel and its support would reduce the efforts by the installer because rather than relying on an installer to physically pull the cable from the center of the coil, the reel will rotate in the container to facilitate payout. Additionally, using *Bass*'s reel and end plates supporting the reel in *Young*'s bag provides protection to the cable from physical damage during the cable payout, such as from excess pulling force or friction force. These benefits of using *Bass*'s reel and end plates supporting the reel in *Young*'s bag would be consistent with *Young*'s desire to provide a "user-oriented container" for carrying and dispensing cable. *Young*, 1:6-12, 1:61-62.

111. A person of ordinary skill in the art would have known how to use *Bass*'s reel and end plates supporting the reel in *Young*'s bag and would have had success in doing so because such modification requires nothing more than ordinary skill. *Bass* discloses assembling the reel and end plates before placing the reel assembly in a box container before closing the box container. *Bass*, 8:1-20. A person of ordinary skill in the art would have known to place *Bass*'s reel assembly in *Young*'s bag similarly in at least two ways.

112. A person of ordinary skill in the art would have understood that both ways would be suitable for placing *Bass*'s reel and end plates in *Young*'s bag and would only require basic practical skills of a cable installation technician.

113. First, a person of ordinary skill in the art would have *Bass*'s end plates placed against the front and rear faces of *Young*'s bag. In this configuration, a person of ordinary skill in the art also would have engaged ordinary creativity to relocate *Young*'s exit opening from the front face to the side to allow the loose end of cable of *Bass*'s reel to pay out from the outer portion of the reel and the bag. Second, a person of ordinary skill in the art would have placed *Bass*'s end plates against the two sides of *Young*'s bag. A person of ordinary skill in the art would have understood that in this way, the loose end of the cable of *Bass*'s reel would pay out from the outer portion of the reel through *Young*'s exit opening.

114. A person of ordinary skill in the art would have made routine optimizations to *Young*'s bag and *Bass*'s reel assembly using ordinary skills. A person of ordinary skill in the art would have adjusted the size of *Young*'s bag and/or *Bass*'s reel and end plates to provide a snug fit of the reel assembly in the bag, maintaining support of the reel by the end plates. *Bass*, 8:20-23 (teaching the box and end plates should be sized so that the spool assembly cannot slip off of the protrusions of the end plates). A snug fit would also help prevent *Bass*'s reel assembly from shifting or tipping over during transportation and cable installation, which can affect cable payout, such as from tangling or snagging of the cable, and even cause injury to the installer. And a snug fit between *Young*'s bag and *Bass*'s reel assembly would allow the bag and end plates to last longer by reducing unnecessary wear and tear on both the bag and the end plates.

115. *Young* discloses that the bag has an opening sufficiently wide to allow the placement of a coil of cable. *Young*, 5:45-50, FIG. 2. A person of ordinary skill in the art would have understood that a coil of cable supported by *Bass*'s reel assembly would marginally increase the size of the cable coil, and would have known how to adjust the size of *Young*'s bag's opening to accommodate the reel supported by end plates. Implementing these size optimizations would only require ordinary measurement skills of a person of ordinary skill in the art.

116. For at least these reasons, using *Bass*'s reel assembly in *Young*'s bag to pay out cable would have been a straightforward application of a known technique to improve a known device in the same way taught and yield predictable results of an improved cable payout apparatus.

B. Independent Claim 10

117. In my opinion, *Young* in view of *Bass* renders obvious claim 10.

1. 10[pre]: "A communications cable payout bag, comprising:"

118. *Young* discloses or renders obvious limitation 10[pre].

119. As shown below, *Young* discloses a cable payout container 10 for carrying and dispensing a coil of electrical cable. *Young*, 1:6-12, 3:30-33, 4:5-12, 4:21-32, FIGS. 1-2. Container 10 is made of a strong and flexible material, such as nylon, sailcloth, canvas, etc. *Id.*, 1:6-12, 3:41-44, 4:17-20, 4:60-68, 6:10-15. Container 10 also includes an exit opening 14 for paying out cable from the inner portion of a coil held in the container. *Id.*, 5:1-4, 5:50-58. An adjustable strap 22 is provided for a user to carry the container while dispensing cable therefrom. *Id.*, 4:28-32, 5:27-30. A person of ordinary skill in the art would have understood that *Young* discloses a cable payout bag that includes a container made of a flexible material for holding cable and a shoulder strap for carrying and dispensing cable.

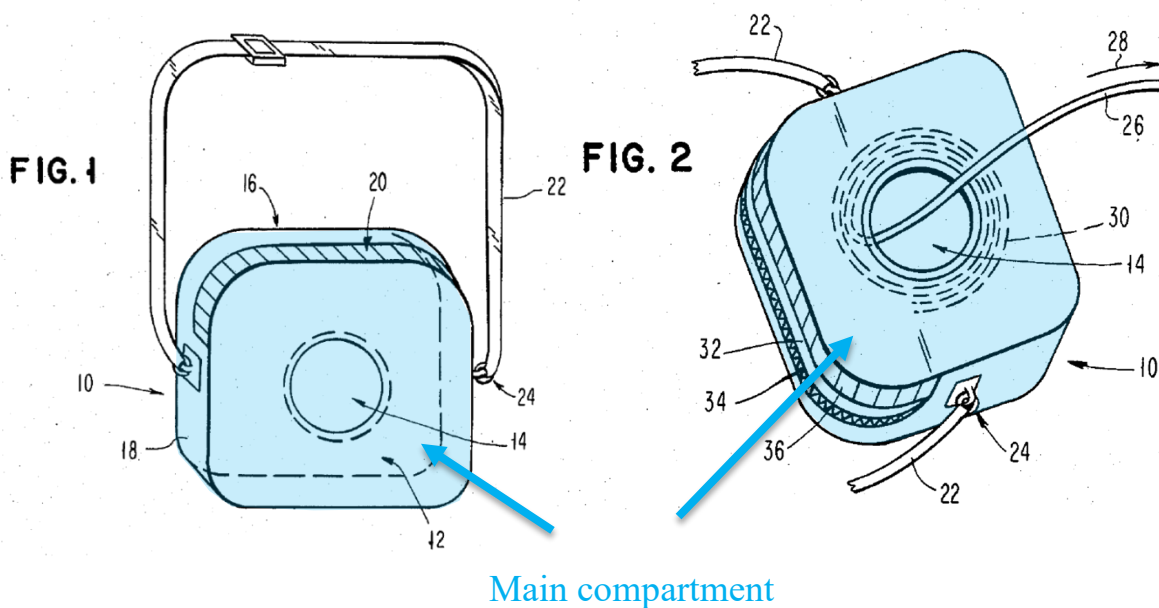


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2. **10[a]: “a main compartment constructed of a flexible material, the main compartment having an interior and an exterior, the main compartment being openable and closable;”**

121. *Young* discloses limitation 10[a].

122. As shown below, *Young*’s container 10 has a front face 12, a rear face 16, and sides 18, and a closable opening 32. *Young*, Abstract, 4:21-25, 5:1-14. Opening 32 is used for inserting or removing a coil of cable into or from container 10. *Id.*, 5:45-50. A person of ordinary skill in the art would have understood that *Young*’s container 10 would constitute a “main compartment” because it provides a receptacle for holding a cable coil.



Id., FIG. 1 (annotated).

124. *Young's* bag is similar to the bag of the '697 patent that includes a main compartment 20 configured to hold a cable package that is to be paid out from the main compartment 20 to the exterior of the bag 10. Ex. 1001, 2:51-65, FIGS. 1-2.



125. *Young* discloses that container 10 is made of a strong and flexible material, such as nylon, sailcloth, canvas, etc. *Young*, 1:6-12, 3:41-44, 4:17-20,

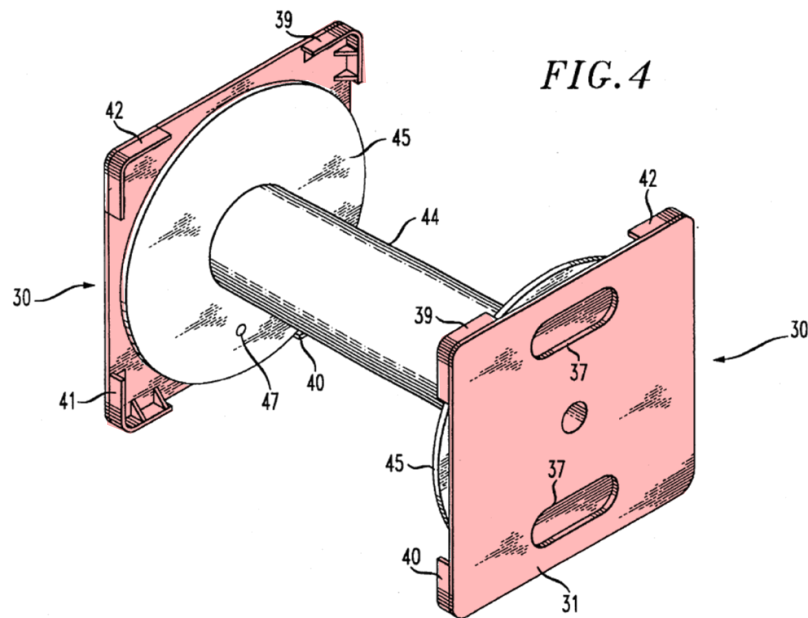
4:60-68, 6:10-15. This is similar to the '697 patent describing that its bag is “generally constructed of a flexible material such as canvas, a synthetic polymer (e.g., nylon) or any other flexible material.” Ex. 1001, 2:44-50.

126. *Young*’s container 10 (“main compartment”) is openable and closable. *Young* discloses that closable opening 32 is used for the insertion and removal of cable into or from the container. *Young*, 4:21-25, 5:5-17, 5:45-58, FIGS. 1-2. Opening 32 may be in the form of a Velcro closure, zipper, or closure snaps. *Id.*, 5:8-14, 5:45-46. This is similar to the '697 patent disclosing that the closure mechanism of the main compartment comprises one or more Zippers or flaps with fasteners, such as hook and loop fasteners. Ex. 1001, 7:26-44.

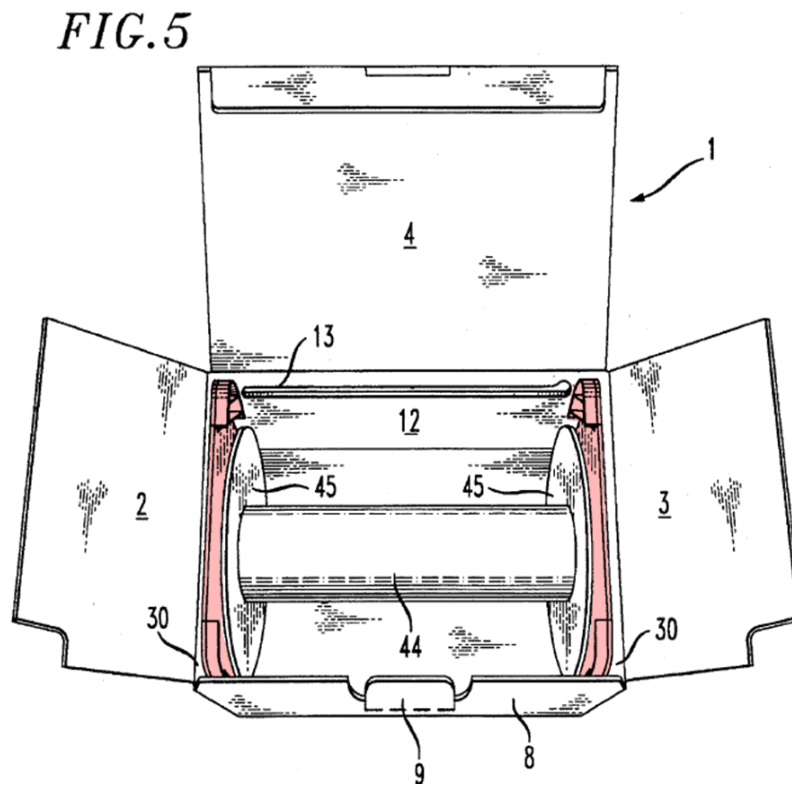
3. 10[b]: “a removable insert within the interior of the main compartment;”

127. *Young* in view of *Bass* renders obvious limitation 10[b] if plain and ordinary meaning of “removable insert” is applied. *See above* Section VI. In my opinion, *Young* in view of *Bass* renders obvious limitation 10[b] under Patent Owner’s constructions as well. *See above* Section VI.

128. *Bass* discloses a spool assembly that includes a reel 44 with two flanges 45 and a pair of **end plates 30** for rotatably supporting the reel. *Bass*, 2:7-17, 7:39-67, 8:1-23, FIGS. 4-5. The spool assembly is placed in a box after being loaded with cable and assembled with the end plates. *Id.*, 8:1-17.

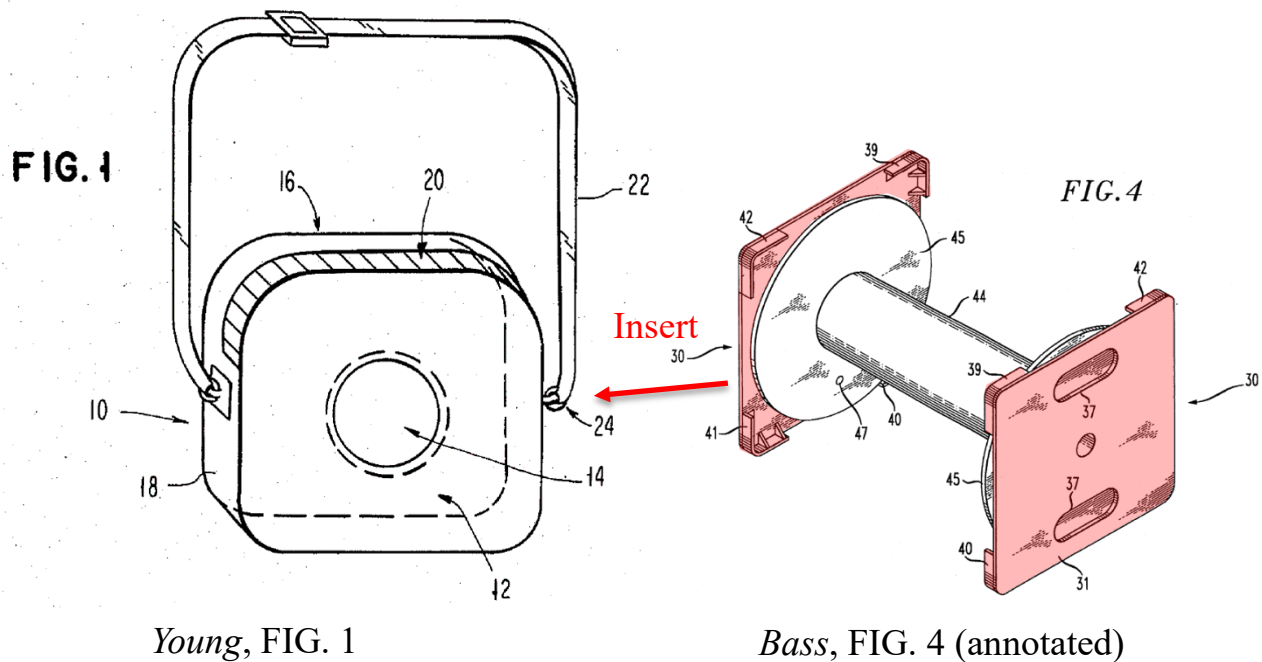


Id., FIG. 4 (annotated).



Id., FIG. 5 (annotated).

129. As discussed in Section IX.A.3, a person of ordinary skill in the art would have found it obvious to use *Bass*'s reel and end plates supporting the reel in *Young*'s cable payout bag to facilitate cable payout and prevent cable damage, as shown below.



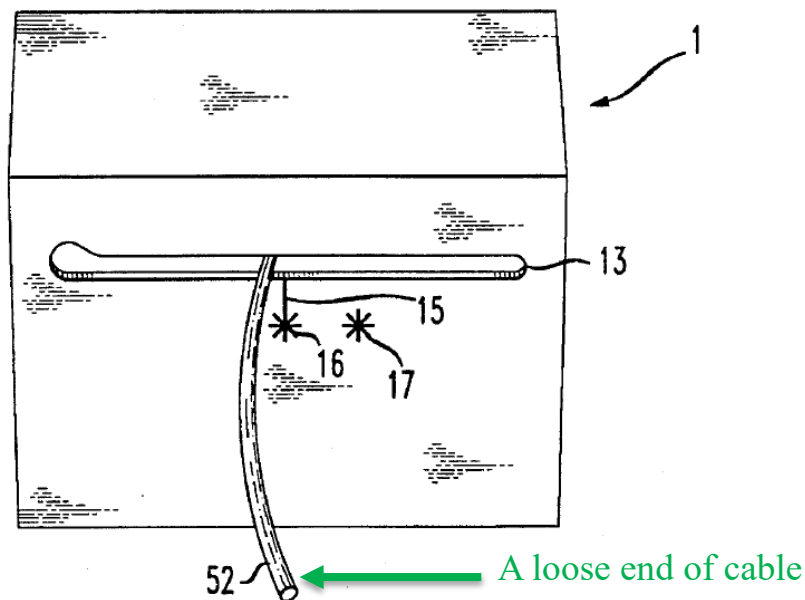
130. In *Young* combined with *Bass*, *Bass*'s reel with cable and end plates would be assembled as taught by *Bass* and inserted into or removed from *Young*'s cable payout bag via *Young*'s closable opening 32, which is used for the insertion and removal of cable into or from the container. As such, *Bass*'s end plates 30 would constitute "a removable insert" within the interior of *Young*'s bag container ("main compartment").

4. **10[c]: “a reel of communications cable that is supported by the removable insert, the reel of communications cable having a loose end of cable at an outer portion thereof;”**

131. *Young* in view of *Bass* renders obvious limitation 10[c].

132. *Bass* discloses loading the reel with optic fiber cable, which a person of ordinary skill in the art would have understood as a type of communications cable. In *Young* combined with *Bass*, *Bass*’s reel would be loaded with optic fiber cable (“communications cable”) and assembled with the end plates (“removable insert”) before being inserted into *Young*’s cable payout bag. See *Bass*, 8:1-17; *Young*, 5:7-8.

FIG. 6



Bass, FIG. 6 (annotated).

133. *Bass* discloses that after the loaded reel and end plates are placed in the box, the loose end of the cable can be paid out from a horizontal slot 13 of the box. *Id.*, 4:1-11, 4:62-65, 8:1-40, FIGS. 4-6. A person of ordinary skill in the art would have understood that *Bass*'s loose end of cable would be at an outer portion of the reel of cable because paying out cable from the outside of the reel allows the reel to rotate to smoothly unwind the cable as desired by *Bass*. *See id.*, 2:26-67; *Holmes*, 1:40-65.

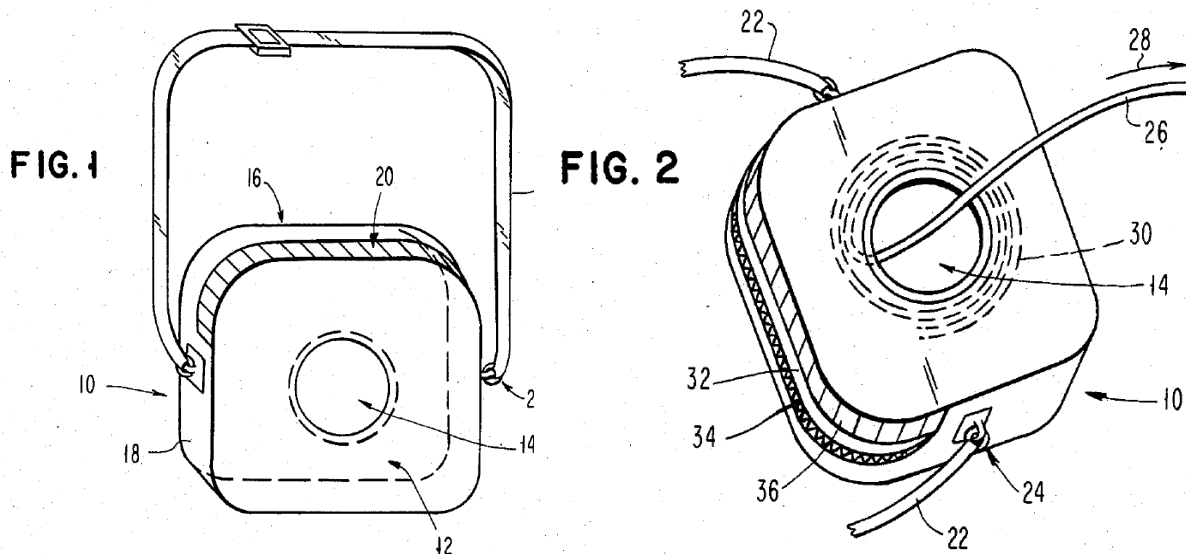
5. 10[d]: “a shoulder strap attached to the exterior of the main compartment;”

134. *Young* discloses limitation 10[d].

135. *Young* discloses an adjustable strap 22 for carrying the container during use. *Young*, 4:28-32, 5:27-30, FIG. 1. A person of ordinary skill in the art would have used *Young*'s adjustable strap as a shoulder strap because carrying *Young*'s container on the shoulder would free both hands of the installer for other tasks associated with installation (e.g., climbing ladders), allow the weight of the cable to distribute more evenly across the body of the installer and prevent injury to installer's arms and hands, particularly with large and heavy cable coils. *See id.*, 4:28-32 (teaching an adjustable strap of a cable payout bag is “a particularly desir[.]able feature when the user is working at an elevation, for example, while standing on a ladder”). Indeed, using a shoulder strap to carry a container for

paying out cable from a reel was known. *See Hickey*, 1:52 (left column) to 1:2 (right column) (teaching a shoulder strap leaving both hands of a worker free to execute various tasks, reduce fatigue, and enhance safety of the worker); *see also Fontana*, 1:27-32, 2:31-36, 4:54-55, FIG. 6.

136. *Young*'s adjustable strap 22 ("shoulder strap") is attached to the exterior of container 10 ("main compartment") via detachable rings 24. *Young*, 5:27-30.



Id., FIGS. 1-2.

6. **10[e]: "a cable payout passageway defined between the interior and the exterior of the main compartment, the cable payout passageway configured to receive therethrough the loose end of cable from the outer portion of the reel of communications cable; and"**

137. *Young* in view of *Bass* renders obvious limitation 10[e].

FIG. 1



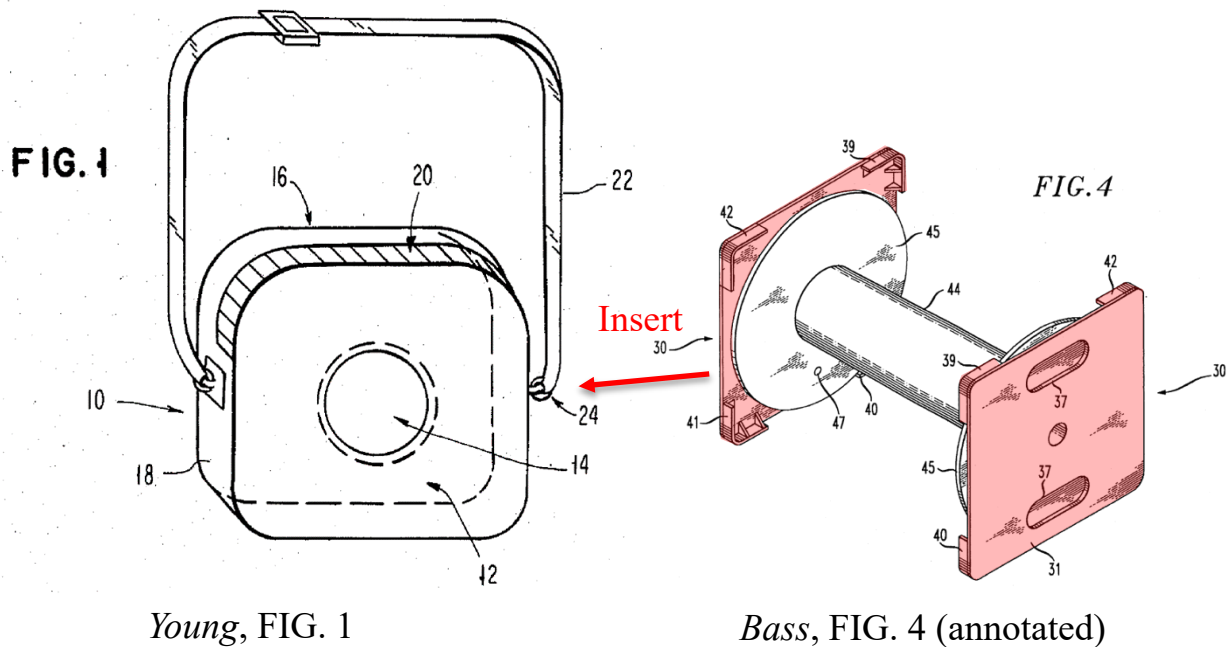
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139. First, in *Young* combined with *Bass*, *Bass*'s end plates would be proportioned and fit against the front and rear faces 12 and 16 of *Young*'s bag, respectively. A person of ordinary skill in the art would have relocated *Young*'s exit opening ("cable payout passageway") to side 18 to allow smooth cable payout because front face 12 and rear face 16 would press against *Bass*'s end plates. *Young*'s cable payout passageway as modified would receive therethrough the loose end of cable from the outer portion of *Bass*'s reel of communications cable for smooth cable payout. A person of ordinary skill in the art would only need to engage ordinary creativity to relocate *Young*'s exit opening ("cable payout passageway") from the front face to the side. Second, in *Young* combined with *Bass*, *Bass*'s end plates would be proportioned and fit against the two sides 18 of *Young*'s bag. The loose end of the cable of *Bass*'s reel would payout from the outer portion of the reel through *Young*'s exit opening ("cable payout passageway"). In both ways, *Young*'s cable payout passageway as modified or used would receive therethrough the loose end of cable from the outer portion of *Bass*'s reel of communications cable for smooth and expedient cable payout as discussed in Section IX.A.3.

7. **10[f]: “a closure mechanism configured to close the main compartment to thereby close the removable insert and the reel of communications cable in the interior of the main compartment;”**

140. *Young* in view of *Bass* renders obvious limitation 10[f].

141. As discussed above, it would have been obvious to a person of ordinary skill in the art to use *Bass*’s reel and end plates (“removable insert”) in *Young*’s cable payout bag (see above Section IX.A.3):



142. As shown above and discussed in Section IX.B.2, *Young* discloses container 10 (“main compartment”) includes an opening for inserting and removing cable into or from the container. *Young*, 5:1-8, 5:45-50, FIGS. 1-2. The opening can be closed by Velcro closure, zipper, or closure snaps (“a closure

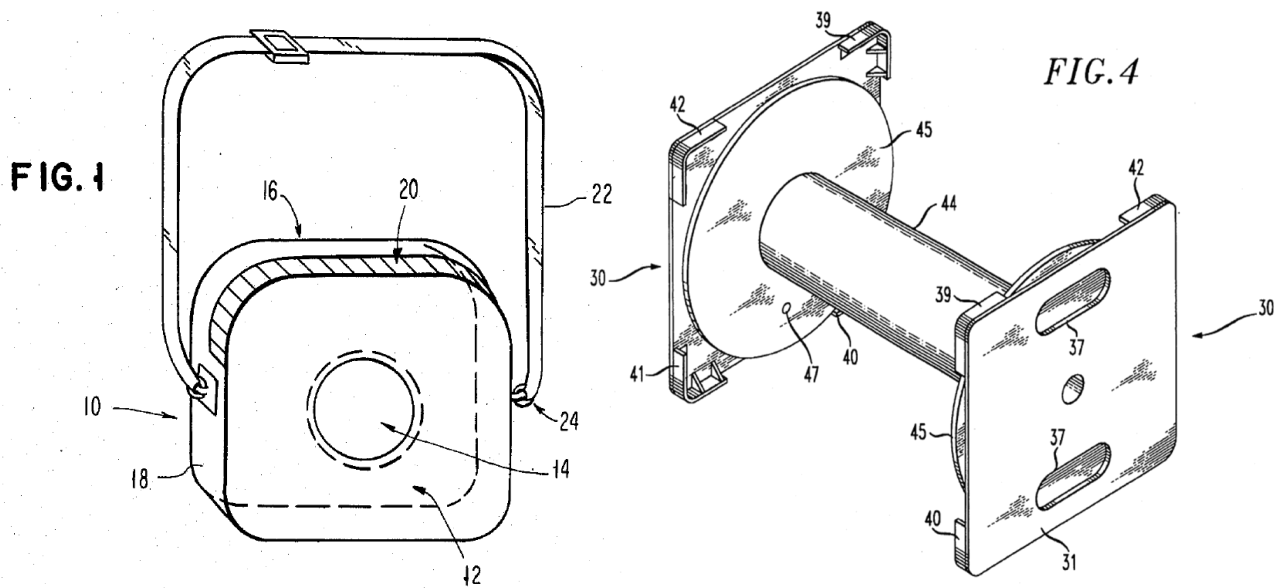
mechanism”). *Id.*, 5:8-14, FIGS. 1-2. This is similar to the ’697 patent describing that the closure mechanism of the main compartment comprises one or more zippers or flaps with fasteners, such as hook and loop fasteners. Ex. 1001, 7:26-44.

143. In *Young* combined with *Bass*, *Young*’s closure mechanism, when closing container 10 (“main compartment”), would have thereby closed *Bass*’s reel loaded with optical fiber cable (“the reel of communications cable”) and supported by end plates (“removable insert”) in the interior of *Young*’s container (“main compartment”).

8. 10[g]: “wherein the main compartment has a substantially rectangular profile when the removable insert and the reel of communications cable are closed in the interior thereof.”

144. *Young* in view of *Bass* renders obvious limitation 10[g].

145. As shown below, *Young* teaches electrical cable boxes have generally rectangular cross-section with right-angle corners that can become broken and torn (*Young*, 1:25-41, 3:34-40), and its container 10 has a generally rectangular profile with rounded corners instead of right-angle corners. *Id.*, 3:50-59, 5:31-33, FIGS. 1-2.



Id., FIGS. 1-2.

146. *Bass* discloses the end plates (“removable insert”) each have a rectangular profile (e.g., square) and rounded corner supports. *Bass*, 6:61-7:6, 7:17-23, FIG. 4. In *Young* combined *Bass*, *Bass*’s reel, loaded with optical fiber cable (“the reel of communications cable”), and the pair of end plates (“removable insert”) would be inserted into and closed in the interior of *Young*’s bag.

147. As discussed above, a person of ordinary skill in the art would have understood that a snug fit of *Bass*’s end plates in *Young*’s bag would allow for smooth and even payout of the cable by preventing the device from shifting during transportation and cable installation, and would reduce wear and tear of *Young*’s bag and *Bass*’s end plates and cable. *See* Section IX.A.3.

148. A person of ordinary skill in the art would have adjusted the size of *Young*'s bag and/or *Bass*'s reel and end plates, and adjusted the arc of the rounded corners of *Young*'s bag and/or the arc of the four rounded corners of *Bass*'s end plates to form a snug fit in the bag, thereby maintaining the rectangular profile of the bag. *Bass*, 7:17-23 (teaching the end plates maintain the proper configuration of the box). A person of ordinary skill in the art would only need to use ordinary skill and creativity to adapt *Young*'s container's size and shape to the shape and size of the *Bass*'s end plates or vice versa. *See Young*, 5:31-33 (teaching that the container has a flexible construction that allows it to adapt to the actual coil shape during use).

C. Dependent Claim 11: “The communications cable payout bag of claim 10, wherein the shoulder strap comprises a single adjustable shoulder strap, and wherein the shoulder strap can be adjusted to a length of at least 37 inches.”

149. *Young* renders obvious this limitation of claim 11.

150. A person of ordinary skill in the art would have adjusted and optimized the length of *Young*'s adjustable shoulder strap to improve comfort and ease of carrying the bag for cable payout using ordinary skill and to account for the majority of standard heights and would have chosen an adjustable length for the shoulder strap to include at least 37 inches for the reasons explained in Section VIII.C (Ground 1, Claim 11).

D. Independent Claim 9

- 1. 9[pre]: “A method of paying out communications cable from a bag that includes a main compartment and a cable payout passageway, the method comprising:”**

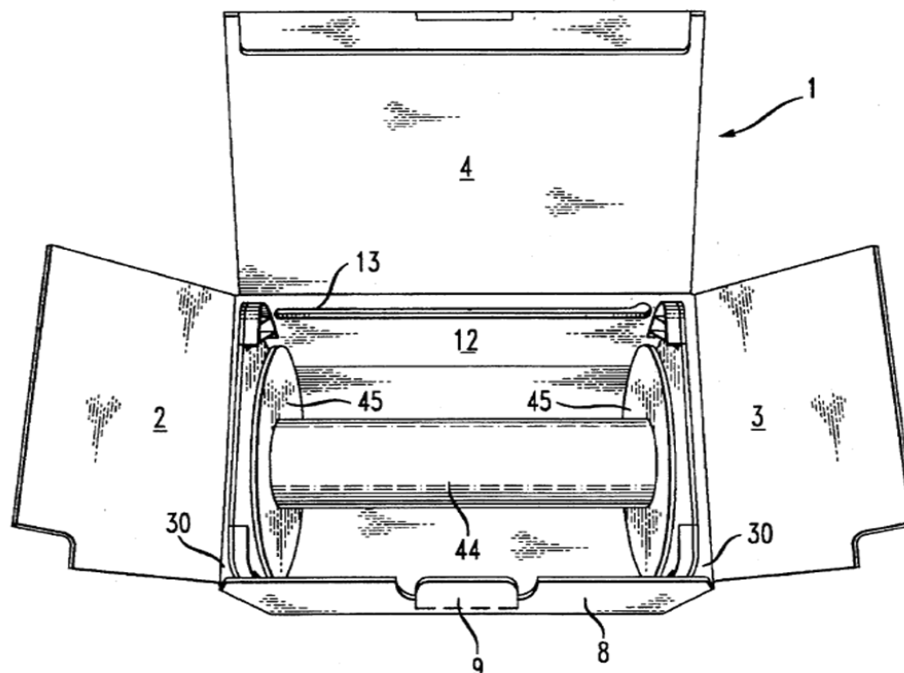
151. *Young* discloses or renders obvious limitation 9[pre]. *Young* discloses a cable payout container 10 for carrying and dispensing electrical cable. *Young*, 1:6-12, 4:21-32, 5:1-8, FIGS. 1-2. As discussed above in limitations 10[pre], 10[a], and 10[e], a person of ordinary skill in the art would have understood that *Young*’s cable payout bag would also be suitable for paying out communications cable, and *Young*’s cable payout bag includes a main compartment and a cable payout passageway. *See above* Sections IX.B.1, IX.B.2, IX.B.6. A person of ordinary skill in the art would have understood that using *Young*’s cable payout bag for paying out communications cable would be a method of paying out communications cable from a bag that includes a main compartment and a cable payout passageway.

- 2. 9[a]: “inserting a removable plastic insert and a cylindrical reel of communications cable supported by the removable insert in the main compartment,”**

152. The combination of *Young* and *Bass* described above renders obvious limitation 9[a]. As discussed above in limitation 10[b], in *Young* combined with *Bass*, *Bass*’s end plates would constitute a “removable insert” in *Young*’s bag. *See above* Section IX.B.3. *Bass* further discloses that the end plates are formed of polycarbonate that is lightweight and highly resilient. *Bass*, Abstract, 2:47-49,

5:34-39, 6:61-67. A person of ordinary skill in the art would have understood that polycarbonate is a type of plastic that is strong, durable, widely used. Thus, *Bass*'s end plates, when formed of polycarbonate, would constitute a "removable plastic insert." And as discussed above in limitation 10[c], the combination of *Young* and *Bass* renders obvious "a reel of communications cable that is supported by the removable insert." *See above* Section IX.B.4. Also as shown below, a person of ordinary skill in the art would have understood that *Bass*'s reel is a cylindrical reel because it has a cylindrical hub connecting two parallel disks that allow cable to be wound and stored on the reel.

FIG. 5



Id., FIG. 4.

153. A person of ordinary skill in the art would have understood that when using *Bass*'s reel and end plates supporting the reel in *Young*'s cable payout bag, *Bass*'s end plates ("removable plastic insert") would be supporting its reel ("cylindrical reel of communications cable") and be inserted into the interior of *Young*'s bag ("main compartment") via the bag's opening. *See above* Sections IX.A.3, IX.B.3.

3. 9[b]: "wherein the reel of communications cable has a loose end of cable at an outer portion thereof, and"

154. This limitation is encompassed by limitation 10[c]. The combination of *Young* and *Bass* described above renders obvious limitation 9[b] for the reasons discussed in limitation 10[c]. *See above* Section IX.B.4.

4. 9[c]: "wherein the main compartment is constructed of a flexible material;"

155. This limitation is encompassed by limitation 10[a]. *Young* discloses limitation 9[c] for the reasons discussed in limitation 10[a]. *See above* Section IX.B.2.

5. 9[d]: "aligning the loose end of cable from the outer portion of the reel of communications cable with the cable payout passageway; and"

156. The combination of *Young* and *Bass* described above renders obvious limitation 9[d]. As discussed above in limitations 9[pre] and 9[b], the combination of *Young* and *Bass* renders obvious "a cable payout passageway" and "a loose end

of cable at an outer portion” of the reel of communications cable. *See above* Sections IX.D.1, IX.D.3; *see also* Sections IX.B.4, IX.B.6. As discussed above, in *Young* combined with *Bass*, a person of ordinary skill in the art would have used the exit opening (“cable payout passageway”) of *Young*’s bag to receive the loose end of cable from the outer portion of the reel of *Bass* in two ways. In both ways, a person of ordinary skill in the art would have aligned the loose end of cable from the outer portion of the reel of *Bass* with the exit opening of *Young*’s bag to allow cable to be smoothly paid out from the outer portion of the reel and from the interior to the exterior of the bag without additional twisting or hindrance.

6. 9[e]: “pulling the loose end of cable through the cable payout passageway.”

157. The combination of *Young* and *Bass* described above renders obvious limitation 9[e]. When using *Bass*’s reel and end plates supporting the reel in *Young*’s cable payout bag, a person of ordinary skill in the art would have known to pull the loose end of cable through the cable payout passageway of *Young*’s bag to draw out a length of the cable. *See Bass*, 8:36-42 (pulling a desired length of cable through payout passage); *Fontana*, 4:14-19 (pulling the free end of cable to unwind the cable coil on a spool). A person of ordinary skill also would have known that such pulling allows the reel to rotate to facilitate cable payout. *Holmes*,

4:12-16 (pulling a cable at a tangent with respect to the cable causes the reel to rotate).

X. [GROUND 6] *YOUNG* IN VIEW OF *BARNETT* RENDERS OBVIOUS CLAIMS 9-11

158. In my opinion, *Young* in view of *Barnett* renders obvious claims 9-11.

A. *Young* in View of *Barnett*

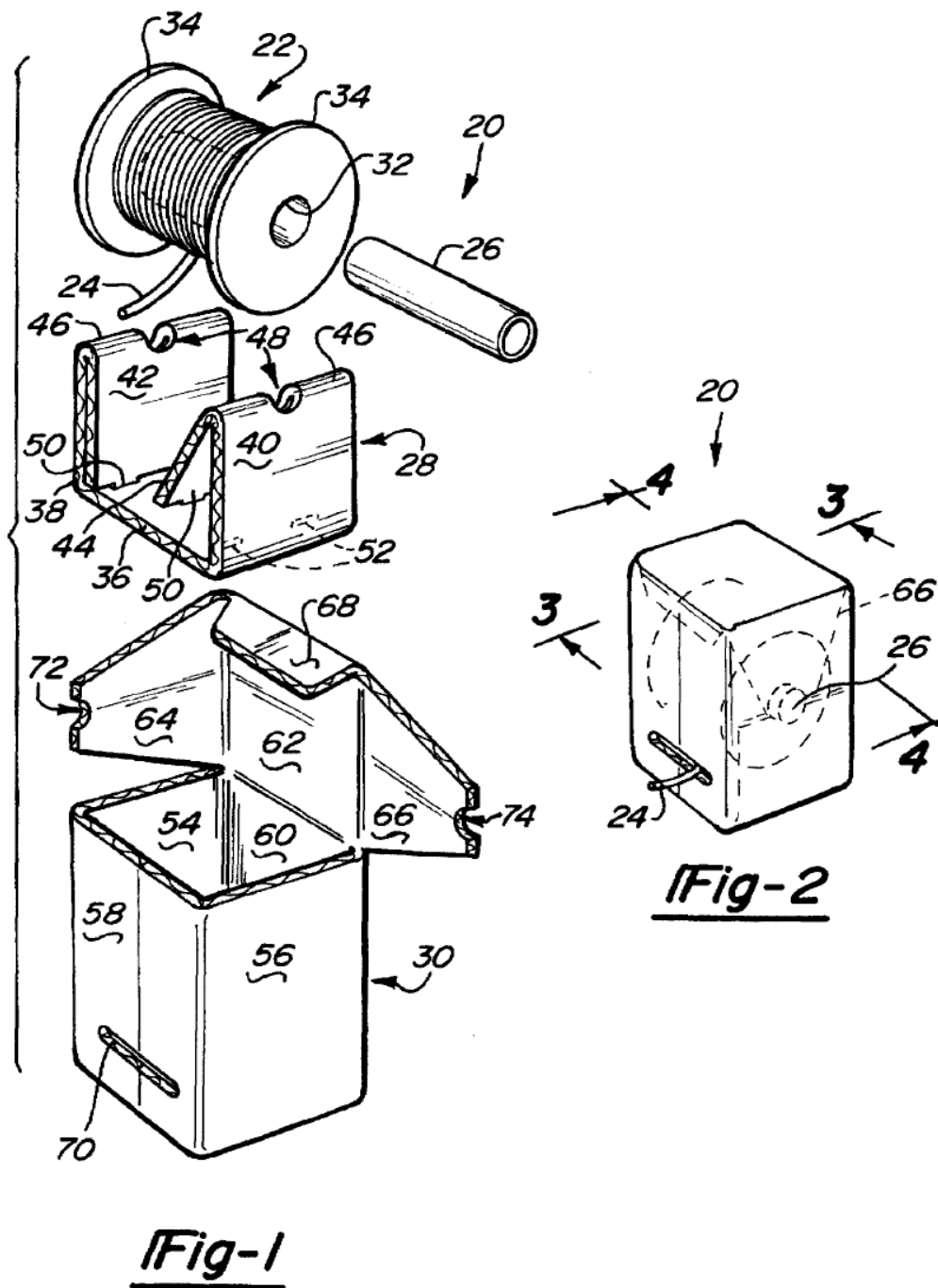
1. Overview of *Barnett* (Ex. 1008)

159. *Barnett* was filed on December 5, 1995, and granted on January 6, 1998 (*Barnett*, cover), over one year before the priority date of the '697 patent. I have thus been informed that *Barnett* qualifies as prior art to the '697 patent under at least 35 U.S.C. § 102 (b).

160. *Barnett* discloses a cable package 20 that includes a container 30 and an insert 28 that fits inside the container for supporting a spool of cable 22.

Barnett, Abstract, 3:1-19, FIGS. 1-2, 5-6. As shown below, container 30 has a generally rectangular profile. *Id.*, FIG. 1. Insert 28 includes a base 36 and a pair of end walls 38 and 40, the end walls providing a cradle that supports a tube 26 around which spool 22 rotates. *Id.*, 2:11-19, 3:2-35, 4:1-7, FIGS. 1-2, 5-6. To assemble the package, insert 28 is positioned in container 30, and spool 22, wound with wire or cable 24, is disposed in container 30 by seating tube 26 of spool 22 in the cradle provided by the end walls. *Id.*, 4:1-7. Container 30 has a payout slot 70

from which an end of wire 24 is dispensed. *Id.*, 3:58-59, 4:7-8. Both insert 28 and container 30 can be formed of cardboard. *Id.*, 2:11-22, 3:20-22, 3:42-47.

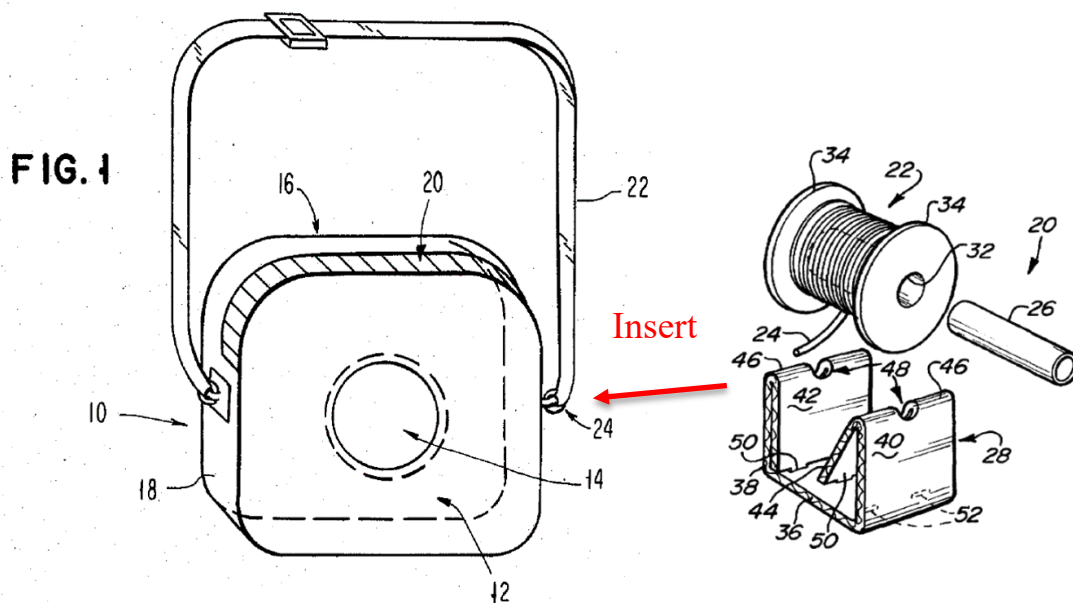


Id., FIGS. 1-2.

161. *Barnett* is analogous to the '697 patent and *Young* because it also relates to an apparatus and method for carrying and paying out cable. *Id.*, Abstract, 1:7-8; Ex. 1001, 1:5-59; *see* Section V.A (Overview of the '697 Patent).

2. A Person of Ordinary Skill in the Art Would Have Found It Obvious to Combine *Young* and *Barnett*

162. A person of ordinary skill in the art would have found it obvious to use *Barnett*'s reel and insert supporting the reel in *Young*'s cable payout bag to facilitate cable payout and prevent cable damage, as shown below.



Young, FIG. 1

Barnett, FIG. 1 (excerpted, annotated)

163. A person of ordinary skill in the art would have understood that using *Barnett*'s reel and insert would address the design deficiencies of *Young*'s bag for paying out cable. *Young* teaches paying out cable from the center of the coil of

cable, whose loose end exits the bag through an exit opening. *Young*, 4:36-38, 5:45-58. A person of ordinary skill in the art would have known that paying out cable from the center of coil without a reel can cause twists or kinks of the cable, adding difficulty in cable payout and installation. *Holmes*, 1:4-37; *see also Kawabe*, 1:16-25, FIG. 11 (teaching that paying out cable from a center extracting opening causes the cable to be bent or kinked). The twists and kinks can cause breaking in the conductors or damage in the insulation around the conductors of electric cables (*Holmes*, 1:31-37), and damage fragile optic fibers (*Bass*, 1:20-25; *Eastwood*, 1:54-2:15).

164. A person of ordinary skill in the art would have understood that using *Barnett's* reel and insert in *Young's* bag would allow for smooth cable payout. *Barnett's* reel and insert would allow the reel to rotate inside the bag, unwinding the cable smoothly and progressively from the outer portion of the reel, thereby preventing twists and kinks that could damage the cable. *See Bass*, 2:52-67; *see also Holmes*, 1:55-65.

165. Furthermore, a person of ordinary skill in the art would have understood that cable payout from a supported reel would be more effective and expedient than paying out cable from the center of a coil without a reel and its support. *See Holmes*, 1:55-2:2. A person of ordinary skill in the art would have

understood that using *Barnett*'s reel and insert in *Young*'s bag would provide better control over cable payout by allowing the installer to adjust the speed of payout. A person of ordinary skill in the art further would have understood that using the reel and its support would reduce the efforts by the installer because rather than relying on an installer to physically pull the cable from the center of the coil, the reel will rotate in the container to facilitate payout. Additionally, a person of ordinary skill in the art would have understood that using *Barnett*'s reel and insert in *Young*'s bag provides protection to the cable from physical damage during the cable payout, such as from excess pulling force or friction force. These benefits of using *Barnett*'s reel and insert in *Young*'s bag would be consistent with *Young*'s desire to provide a "user-oriented container" for carrying and dispensing cable. *Young*, 1:6-12, 1:61-62.

166. A person of ordinary skill in the art would have known how to use *Barnett*'s reel and insert it into *Young*'s bag and would have expected success in doing so because such modification requires nothing more than ordinary skill. *Barnett* discloses assembling the reel and insert and placing the insert in a container. *Barnett*, 4:1-12. A person of ordinary skill in the art would have understood to place *Barnett*'s reel and insert in *Young*'s bag similarly in at least two ways.

167. A person of ordinary skill in the art would have understood that both ways would be suitable for placing *Barnett's* reel and insert in *Young's* bag and would only require basic practical skills of a cable installation technician.

168. First, a person of ordinary skill in the art would have the end walls of *Barnett's* insert placed against the front and rear faces of *Young's* bag. In this configuration, a person of ordinary skill in the art also would have modified *Young's* bag to relocate *Young's* exit opening for cable payout to the side of *Young's* bag to allow the loose end of the cable of *Barnett's* reel to payout from the outer portion of the reel and the bag. Such modification simply is well within the ordinary creativity of a person of ordinary skill in the art.

169. Second, a person of ordinary skill in the art would have placed the end walls of *Barnett's* insert against the two sides of *Young's* bag. A person of ordinary skill in the art would have understood that in this way, the loose end of the cable of *Barnett's* reel would payout from the outer portion of the reel through *Young's* exit opening.

170. A person of ordinary skill in the art would have made routine optimizations to *Young's* bag and *Barnett's* reel and insert using ordinary practical skills. For example, a person of ordinary skill in the art would have adjusted the size of *Young's* bag and/or *Barnett's* reel and insert to provide a snug fit of the

insert in the bag. A snug fit would also help prevent *Barnett's* reel and insert from shifting or tipping over during transportation and cable installation, which can affect cable payout, such as from tangling or snagging of the cable, and even cause injury to the installer. And a snug fit between *Young's* bag and *Barnett's* insert would allow the bag and insert to last longer by reducing unnecessary wear and tear on both the bag and the insert.

171. *Young* discloses that the bag has an opening sufficiently wide to allow the placement of a coil of cable. *Young*, 5:45-50, FIG. 2. A person of ordinary skill in the art would have understood that a coil of cable supported by *Barnett's* reel and insert would marginally increase the size of the cable coil, and would have known how to adjust the size of *Young's* bag's opening to accommodate the reel supported by end plates.

172. For at least these reasons, using *Barnett's* reel and insert in *Young's* bag to pay out cable would have been a straightforward application of a known technique to improve a known device in the same way taught and yield predictable results of an improved cable payout apparatus.

B. Independent Claim 10

173. In my opinion, *Young* in view of *Barnett* renders obvious claim 10.

1. 10[pre]: “A communications cable payout bag, comprising:”

174. *Young* discloses or renders obvious limitation 10[pre] for reasons discussed in Section IX.B.1.

2. 10[a]: “a main compartment constructed of a flexible material, the main compartment having an interior and an exterior, the main compartment being openable and closable;”

175. *Young* discloses limitation 10[a] for reasons discussed in Section IX.B.2.

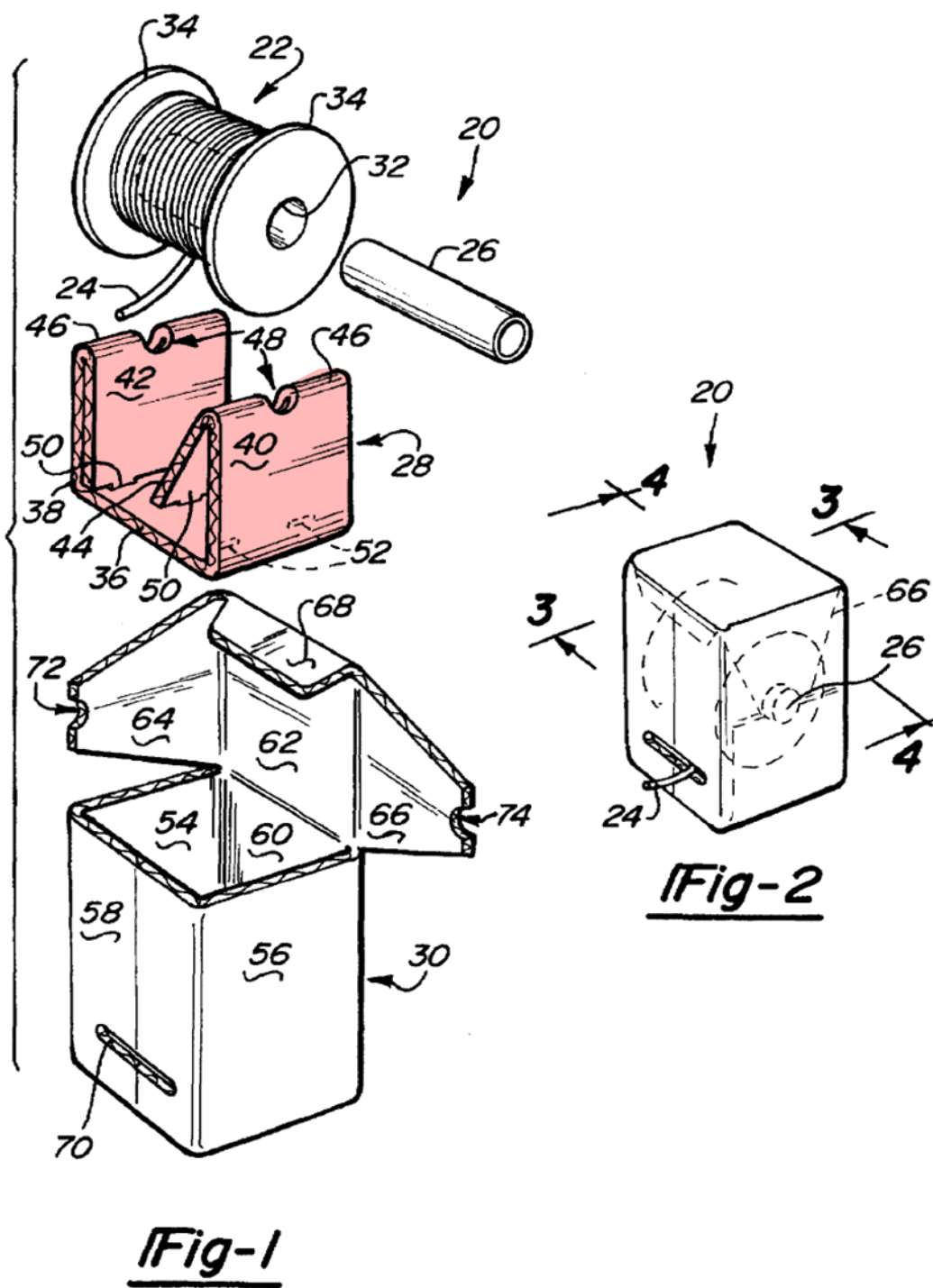
3. 10[b]: “a removable insert within the interior of the main compartment;”

176. In my opinion, *Young* in view of *Barnett* renders obvious 10[b] if plain and ordinary meaning or Patent Owner’s constructions of “removable insert” are adopted. *See above* Section VI.

177. *Barnett* discloses a cable package 20 that includes a container 30 and an insert 28 that fits inside the container for supporting a spool of cable 22. *Barnett*, Abstract, 3:1-19, FIGS. 1-2, 5-6. Insert 28 supports a tube 26 around which spool 22 rotates. *Id.*, 2:11-19, 3:2-35, 4:1-7, FIGS. 1-2, 5-6. To assemble the package, insert 28 is positioned in container 30, and spool 22, wound with wire or

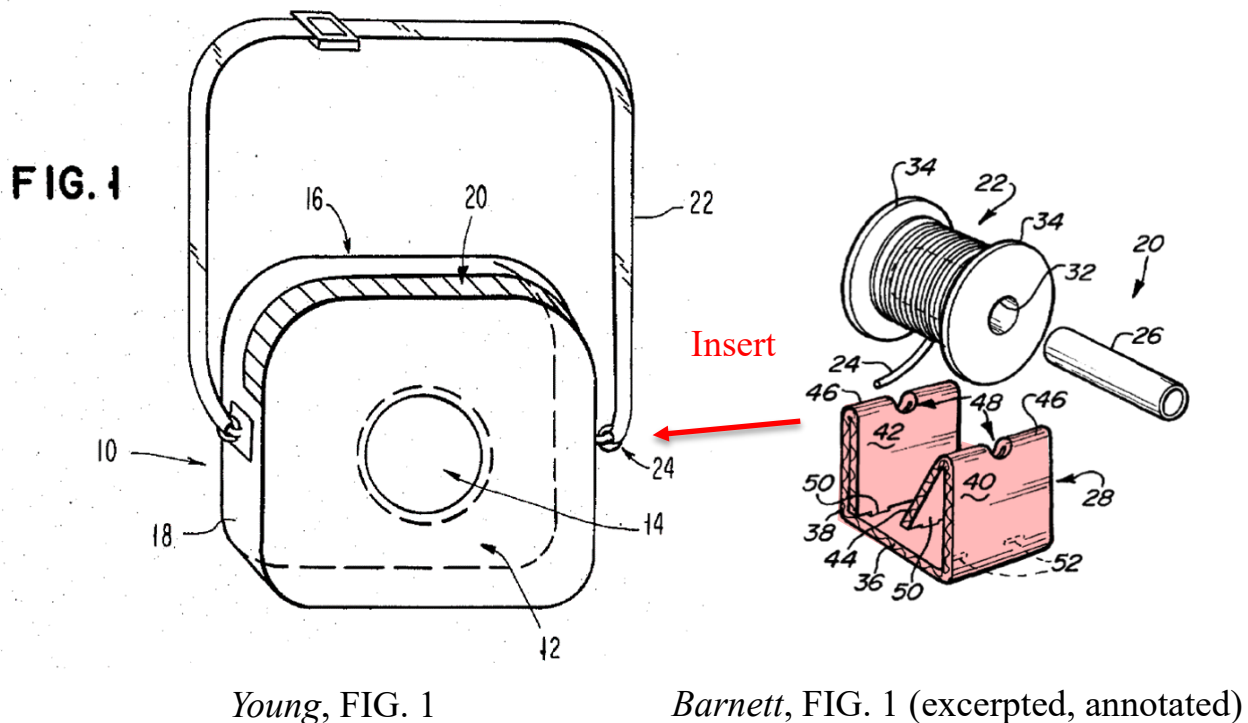
cable 24, is disposed in container 30 by seating tube 26 of spool 22 in the cradle provided by the end walls. *Id.*, 4:1-7.

178. A person of ordinary skill in the art would have understood that *Barnett's* reel and insert would be removable from *Barnett's* container, such as for replenishing the reel or replacing it with a fully loaded reel. *Barnett* teaches the insert is adapted to fit inside the container. *Id.*, Abstract. A person of ordinary skill in the art would have known that *Barnett's* reel and insert can be removed from the container by opening its top panel and retrieving the reel and insert using basic practical skills.



Id., FIGS. 1-2 (annotated).

179. As discussed in Section X.A.2, a person of ordinary skill in the art would have found it obvious to use *Barnett*'s reel and insert supporting the reel in *Young*'s cable payout bag to facilitate cable payout and prevent cable damage, as shown below.



180. In *Young* combined with *Barnett*, *Barnett*'s reel and insert would be assembled as taught by *Barnett* and inserted into or removed from *Young*'s cable payout bag via closable opening 32, which is used for the insertion and removal of cable into or from the container. As such, *Barnett*'s insert would constitute “a removable insert” within the interior of *Young*'s bag container (“main compartment”).

181. *Young* in view of *Barnett* renders obvious limitation 10[c].

Reel of communications cable

Loose end from an outer portion of the reel

Removable insert

Fig-2

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183. *Barnett*'s loose end of cable 24 is further dispensed from a payout slot 70 at a side surface of the container. *Id.*, 3:58-59, 4:7-8, FIGS. 1-2. A person of ordinary skill in the art would have understood that *Barnett*'s loose end of cable dispensed from an outer portion of the reel would allow the reel to rotate to smoothly unwind the cable. *See Bass*, 2:26-67; *Holmes*, 1:40-65.

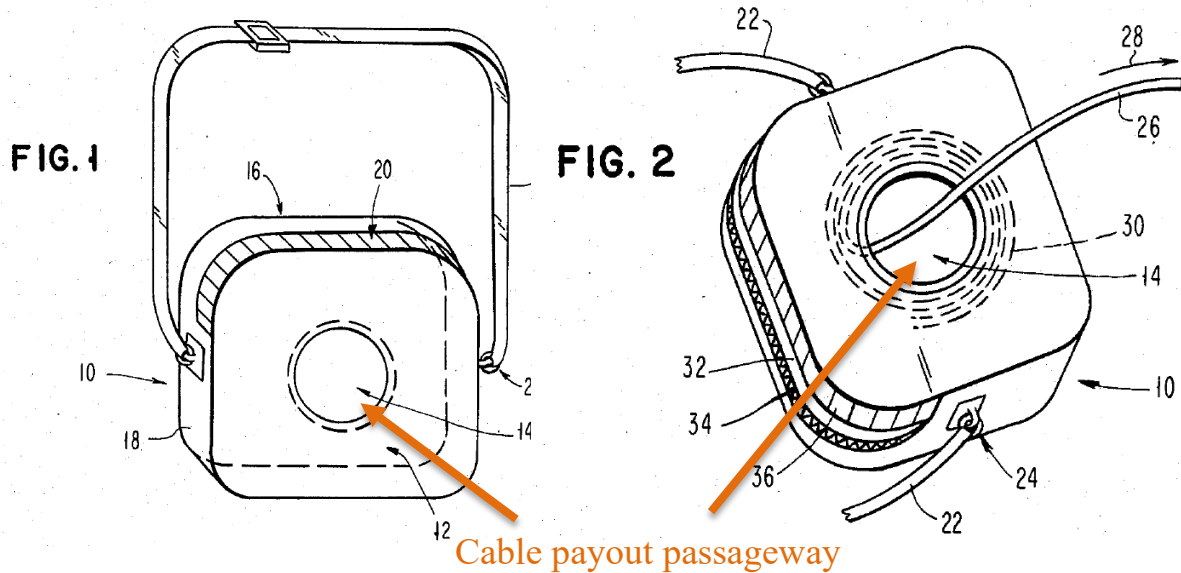
5. 10[d]: “a shoulder strap attached to the exterior of the main compartment;”

184. *Young* discloses limitation 10[d] for reasons discussed in Section IX.B.5.

6. 10[e]: “a cable payout passageway defined between the interior and the exterior of the main compartment, the cable payout passageway configured to receive therethrough the loose end of cable from the outer portion of the reel of communications cable; and”

185. *Young* in view of *Barnett* renders obvious limitation 10[e] for the reasons explained in Section IX.B.6 and additional reasons below.

186. As discussed above, *Young*'s exit opening 14 is a cable payout passageway defined between the interior and the exterior of the main compartment and receives therethrough the loose end of the cable from the center of the coil. *Young*, 4:36-41, FIG. 2; *see above* Section IX.B.3.



Young, FIGS. 1-2 (annotated).

187. As discussed above, in *Young* combined *Barnett*, *Barnett*'s reel, loaded with cable, e.g., communications cable, and the insert ("removable insert") would be placed in *Young*'s bag in at least two ways. A person of ordinary skill in the art would have understood that both are suitable for placing *Barnett*'s reel and insert in *Young*'s bag. *See above* Section X.A.2.

188. First, the pair of end walls 38 and 40 of *Barnett*'s insert would be proportioned and fit against the front and rear faces 12 and 16 of *Young*'s bag, respectively. Second, the pair of end walls 38 and 40 of *Barnett*'s insert would be proportioned and fit against the two sides 18 of *Young*'s bag.

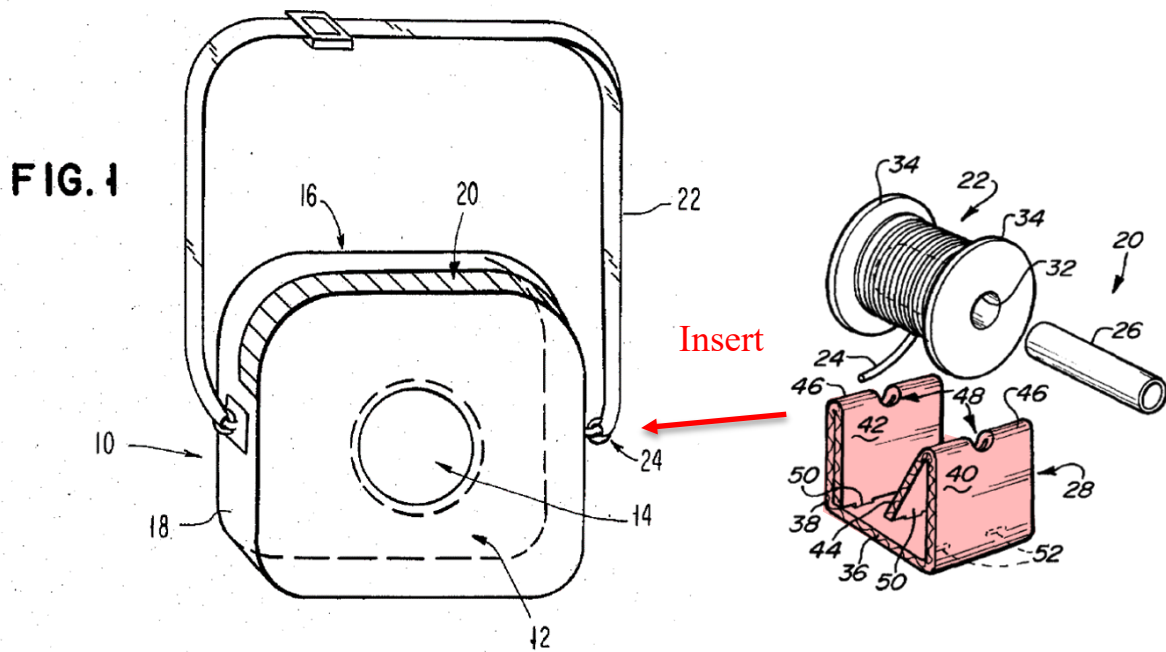
189. In the first way, when *Barnett*'s reel and insert are inserted into *Young*'s container to facilitate cable payout, a person of ordinary skill in the art would have relocated *Young*'s exit opening ("cable payout passageway") to the side of the bag, like in *Barnett*. *Barnett*, 3:58-59, 4:7-8, FIGS. 1-2.

190. In the second way, the loose end of the cable of *Barnett*'s reel would payout from the outer portion of the reel through *Young*'s exit opening ("cable payout passageway"). In both ways, *Young*'s cable payout passageway as modified or used would receive therethrough the loose end of cable from the outer portion of *Barnett*'s reel of communications cable for smooth and expedient cable payout as discussed in Section IX.B.6.

7. 10[f]: "a closure mechanism configured to close the main compartment to thereby close the removable insert and the reel of communications cable in the interior of the main compartment;"

191. *Young* in view of *Barnett* renders obvious limitation 10[f] for the reasons explained in Section IX.B.7 and additional reasons below.

192. As discussed above, it would have been obvious to a person of ordinary skill in the art to use *Barnett*'s reel and insert ("removable insert") in *Young*'s cable payout bag (*see above* Section X.A.2):



Young, FIG. 1

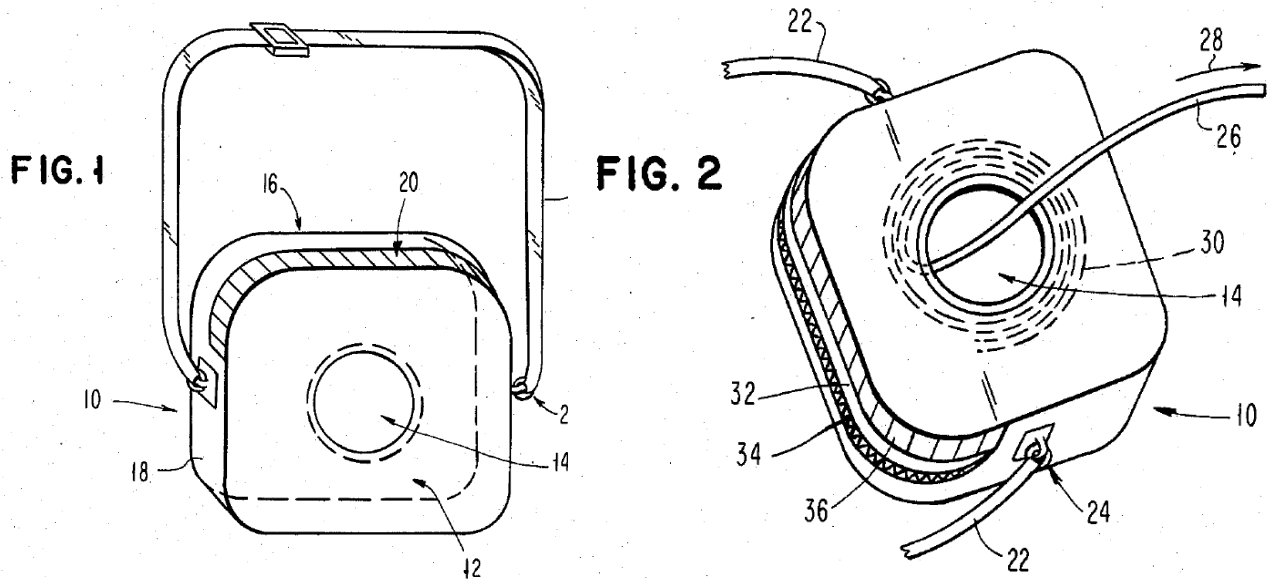
Barnett, FIG. 1 (excerpted, annotated)

193. As shown above and discussed in Section IX.B.2, *Young* discloses container 10 (“main compartment”) includes an opening for inserting and removing cable into or from the container. *Young*, 5:1-8, 5:45-50, FIGS. 1-2. The opening can be closed by Velcro closure, zipper, or closure snaps (“a closure mechanism”). *Id.*, 5:8-14, FIGS. 1-2. In *Young* combined with *Barnett*, *Young*’s closure mechanism, when closing container 10 (“main compartment”), would have thereby closed *Barnett*’s reel loaded with cable, e.g., communications cable, and supported by the insert (“removable insert”) in the interior of *Young*’s container (“main compartment”).

8. **10[g]: “wherein the main compartment has a substantially rectangular profile when the removable insert and the reel of communications cable are closed in the interior thereof.”**

194. *Young* in view of *Barnett* renders obvious limitation 10[g].

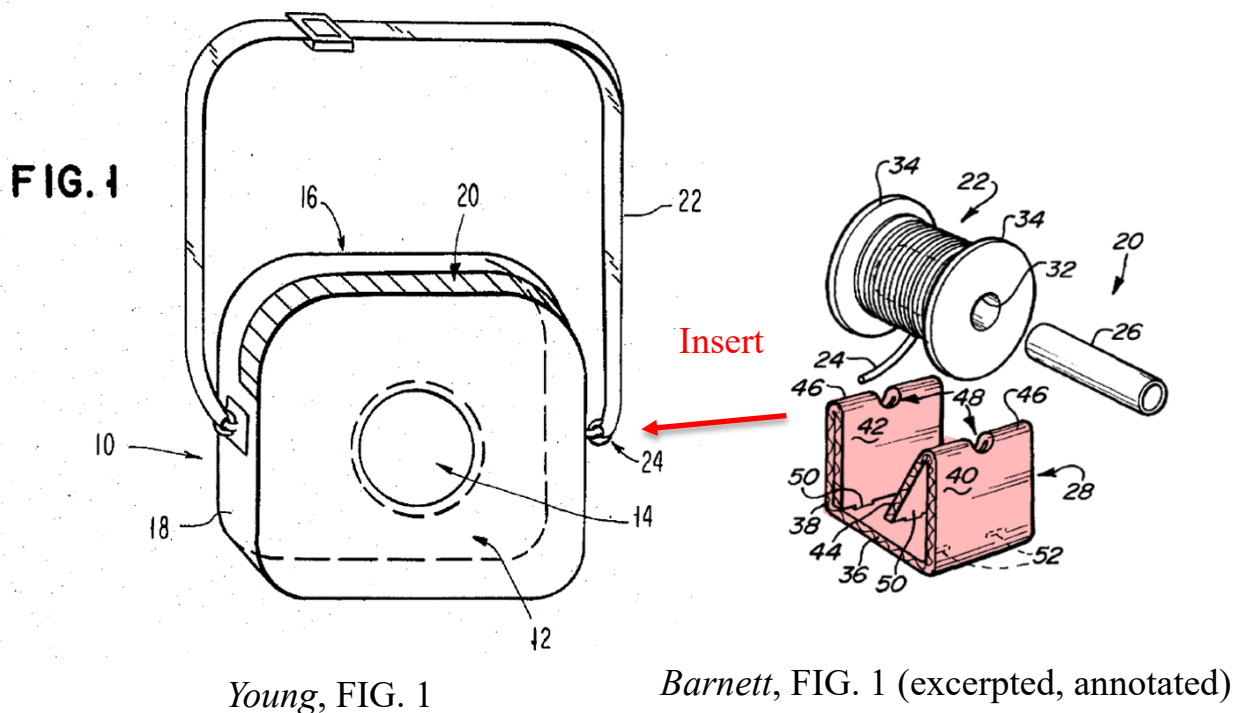
195. As shown below, *Young* teaches electrical cable boxes have generally rectangular cross-section with right-angle corners that can become broken and torn (*Young*, 1:25-41, 3:34-40), and its container 10 has a generally rectangular profile with rounded corners instead of right-angle corners. *Id.*, 3:50-59, 5:31-33, FIGS. 1-2.



Id., FIGS. 1-2.

196. *Barnett*'s insert ("removable insert") includes a base 36 and a pair of end walls 38 and 40, each having a rectangular profile, as shown below. *Barnett*, 2:11-19, 3:2-35, 4:1-7, FIGS. 1-2, 5-6. As discussed above in Section X.A.2, in

Young combined *Barnett*, *Barnett*'s reel, loaded with cable, e.g., communications cable and the insert ("removable insert") would be inserted into and closed in the interior of *Young*'s bag in two ways. In both ways, a person of ordinary skill in the art would have adjusted the size of *Young*'s bag and/or *Barnett*'s insert to form a snug fit, thereby maintaining the rectangular profile of *Young*'s bag.



197. As discussed above, a person of ordinary skill in the art would have understood that a snug fit of *Barnett*'s insert in *Young*'s bag would allow for smooth and even payout of the cable by reducing the risk of tangling or snagging, prevent the device from shifting during transportation and cable installation, and reduce wear and tear of *Young*'s bag and *Barnett*'s insert. See Section X.A.2. A

person of ordinary skill in the art would only need to use ordinary skill and creativity to adjust the size of *Young*'s bag or *Barnett*'s insert. *Id.*

C. Dependent Claim 11: “The communications cable payout bag of claim 10, wherein the shoulder strap comprises a single adjustable shoulder strap, and wherein the shoulder strap can be adjusted to a length of at least 37 inches.”

198. *Young* renders obvious claim 11 for reasons explained in Section IX.C (Ground 4, Claim 11).

D. Independent Claim 9

1. 9[pre]: “A method of paying out communications cable from a bag that includes a main compartment and a cable payout passageway, the method comprising:”

199. *Young* discloses or renders obvious limitation 9[pre] for the reasons explained in Section IX.D.1 (Ground 4, limitation 9[pre]).

2. 9[a]: “inserting a removable plastic insert and a cylindrical reel of communications cable supported by the removable insert in the main compartment,”

200. The combination of *Young* and *Barnett* described above renders obvious limitation 9[a]. As discussed above in limitation 10[b], in *Young* combined with *Barnett*, *Barnett*'s insert would constitute a “removable insert” in *Young*'s bag. *See above* Section X.B.3. *Barnett* discloses that its insert is made of cardboard to enhance recyclability, reduce weight, and lower cost of the system. *Barnett*, Abstract, 3:20-22, 4:19-24. In *Young* combined with *Barnett*, a person of ordinary

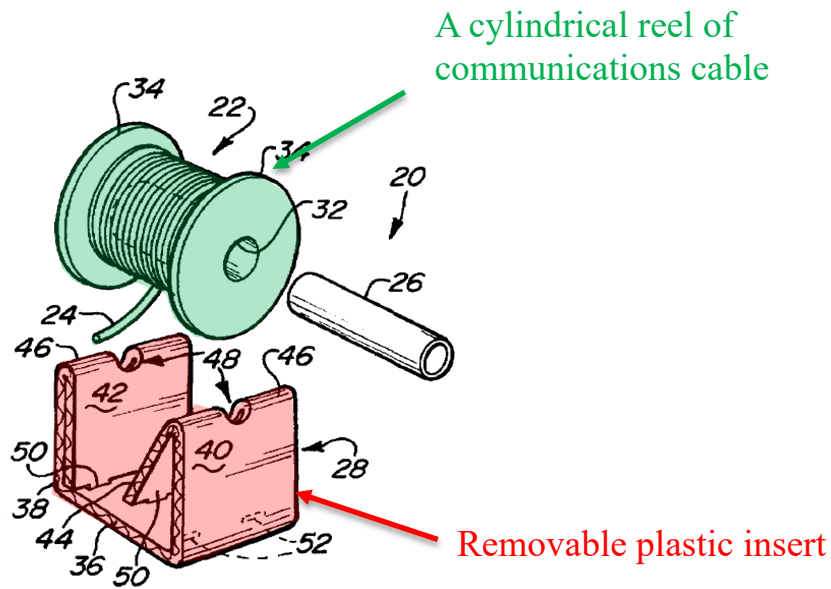
skill in the art would have found it obvious to modify *Barnett*'s insert to be made of a plastic material that is light weight, recyclable, and low cost. *See Bass*, Abstract, 2:47-49, 5:34-39, 6:61-67 (disclosing that using lightweight and high-strength polycarbonate for two end plates inserted in a container for supporting a reel).

201. While *Barnett* discloses the insert is made of paper products like its container to enhance recyclability, reduce weight and cost for a spool-in-a box system (*Barnett*, 4:19-23), in *Young* combined with *Barnett*, a person of ordinary skill in the art would have recognized the benefits of forming *Barnett*'s insert using a plastic material and would have been motivated to using a plastic material for the insert in *Young* combined with *Barnett*.

202. For example, a person of ordinary skill in the art would have understood that the cable payout system of *Young* combined with *Barnett* allows for cable replenishment after a reel is paid out and would be reused. Thus, a person of ordinary skill in the art would have understood that the combined system would benefit from more durable, long-lasting material that do not break or get damaged easily. A person of ordinary skill in the art would have known that cardboard is less durable than plastic and can be susceptible to mold and moisture damage. Also, using a plastic material for *Barnett*'s insert in *Young*'s bag would provide a

more stable and stronger support in the bag made of a flexible material. A person of ordinary skill in the art would have known to choose a suitable light weight and durable plastic material, such as polycarbonate. *Bass*, Abstract, 2:47-49. And a person of ordinary skill in the art would have known that suitable plastic materials, such as polystyrene, can also be recycled and cost effective. *See id.*, 3:7-10 (teaching polystyrene is easily recyclable and high impact). A person of ordinary skill in the art would have known how to form *Barnett's* insert with a suitable plastic material using conventional techniques, such as by injection molding, thermoforming or compression molding a plastic sheet. Thus, in *Young* combined with *Barnett*, a person of ordinary skill in the art would have found it obvious to use a plastic material for *Barnett's* insert, which would constitute a “removable plastic insert.”

203. And as discussed above in limitation 10[c], the combination of *Young* and *Barnett* renders obvious “a reel of communications cable that is supported by the removable insert.” *See above* Section X.B.4. Also as shown below, a person of ordinary skill in the art would have understood that *Barnett's* reel is a cylindrical reel because it has a cylindrical hub connecting two parallel disks that allow cable to be wound and stored on the reel.



Barnett, FIG. 1 (excerpted, annotated).

204. A person of ordinary skill in the art would have understood that when modifying *Barnett*'s insert to made of a plastic material and using such insert in *Young*'s cable payout bag, *Barnett*'s insert ("removable plastic insert") would be supporting its reel ("cylindrical reel of communications cable") and be inserted into the interior of *Young*'s bag ("main compartment") via the bag's opening. *See above* Sections X.A.2, X.B.3.

3. 9[b]: "wherein the reel of communications cable has a loose end of cable at an outer portion thereof, and"

205. This limitation is encompassed by limitation 10[c]. The combination of *Young* and *Barnett* described above renders obvious limitation 9[b] for the reasons discussed in limitation 10[c]. *See above* Section X.B.4.

4. 9[c]: “wherein the main compartment is constructed of a flexible material;”

206. This limitation is encompassed by limitation 10[a]. *Young* discloses limitation 9[c] for the reasons discussed in limitation 10[a]. *See above* Section X.B.2.

5. 9[d]: “aligning the loose end of cable from the outer portion of the reel of communications cable with the cable payout passageway; and”

207. The combination of *Young* and *Barnett* described above renders obvious limitation 9[d]. As discussed above in limitations 9[pre] and 9[b], the combination of *Young* and *Barnett* renders obvious “a cable payout passageway” and “a loose end of cable at an outer portion” of the reel of communications cable. *See above* Sections X.D.1, X.D.3; *see also* Sections X.B.4, X.B.6. As discussed above, in *Young* combined with *Barnett*, a person of ordinary skill in the art would have used the exit opening (“cable payout passageway”) of *Young*’s bag to receive the loose end of cable from the outer portion of the reel of *Barnett* in two ways. In both ways, a person of ordinary skill in the art would have aligned the loose end of cable from the outer portion of the reel of *Barnett* with the exit opening of *Young*’s bag to allow cable to be smoothly paid out from the outer portion of the reel and from the interior to the exterior of the bag without additional twisting or hindrance.

6. 9[e]: “pulling the loose end of cable through the cable payout passageway.”

208. The combination of *Young* and *Barnett* described above renders obvious limitation 9[e]. When using *Barnett*’s insert in *Young*’s cable payout bag, a person of ordinary skill in the art would have known to pull the loose end of cable through the cable payout passageway of *Young*’s bag to draw out a length of the cable. *See Bass*, 8:36-42 (pulling a desired length of cable through payout passage); *Fontana*, 4:14-19 (pulling the free end of cable to unwind the cable coil on a spool). A person of ordinary skill also would have known that such pulling allows the reel to rotate to facilitate cable payout. *Holmes*, 4:12-16 (pulling a cable at a tangent with respect to the cable causes the reel to rotate).

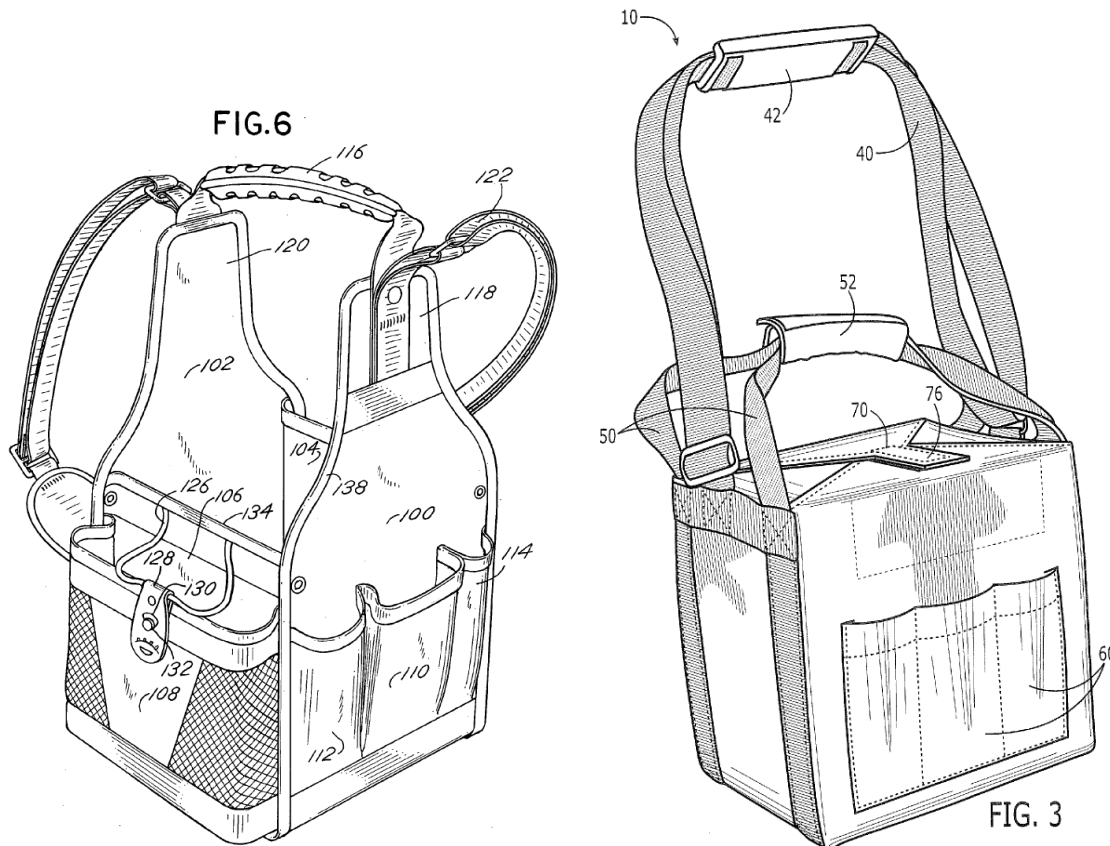
XI. YOUNG IN VIEW OF BASS AND REDZISZ (GROUND 4) OR YOUNG IN VIEW OF BARNETT AND REDZISZ (GROUND 7) RENDERS OBVIOUS CLAIM 12

A. Overview of *Redzisz* (Ex. 1005)

209. As discussed above and shown below, *Redzisz*’s bag includes multiple auxiliary pouches. An auxiliary pouch 108 is formed on the outside of the front panel 106, auxiliary pouch 142 is provided on the outside of backside panel 104, auxiliary pouches 110, 112 and 114 are provided on the outside of first end panel 100, and auxiliary pouches 146 and 148 are provided on the outside of second end panel 102. *Id.*, [0033], [0035], FIGS. 6-9.

210. *Redzisz* teaches pouch 142 has a zipper fastener or closure 144, and pouches 146 and 148 each with its own flap 150 and 152, respectively. *Redzisz*, [0038]. *Redzisz* teaches these additional pockets allow for separating and transporting tools and versatility of the bag. *Id.*, [0003], [0038].

211. Indeed, *Redzisz*'s bag is similar to the bag of the '697 patent, both having a main compartment and at least one storage pouch on the exterior of the main compartment. *Redzisz*, [0033], [0035], FIGS. 6-9; Ex. 1001, 5:49-52, FIG. 3; see Section V.A (Overview of the '697 Patent).



Redzisz, FIG. 7; Ex. 1001, FIG. 1.

B. A Person of Ordinary Skill in the Art Would Have Found It Obvious to Combine *Young*, *Bass*, and *Redzisz* (Ground 3) and Combine *Young Barnett*, and *Redzisz* (Ground 7).

212. As discussed above, the combinations of *Young* and *Bass* (Ground 3, Section IX) and *Young* and *Barnett* (Ground 6, Section X) each render obvious a communication cable payout bag. A person of ordinary skill in the art would have been motivated to further modify the communication cable payout bag of *Young* as modified by *Bass* (or *Barnett*) to add at least one auxiliary pouch outside the bag as taught in *Redzisz*. A person of ordinary skill in the art would have understood that the pouches would allow for additional storage space for tools and accessories for installation, such as pliers, wrenches, screwdrivers, and tapes. *Thurner*, [0013]. Such additional tool storage would make it more convenient for cable installers to carry installation tools and accessories and facilitate their installation work in the field and add more versatility to the bag. *See Redzisz*, [0003], [0038].

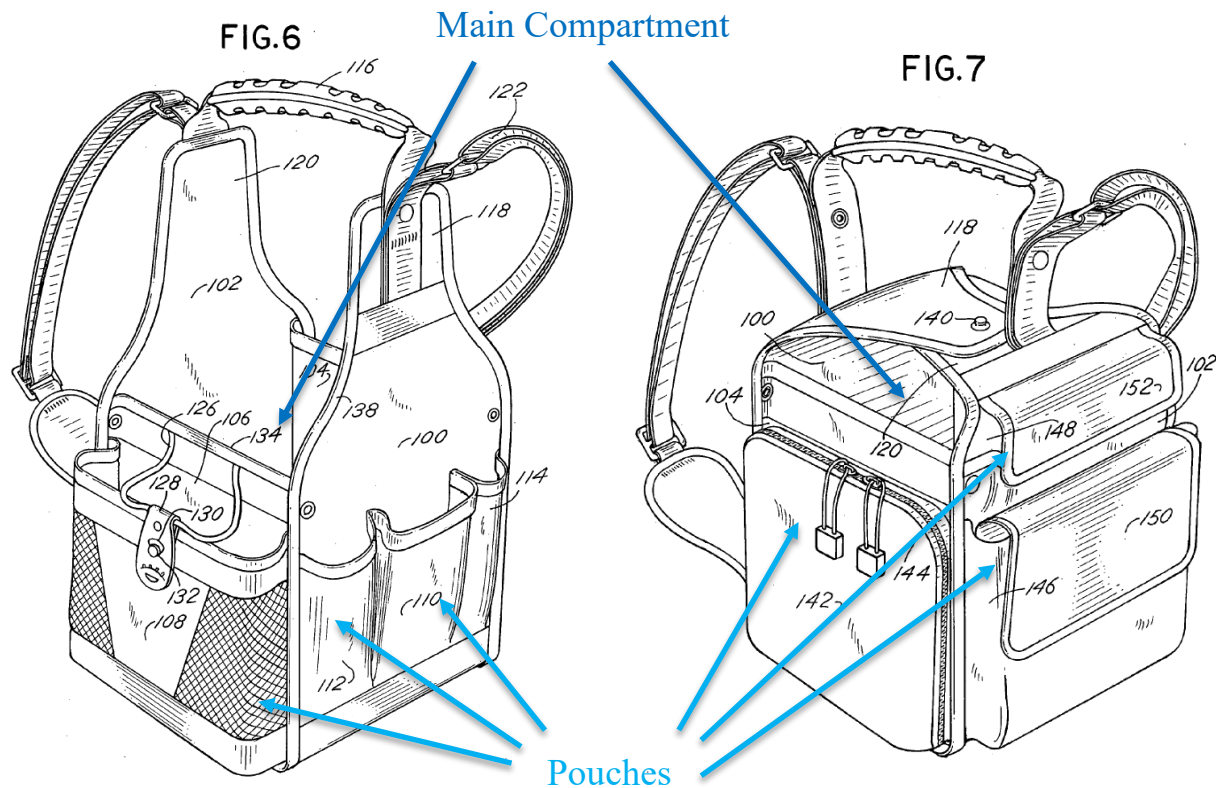
213. A person of ordinary skill in the art would have expected reasonable success in modifying *Young*'s bag to include at least one external pouch using ordinary skill, such as by attaching the pouch to the outside of the bag by riveting, binding or stitching, clips, snaps, or other suitable attachment methods. *Thurner*, [0013]; *Redzisz*, [0037]. A person of ordinary skill in the art would have understood that such modification would have been using a known device to

improve a similar device in the same way. Indeed, it was common and known for a tool bag to have a storage pouch on the exterior of the main compartment of the bag for additional storage. *See Thurner*, [0010], [0013], FIGS. 1-4; *Ho*, [0025], FIG. 3; *Williams*, [0025], FIGS. 3-5.

C. Dependent Claim 12: “The communications cable payout bag of claim 10, further comprising at least one storage pouch on the exterior of the main compartment.”

214. In my opinion, *Young* in view of *Bass* and *Redzisz* (Ground 4) and *Young* in view of *Barnett* and *Redzisz* (Ground 7) renders obvious claim 12.

215. *Redzisz* discloses a bag that has auxiliary pouches provided outside the bag, including an auxiliary pouch 108 formed on the outside of the front panel 106, auxiliary pouch 142 is provided on the outside of backside panel 104, auxiliary pouches 110, 112 and 114 are provided on the outside of first end panel 100, and auxiliary pouches 146 and 148 are provided on the outside of second end panel 102. *Redzisz*, [0033], [0035], FIGS. 6-9. *Redzisz*’s pouches are on the exterior of the main compartment formed by the outsides of first end panel, second end panel, front panel, back panel, and bottom panel joined together, as shown below. *Id.*, [0026]-[0027], [0030]-[0031], [0037], FIGS. 1, 6-9.



Redzisz, FIGS. 6-7.

216. A person of ordinary skill in the art would have found it obvious to attach an auxiliary pouch as taught in *Redzisz* (“storage pouch”) to the exterior of *Young*’s bag as modified by *Bass* (or *Barnett*) for storing tools and accessories for installation and improve versatility. See Section XI.B.

XII. [GROUND 2, 5, 8] *COHN* IN VIEW OF *REDZISZ* AND *EASTWOOD* (GROUND 2), *YOUNG* IN VIEW OF *BASS* AND *EASTWOOD* (GROUND 5), OR *YOUNG* IN VIEW OF *BARNETT* AND *EASTWOOD* (GROUND 8) RENDERS OBVIOUS CLAIM 13

A. Overview of *Eastwood* (Ex. 1017)

217. *Eastwood* was filed on April 15, 2005, and granted on January 22, 2008 (*Eastwood*, cover), over one year before the priority date of the '697 patent. I have thus been informed that *Eastwood* qualifies as prior art to the '697 patent under at least 35 U.S.C. § 102 (b).

218. *Eastwood* discloses a caddy 2 for carrying and dispensing wire wound on spools. *Eastwood*, 1:5-21, 4:62-67. As shown below, caddy 2 includes a bottom portion 5 rotatably coupled to a top portion 6. *Id.*, 5:54-65, 6:47-50, FIGS. 2-9, 12, 14. Bottom portion 5 includes a plurality of wells 37 for respectively receiving and supporting a plurality of wire spools 28 on which wire is wound. *Id.*, 7:6-64, 9:15-18, FIGS. 14-15, 18-19. Caddy 2 further includes a cover 27 releasably secured to bottom portion to retain the wire spool in the well. *Id.*, 6:50-7:14, 9:15-27, FIGS. 1-2, 10-14, 19. Cover 27 provides apertures 29 and wire can be drawn through the corresponding aperture. *Id.*, 6:53-57, 7:15-21, 7:65-8:21, FIGS. 14, 19, 21-24.

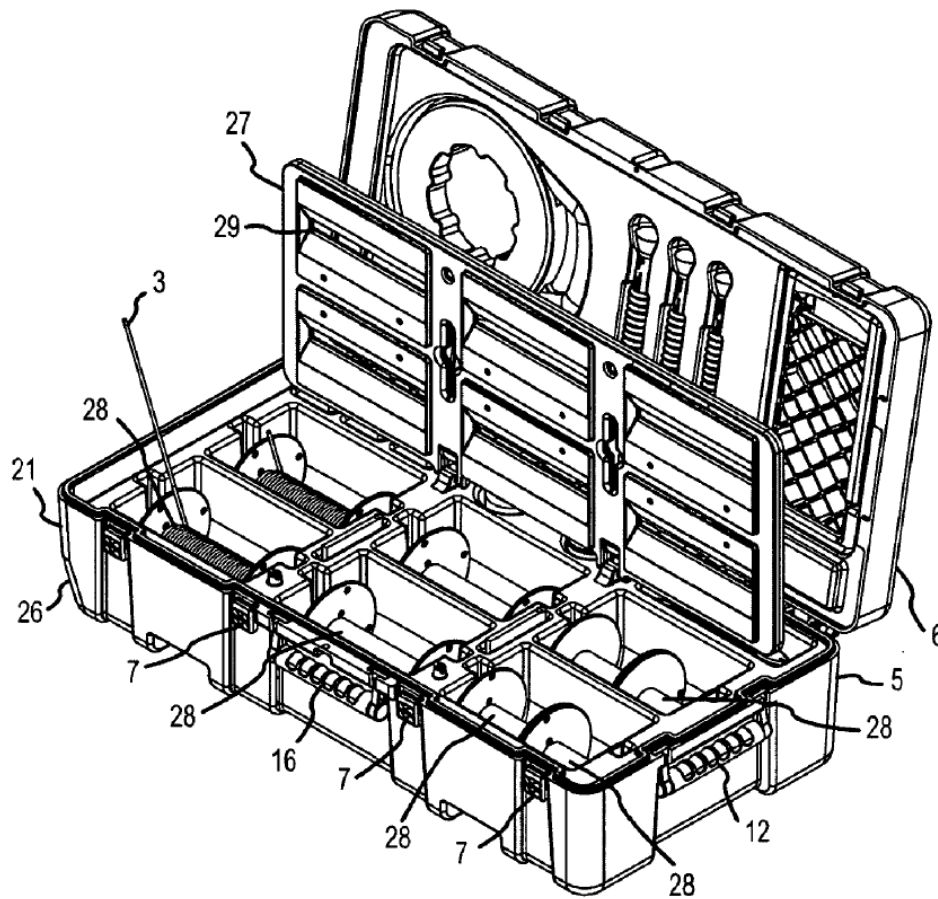


FIG.13

Id., FIG. 13.

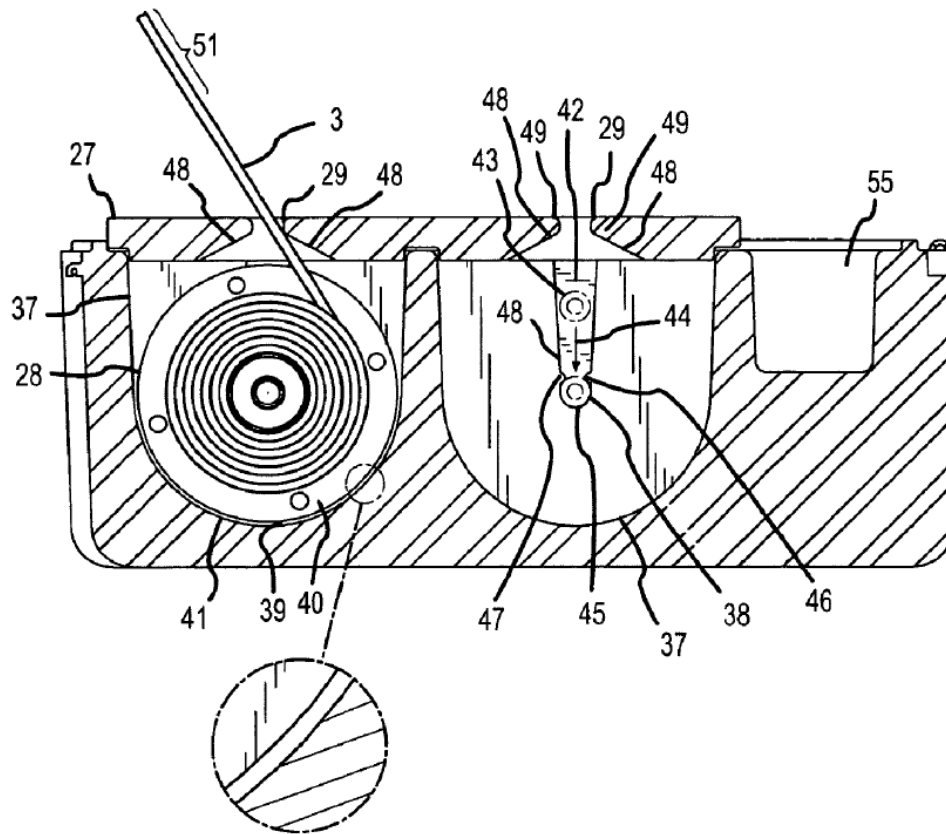
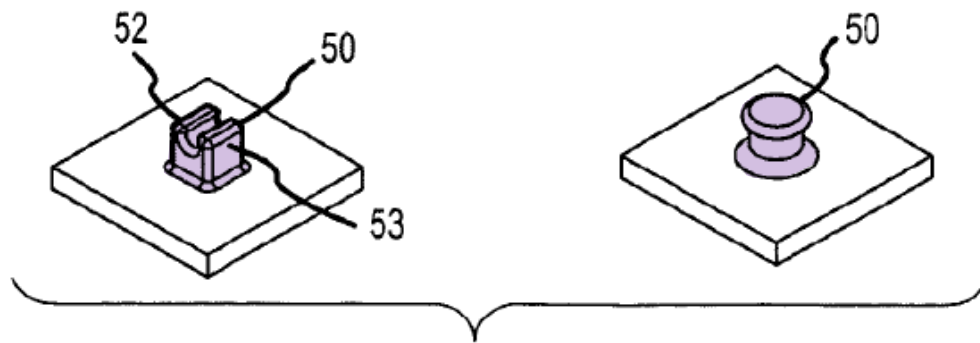


FIG.19

Id., FIG. 19.

**FIG. 25**

Id., FIG. 25.

219. As shown above, caddy 2 further includes a **wire retainer 50** coupled to cover 27 to secure a terminal portion 51 of wire 3 drawing from wire spool 28 through aperture 29 in the cover 27. *Id.*, 8:22-41, FIGS. 23-25. Wire retainer 50 is a bore and terminal portion 51 is inserted into the bore. *Id.*, 8:27-31, FIGS. 23-24. Alternatively, wire retainer 50 is a pair of members projecting from a surface 31 of the cover 27 and the terminal portion 51 is disposed therebetween. *Id.*, 8:31-37, FIG. 25. Or wire retainer 50 is a single member projecting from surface 31 of cover 27 and terminal portion 51 is wound around the single member to secure the wire. *Id.*, 8:37-41, FIG. 25.

220. *Eastwood* is analogous to the '697 patent because it also relates to an apparatus and method for carrying and paying out cable. *Id.*, 4:62-5:2, 5:55-65; Ex. 1001, 1:5-59; *see* Section V.A (Overview of the '697 Patent).

B. A Person of Ordinary Skill in the Art Would Have Found It Obvious to Combine *Cohn*, *Redzisz*, and *Eastwood* (Ground 3), Combine *Young*, *Bass*, and *Eastwood* (Ground 6), Combine *Young Barnett*, and *Eastwood* (Ground 9).

221. For the reasons explained above, the combinations of *Cohn* and *Redzisz* (Ground 1, Section VII), *Young* and *Bass* (Ground 3, Section IX), and *Young* and *Barnett* (Ground 6, Section X) each render obvious a communication cable payout bag.

222. A person of ordinary skill in the art would have been motivated to modify the communication cable payout bag of *Redzisz* as combined with *Cohn* or that of *Young* as combined with *Bass* (or *Barnett*) to add a wire retainer (“cable lock”) on the outside surface of the bag to secure a terminal portion of the cable drawing out of the bag, as taught by *Eastwood*. A person of ordinary skill in the art would have understood that the retainer would prevent the terminal end of the cable from retracting into the bag and prevent unwinding or tangling and thus would constitute a cable lock. *See Cohn*, 3:20-27, FIGS. 1, 4 (teaching a wire securement opening through which the loose end of the wire can be folded around and tucked back to the box to prevent unwinding); *Bass*, 4:9-26, 8:23-25, FIG. 6 (teaching securing the loose end of the cable using two starburst cuts in the box container to hold the loose end of the cable and prevent it from retracting to the box or from dangling).

223. A person of ordinary skill in the art would have understood that such retainer would provide various benefits during the cable transportation and installation. For example, a person of ordinary skill in the art would have understood that such retainer would prevent uncontrolled unwinding or sudden movement, when cable is not being drawn, such as during transportation, or when the installer prepares to cut a desired length of the cable. *Bass*, 8:40-45 (teaching holding the cable in the starburst cut to prepare to cut the cable). A person of ordinary skill in the art also would have understood that such retainer would reduce the time spent on controlling the reel or dealing with overruns or tangles. A person of ordinary skill in the art also would have understood that using such retainer allows for more precise control over how much cable is pulled at a given time, reducing wasting cable.

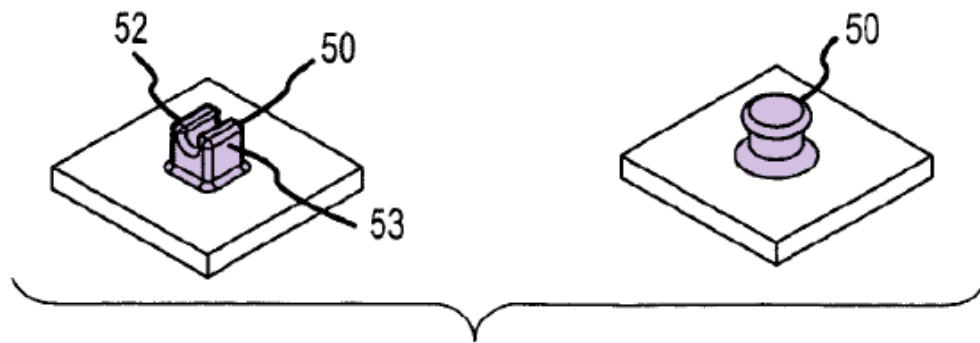
224. A person of ordinary skill in the art would have expected reasonable success in modifying *Redzisz*'s bag or *Young*'s bag to have the wire container using ordinary skill, such as by attaching the wire container to the outside of the bag by glue, stitching, or using a fastener, such as a Velcro, a snap connector. A person of ordinary skill in the art would have understood that such modification would have been using a known device to improve a similar device in the same way. Indeed, I agree with the Examiner and the Board's finding that Eastwood

discloses the claimed cable lock, and when combined with *Cote* and *Godshaw*, renders obvious a cable lock on a cable payout bag. Ex. 1003, 18-19.

C. Dependent Claim 13: “The communications cable payout bag of claim 10, further comprising a cable lock configured to secure the loose end of cable on the exterior of the main compartment, wherein the cable lock is located on the exterior of the main compartment adjacent the cable payout passageway.”

225. In my opinion, *Cohn* in view of *Redzisz* and *Eastwood* (Ground 2), *Young* in view of *Bass* and *Eastwood* (Ground 5), or *Young* in view of *Barnett* and *Eastwood* (Ground 8) render obvious claim 13.

226. *Eastwood* discloses a caddy 2 for carrying and dispensing wire wound on spools. *Eastwood*, 1:5-21, 4:62-67. As shown below, caddy 2 includes a cover 27 that covers a well 37 that receives and supports a spool 28 wound with wire or cable 3. *Id.*, 4:62-67, 7:6-64, 9:15-18, FIGS. 14-15, 18-19. Wire 3 exists from an aperture 29 in the cover and the terminal end 51 of wire is secured by a **wire retainer 50**. *Id.*, 6:53-57, 7:15-21, 7:65-8:21, FIGS. 14, 19, 21-24. A person of ordinary skill in the art would have understood that wire retainer 50 is a device that secures the loose end of cable and thus constitutes a cable lock.

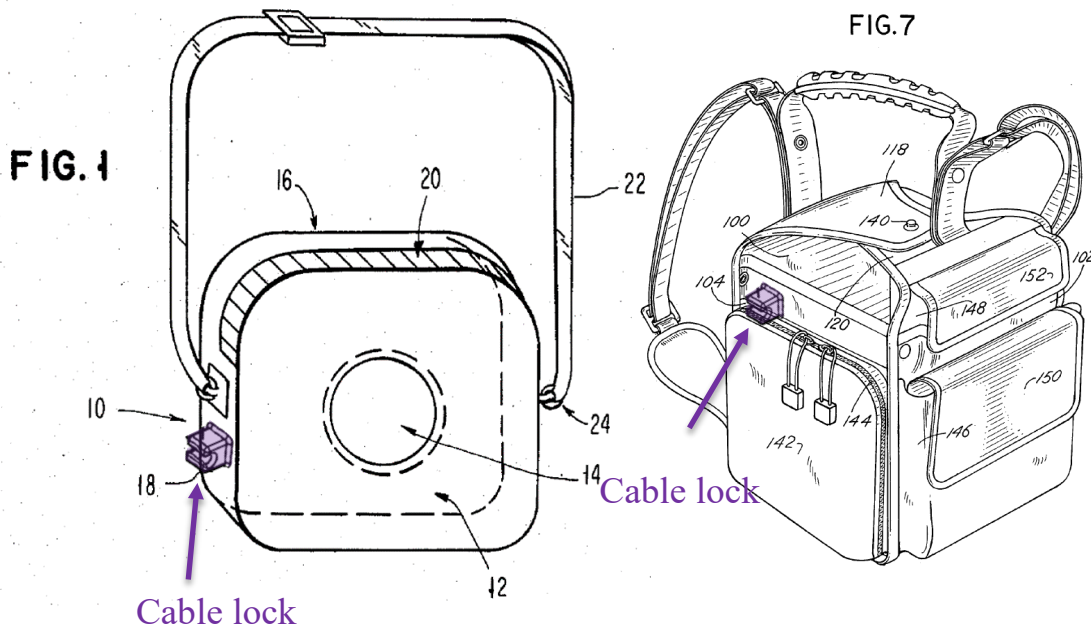
**FIG. 25**

Eastwood, FIG. 25 (annotated).

227. *Eastwood* discloses wire retainer 50 can be a pair of members projecting from a surface 31 of the cover 27 and terminal portion 51 is disposed therebetween to secure the wire. *Id.*, 8:30-36, FIG. 25. Or wire retainer 50 is a single member projecting from surface 31 of cover 27 and terminal portion 51 is wound around the single member to secure the wire. *Id.*, 8:37-40, FIG. 25. A person of ordinary skill in the art would have understood that wire retainer 50 (“cable lock”) would secure the loose end of cable on the exterior of well 37 (“main compartment”) because it is located on surface 31 external to well 37. I also agree with the Board and the Examiner’s finding that *Eastwood*’s wire retainer is on the external portion of the main compartment. Ex. 1003, 18-19.

228. A person of ordinary skill in the art also would have found it obvious to modify *Redzisz*’s bag or *Young*’s bag to have a wire retainer (“cable lock”)

projecting from the outside surface of the bag (“on the exterior of main compartment”) as taught by *Eastwood* to secure the terminal portion of the cable (“loose end”), as illustrated below:



Young, FIG. 1 (modified, annotated)

Redzisz, FIG. 7 (modified, annotated)

229. A person of ordinary skill in the art would have found it obvious to add a wire retainer (“cable lock”) as taught in *Eastwood* to the exterior of *Redzisz*’s bag as modified by *Cohn* or *Young*’s bag as modified by *Bass* (or *Barnett*) for securing the loose end of the cable and prevent uncontrolled cable movement and improve cable installation efficiency. See Section XII.B.

XIII. CONCLUSION

230. For the reasons set forth above, in my opinion, a person of ordinary skill in the art as described in paragraph 15 would have considered the Challenged Claims of the '697 patent to be obvious over the prior art discussed above.

231. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

232. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: April 25, 2025

By: 

Charles A. Eldering, Ph.D.

APPENDIX

A

Curriculum Vitae
Dr. Charles A. Eldering

CAsE Analysis, Inc.
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AREAS OF SPECIALIZATION: Extensive technical and market expertise in the areas of telecommunications, microelectronics, consumer electronics, targeted advertising, location-based services, data mining, and bioinformatics, with over 30 years of industrial experience. Highly skilled in the management and utilization of patents including infringement analysis and documentation of use of claimed technology.

EDUCATION:

- 1989 University of California; Davis, California
 Ph.D. Electrical Engineering
- 1985 Syracuse University; Syracuse, New York
 M.S. Solid State Science and Technology
- 1981 Carnegie Mellon University; Pittsburgh, Pennsylvania
 B.S. Physics

OTHER QUALIFICATIONS:

Registered U.S. Patent Agent. Registration No. 39,180
FCC Licensed General Class Amateur Radio Operator, N3YRB

EMPLOYMENT HISTORY:

December 2013 to present:

CAsE Analysis, Inc.
Founder & President

September 2022 to present

SitNet LLC
Founder and Managing Member

May 2000 to December 2021

Expanse Networks/Expanse Bioinformatics
Founder and President

December 1997 to December 2013:

Technology, Patents & Licensing, Inc. (now TechPats)
Founder and President

October 1995 to November 1997:

Next Level Communications, Rohnert Park, CA
Director, Advanced Systems Engineering

September 1993 to September 1995:

General Instrument Corporation, Hatboro, PA
Manager, Fiber-to-the-Curb/Switched Digital Video Systems; March 1995 to September 1995
Manager, Broadband Systems Engineering; January 1994 to March 1995
Senior Project Engineer, Systems Engineering; September 1993 to December 1993

January 1990 to August 1993:

Alcatel, Madrid, Spain
Senior Engineer/Manager, Fiber in the Loop R&D; October 1990 to August 1993
Consultant; January 1990 to September 1990

June 1986 to August 1990:

University of California, Davis, CA
Researcher, Department of Electrical and Computer Engineering

October 1981 to May 1986:

United States Air Force, Rome Laboratory, Rome, NY

Officer

EXPERT WITNESSING:

1. *BizLink Technology, Inc. v. Anderson Power Products, Inc.*, IPR2024-00687 (PTAB).
2. *PPC Broadband, Inc. v. Amphenol Corporation*, No. 2023-01363 (PTAB).
3. *CommScope Technologies v. Belden Nos.*, IPR2023-01056, -01058, -01061, -01062 (PTAB).
4. *PPC v. Perfect Vision Manufacturing, Inc.*, Case No. 4:22-CV-204 (Eastern District of Arkansas).
5. *PPC v. Perfect Vision Manufacturing, Inc.*, Case No. 4:22-CV-163 (Eastern District of Arkansas).
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7. *PPC v. Charles Industries, LLC and Amphenol Corporation*, Case No. 1:22-CV-01517 (District of Delaware).
8. *Belden v. CommScope, Inc.*, Case No. 22-782-RGA (District of Delaware).
9. *Amphenol Corporation v. PPC Broadband, Inc.*, Nos. IPR2022-00718, -00719, -00720 and -00721 (PTAB).
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18. *Unified Patents Inc. v. iMTX Strategic, LLC*, No. IPR2015-01061 (PTAB).
19. *Unified Patents Inc. v. TransVideo Electronics, Ltd.*, No. IPR2015-01519 (PTAB).
20. *PPC Broadband, Inc. d/b/a PPC v. Times Fiber Communications, Inc.*, United States District Court for the Northern District of New York (Civil Action No. 5:13-cv-460-TJM-DEP)
21. *PPC Broadband, Inc. d/b/a PPC v. Corning Gilbert, Inc.*, United States District Court for the Northern District of New York (Civil Action No. 5:13-cv-00538-GLS-DEP).
22. *PPC Broadband, Inc. v. Corning Optical Communications RF, LLC, In the Matter of Certain Coaxial Cable Connectors and Components Thereof and Products Containing Same*, United States International Trade Commission, Washington, D.C. (Investigation No. 337-TA-938).

23. *BroadSoft, Inc. v. CallWave Communications, LLC*, United States District Court for the District of Delaware (DED-1-13-cv-00711-RGA).
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25. *Mediatube Corp and Northvu Inc. v. Bell Canada and Bell Aliant Regional Communications, Limited Partnership*, Canadian Federal Court (C.A. T-705-13).
26. *John Mezzalingua Associates, Inc. d/b/a PPC v. Corning Gilbert Inc.*, United States District Court for the District of Arizona (Case No. 2: 12-CV-12-02208-SMM).
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29. *Corning Gilbert Inc., v. PPC Broadband, Inc.*, No. IPR2013-00342 (PTAB).
30. *Corning Gilbert Inc., v. PPC Broadband, Inc.*, No. IPR2013-00346 (PTAB).
31. *Corning Gilbert Inc., v. PPC Broadband, Inc.*, No. IPR2013-00347 (PTAB).
32. *PPC Broadband, Inc. v. Corning Gilbert Inc.*, United States District Court for the Northern District of New York (Civil Action No. 5:13-cv-1310).
33. *PPC Broadband, Inc. d/b/a PPC v. Corning Gilbert, Inc.*, United States District Court for the Northern District of New York (Civil Action No. 11-cv-00761-GLS-DEP).
34. *Corning Gilbert, Inc. v. The United States of America, et al.* in the United States Court of International Trade (Case No. 11-00511).
35. *Parus Holdings, Inc. v National Airtran Airways, Inc., Airtran Holdings, Inc., Airtran Holdings, LLC* in the United States District Court for the Middle District of Florida, Tampa Division (Case No. 8:11-cv-01685-EAK-TBM).
36. *John Mezzalingua Associates, Inc. d/b/a PPC v. International Communications Manufacturing Corporation, Randall A. Holliday, and Belden Inc.* in the United States District Court for the Western District of Wisconsin (Case No. 3:11-cv-00424-bbc).
37. *eTool Development, Inc., and eTool Patent Holdings Corp. v National Semiconductor Corporation* in the United States District Court for the Eastern District of Texas, Marshall Division (Case No. 2:08-cv-196).
38. *John Mezzalingua Associates, Inc. d/b/a PPC, Inc. v. PCT International, Inc.* in the United States District Court for the Western District of Texas, San Antonio Division (Case No. 5:09-cv-00410-RF).
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40. *John Mezzalingua Associates, Inc. d/b/a PPC, Inc. v. Hanjiang Fei Yu Electronics Equipment Factory, Zhongguang Electronics, Yangzhou Zhongguang Electronics Co., Ltd., and Yangzhou Zhongguang Foreign Trade Co., Ltd.* in Certain Coaxial Cable Connectors and Components Thereof and Products Containing Same, United States International Trade Commission, Washington, D.C. (Investigation No. 377-TA-650).
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44. *John Mezzalingua Associates, Inc. d/b/a PPC, Inc. v. Arris International, Inc.* in the United States District Court for the Western District of Wisconsin (Case No. 03-C-0353-C).
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14. Eldering, C.A. Panel participant in Deregulating Digital Transport: The Bandwidth Crisis and the Role of Government. *Progress & Freedom Foundation's 5th Annual Cyberspace and the American Dream Aspen Summit 1998*, (August, 1998), broadcast on C-SPAN.
15. Eldering, C.A. Evolution of Broadband Access Technologies and Systems. *Networkd + Interop '97; The 4th Annual Engineer Conference*, (May, 1997).
16. Eldering, C.A. An Overview of Wired Broadband Access Systems. *IEEE Sarnoff Symposium on Advances on Wired and Wireless Communications*, (March, 1997).
17. Eldering, C.A. Technology: Past and Present – The Impact of Network Competitors. Communications Media Center at New York Law School, *Seminar on Cable TV Franchise Renewals: Business as Usual or A Time for New Priorities?*, (November, 1996).
18. Eldering, C.A. Broadband Access Technologies. *The 8th Annual Digital Audio/Video Workshop*, (October, 1996).
19. Eldering, C.A. Burst Mode Receivers for Fiber Optic Networks. *1995 IEEE/LEOS Summer Topical Meetings on IC's for New Age Lightwave Communications*, (August, 1995).
20. Eldering, C.A. Performance Comparison of Multiple-Access Techniques in Hybrid Fiber-Coax Return Systems. *1995 Optical Fiber Conference*, (February, 1995).
21. Eldering, C.A. Characteristics of Hybrid Fiber-Coax Return Systems. *1995 SCTE Conference on Emerging Technologies*, (January, 1995).
22. Eldering, C.A. Engineering Requirements for Hybrid Fiber-Coax Telephony Systems. *NCTA Engineering Committees 1994 Technical Program*, (May, 1994).
23. Eldering, C.A. Burst and Bit Synchronization Methods for Passive Optical Networks. *Fourth IEEE Workshop in Local Optical Networks*, (September, 1992).
24. Eldering, C.A. Transmitter and Receiver Requirements for Time Division Multiple Access Passive Optical Networks. *Third IEEE Workshop on Local Optical Networks*, (September, 1991).
25. Eldering, C.A. Subscriber Loop Optical Distribution Architecture (SODA): A Cost Effective TDM/TDMA Fiber System. *Fiber Networks for Telephony and CATV*, (September, 1991).
26. Eldering, C.A. Fixed Optical Interconnects for Concurrent Computing Systems. *Optical Information Processing Systems and Architectures*, (August, 1989).

TEACHING APPOINTMENTS:

- University of California at Davis. Lecturer, Electronics Laboratory, (1987-88).
- State University of New York, Utica/Rome. Adjunct Professor, Electronics, (1985-86).

REPORTS, THESES, OTHER PUBLICATIONS:

1. Charles Eldering and Juan Gisone. Claims-based patent valuation. *Intellectual Asset Management Magazine*, (Issue 50 November/December 2011).
2. Charles A. Eldering, Technology, Patents & Licensing, Inc. and Expanse Networks, Inc., Amici Curiae Supporting MercExchange L.L.C., *eBay Inc. v. MercExchange L.L.C.*, on Writ of Certiorari to the United States Court of Appeals for the Federal Circuit (2006).
3. Keeler, P. and C.A. Eldering, S. Weiswasser, A. Weixel and H. Feld. *Reply Comments of Next Level Communications*, CC Docket No. 98-147. FCC Proceedings on Deployment of Wireline Services Offering Advanced Telecommunications Capability. (October 16, 1998).
4. Eisenach, J. and C.A. Eldering. *Comments of the Progress and Freedom Foundation*, CC Docket No. 98-146. FCC Proceedings on Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996. (September 14, 1998).
5. Eames, T., C.A. Eldering and J. Bernstein. *Reply Comments of Next Level Communications*, RM no. 9244, file no. CCB/CPD 98-15. FCC Proceedings on Petition of Alliance for Public Technology Requesting Issuance of Notice of Inquiry and Notice of Proposed Rulemaking to Implement Section 706 of the 1996 Telecommunications Act. (May 4, 1998).
6. Eames, T., C.A. Eldering and J. Bernstein. *Comments of Next Level Communications*, CC Docket No. 98-11. FCC Proceedings on Petition of Bell Atlantic Corporation for Relief from Barriers to Deployment of Advanced Telecommunications Services. (April 6, 1998).
7. Bernstein, J., T. Eames and C.A. Eldering. *Comments of Next Level Communications*, CC Docket No. 98-32. FCC Proceedings on Petition of Ameritech Corporation to Remove Barriers to Invest in Advanced Telecommunications Capacity. (April 6, 1998).
8. Eldering, C.A. and J. Bernstein. *Comments of Next Level Communications*, CC Docket No. 98-26. Petition of US West Communications, Inc. for Relief from Barriers to Deployment of Advanced Telecommunications Services. (April 6, 1998).
9. Eames, T. and C.A. Eldering. Going All-Digital. *Telephony*, (August 18, 1997).
10. Blasko, J.P., C.A. Eldering and A. Brown. Provisional Applications Offer Patentees Priority. *National Law Journal*, (June 16, 1997).
11. Eames, T., B. Weeks and C.A. Eldering. A Winning Solution. *Telephony*, (June 2, 1997): 150-162.
12. Eldering, C.A. Analysis of Fiber to the Curb and Fiber to the Home Architectures. Internal Report prepared for *Telettra España*. (August, 1990).
13. Eldering, C.A. Electro-Optic Polymeric Thin Films and Device. *Ph.D. Dissertation*, University of California, Davis, (1997).
14. Eldering, C.A., B.J. Walker, S.P. Ilitzki and D.J. Holtzhauer. Temperature Measurements Using Infrared Techniques. *Internal Government Report*, Rome Air Development Center (March, 1986).
15. Eldering, C.A. Evaluation of the Use of p-n Structures as Photodetectors in Silicon Integrated Circuits. *Master's Thesis*, (June, 1985), also published as a Government technical report, RADC-TR-85-123.

ISSUED US PATENTS:

1. U.S. Patent 12,043,411 Systems and methods for tethered drones
2. U.S. Patent 11,956,515 Creating customized programming content

3. U.S. Patent 11,791,054 Comparison and identification of attribute similarity based on genetic markers
4. U.S. Patent 11,741,499 Methods and systems using a multi-platform targeted advertising system to select advertisements within a target geographic area
5. U.S. Patent 11,735,323 Computer implemented identification of genetic similarity
6. U.S. Patent 11,678,026 Creating customized programming content
7. U.S. Patent 11,621,089 Attribute combination discovery for predisposition determination of health conditions
8. U.S. Patent 11,600,393 Computer implemented modeling and prediction of phenotypes
9. U.S. Patent 11,581,096 Attribute identification based on seeded learning
10. U.S. Patent 11,581,098 Computer implemented predisposition prediction in a genetics platform
11. U.S. Patent 11,545,269 Computer implemented identification of genetic similarity
12. U.S. Patent 11,514,085 Learning system for pangenetic-based recommendations
13. U.S. Patent 11,515,046 Treatment determination and impact analysis
14. U.S. Patent 11,515,047 Computer implemented identification of modifiable attributes associated with phenotypic predispositions in a genetics platform
15. U.S. Patent 11,495,360 Computer implemented identification of treatments for predicted predispositions with clinician assistance
16. U.S. Patent 11,482,340 Attribute combination discovery for predisposition determination of health conditions
17. U.S. Patent 11,363,347 Creating customized programming content
18. U.S. Patent 11,348,691 Computer implemented predisposition prediction in a genetics platform
19. U.S. Patent 11,348,692 Computer implemented identification of modifiable attributes associated with phenotypic predispositions in a genetics platform
20. U.S. Patent 11,166,074 Creating customized programming content
21. U.S. Patent 11,003,694 Learning systems for pangenetic-based recommendations
22. U.S. Patent 10,667,009 Profiling and identification of television viewers
23. U.S. Patent 10,438,240 Methods and systems using a multi-platform targeted advertising system to select advertisements within a target geographic area
24. U.S. Patent 10,379,812 Treatment determination and impact analysis
25. U.S. Patent 10,231,031 Queue based advertisement scheduling and sales
26. U.S. Patent 10,206,012 Queue based head-end advertisement scheduling method and apparatus
27. U.S. Patent 10,116,983 System and method for managing advertising in program streams
28. U.S. Patent 10,182,258 Profiling and identification of television viewers
29. U.S. Patent 10,104,414 Method and system for targeted advertisement filtering and storage
30. U.S. Patent 9,918,117 System and method for managing advertising in program streams
31. U.S. Patent 9,906,819 Advertisement management system for digital video streams
32. U.S. Patent 9,888,297 Queue based advertisement scheduling and sales
33. U.S. Patent 9,602,884 Customizing programming content
34. U.S. Patent 9,582,647 Attribute combination discovery for predisposition determination
35. U.S. Patent 9,544,631 Queue-based head-end advertisement scheduling method and apparatus

36. U.S. Patent 9,524,194 Performing services on behalf of physical devices
37. U.S. Patent 9,479,803 Alternative advertising in prerecorded media
38. U.S. Patent 9,473,814 Profiling and identification of television users
39. U.S. Patent 9,426,315 Grouping advertisement subavails
40. U.S. Patent 9,432,733 Queue based advertisement scheduling and sales
41. U.S. Patent 9,390,423 Methods and systems for verifying advertisements in a multi-platform targeted advertising system
42. U.S. Patent 9,232,252 Queue-based head-end advertisement scheduling method and apparatus
43. U.S. Patent 9,170,992 Treatment determination and impact analysis
44. U.S. Patent 9,165,604 Alternative advertising in prerecorded media
45. U.S. Patent 9,147,112 Advertisement Detection
46. U.S. Patent 9,124,949 Grouping advertisement subavails
47. U.S. Patent 9,043,827 Method and system for providing conditional access to encrypted content
48. U.S. Patent 9,031,870 Pangenetic Web User Behavior Prediction System
49. U.S. Patent 8,934,843 Weighting factor adjustment in adaptive antenna arrays
50. U.S. Patent 8,930,204 Determining lifestyle recommendations using aggregated personal information
51. U.S. Patent 8,837,920 Alternative Advertising in prerecorded media
52. U.S. Patent 8,813,126 Advertisement Filtering and Storage for Targeted Advertisement Systems
53. U.S. Patent 8,789,091 Queue based advertisement scheduling and sales
54. U.S. Patent 8,788,286 Side effects prediction using co-associating bioattributes
55. U.S. Patent 8,788,283 Modifiable attribute identification
56. U.S. Patent 8,776,111 Methods and systems for generating subscriber usage profiles in a multi-platform targeted advertising system
57. U.S. Patent 8,775,287 Method and system for determining insurance needs
58. U.S. Patent 8,677,401 Grouping advertisement subavails
59. U.S. Patent 8,667,536 Profiling and identification of television viewers
60. U.S. Patent 8,655,915 Pangenetic web item recommendation system
61. U.S. Patent 8,655,908 Predisposition modification
62. U.S. Patent 8,655,899 Attribute method and system
63. U.S. Patent 8,635,087 Aggregating personal information
64. U.S. Patent 8,634,652 Video entity recognition in compressed digital video streams
65. U.S. Patent 8,606,761 Lifestyle optimization and behavior modification
66. U.S. Patent 8,581,873 Elastomeric wave tactile Interface
67. U.S. Patent 8,577,296 Weighting factor adjustment in adaptive antenna arrays
68. U.S. Patent 8,570,938 Method and system for adaptive antenna array pairing
69. U.S. Patent 8,484,677 Advertisement monitoring system
70. U.S. Patent 8,473,457 Method of distributing contact and calendar records
71. U.S. Patent 8,458,121 Predisposition prediction using attribute combinations

72. U.S. Patent 8,458,097 System, method and software for healthcare selection based on pangenetic data
73. U.S. Patent 8,452,619 Masked data record access
74. U.S. Patent 8,424,043 Method and system for detecting unscheduled events and recording programming streams
75. U.S. Patent 8,417,675 Method of distributing contact and calendar records
76. U.S. Patent 8,386,519 Pangenetic web item recommendation system
77. U.S. Patent 8,374,387 Video entity recognition in compressed digital video streams
78. U.S. Patent 8,365,216 Video stream modification to defeat detection
79. U.S. Patent 8,358,204 Dynamic tactile interface
80. U.S. Patent 8,346,307 Method of displaying contact information
81. U.S. Patent 8,335,854 Performing services on behalf of low-power devices
82. U.S. Patent 8,326,648 System for secure mobile healthcare selection
83. U.S. Patent 8,306,975 Expanded interest recommendation engine and variable personalization
84. U.S. Patent 8,290,351 Alternative advertising in prerecorded media
85. U.S. Patent 8,280,633 Weather risk estimation system and method
86. U.S. Patent 8,273,425 Nanotube assisted self-cleaning material
87. U.S. Patent 8,266,256 Virtualization for low-power networks
88. U.S. Patent 8,258,956 RFID tag filtering and monitoring
89. U.S. Patent 8,255,403 Pangenetic web satisfaction prediction system
90. U.S. Patent 8,253,703 Elastomeric wave tactile interface
91. U.S. Patent 8,234,244 Method of distributing contact and calendar records
92. U.S. Patent 8,225,347 Advertisement filtering and storage for targeted advertisement systems
93. U.S. Patent 8,224,835 Expanding attribute profiles
94. U.S. Patent 8,209,319 Compiling co-associating bioattributes
95. U.S. Patent 8,200,509 Masked data record access
96. U.S. Patent 8,185,597 Providing notifications to an individual in a multi-dimensional personal information network
97. U.S. Patent 8,185,461 Longevity analysis and modifiable attribute identification
98. U.S. Patent 8,180,675 System and method for automatically managing avail inventory data and avail pricing
99. U.S. Patent 8,151,295 Queue based advertisement scheduling and sales
100. U.S. Patent 8,150,422 Method of displaying contact information
101. U.S. Patent 8,126,486 Adaptive antenna weighting system for wireless local area and personal area networks
102. U.S. Patent 8,121,915 Generating financial plans using a personal information aggregator
103. U.S. Patent 8,116,616 Alternative advertising in prerecorded media
104. U.S. Patent 8,108,406 Pangenetic web user behavior prediction system
105. U.S. Patent 8,099,424 Treatment determination and impact analysis
106. U.S. Patent 8,087,045 Grouping advertisement subavails

107.U.S. Patent 8,077,021	Dynamic tactile interface
108.U.S. Patent 8,075,980	Diffraction grating assisted self-cleaning material
109.U.S. Patent 8,073,708	Aggregating personal healthcare information
110.U.S. Patent 8,073,194	Video entity recognition in compressed digital video streams
111.U.S. Patent 8,072,314	Secondary card reader
112.U.S. Patent 8,065,324	Weight and diet attribute combination discovery
113.U.S. Patent 8,055,643	Predisposition modification
114.U.S. Patent 8,051,033	Predisposition prediction using attribute combinations
115.U.S. Patent 8,046,798	Profiling and identification of television viewers
116.U.S. Patent 8,024,348	Expanding attribute profiles
117.U.S. Patent 7,984,466	Advertising management system for digital video streams
118.U.S. Patent 7,970,827	Providing notifications to an individual in a multi-dimensional personal information network
119.U.S. Patent 7,962,934	Advertising monitoring system
120.U.S. Patent 7,952,480	RFID tag filtering and monitoring
121.U.S. Patent 7,949,565	Privacy-protected advertising system
122.U.S. Patent 7,941,434	Efficiently compiling co-associating bioattributes
123.U.S. Patent 7,941,329	Insurance optimization and longevity analysis
124.U.S. Patent 7,933,912	Compiling co-associating bioattributes using expanded bioattribute profiles
125.U.S. Patent 7,930,714	Video detection and insertion
126.U.S. Patent 7,917,438	System for secure mobile healthcare selection
127.U.S. Patent 7,870,576	Targeted advertising through electronic program guide
128.U.S. Patent 7,844,609	Attribute combination discovery
129.U.S. Patent 7,818,310	Predisposition modification
130.U.S. Patent 7,810,114	Advertisement filtering and storage for targeted advertisement systems
131.U.S. Patent 7,809,154	Video entity recognition in compressed digital video streams
132.U.S. Patent 7,801,956	Providing notifications to an individual in a multi-dimensional personal information network
133.U.S. Patent 7,797,302	Compiling co-associating bioattributes
134.U.S. Patent 7,694,318	Video detection and insertion
135.U.S. Patent 7,690,013	Advertisement monitoring system
136.U.S. Patent 7,690,011	Video stream modification to defeat detection
137.U.S. Patent 7,689,682	Obtaining lists of nodes of a multi-dimensional network
138.U.S. Patent 7,500,258	Advertisement subgroups for digital streams
139.U.S. Patent 7,440,674	Alternative advertising in prerecorded media
140.U.S. Patent 7,432,811	RFID tag filtering and monitoring
141.U.S. Patent 7,420,458	Secondary card reader
142.U.S. Patent 7,331,057	Grouping advertisement subavails

143.U.S. Patent 7,328,448	Advertisement distribution system for distributing targeted advertisements in television systems
144.U.S. Patent 7,313,811	Optical conversion device
145.U.S. Patent 7,298,264	RFID tag filtering and monitoring
146.U.S. Patent 7,260,823	Profiling and identification of television viewers
147.U.S. Patent 7,240,355	Subscriber characterization system with filters
148.U.S. Patent 7,177,844	Apparatus and method for activation of a security module in a set-top retail environment
149.U.S. Patent 7,152,237	Delivering advertisements to the set-top-box
150.U.S. Patent 7,150,030	Subscriber characterization system
151.U.S. Patent 7,062,510	Consumer profiling and advertisement selection system
152.U.S. Patent 7,039,932	Queue-based head-end advertisement scheduling method and apparatus
153.U.S. Patent 6,915,530	Ingress detection and characterization by time/frequency map
154.U.S. Patent 6,882,709	Enhanced broadband telephony services
155.U.S. Patent 6,880,170	Ingress detection and attenuation
156.U.S. Patent 6,820,277	Advertising management system for digital video streams
157.U.S. Patent 6,714,917	Subscriber identification based on electronic program guide data
158.U.S. Patent 6,704,930	Advertisement insertion techniques for digital video streams
159.U.S. Patent 6,684,194	Subscriber identification system
160.U.S. Patent 6,615,039	Advertisement subgroups for digital streams
161.U.S. Patent 6,560,578	Advertisement selection system supporting discretionary target market characteristics
162.U.S. Patent 6,457,010	Client-server based subscriber characterization system
163.U.S. Patent 6,324,519	Advertisement auction system
164.U.S. Patent 6,321,384	Noise reduction in cable return paths
165.U.S. Patent 6,317,884	Video, data, and telephony gateway
166.U.S. Patent 6,298,348	Consumer profiling system
167.U.S. Patent 6,216,129	Advertisement selection system supporting discretionary target market characteristics
168.U.S. Patent 6,078,593	Method and apparatus for reliable operation of universal voice grade cards
169.U.S. Patent 5,881,362	Method of ingress noise reduction in cable return paths
170.U.S. Patent 5,742,591	Interference cancellation system for CATV return transmissions
171.U.S. Patent 5,479,451	Method and device for data recovery in burst mode systems
172.U.S. Patent 5,408,525	Diverter interface between two telecommunication lines and a station set
173.U.S. Patent 5,357,588	Opto-electronic transducer device for optical link termination equipment and application thereof to various types of optical link
174.U.S. Patent 4,813,772	Electro-optical interface
175.U.S. Patent 4,698,587	Method of characterizing critical timing paths and analyzing timing related failure modes in very large scale integrated circuits

FUNDED RESEARCH PROPOSALS:

- Raised \$3.6 million in capital (December 1999 through April 2000) for Expanse Networks, Inc. for development of systems and intellectual property in the area of targeted advertising.
- Kowel, S.T., A. Knoesen (principal investigators) and C.A. Eldering (proposal co-author), *Polymeric Ultrathin Film Multilayered Modulators*, funded by NSF Quantum Electronics, Waves and Beams Program for approximately \$300,000 over 3 years.

PROFESSIONAL ACTIVITIES AND PUBLIC RECOGNITION:

- Recognized in *IAM Strategy 250 – The World's Leading IP Strategists* published by *Intellectual Asset Management (IAM) Magazine* (2009-2011). *IAM Strategy 300* (2012-2013).
- Certified Passive Home Consultant, *Passive Home Institute*.
- Guest Editor. Feature topic: Patents and Telecommunications. *IEEE Communications Magazine* (July, 2000).
- Cited in "Who Owns the Knowledge Economy? Patent Wars." *The Economist*, (April 8-14, 2000).
- Cited in "Access: Not a Rocket Science" *Cable World*, (February, 2000).
- Cited in "Patents Considered Vital to Thrive on the Internet." *New York Times Outlook 2000*, (December, 1999).
- Guest Editor for Feature topic: Broadband Technologies and Trials. *IEEE Communications Magazine* (October, 1999).
- Guest Editor for Feature topic: Broadband Deployment in a Deregulated Environment. *IEEE Communications Magazine* (July, 1998).
- Member of *Network Reliability and Interoperability Council* and contributor to NRIC reports to FCC on interoperability and telecommunications deregulation.
- Senior Member, *IEEE*.
- Chair, *Access Subcommittee of IEEE Communications Society*.
- Member, Technical Program Committee and Session Chair, *IEEE Communications Society Broadband '96 Conference*.
- Invited speaker, 1995 *IEEE/LEOS Summer Topical Meeting*.
- Co-chair, 1991 *SPIE Fibers '91 Conference*.
- Chair, 1993 *SPIE Conference on LANs and MANS*.
- Invited participant, 1990 *Gordon Conference on Organic Thin Films*.

LANGUAGES:

- English: native language
- Spanish: speak, read, and write
- Portuguese: speak, read and write
- German: working knowledge
- Italian: working knowledge