Test Number 014A
Test Series 197

NAME _____

U.S. DEPARTMENT OF COMMERCE
UNITED STATES PATENT AND TRADEMARK OFFICE
REGISTRATION EXAMINATION
FOR PATENT ATTORNEYS AND AGENTS

August 27, 1997

Afternoon Section (100 Points) Time: 3 Hours

DIRECTIONS

This section of the examination is an open book examination. You may use books, notes, or other written materials that you believe will be of help to you *except* you may not use prior registration examination questions and/or answers. Books, notes or other written materials containing prior registration examination questions and/or answers *cannot* be brought into or used in the room where this examination is being administered. If you have such materials, you must give them to the test administrator before this section of the examination begins.

All questions must be answered in the appropriate SECTIONS 1 through 6 of the Answer Sheet which is provided to you by the test administrator. You must use a No. 2 (or softer) lead pencil to record your answers on the Answer Sheet. Darken *completely* the circle corresponding to your answer. You must keep your mark within the circle. Erase *completely* all marks except your answer. Stray marks may be counted as answers. No points will be awarded for incorrect answers or unanswered questions. Questions answered by darkening more than one circle will be considered as being incorrectly answered.

This section of the examination consists of THREE PARTS. PART 1 has fifteen (15) true/false questions, each worth one (1) point; PART 2 has twentynine (29) multiple choice questions, each worth two (2) points; and PART 3 has four (4) OPTION SECTIONS of fact patterns, each containing three (3) questions, each question worth three (3) points. Do not assume any additional facts not presented in the questions. For true/false questions of PART 1, please darken (A) if true or (B) if false. Darkening of (C), (D), or (E) for a true/false question will result in the answer being wrong. Regarding multiple choice questions of PARTS 2 AND 3, where choices (A) through (D) are correct and choice (E) is "All of the above," the last choice (E) will be the most correct answer and the only answer which will be accepted. Where two or more choices are correct, the most correct answer is the answer which refers to each and every one of the correct choices. Where a question includes a statement with one or more blanks or ends with a colon, select the answer from the choices given to complete the statement which would make the statement *true*. Also for PART 3, you are to choose ONLY three of the four OPTION SECTIONS to answer. When answering each question, unless otherwise stated, assume that you are a registered patent practitioner. Any reference to a practitioner is a reference to a registered patent practitioner. The most correct answer is the policy, practice, and procedure which must, shall, or should be followed in accordance with the U.S. patent statutes, the PTO rules of practice and procedure, the Manual of Patent Examining Procedure (MPEP), and the Patent Cooperation Treaty (PCT) articles and rules, unless modified by a subsequent court decision or a notice in the *Official Gazette*. There is only one most correct answer for each question. Unless otherwise explicitly stated, all references to patents or applications are to be understood as being U.S. patents or regular (non-provisional) utility applications for utility inventions only, as opposed to plant or design applications for plant or design inventions. Where the terms "USPTO," "PTO," or "Office" are used in this examination, they mean the U.S. Patent and Trademark Office.

You may write anywhere on this examination booklet. However, do not remove any pages from the booklet. Only answers recorded in SECTIONS 1 through 6 of your Answer Sheet will be graded. YOU MUST SCORE AT LEAST 70 POINTS TO PASS THE AFTERNOON SECTION OF THE REGISTRATION EXAMINATION.

DO NOT TURN THIS PAGE UNTIL YOU ARE INSTRUCTED TO

AFTERNOON SECTION

The Afternoon Section has been divided into **THREE PARTS.**

PART ONE consists of **SECTION 1** having 15 true/false questions. Each question is worth one point, and **SECTION 1** is worth a total of 15 points. Record your answers in **SECTION 1** of your Answer Sheet in the line having a number corresponding to the question being answered.

PART TWO consists of **SECTION 2** having 29 multiple choice questions. Each question is worth two points, and **SECTION 2** is worth a total of 58 points. Record your answers in **SECTION 1** of your Answer Sheet in the line having a number corresponding to the question being answered.

PART THREE consists of four OPTION SECTIONS identified as **OPTION SECTION 3, OPTION SECTION 4, OPTION SECTION 5,** and **OPTION SECTION 6.** Each of the four OPTION SECTIONS consists of a fact pattern followed by three questions based on the facts. Each question is worth three points, and **PART THREE** is worth a total of 27 points. Select three of the four OPTION SECTIONS, and answer all the questions in the three selected OPTION SECTIONS. If you choose to answer the questions in **OPTION SECTION 3,** record all of your answers in **SECTION 3** of your Answer Sheet in the line having a number corresponding to the question being answered. If you choose to answer the questions in **OPTION SECTION 4,** record all of your answers in **SECTION 4** of your Answer Sheet in the line having a number corresponding to the question being answered. If you choose to answer the questions in **OPTION SECTION 5,** record all of your answers in **SECTION 5** of your Answer Sheet in the line having a number corresponding to the question being answered. If you choose to answer the questions in **OPTION SECTION 6,** record all of your answers in **SECTION 6** of your Answer Sheet in the line having a number corresponding to the question being answered. If answers are marked in SECTIONS 3, 4, 5, and 6 of the Answer Sheet, only the answers in SECTIONS 3, 4, and 5 will be accepted, and the answers in SECTION 6 will <u>not</u> be accepted.

PART 1: TRUE/FALSE

DIRECTIONS: Each correct answer is worth one point. No points are awarded for incorrect or unanswered questions. The questions must be answered in **SECTION 1** of the Answer Sheet. Please darken the "**A**"circle on your Answer Sheet if the answer to the question is *true*, and the "**B**" circle if it is *false*. Do not darken circles having "**C**," "**D**," or "**E**" in them.

1. A claim in the application as filed is indefinite which initially refers to "a screw" when the only basis for "a screw" is shown in the original application drawings, and the scope of the claim is ascertainable by one skilled in the art.

2. Where a range of "35 mg - 80 mg," and specific examples of "40 mg" and "65 mg" are described in the original specification which was filed with a declaration under 37 CFR § 1.63, and an amendment changing the numerical range in a claim from "35 mg - 80 mg" to "at least 42 mg" is filed after the application is filed, the amended claim is supported by the written description in the original specification.

3. The specification and claims of a utility patent application, as filed, do not describe a scanning device as having a specific angular view which is essential or critical to the invention. The generic claims in the application are amended for non-prior art reasons to limit the scanning device to having a specific angular view, and a patent is granted with the generic claims drawn to a scanning device having a specific angular view. A reissue application removing the limitations directed to the specific angular view is properly broadened and supported when filed by the same applicant one year after the patent issued.

4. A claim in the application as filed is definite when it refers to not only a broad numerical range, but also to a preferred narrow range that falls within the broader range in the same claim, such as when referring to "a pH range between 7 and 12, preferably between 9 and 10."

5. The scope of enablement required to support claims in a patent application varies inversely to the degree of predictability involved, but even in unpredictable arts, applicant needs to disclose every operable species.

6. Where a range of "10 psi to 50 psi," and a specific example of "42 psi" are described in the original specification which was filed with a declaration under 37 CFR § 1.63, and an amendment changing the numerical range in a claim from "10 psi to 50 psi" to "between 35 psi and 45 psi" is filed after the application is filed, the amended claim is supported by the written description in the original specification.

7. Publications dated after the filing date of an application providing information or the current state of the art first publicly disclosed after the filing date can supplement the disclosure in the application to make the disclosure enabling where the application did not disclose how to make or use the claimed invention, and claims in the application should not be rejected under 35 U.S.C. § 112, first paragraph, for lack of an enabling disclosure.

8. A claim in the application as filed is indefinite when a Markush expression is introduced by the term "comprising," for example, "R is selected from the group comprising A, B, C, and D."

9. Claims in a reissue application amended to omit the "in synchronism" limitation in the original patent disclosure and thereby permit the claimed invention to have scanning means and indexing means not "in synchronism" are not supported by the original disclosure in the patent application describing the invention as having only scanning means and indexing means "in synchronism."

10. Publications dated after the filing date of an application may not be used by the patent examiner to support a rejection under 35 U.S.C. § 112, first paragraph, that the application does not provide an enabling disclosure which is commensurate in scope with the claimed invention.

11. A claim in the application as filed is definite which initially refers to "an aluminum lever," and "a plastic lever" and thereafter refers to "said lever".

12. Only one example in the specification of an application may provide enablement commensurate with the scope of the claims in the application, and if such enablement is provided, the claims should not be rejected under 35 U.S.C. § 112, first paragraph, for lack of an enabling disclosure.

13. Disclosure of a specific utility of an invention and disclosure of a credible basis supporting the specific utility do not provide a basis for concluding that the requirements of 35 U.S.C. § 112, first paragraph, have been met where one of ordinary skill in the art must engage in undue experimentation to actually practice the invention.

14. A claim in the application as filed is definite which initially refers to "the lever," or "said lever" when the claim contains no earlier recitation or limitation to a lever, and it is unclear as to what element the limitation is referencing.

15. Claims in a U.S. patent application directed to a broad genus of painkillers with numerous variations are not supported by a foreign priority application where the foreign priority application discloses only two species of painkillers within the broad genus, and not the broad genus *per se*.

PART 2: MULTIPLE CHOICE

DIRECTIONS: Each correct answer is worth two (2) points. No points are awarded for incorrect or unanswered questions. The questions must be answered in **SECTION 2** of the Answer Sheet.

1. Applicant filed a patent application claiming a polyol. The application discloses that the claimed polyol is used to form rigid polyurethane foam having structural formula Z. The examiner properly rejected the claims as unpatentable over prior art disclosing the claimed polyol and its use to form rigid polyurethane foam having structural formula Z. Given the fact that applicant's specification discloses that the polyol may be produced by a process comprising steps A, B, C, and D, and such process is novel and unobvious, which of the following claims, if introduced by amendment, would overcome the rejection?

(A) A polyol having the property of forming rigid polyurethane foam having structural formula Z, the polyol being produced by the process comprising the steps A, B, C, and D.

(B) A polyol produced by the process comprising the steps A, B, C, and D, said polyol having the property of forming rigid polyurethane foam having structural formula Z.

(C) A polyol produced by the process comprising the steps A, B, C, and D.

(D) A polyol comprising the resultant product of steps A, B, C, and D.

(E) A polyol-producing process comprising steps A, B, C, and D, said process resulting in a polyol capable of forming rigid polyurethane foam having structural formula Z.

2. The specification of inventor B's patent application discloses an electrical circuit comprising, in series, (a) a DC current source capable of producing a variable current in the range of 5-25 amperes, preferably 10-20 amperes; (b) a fixed resistor in the range of 5-15 ohms, preferably 8-10 ohms, and (c) a fixed capacitor in the range of 3-8 μf, preferably in the range of 6-7 μf. The application includes the following four claims:

1. An electrical circuit comprising, in series, a 10-20 amperes DC current source of variable current, an 8-10 ohm resistor, and a 3-8 μf capacitor.
2. An electrical circuit according to Claim 1, wherein the resistor is a 5-10 ohm resistor.
3. An electrical circuit according to Claim 1, wherein the capacitor is a 6-7 μf capacitor.
4. An electrical circuit according to Claim 2, wherein the capacitor is a 3-8 μf capacitor, and the DC current source is a 10-20 amperes source.

A British patent, published three years before the effective filing date of B's patent application, discloses a single circuit consisting of, in series, a 12 ampere DC current source of variable current, a 3 μf capacitor, and a 9 ohm resistor. Which of the following statements regarding the claims is true?

(A) Claim 1 is an improper independent claim because there is no support in the specification of B's application for the circuit to have "a 10-20 amperes DC current source of variable current."
(B) Claim 2 is a proper dependent claim because Claim 2 depends from a preceding claim, and Claim 2 further restricts the scope of the claim from which it depends.
(C) Claim 3 is a proper dependent claim because it depends from a preceding claim, and because it narrows the scope of the claim from which it depends.
(D) Claim 4 is a proper dependent claim because it further restricts the scope of the claim from which it depends.
(E) Claims 1, 2, 3, and 4 are patentable over the British patent.

3. All of the following original claims are found in a single patent application. Claim 1 is an independent claim, and Claims 2, 3, 4, 7 and 9 each depend on Claim 1. Claim 6 is dependent on Claim 4. Claims 5, 8, 10, and 11 are multiple dependent claims which appear below. Which of the following contain permissible wording for proper multiple dependent claims?

(A) 5. A widget as in either Claim 4 or Claim 6, wherein . . . .
(B) 8. A widget as in Claim 5 or Claim 7, wherein . . . .
(C) 10. A widget as in Claims 1-3, or 7-9, wherein . . . .
(D) 11. A widget as in any one of Claims 1-4, 7, or 9, wherein . . . .
(E) (C) and (D).

4. Patentee P wishes to amend Claim 1 in the patent granted to P, and obtain the following amended Claim 1 either through reexamination or reissue:

> 1. A ball valve comprising:
>
> i) a housing;
>
> ii) a valve [member] ball rotatably joined in the housing;
>
> iii) a [flanged] seal engagable with surfaces of the [member] ball; and
>
> iv) a linear spring [means] interposed between the housing and the seal and biasing the seal into engagement with the [member] ball.

The amended claim is supported by the original disclosure in the application which matured into P's patent. In the absence of questions of recapture, novelty, obviousness, and utility which of the following statements is true?

(A) A claim so amended is properly presented in a reissue application filed on May 20, 1997, and a reissue patent is grantable where reissuance is sought of a patent granted on February 7, 1995.

(B) A claim so amended is properly presented in a reissue application filed on May 20, 1997, and a reissue patent is grantable where reissuance is sought of a patent granted on June 6, 1995.

(C) A claim so amended is properly presented in a request for reexamination filed on May 20, 1997, and a certificate of reexamination is grantable where reexamination is sought of a patent granted on February 7, 1995.

(D) A claim so amended is properly presented in a request for reexamination filed on May 20, 1997, and a certificate of reexamination is grantable where reexamination is sought of a patent granted on June 6, 1995.

(E) (B) and (D).

5. You draft a patent application disclosing and describing an adjustable doll stand shown in the drawing to the right (Figure 1) having a clamp to hold a doll upright. You draft the following independent claim:

> 1. A doll stand comprising a base (1), a hollow threaded tube (2) upstanding from the base, said hollow threaded tube having an outer diameter and an upper surface parallel to said base, a threaded rod (3) disposed in and threadedly interrelated with said hollow threaded tube, and a clamp consisting of two metal wires (4 and 5) secured to said rod.

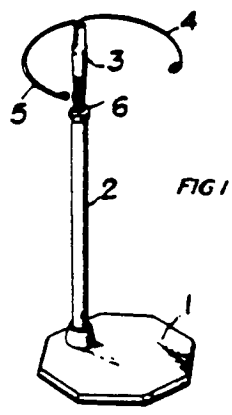


FIG 1

In the absence of questions of supporting disclosure, which of the following would not be a proper dependent claim in the application when the application is filed in the PTO?

(A) 2. A doll stand according to Claim 1 further comprising a ring (6) coaxially disposed with respect to said hollow tube and threadedly interconnected with said rod, said ring having a bottom surface disposed in flat face contacting relation with the upper surface of the hollow tube, said ring being seated flush with said hollow tube.

(B) 2. A doll stand according to Claim 1 wherein said base is pecan resin.

(C) 2. A doll stand according to Claim 1 wherein said clamp further comprises horizontally disposed ceramic arms on the end of said metal wires.

(D) (A) and (C).

(E) (A), (B), and (C).

6. You draft a patent application disclosing and describing an electrical chronometer containing a resistor having a resistance of 10-90 ohms, preferably 40 ohms. You draft the following independent claim:

1. An electrical chronometer comprising a resistor with a resistance of 10-90 ohms.

Which of the following would <u>not</u> be a proper dependent claim if presented as an original claim in the application when the application is filed in the PTO?

(A) 2. The electrical chronometer of Claim 1 wherein the resistor has a resistance of 40 ohms.

(B) 2. An electrical chronometer as in Claim 1 wherein the resistor has a resistance of 40-90 ohms.

(C) 2. An electrical chronometer as in Claim 1 wherein the resistor has a resistance of about 10 - 90 ohms.

(D) 2. The electrical chronometer of Claim 1 wherein the resistor has a resistance of between 50 and 90 ohms.

(E) (C) and (D).

7. A patent application discloses a multi-layer material for a diver's wet suit wherein an outer layer is a structural fabric; the first inner layer is a plush layer of a combination of cotton, silk, wool, and synthetic fabric interwoven together, and bonded to an outer layer; a second inner layer is a plush layer of cotton, silk, wool, or synthetic fabric bonded to the first inner layer opposite the outer layer, wherein the bond between the outer layer and the first inner layer is a water resistant material. Claim 1 in the application is as follows:

> 1. A multi-layer material for a diver's wet suit comprising:
>
> i) an outer layer comprising a structural fabric;
>
> ii) a first inner layer of a plush layer which is a member selected from the group comprising cotton, silk, wool, and synthetic fabric, said first inner layer bonded to said outer layer; and
>
> iii) a second inner layer of a plush layer of cotton, silk, wool, or synthetic fabric bonded to the first inner layer opposite the outer layer; wherein a water resistant material comprises a bond between said outer layer and said first inner layer.

Claim 1 is properly rejected under 35 U.S.C. § 102 over an article published 5 years before the filing date of the application disclosing a multi-layer material for a diver's wet suit having an outer layer which is a structural fabric; a first inner, plush layer of cotton, the first layer being bonded to the outer layer by a water resistant material; and a second inner, plush layer of cotton, silk, wool, or synthetic fabric bonded to the first inner layer opposite the outer layer. The specification is also objected to under 35 U.S.C. § 112, first paragraph, as not providing an adequate written description of the invention as claimed. Claim 1 is rejected for the same reasons. The rejection and objection may be properly obviated by:

(A) A response arguing that the publication is not relevant because it lacks silk, wool, and synthetic fabric in the first inner layer, and arguing that, as an original claim, Claim 1 does not need antecedent basis in the specification.

(B) In line 4, amending "comprising" to "consisting of" to define the first inner layer as being "a plush layer which is a member selected from the group consisting of cotton, silk, wool, and synthetic fabric, said first layer bonded to said outer layer"; and arguing that the amended claim overcomes the publication because it requires the first inner layer to be a plush layer of a combination of cotton, silk, wool, and synthetic fabric, and it now conforms with the original disclosure in the specification.

(C) In line 4, amending "comprising" to "consisting essentially of" to define the first inner layer as being "a plush layer which is a member selected from the group consisting essentially of cotton, silk, wool, and synthetic fabric, said first layer bonded to said outer layer"; and arguing that the amended claim overcomes the publication because it requires the first inner layer to be a plush layer of a combination of cotton, silk, wool, and synthetic fabric, and it now conforms with the original disclosure in the specification.

(D) In line 3, amending Claim 1 by deleting the phrase "which is a member selected from the group comprising," and inserting in its place the phrase "of a combination of"; and in line 4, after "fabric" inserting "interwoven together" to define the first inner layer as being "a plush layer of a combination of cotton, silk, wool, and synthetic fabric interwoven together, said first inner layer bonded to said outer layer"; and arguing that the claim, as amended, now conforms with the original disclosure in the specification, and the publication does not teach the claimed combination of interwoven fabrics in the first layer.

(E) (B), (C), and (D) are equally correct.

8. Claim 1 in the patent and as amended below is fully supported by the original disclosure in the application.

1. A fluorescent light fixture comprising:
   - i) a semicylindrical enclosure;
   - ii) a fluorescent light lockably connected in the enclosure;
   - iii) a pair of [bayonet] sockets on opposite ends of said enclosure which engage the fluorescent light; and
   - iv) a longitudinal adjustment screw [means] positioned between each [bayonet] socket and one of said ends of said enclosure to secure said fluorescent light to said pair of [bayonet] sockets.

Claim 1 is the only claim in the original patent. Claim 1, as so amended, may be considered proper in:

(A) In a reissue application filed within two years of the patent grant wherein claims broadening the scope of the claimed invention may be presented in appropriate circumstances.

(B) In a reissue application filed any time during the term of the patent inasmuch as the claim does not seek to enlarge the scope of Claim 1 in the original patent.

(C) Only in a request for reexamination.

(D) In a request for reexamination or in a reissue application filed within two years of the patent grant wherein claims broadening the scope of the claimed invention may be presented in appropriate circumstances.

(E) In a request for reexamination or in a reissue application filed any time during the term of the patent inasmuch as the scope of Claim 1 in the original patent is narrowed by replacing the word "means" with the word "screw."

Questions 9 and 10 below rely on the patent application drawings (Figures 1 and 1a) below and to the right, which are the only drawings in the application. Consider Questions 9 and 10 independently of each other.

9. You are drafting a patent application for your client. The invention disclosed in the specification is a floating stool for use in a swimming pool. The stool, as shown in Figures 1 and 1a, has a seat 11, and a single leg 14 attached to the seat and extending downwardly from the seat. The stool also has gripping means 15 on the opposite end of the single leg for gripping the bottom of a pool. The specification discloses two specific embodiments of the gripping means, a suction cup, or a rubber tip having small depressions on the end which contact the pool bottom and provide a gripping surface. The specification also discloses that foot rests 12 and 13 may be secured to the single leg. Further, the specification discloses that in order for the stool leg to be vertical, a spring 14a can be secured between the lower end of the shaft 14 and the upper end of the gripping means 15.

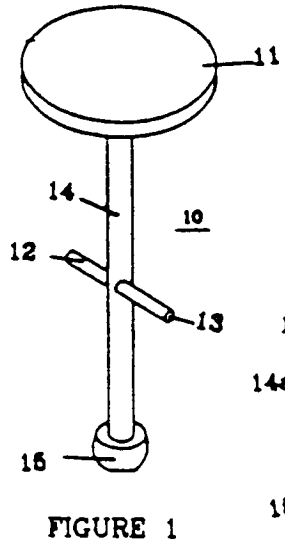


FIGURE 1

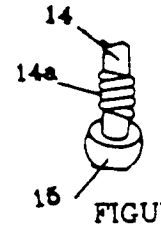


FIGURE 1

Lastly, the specification discloses that the spring may be used only with the suction cup because the spring causes the rubber tip having small depressions to be dislodged from the pool bottom. The first three claims in the application are as follows:

1. A floating stool for use in a swimming pool, the stool comprising a seat, a single leg attached to and extending downwardly from said seat, and gripping means on said single leg.
2. The stool according to Claim 1 further comprising a foot rest.
3. The stool according to Claims 1 or 2 wherein the gripping means is a suction cup.

Which of the following claims would be a proper Claim 4 and be supported by the specification?

(A) 4. The stool according to Claim 3 wherein the gripping means is a rubber tip having small depressions on its end.

(B) 4. The stool according to Claim 2 wherein the gripping means is a rubber tip having small depressions on its end.

(C) 4. The stool according to Claims 1, 2, or 3 further comprising a spring.

(D) 4. The stool according to Claims 1 and 2 wherein the gripping means is a rubber tip having small depressions on its end whereby the bottom of a pool is contacted and a gripping surface is provided.

(E) 4. The stool according to Claims 1 or 2 wherein said gripping means is a rubber tip having small depressions on its end, and further comprising a spring secured between the lower end of the shaft and the upper end of the gripping means.

10. In July 1996, you simultaneously filed in the PTO your client's declaration under 37 CFR § 1.63 and a patent application. The invention disclosed in the specification of the application describes a floating stool for use in a swimming pool. The stool is shown in the drawings filed with the application (Figures 1 and 1a) as having a seat 11, a single leg 14, gripping means 15, and foot rests 12 and 13. On August 20, 1997, you discovered that the foot rests are shown in the drawing, but are not described in the specification or set forth in the claims. Your client wants to claim the stool with the foot rests. What is the most appropriate way, if any, to meet your client's objectives of quickly obtaining patent protection on this invention?

(A) File a C-I-P application identifying the foot rests as new matter and including claims to the stool with the foot rests.
(B) Amend the description of the specification to include the foot rests.
(C) Present the foot rests in new claims added by amendment.
(D) (A) and (B).
(E) (B) and (C).

11. You are drafting a patent application disclosing and describing a door assembly wherein a door, a door frame, and a pair of hinges are separate elements which must be included in a claim to the assembled combination of a door secured to a door frame by a pair of hinges. The application discloses that it is essential to the invention that the door be secured to the door frame in the described manner to permit the door to be readily opened and closed. The application further discloses that the assembly, in a closed relationship, keeps out exterior elements, and provides privacy while permitting quick egress in an emergency. Which of the following claims properly sets forth the combination?

(A) An assembly having a door capable of being hingedly connected to a door frame.
(B) An assembly having a door and means for securing the door.
(C) An assembly having a door and a pair of hinges for securing the door.
(D) An assembly having a door, and a door frame, said door being secured to said door frame with a pair of hinges.
(E) An assembly having a door adapted to be secured to a door frame with a pair of hinges.

12. Inventor A filed a patent application in the PTO on November 12, 1993, disclosing an acne-treating composition which was described in the specification as comprising 5-22 mg. salt; 8-15, preferably 8-10, mg. sugar; 0.01-2.0, preferably 0.5-1.0, mg. sodium nitrate; and 0.01-1.0, preferably 0.04-0.06, mg. vitamin C. On June 6, 1995, a patent was granted to A. The patent contains only the following claim:

> 1. An acne-treating composition comprising 5-22 mg. salt, 8-10 mg. sugar, 0.5-1.0 mg. sodium nitrate, and 0.01-1.0 mg. vitamin C.

Recently, inventor A became aware of a British patent published in 1990 disclosing an acne-treating composition consisting of 10 mg. salt, 9 mg. sugar, 0.6 mg. sodium nitrate, and 0.02 mg. vitamin C. Inventor A files a reissue application with an amended claim. In which of the following situations would amended Claim 1, which is supported by the disclosure of the application filed on November 12, 1993, be sufficient to distinguish over the British patent?

(A) The reissue application is filed on May 6, 1997, containing the following amended claim:

> 1. An acne-treating composition consisting of 5-22 mg. salt, 8-10 mg. sugar, 0.5-1.0 mg. sodium nitrate, and 0.01-1.0 mg. vitamin C.

(B) The reissue application is filed on May 6, 1997, containing the following amended claim, and an affidavit showing that the amount of vitamin C in amended Claim 1 provides an unexpected 210% improvement in the treatment of acne:

> 1. An acne-treating composition comprising 5-22 mg. salt, 8-10 mg. sugar, 0.5-1.0 mg. sodium nitrate, and [0.01]<u>0.02</u>-[1.0]<u>0.06</u> mg. vitamin C.

(C) The reissue application is filed on July 7, 1997, containing the following amended claim, and an affidavit showing that the amount of vitamin C in amended Claim 1 provides an unexpected 200% improvement in the treatment of acne:

> 1. An acne-treating composition comprising 5-22 mg. salt, 8-10 mg. sugar, 0.5-1.0 mg. sodium nitrate, and [0.01]<u>0.04</u>-[1.0]<u>0.06</u> mg. vitamin C.

(D) The reissue application is filed on July 7, 1997, containing the following amended claim, and an affidavit showing that the amounts of sugar and vitamin C in amended Claim 1 provide an unexpected 180% improvement in the treatment of acne:

> 1. An acne-treating composition comprising 5-22 mg. salt, 8-[10]<u>15</u> mg. sugar, 0.5-1.0 mg. sodium nitrate, and [0.01]<u>0.04</u>-[1.0]<u>0.06</u> mg. vitamin C.

(E) All of the above.

13. Claim 1 in a patent application describes a bird call device shown in the drawings to the right (Figures 1 and 2). Claims 1 through 5 read as follows:

1. A bird call comprising:
   - i) a hollow tubular body (11) open at both ends ((12) and (13));
   - ii) a blowhole (16) in said tubular body intermediate of said ends; and
   - iii) a pair of reed assemblies (14), each of said reed assemblies disposed in one of said ends of said tubular body, each of said reed assemblies including a reed (26) having a freely vibrating end (27) extending inwardly into said tubular body, and adapted to be actuated by an airstream introduced through said blowhole.

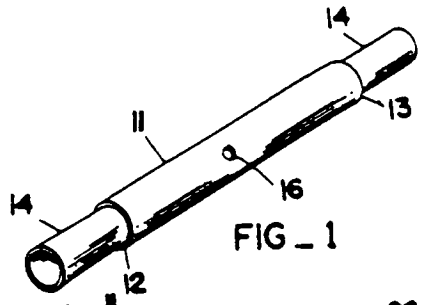


FIG _ 1

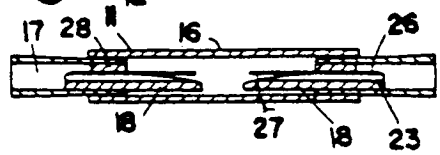


FIG _ 2

2. The reed assemblies according to Claim 1 wherein each reed assembly includes a truncated conical member having a bore (17) therethrough, said member being received narrow end first in one of said ends of the tubular body.
3. The bird call of Claim 2, further including a compression plug (28) for impinging on and removably securing said reed (26) and said tongue (18) in said bore.
4. The bird call according to Claim 1 wherein said reed assemblies each include a longitudinally extending tongue (18) having a longitudinally extending air channel therein (23).
5. The longitudinally extending air channel according to Claim 4, wherein said air channel terminates in said tongue.

Which of the following is/are proper dependent claim(s) in accordance with 37 CFR § 1.75?

(A) Claim 2.
(B) Claim 3.
(C) Claim 4.
(D) Claim 5.
(E) Claims 2 through 5.

14. Assuming that each of the following claims is in a different utility patent application, and each claim is fully supported by the disclosure in the application in which the claim appears, which of the claims, if any, particularly points out and distinctly claims the invention?

(A) A system for the display of stereographic three-dimensional images of celestial objects as disclosed in the specification and drawings.
(B) The features of novelty herein disclosed.
(C) As a new article of manufacture, a door mat made of corn-husks substantially as described.
(D) A paint remover as herein shown and described.
(E) None of the above.

15. Assuming that each of the following claims is in a different utility patent application, and each claim is fully supported by the disclosure in preceding claims or in the application in which the claim appears, which of the claims properly presents a process claim?

(A) A process for using monoclinal antibodies to isolate and purify interferon.
(B) A process of using paint to cover a surface comprising applying paint to a surface and removing the excess.
(C) The use of a metallic fibrous compound having a proportion of metallic granules as a motor compression part subject to stress by sliding friction.
(D) The use of a sustained release therapeutic agent in a human body wherein said sustained release therapeutic agent comprises a pain killer absorbed on a polymeric surface.
(E) All of the above.

16. You filed a patent application for a client containing a claim to a composition wherein X is defined as follows: "X is a member selected from the group consisting of elements A, B, and C." The claim is properly rejected under 35 U.S.C. § 102(b) as being anticipated by a reference describing the same invention wherein X is element A. The rejection may be properly obviated by:

(A) Amending the claim by canceling elements B and C because the reference is concerned only with element A.
(B) Arguing that the reference is not relevant because it lacks elements B and C.
(C) Amending the claim by canceling element A from the Markush group.
(D) Amending the claim by changing "consisting of" to "consisting essentially of."
(E) Amending the claim to redefine X as "being a member selected from the group comprising elements A, B, and C."

17. Claims 1 and 2 in a patent application are drawn to a toy shown in the drawings to the right (Figures 1 and 2). The toy produces a water spray. Claims 1 and 2 read as follows:

1. A toy (100) for producing a spray of water comprising:
i) a tube (101) having opposed ends (102 and 103); and
ii) a restriction means (210) disposed on one of said opposed ends to form an internal restriction at one end (102) of said tube, whereby a spray of water (155) is produced when the unrestricted end (103) of said tube is forcibly thrust (150) into a body of water.

2. Apparatus as set forth in claim 1 wherein a tube has a uniform diameter.

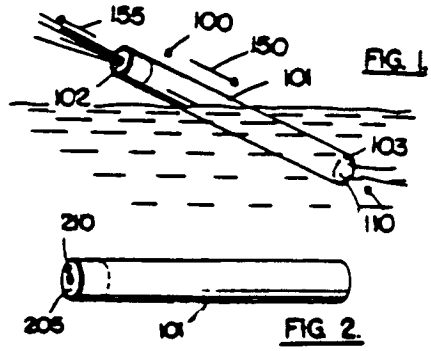


FIG. 1
FIG. 2.

Which of the following is a proper manner for amending Claim 2 for the first time?

(A) 2. (amended once) [Apparatus as set forth in claim 1] A toy for producing a spray of water comprising a tube (101) having opposed ends (102 and 103); and a restriction means (210) disposed on one end of said tube, to form an internal restriction at one end (102) of said tube, wherein [a] said tube has a uniform diameter.

(B) 2. (amended once) (Apparatus as set forth in claim 1) A toy for producing a spray of water comprising a tube (101) having opposed ends (102 and 103); and a restriction means (210) disposed on one end of said tube, to form an internal restriction at one end (102) of said tube, wherein [a] said tube has a uniform diameter.

(C) 2. (amended once) A toy as set forth in Claim 1 wherein a tube has a uniform diameter.

(D) 2. (amended once) [Apparatus as set forth in claim 1] A toy as set forth in Claim 1 wherein said tube has a uniform diameter.

(E) (A) and (D).

18. Your client informs you that he has discovered a chemical compound that exhibits outstanding insecticidal properties, and he provides you with reliable test data establishing this fact. Assume that the name "compound Z" fully and definitely identifies such compound. Preliminary to preparing a patent application, you conduct a search of the prior art, and find that the compound *per se* and a method for its preparation are disclosed in a scientific journal that was published some 75 years ago. Notwithstanding, you decide to file a patent application on your client's invention. Which of the following is the best way to claim your client's invention?

(A) A method of preparing compound Z, said compound being characterized by outstanding insecticidal properties.

(B) An insecticidal compound consisting of compound Z.

(C) A process for using compound Z as an insecticide.

(D) An insecticide substantially as shown and described.

(E) An insecticide comprising compound Z and a carrier.

19. Applicant's specification discloses a process for converting compound X to compound Y by heating at a temperature in the range of 275°F to 295°F in the presence of a trivalent metallic chloride catalyst. However, the specification indicates the heating must occur in an inert atmosphere. The specification also discloses the following test results:

Test No.	Catalyst	Temperature	Conversion
1	$AlCl_3$	275°F	94%
2	$AlCl_3$	295°F	89%
3	$ScCl_3$	275°F	90%
4	$ScCl_3$	295°F	87%

Of the following claims, which is the broadest claim that particularly points out and distinctly claims the invention that can reasonably be expected to be allowed in the absence of prior art?

(A) A process for converting compound X to compound Y by heating compound X in an inert atmosphere at a temperature in the range of 275°F to 295°F in the presence of a bivalent metallic chloride catalyst.

(B) A process for converting compound X to compound Y by heating compound X in an inert atmosphere at a temperature in the range of 275°F to 295°F in the presence of a trivalent metallic chloride catalyst.

(C) A process for converting compound X to compound Y by heating compound X in an inert atmosphere at a temperature of 275°F or 295°F in the presence of a trivalent metallic chloride catalyst.

(D) A process for converting compound X to compound Y by heating compound X at a temperature in the range of 275°F to 295°F in the presence of a trivalent metallic chloride catalyst.

(E) A process for converting compound X to compound Y by heating compound X in an inert atmosphere at a temperature of 275°F or 295°F in the presence of a trivalent metallic chloride catalyst selected from the group consisting of $AlCl_3$ and $ScCl_3$.

20. You draft a patent application disclosing and describing a figurine simulating an inverted suspended human shown in the drawings to the right (Figures 1 and 2), i.e., a bungee jumper, for suspended attachment to an object, such as an automobile rear view mirror (18). You draft the following independent claim:

1. A suspended doll consisting of:
a) a plastic, human-shaped figurine (12) having a top end and a bottom end;
b) a resiliently deformable elastic material (14) extending from said bottom end of said figurine; and
c) an attachment means (16) coupled to said resiliently deformable elastic material for mounting said resiliently deformable elastic material to an object whereby said figurine is suspended therefrom in an inverted position.

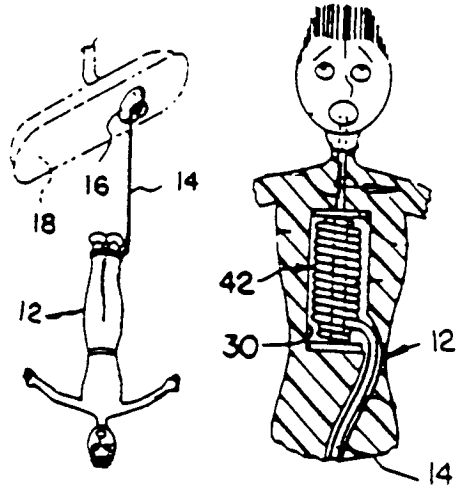


FIG 1 FIG 2

In the absence of questions of supporting disclosure, which of the following would not be a proper dependent claim in the application when the application is filed in the PTO?

(A) 2. The suspended doll of Claim 1 wherein said figurine body defines an interior cavity (30), and has a retracting, metallic spring (42) disposed within the cavity.

(B) 2. The suspended doll of Claim 1 wherein the body of said human-shaped figurine has a head, two arms, and two legs.

(C) 2. The suspended doll of Claim 1 wherein the resiliently deformable elastic material is rubber.

(D) 2. The suspended doll of Claim 1 wherein said attachment means is a suction cup coupled to said resiliently deformable elastic material.

(E) 2. The suspended doll of Claim 1 wherein said attachment means is a suction cup coupled to said resiliently deformable elastic material, and said resiliently deformable elastic material is rubber.

21. In the printing field industry, it is normal to attach a web-manifolding machine to a typewriting machine for the purpose of feeding carbon sheets to the typewriting machine. Carbon sheets are not part of the machines. Applicant has noted that the ordinary length carbon sheets wear out rather quickly and proposes a novel extra length carbon sheet that will last over an extended period of time. Which of the following claims would cover applicant's invention in accordance with proper PTO practice and procedure?

(A) A web-manifolding machine including a typewriting machine, said typewriting machine having a platen and typing instrumentalities, a carbon-stripper at the rear of said platen, a continuous belt of web-plies threaded through said carbon-stripper and extending to said platen, and carbon sheets attached to said carbon-stripper interleaved between said web plies.

(B) A web-manifolding machine including a carbon-stripper attached to a platen, a continuous belt of web-plies threaded through said carbon-stripper and extending to said platen, and carbon sheets attached to said carbon-stripper interleaved between said web-plies.

(C) A web-manifolding machine including a typewriting machine, said typewriting machine having a platen and typing instrumentalities, a carbon-stripper at the rear of said platen, a continuous belt of web-plies threaded through said carbon-stripper and extending to said platen, and carbon sheets.

(D) A web-manifolding machine including a typewriting machine, said typewriting machine having a platen and typing instrumentalities, a carbon-stripper at the rear of said platen, means for threading a continuous belt of web-plies through said carbon-stripper to said platen, and means for attaching carbon sheets to said carbon-stripper and interleaving said carbon sheets between said web-plies.

(E) None of the above.

22. John Doe, while employed as a research scientist for the ABC Corporation, a leading manufacturer of synthetic detergents for cleaning pots and pans, discovered in 1994 that the addition of water-soluble polyphosphates to ABC's commercially marketed Brand X greatly improved the effectiveness of the Brand X composition as a detergent. However, shortly after introducing the improved Brand X in the marketplace, complaints started pouring in indicating that tarnishing was occurring with respect to utensils made from copper or copper-nickel alloys. After further research in 1996, John Doe was able to resolve the "tarnish" problem by incorporating a tarnish inhibitor consisting of a complex organic compound into the improved Brand X composition. The structural formula of the tarnish inhibitor was depicted with a Y radical, Y being defined as a radical selected from the group consisting of mercapto and amino radicals.

ABC has retained you to prepare and file a patent application protecting the improved Brand X composition with the tarnish inhibitor. Accordingly, your application as filed in 1997 includes test data revealing the tarnish inhibiting characteristics of a number of different detergent samples, including those containing tarnish inhibitors having a mercapto radical and those containing tarnish inhibitors having an amino radical. All of the original claims are directed to the tarnish inhibiting detergent and include the following language: "Y being defined as a radical selected from the group consisting of mercapto and amino radicals." In the first Office action, the examiner rejected all claims as being anticipated by a 1991 French patent disclosing a detergent containing a water-soluble polyphosphate and a tarnish inhibitor consisting of a complex organic compound containing an amino radical. Which of the following actions accords with PTO practice and procedure and would provide the best chance of obtaining an allowance in the quickest manner?

(A) File an amendment limiting all claims to a detergent containing a water-soluble polyphosphate and a tarnish inhibitor consisting of a complex organic compound containing a mercapto radical.

(B) File a divisional patent application limiting all claims to a detergent containing a water-soluble polyphosphate.

(C) File a file wrapper continuation application limiting all claims to a detergent containing a water-soluble polyphosphate and a tarnish inhibitor.

(D) File an amendment canceling all test data relating to a tarnish inhibitor consisting of a complex organic compound containing an amino radical.

(E) File an amendment canceling all test data relating to a tarnish inhibitor consisting of a complex organic compound containing an amino radical, canceling all claims, and adding new claims to a detergent containing a water-soluble polyphosphate and a tarnish inhibitor consisting of a complex organic compound containing an amino radical or a mercapto radical.

23. A patent application discloses a method for using a composition consisting of alkyl magnesium halide as a reagent in certain chemical syntheses. The application discloses test data revealing that the preferred halides are chloride, bromide and iodide. The application also discloses that optionally, fluoride, another halide, could be employed as the halide. Which of the following expressions, if recited in a claim in the application would be in violation of 35 U.S.C. § 112, second paragraph?

(A) "a composition consisting of alkyl magnesium halide"
(B) "a composition comprising alkyl magnesium halide, wherein the halide is selected from the group comprising chloride, bromide, or iodide"
(C) "a composition consisting of alkyl magnesium halide, wherein the halide is selected from the group consisting of chloride, bromide, iodide, and fluoride"
(D) "a composition consisting of alkyl magnesium halide, wherein the halide is selected from the group consisting of chloride, bromide, and iodide, and optionally, fluoride"
(E) "a composition consisting of alkyl magnesium chloride"

24. Applicant filed a patent application disclosing an apparatus for use in conjunction with a range in a home for the serving of sizzling steaks and the like on a table. The apparatus includes primarily a grill upon which the food, such as steaks or chops, is both broiled and served. The invention contemplates that the food will be cooked on the grill in the broiling compartment of the range. The grill is transferred, by disclosed mechanical means, to a table without removal of the food from the grill. Which of the following claims avoids a rejection under 35 U.S.C. § 112, second paragraph, based upon a lack of cooperation between the recited elements?

(A) An apparatus comprising a drip pan, a server, and a grill, whereby the grill is adapted to be transferred from the drip pan to the server.
(B) An apparatus for use in conjunction with a range in a home for the serving of sizzling steaks and the like on a table, comprising a drip pan, a server, and a grill.
(C) An apparatus comprising a drip pan, the drip pan having a dished central portion forming a primary drain receptacle, a server, the server having a dished central portion forming a secondary drain receptacle, and a grill.
(D) An apparatus comprising a drip pan, a server, and mechanical means for transferring the grill from the drip pan to the server.
(E) An apparatus comprising a drip pan, said drip pan having a dished central portion forming a primary drain receptacle, and a grill, said grill being removably positioned in the dished central portion of the drip pan.

25. Applicant filed a patent application relating to a prefabricated water-tight structure which utilized steel panels to which is bonded an elastomeric chlorosulphonated polythene. The elastomeric chlorosulphonated polythene is sold under the trademark HYPALON. It is acknowledged that those skilled in the art know how to make such materials adaptable for a variety of building applications. Assuming no issue of support arises, which of the following claims is properly rejectable under 35 U.S.C. § 112, second paragraph?

(A) 1. A prefabricated panel for a building system having a surface comprising HYPALON continuously bonded to a surface of a thin sheet steel member by an adhesive which is resistant to corrosive fluids.

(B) 1. A prefabricated water-tight structure comprising a prefabricated panel, said panel comprising a thin sheet steel member bonded by an adhesive to an elastomeric chlorosulphonated polythene, said elastomeric chlorosulphonated polythene being sold under the trademark HYPALON, and said adhesive being resistant to corrosive fluids.

(C) 1. A prefabricated water-tight structure comprising an elastomeric chlorosulphonated polythene, an adhesive, and a thin sheet steel member, said elastomeric chlorosulphonated polythene being sold under the trademark HYPALON, and characterized by good wear resistance, and said elastomeric chlorosulphonated polythene being continuously bonded by said adhesive to a surface of a thin sheet steel member, said adhesive being resistant to corrosive fluids.

(D) 1. The prefabricated panel for a structure having a surface comprising a thin membrane of an elastomeric chlorosulphonated polythene, said elastomeric chlorosulphonated polythene being continuously bonded to a surface of a thin sheet steel member by an adhesive.

(E) 1. A prefabricated water-tight structural system comprising a diaphragm characterized by good heat, ozone and weather resistance, said diaphragm having a surface comprising a thin membrane of an elastomeric chlorosulphonated polythene, said elastomeric chlorosulphonated polythene continuously bonded to a surface of a thin sheet steel member by an adhesive which is resistant to corrosive fluids.

26. Applicant's patent application is directed to a pressure sensitive adhesive composition comprising a water-based latex including a continuous aqueous medium containing dispersed particles of a normally tacky copolymer having a glass transition temperature of 0°C or less. The copolymer is made from at least 60% by weight monomer X, and at least 0.1% by weight monomer Y. 74%, 79% and 85% are exemplary weight percentages of monomer X, with the respective weight percentage balances of the copolymer being monomer Y. Glass transition temperature is defined as the temperature or temperature range at which an amorphous polymer changes from a hard, rigid, glassy state to a soft, flexible, rubbery state. Glass transition temperature is directly related to the types of monomers selected and monomer proportions selected. A prior art reference properly cited against the application discloses water-based latexes including a continuous aqueous medium containing dispersed particles of normally tacky copolymers made from the same monomers and proportions of monomers and in the same manner as disclosed by applicant. The prior art reference does not disclose the glass transition temperature of the copolymer. The reference compositions are disclosed as being used in binding agents in photographic gels and films. Which of the following claims, if any, is patentable over the reference?

(A) A pressure sensitive adhesive composition comprising a water-based latex comprising a continuous aqueous medium containing dispersed particles of a normally tacky copolymer having a glass transition temperature of 0°C or less, said copolymer comprising at least 60% by weight monomer X, and at least 0.1% by weight monomer Y.

(B) A pressure sensitive adhesive composition comprising a water-based latex comprising a continuous aqueous medium containing dispersed particles of a normally tacky copolymer having a glass transition temperature of 0°C or less, said copolymer comprising 74% by weight monomer X, and the balance monomer Y.

(C) A pressure sensitive adhesive composition comprising a water-based latex comprising a continuous aqueous medium containing dispersed particles of a normally tacky copolymer having a glass transition temperature of 0°C or less, said copolymer comprising 79% by weight monomer X, and the balance monomer Y.

(D) A pressure sensitive adhesive composition comprising a water-based latex comprising a continuous aqueous medium containing dispersed particles of a normally tacky copolymer having a glass transition temperature of 0°C or less, said copolymer comprising 85% by weight monomer X, and the balance monomer Y.

(E) None of the above.

27. Applicant filed a patent application relating to adhesive compositions having a paste-like consistency and comprising filler admixed with liquid monomer, the filler being water-insoluble solid filler which forms a paste with the liquid monomer, and is essentially inert with respect to the monomer and is insoluble in the monomer. The specification states, "The compositions of this invention must contain, as essential ingredients, at least one monomer of a class of alpha-cyanoacrylic acid esters and at least one filler." The compositions are characterized as being capable of being applied to a substrate submerged in water. Claim 1 reads as follows:

> 1. An adhesive composition having a paste-like consistency and comprising filler admixed with liquid monomer, the filler being water-insoluble solid filler which forms a paste with the liquid monomer, and is essentially inert with respect to the monomer and is insoluble in the monomer, the composition being capable of being applied to a substrate submerged in water.

The examiner rejected claim 1 under 35 U.S.C. § 112, second paragraph, by virtue of the functional statement regarding application to a substrate submerged in water therein, and under 35 U.S.C. § 112, first paragraph, as unduly broad. You decide to amend the application by canceling claim 1 and adding a new claim or claims. Assuming proper claim numbering, which of the following claims and arguments accords with proper PTO practice and procedure and would overcome the rejections?

(A) Claim - An adhesive composition having a paste-like consistency and comprising filler admixed with liquid monomer, the filler being water-insoluble solid filler which forms a paste with the liquid monomer, and is essentially inert with respect to the monomer and is insoluble in the monomer.
Argument - The 35 U.S.C. § 112, second paragraph, rejection is obviated because the functional statement is no longer recited in the claim. The 35 U.S.C. § 112, first paragraph, rejection is traversed on the ground that the liquid monomer is fully supported by the specification.

(B) Claim - An adhesive composition having a paste-like consistency and comprising filler admixed with at least one liquid monomer of a class known as alpha-cyanoacrylic acid esters, the filler being water-insoluble solid filler which forms a paste with the liquid monomer, and is essentially inert with respect to the monomer and is insoluble in the monomer, the composition being capable of being applied to a substrate submerged in water.
Argument - The 35 U.S.C. § 112, second paragraph, rejection is traversed on the ground that functional language in patent claims is permissible so long as it sets out and circumscribes a particular area with a reasonable degree of precision and particularity. The 35 U.S.C. § 112, first paragraph, rejection is obviated because the breadth of the language "liquid monomer" has been narrowed to an essential ingredient, i.e., at least one liquid monomer of a class known as alpha-cyanoacrylic acid esters.

(C) Claim - An adhesive composition having a paste-like consistency and comprising at least one monomer of a class known as alpha-cyanoacrylic acid esters.

Argument - The 35 U.S.C. § 112, second paragraph, rejection is obviated because the functional statement is no longer recited in the claim. The 35 U.S.C. § 112, first paragraph, rejection is traversed on the ground that the liquid monomer is fully supported by the specification.

(D) Claim - An adhesive composition having a paste-like consistency and comprising filler admixed with at least one liquid monomer of a class known as alpha-cyanoacrylic acid esters, the filler being water-insoluble solid filler which forms a paste with the liquid monomer, and is essentially inert with respect to the monomer and is insoluble in the monomer.

Argument - The 35 U.S.C. § 112, second paragraph, rejection is obviated because the functional statement is no longer recited in the claim. The 35 U.S.C. § 112, first paragraph, rejection is obviated because the breadth of the language "liquid monomer" has been narrowed to an essential ingredient, i.e., at least one liquid monomer of a class known as alpha-cyanoacrylic acid esters.

(E) (B) and (D).

28. Your client, A, owns a patent covering a golf club. The patent has one claim which states:

> Claim 1. An apparatus for hitting golf balls comprising: a shaft having upper and lower ends and made of metal, and having a substantially elliptical cross-sectional area; a club head connected to said lower end of said shaft; and a grip portion connected to said upper end of said shaft.

One month after the patent has issued, A discovers that he incorrectly claimed his invention. The claim is too narrow because it limits the composition of the shaft to metal, whereas golf clubs can be made of graphite. The claim also does not adequately describe the direction of the ellipse in relation to the club as is set forth in the patent drawings. Your client intended his original patent application to be limited to golf clubs, as opposed to other types of apparatuses. A asks if the patent can be corrected. As a result, you file a reissue application within the next six months which includes an amended claim as follows:

> Claim 1. A[n apparatus] golf club [for hitting golf balls] comprising: a shaft having upper and lower ends [and made of metal], and having a substantially elliptical cross-sectional area; a club head connected to said lower end of said shaft; and a grip portion connected to said upper end of said shaft; wherein the elliptical cross-sectional area is formed of an ellipse having a long axis parallel to the angle of motion during the golf swing.

The examiner only objects to the language "angle of motion during the golf swing" in the proposed amended claim as indefinite, but in all other respects, agrees to the amendment. In order to overcome the objection, you want to file a second amended claim. Which of the following would constitute **proper form** for a second amendment.

(A) Claim 1. A golf club comprising: a shaft having upper and lower ends, and having a substantially elliptical cross-sectional area; a club head connected to said lower end of said shaft, and having a face; and a grip portion connected to said upper end of said shaft; wherein the elliptical cross-sectional area is formed of an ellipse having a long axis being perpendicular to the face of the club head.

(B) Claim 1. A[n apparatus] golf club [for hitting golf balls] comprising: a shaft having upper and lower ends [and made of metal], and having a substantially elliptical cross-sectional area; a club head connected to said lower end of said shaft, and having a face; and a grip portion connected to said upper end of said shaft; wherein the elliptical cross-sectional area is formed of an ellipse having a long axis being perpendicular to the face of the club head.

(C) Cancel claim 1 and add the following new claim:

> Claim 1. A golf club comprising: a shaft having upper and lower ends, and having a substantially elliptical cross-sectional area; a club head connected to said lower end of said shaft, and having a face; and a grip portion connected to said upper end of said shaft; wherein the elliptical cross-sectional area is formed of an ellipse having a long axis being perpendicular to the face of the club head.

(D) Claim 1. A[n apparatus] golf club [for hitting golf balls] comprising: a shaft having upper and lower ends [and made of metal], and having a substantially elliptical cross-sectional area; a club head connected to said lower end of said shaft, and having a face; and a grip portion connected to said upper end of said shaft; wherein the elliptical cross-sectional area is formed of an ellipse having a long axis being [parallel to the angle of motion during the golf swing] perpendicular to the face of the club head.

(E) Both B and C constitute proper form of an amendment.

29. Applicant's application relates to an air filter assembly for filtering air laden with particulate matter. The following claim, supported by the specification, appears in the application:

> 1. An air filter assembly for filtering air laden with particulate matter comprising a housing having a clean air chamber and a filter chamber, said clean air chamber having a clean air outlet and said filter chamber having a dirty air inlet, means mounting a plurality of spaced-apart filter elements within the filter chamber, each of said elements being in fluid communication with said clean air outlet, pulse jet cleaning means intermediate said clean air outlet and said filter elements, and a hopper in said filter chamber for collecting particulate matter.

The claim is anticipated by a prior art reference, and the Examiner has applied a rejection under 35 U.S.C. § 102. Applicant's specification indicates that the filter chamber has a flexible wall, diaphragm-like structure. The flexible wall, diaphragm-like structure is responsive to pressure increases caused by the pulse jet cleaning means for moving particulate matter in a downward direction towards the bottom of the hopper. The prior art reference discloses a similar assembly with the exception that the filter chamber in the prior art has a rigid wall structure leading to the bottom of a hopper. The two assemblies employ jet pulses of compressed, high energy gas to dislodge particulate matter from spaced-apart filter elements, permitting the dislodged particulate matter to move towards the bottom of the hopper. Which of the following phrases, if any, when added after the word "matter" at the end of the claim would overcome the rejection under 35 U.S.C. § 102?

(A) , said filter chamber having a wall, said particulate matter moving in a downward direction towards the bottom of the hopper.

(B) , said filter chamber having means responsive to pressure increases caused by the pulse jet cleaning means for moving particulate matter in a downward direction towards the bottom of the hopper.

(C) , said jet cleaning means functioning to dislodge particulate matter from the spaced-apart filter elements, thereby permitting the dislodged particulate matter to move towards the bottom of the hopper.

(D) , said jet cleaning means designed to employ pulses of compressed, high energy gas to dislodge particulate matter from spaced-apart filter elements, permitting the dislodged particulate matter to move towards the bottom of the hopper.

(E) None of the above.

PART 3: OPTION SECTIONS 3, 4, 5, & 6

DIRECTIONS: There are four OPTION SECTIONS, each with its own fact pattern. Select three of the four OPTION SECTIONS, and answer all the questions following the fact pattern in the three selected OPTION SECTIONS. DO NOT ANSWER QUESTIONS IN ALL FOUR OPTION SECTIONS. Record your answers on the Answer Sheet in the SECTION and line whose numbers correspond to the number of the OPTION SECTION and question you are answering.

OPTION SECTION 3 - BOTTLE STOPPER

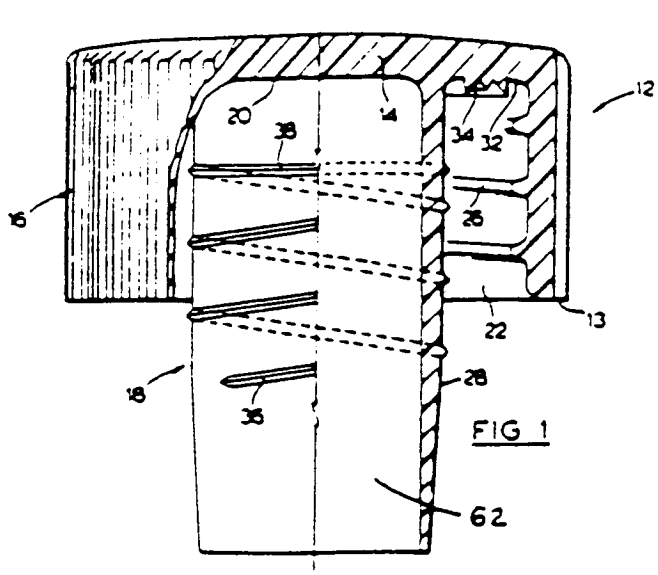


FIG 1

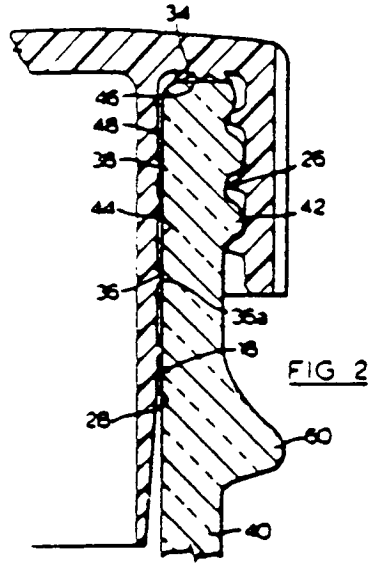


FIG 2

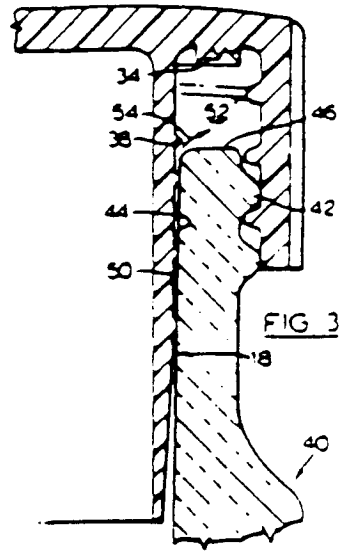


FIG 3

Your client's invention relates to a threaded bottle stopper for a champagne bottle which controls the release of pressurized gas from the bottle to preclude both ejection of the stopper at a dangerous velocity and undesirable premature spillage of the contents of the bottle. With known prior art stoppers for champagne bottles, a problem exists in that the removal of the stopper from the neck of the bottle is either too easy or too difficult. As is well known, stoppers for bottles containing champagne can be ejected from the bottle at a dangerous velocity causing possible bodily injury and/or property damage.

It is therefore a principal object of the present invention to provide a threaded bottle stopper which reduces the hazard of the bottle stopper being ejected from the bottle at a high velocity and controls the release of pressurized gas from within the bottle so that the stopper is withdrawn from the bottle in a controlled manner, but with the familiar "pop" sound associated with the opening of a bottle of champagne.

FIG. 1 shows a one piece bottle stopper **12** made of plastic, e.g. polyethylene. The stopper includes a cap that comprises a disc portion **14** with an annular skirt **16** depending from an inner surface **20** of the disc portion at its outer periphery. A continuous mechanical thread **26** is provided on the inside surface of the skirt **16** which engages a mating thread **42** on the external surface of bottle neck **40**, as shown in FIG. 2. A flexible tubular body portion **18**, generally concentric with the skirt, also extends from the inner surface **20** of the disc portion. The outer diameter of the tubular body portion **18** is less than the inner diameter of the skirt **16** so that an annular space **22** is defined therebetween. An annular base section **32** of the inner surface **20** of disc portion **14** constitutes the base of the annular space **22**. Three concentric V-shaped seals **34** are provided on the annular base section **32** to contact the rim **46** of the bottle neck **40** and thereby seal the contents of the bottle, as shown in Fig. 2. These seals are described in the Jones U.S. Pat. No. 9,999,999, which patent in its entirety is incorporated herein by reference.

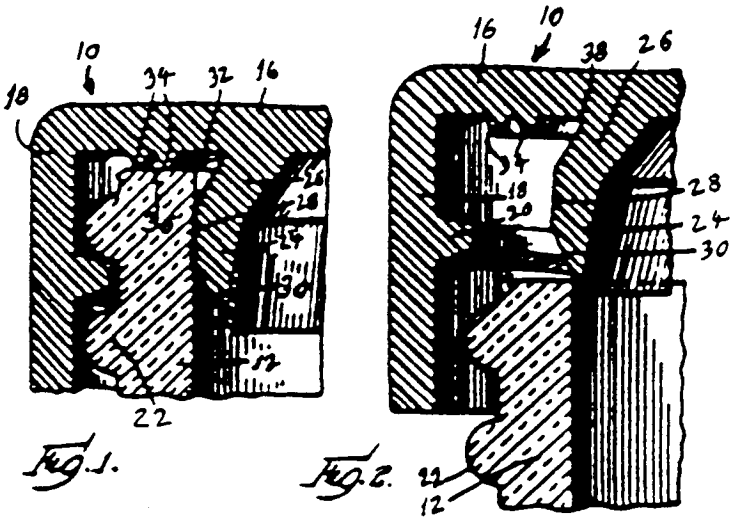
The outside surface **28** of the tubular body portion **18** is provided with structure which acts as a means for sealingly engaging the inner annular surface **44** of the bottle neck **40** and as a means for controllably releasing pressurized gas from within the bottle. The structure comprises an annular sealing ring **38** and a single spiral thread **36**, each being integral with the outside surface **28** of the tubular body portion **18.** The pitch of the spiral thread is a critical feature for the functioning of the cap. Your client tells you the invention must have a pitch of 3 - 8 threads per inch to work. More preferably, the pitch should be 4 - 6 threads per inch, and most preferably 4.5 to 5 threads per inch. The annular sealing ring **38** is positioned adjacent the annular base section **32** and is intended to be selectively moved into and out of sealing engagement with the inner annular surface **44** of the bottle neck **40**. The single spiral thread **36** has a first end adjacent open end **62** of the tubular body portion **18** and a second end terminating at the annular sealing ring **38**. The outside surface **28** of the tubular body portion **18** has a diameter that is less than the diameter of the inner annular surface **44** of the bottle neck **40** thereby defining an annular space **48**. As shown in FIG. 2, the periphery **36a** of the single spiral thread **36** contacts the inner annular surface **44** of the bottle neck **40** such that a spiral channel **50** is formed within space **48**. When the bottle stopper is fully assembled on the bottle, the spiral channel **50** is open to the gas of the champagne at its first end, but is closed at its second end by sealing ring **38**. The gas within the bottle is thereby prevented from passing into space **48** above the sealing ring **38**.

In operation when the stopper is sufficiently partially rotated counter-clockwise, the V-shaped seals **34** and sealing ring **38** are released from engagement with the bottle, as shown in FIG. 3. The partial rotation of the stopper is not sufficient to release the engagement of threads **26** and **42** of the stopper and bottle, respectively. The seal release opens the interior of the bottle to the atmosphere via the spiral channel **50** and the unsealed spacing between the threads **26** and **42** of the stopper and bottle, respectively. The spiral channel **50** functions to control the flow of gas **54** released from the bottle into space **52** to reduce the danger of a high velocity release of the stopper, and to retain sufficient pressure within the bottle to have the desired "pop" when the stopper is fully released by further unscrewing the stopper from the bottle.

PRIOR ART

MILLER PATENT (U.S. PAT. NO. 7,777,777)

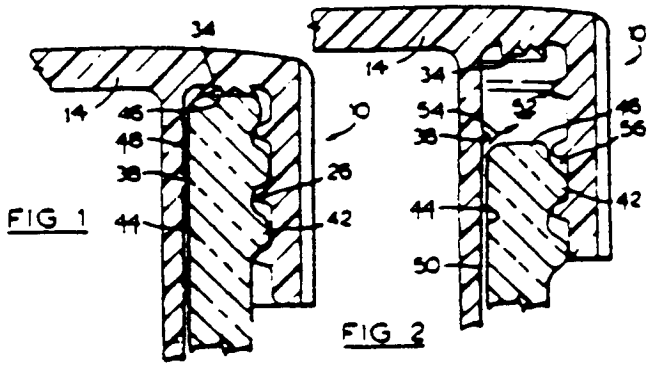
This invention relates to a combination closure cap and stopper for bottles. An object of the invention is to provide a cap which displays improved sealing efficiency and is resistant to being popped out by expansion of the contained product. FIG. 1 shows a flexible closure cap **10** of polyethylene closing off the neck **12** of a glass bottle. FIG. 2 shows the cap initially placed over a bottle. The cap **10** includes a disc **16** and a cylindrical wall **18** fixed to the edge of the disc. The interior surface of the wall **18** is provided with threads **20** for engaging cooperating threads **22** on the annular exterior surface of the neck **12** of the bottle.



The cap also includes a flexible skirt **24** connected to the disc **16** by a frusto-conical collar **26**. Skirt **24** is concentric with and spaced apart from the cylindrical wall **18** so that a cylindrical sealing portion **28** of the skirt can engage the interior surface of the neck **12**. The diameter of the sealing portion **28** exceeds the internal diameter of the neck **12**. The skirt **24** is radially compressed when the bevel **30** of the skirt enters the neck **12**. Two annular sealing ribs **34** of triangular cross-section are provided concentrically on the disc **16** and about the end surface **36** of the neck **12** when the closure cap **10** completely closes the bottle as seen in FIG. 1. In assembled position, the sealing portion **28** of the skirt engages the interior surface of the neck **12**. The flexure of the collar **26** permits the skirt to engage the neck resiliently thereby effectively sealing bottles whose inside neck diameter varies slightly from standard dimensions. Due to the resiliency of the material used to make the cap, the ribs **34** axially compress slightly to provide additional sealing when the cap **10** is fully assembled.

JONES PATENT (U.S. Pat. No. 9,999,999)

FIGS. 1 and 2 are from the Jones patent. The numerals in the figures are interchangeable with the numerals in the figures in your client's application. The stopper **10** of this patent is identical to the stopper of the your client's application, except that the Jones patent does not disclose the single spiral thread **36** on the outer surface of the flexible tubular portion **28** that is described in your client's application.



The Jones patent more specifically describes the plural V-shaped seals on the inner surface of the disc portion **14** as comprised of three concentric seals **34**. Inner and outer seals of the concentric seals **34** are deflectable and the intermediate seal is a compression seal that is considerably shorter than the inner and outer deflectable seals. The combination of the three concentric V-shaped seals has been found to conform to any nonuniformities on the rim **46** of the neck of the bottle.

DIRECTIONS: Please place your answers to the following questions in **SECTION 3** of the Answer Sheet.

1. Assuming no prior art rejections, which limitation included in a claim for the bottle stopper is most likely to gain the quickest allowance for that claim?

(A) an inside surface of the annular skirt portion of the cap having threads thereon intended to engage threads on an external surface of the neck of the bottle, said pitch being 3 - 8 threads per inch.

(B) an inside surface of the annular skirt portion of the cap having threads thereon intended to engage threads on an external surface of the neck of the bottle, and having a base section with a plurality of V shaped seals.

(C) an inside surface of the annular skirt portion of the cap having threads thereon intended to engage threads on an external surface of the neck of the bottle, and having a spiral thread pitch of 4.5 to 5 threads per inch.

(D) an inside surface of the annular skirt portion of the cap having threads thereon intended to engage threads on an external surface of the neck of the bottle, and having a spiral thread pitch of 3 - 8 threads per inch, preferably 4 - 6 threads per inch.

(E) an inside surface of the annular skirt portion of the cap having threads thereon intended to engage threads on an external surface of the neck of the bottle, and including a tubular body portion depending from the inner surface of the disc portion of the cap.

2. In a utility patent application for your client, which of the following limitations must be included to distinguish his claimed invention from the prior art?

(A) an inside surface of the annular skirt portion of the cap having threads thereon intended to engage threads on an external surface of the neck of the bottle.

(B) an annular base section including a plurality of V-shaped seals for engaging a rim of a neck of said bottle.

(C) a cap including a disc portion having an inner surface and an outer periphery.

(D) a tubular body portion depending from the inner surface of the disc portion of the cap.

(E) a tubular body portion of the cap including an outside surface having a single spiral thread intended to engage an inner annular surface of the neck of the bottle.

3. Your client indicates that he wants protection on the ornamental aspects of his invention. You decide to prepare a design patent application for him. Which of the following would be a proper design patent claim covering your client's invention?

(A) The ornamental design for a bottle stopper.
(B) The ornamental design for a bottle stopper as shown and described.
(C) The ornamental design for an item as shown and described.
(D) A bottle stopper which controls the release of pressurized gas from the bottle as shown and described.
(E) The ornamental design for a champagne bottle neck and cap as shown and described.

OPTION SECTION 4: MULTILAYERED DROPCLOTH

PRIOR ART

FIG. 1 is cross-sectional view of a prior art lightweight multilayered dropcloth which absorbs fluids and which has a textured surface to prevent the dropcloth from slipping off objects. The prior art dropcloth has outer layers **1** and **5** made of spun bonded polypropylene film which is characterized by its ability to absorb and hold organic and inorganic liquids. Each of the outer layers have embossed depressions **6** to give the outer surfaces of the outer layers texture to prevent the cloth from slipping off the object it is covering. A center layer **3** is made of a plastic material such as low density polyethylene which is impervious to water. The outer layers **1** and **5** are bonded to the center layer **3** by adhesive layers **2** and **4**, respectively. The center layer may contain an inorganic white pigment, such as TiO_2 dispersed in the polyethylene. The thickness of the dropcloth is 0.0025 to 0.006 mils thick, preferably, 0.0035 mils thick.

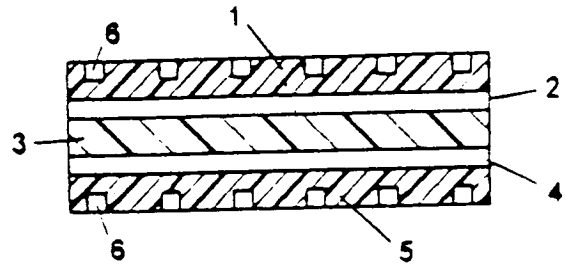


FIG. 1

OBJECTS OF THE INVENTION

The object of the invention is to provide a simple and inexpensive dropcloth having good ability to grip a covered surface, provide high absorption of fluids using a spun bonded plastic film, prevent penetration of absorbed fluids through the dropcloth, and prevent separation of the outer layers from the center layer. A further object of the invention is to provide a dropcloth having significant flexibility to allow appropriate draping thereof over objects, be consistent in form, and have a toughness and tear resistance equal to canvas and superior to prior art plastic dropcloths.

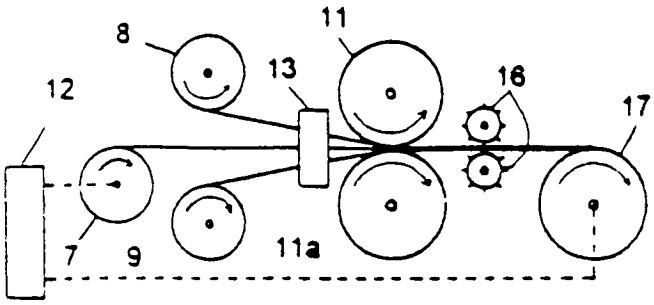


FIG. 2 (The Process)

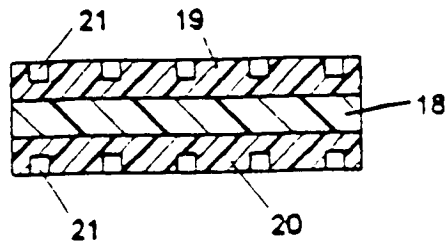


FIG. 3 (The Invention)

A cross-sectional view of the multilayered dropcloth of the present invention is shown in FIG. 3. The dropcloth is formed by a thermal bonding process illustrated in FIG. 2. Center layer **18** of the dropcloth is a plastic film while outer layers **19** and **20** of the dropcloth are each a spun bonded plastic film which absorbs fluids. Layers **18**, **19**, and **20** are provided by large supply rolls **7**, **8**, and **9**, respectively. Supply rolls **8** and **9** are in an off-set alignment with respect to supply roll **7**. A drive system **12** is coupled to the supply roll **7** and to a receiving roll **17**. The films from supply rolls **7**, **8**, and **9** pass through the bonding apparatus at an fixed speed as determined by drive **12**. The opposed faces of the films are passed through heating unit **13** to heat the faces of the films prior to moving the films between bonding rollers **11** and **11a**. The heating unit rapidly heats the opposed faces of the films to form a fusion state while maintaining the integrity of the films. The heated films pass between bonding rollers **11** and **11a** which press the films together with sufficient pressure over the entire interface of the films to effect a suitable fusion bond between the films.

A pair of embossing rollers **16** provide appropriate embossing configurations **21** on outer layers **19** and **20**. The rollers include substantially aligned small surface projections to deform the surface of the outer layers and locate aligned depressions **21** in the surfaces of the outer plastic layers **19** and **20**. In the preferred embodiment of the invention, the depressions **21** are uniformly distributed about the outer surfaces of the outer plastic layers of the dropcloth. Most preferably, a dropcloth is provided with small, closely spaced diamond-shaped depressions uniformly distributed about the surface of the outer plastic layers. The dropcloth film is then wound on the receiving roll **17**.

In the preferred embodiment of the invention, each of the outer plastic layers **19** and **20** is a film of spun bonded polypropylene having a minimum thickness of 0.0005 mils, which is relatively thin and flexible. A spun bonded polypropylene film layer retains its flexible character up to a thickness 0.002 mils when combined with the plastic film of the center layer **18**. In the most preferred embodiment of the invention, the two outer layers **19** and **20** are made of spun bonded polypropylene which includes short segments of spun bonded polybutylene dispersed in the spun bonded polypropylene to improve the effectiveness of surface gripping of the dropcloth. The spun bonded polybutylene has the characteristic of rubber enabling it to effectively grip surfaces, however, it is less absorbent than spun bonded polypropylene. Therefore, spun bonded polybutylene must be used in short segments.

The outer layers **19** and **20** of the multilayered dropcloth of present invention have surface depressions **21** on the outer surface of each outer layer to provide the dropcloth with an effective gripping surface such that the dropcloth remains in a draped position. The center layer **18** is a plastic film which must be 0.0005 to 0.002 mils thick in order prevent absorbed fluids on one side of the dropcloth from penetrating the other side of the dropcloth. The center layer may contain TiO_2, an inorganic white pigment, uniformly dispersed throughout the film.

The center layer **18** is preferably a film of polyethylene or polypropylene which is 0.005 to 0.001 mils thick. The pigment is used to provide a contrast for liquids having colors other than white. It is preferred that the polyethylene be a relatively low density or linear low density polyethylene in contrast to high density polyethylene in order to maintain a significant degree flexibility of the film. The use of polypropylene for the center layer is most preferred because it is more readily bonded to the outer layers, and the combination forms a tough, strong cloth. Also, in the most preferred embodiment of the invention, TiO_2 pigment is present in the polypropylene film in an amount of 50 to 85% by weight of the polypropylene.

Significant flexibility of the dropcloth of this invention is achieved when the dropcloth is made with a total thickness, i.e. layers **18, 19,** and **20** combined, from 0.0015 to 0.005 mils. Although dropcloths of greater thickness may be constructed, the cloth does not meet the objectives of the invention for flexibility. A dropcloth constructed with a lesser thickness does not meet the objectives of the invention because it can be easily torn.

DIRECTIONS: Please place your answers to the following questions in **SECTION 4** of the Answer Sheet.

1. Which of the following claims, if any, avoids anticipation by the prior art?

(A) A multilayered dropcloth consisting of a first outer plastic layer, a center layer comprising a plastic film having a thickness in the range of 0.0005 to 0.002 mils, and a second outer plastic layer, each outer plastic layer comprising a spun bonded plastic film which absorbs fluids.

(B) A fabric comprising a center core layer positioned between first and second outer layers, said outer layers made of spun bonded polypropylene film.

(C) A multilayered dropcloth comprising a first outer plastic layer and a second outer plastic layer, each outer plastic layer consisting of a plastic film that retains water and a center layer comprising a plastic film.

(D) (A) and (C).

(E) (B) and (C).

2. Assuming proper antecedent basis, which of the following passages, if included in an independent claim directed to the described invention, particularly points out and distinctly claims the invention?

(A) said center layer having opposed surfaces, said first outer plastic layer adhesively bonded to one of said surfaces and said second outer plastic layer adhesively bonded to the other of said surfaces

(B) each of said first and second outer plastic layers having an inner surface, and each outer plastic layer having surface depressions on the inner surface separated by small raised portions

(C) said dropcloth having a thickness within the range of 0.0025 to 0.005 mils

(D) said first and second plastic layers bonded by heat on an adhesive layer

(E) (A), (B), and (C).

3. Assuming that Claim 1 is anticipated by the prior art, which of the following dependent claims is not anticipated by the prior art and is supported by the written description provided herein?

(A) 2. A dropcloth according to Claim 1, wherein the center layer plastic film is selected from the group consisting of low density polyethylene, linear low density polyethylene, and polypropylene.

(B) 2. A dropcloth according to Claim 1, wherein the center layer plastic film contains an inorganic white pigment.

(C) 2. A dropcloth according to Claim 1, wherein each of the first and second outer layers having an outer surface, and each outer layer having surface depressions on the outer surface uniformly distributed about said outer surfaces of said first and second outer layers.

(D) 2. A dropcloth according to Claim 1, wherein each of the first and second outer layers is made of spun bonded polypropylene film containing segments of spun bonded polybutylene.

(E) 2. A dropcloth according to Claim 1, wherein the thickness of the dropcloth is 0.0005 mils .

THE PRIOR ART

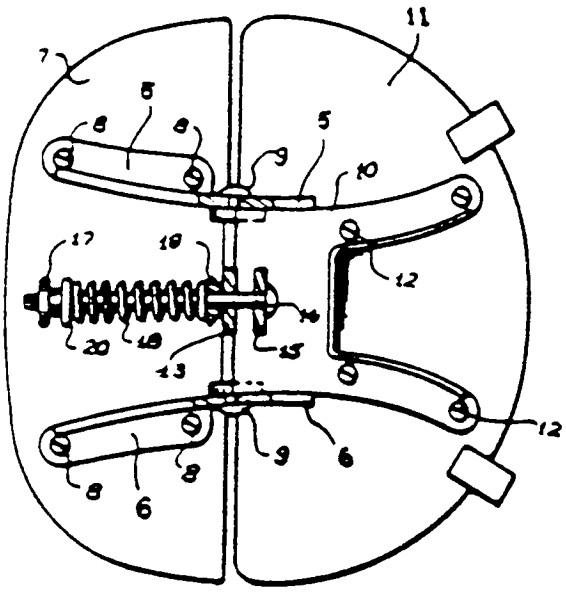


FIG. 2

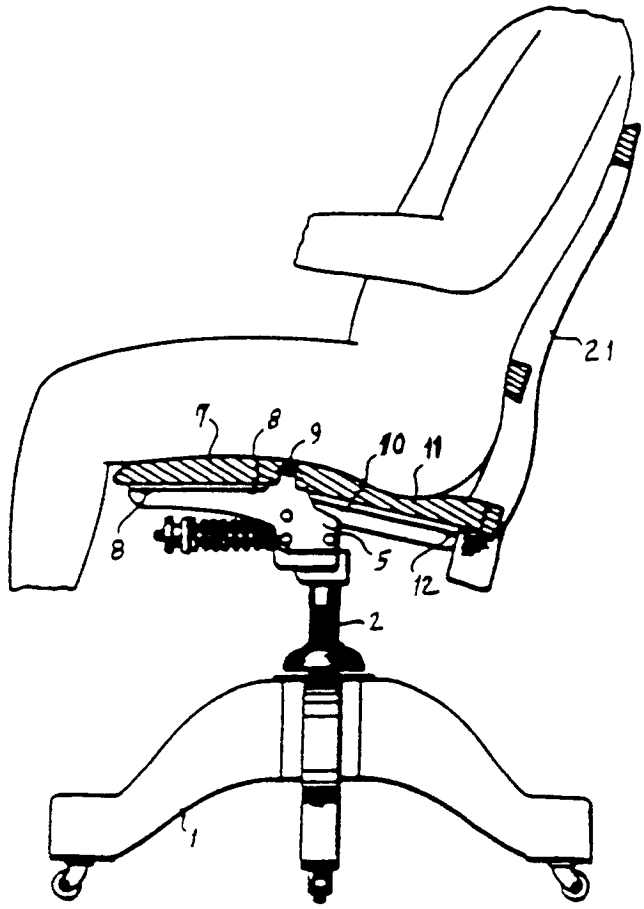


FIG. 1

A prior art chair is illustrated FIGS. 1 and 2. It includes a conventional base pedestal **1** made up of a plurality of legs with casters normally provided at the lowermost ends of the legs to facilitate movement of the chair, a vertically adjustable support column **2** mounted at its lower end to the base so that the height of the seat can be adjusted, and a pair of mounting brackets **5** and **6** connected to the upper end of the support column. The mounting brackets **5** and **6** are fixedly connected to the support column **2**. The prior art chair seat includes a two-piece seat having a front portion **7** and a rear portion **11**. The front portion **7** is fixedly secured to mounting brackets **5** and **6** by screws **8**. The rear portion **11** is fixedly secured to a frame **10** by screws **12** and has a backrest **21** fixed thereto. The frame **10** is pivotally connected to mounting brackets **5** and **6** by pivot pins **9**. It will be appreciated that the support column **2** is connected to the base in such a

manner that the overall height of the chair may be adjusted to accommodate a user thereof, and the support column is rotatably connected to either the base or the mounting brackets to permit pivoting movement by the user of the chair, both in manners well known in the art.

As more clearly shown in FIG. 2, spring **18** is captured on bolt **14** between nut and washer combination **17** and **20** and arcuate washer **19**. The shank of the bolt runs through a flange **13** connected to the front portion **7** of the seat and a flange **15** connected to the frame member **10**. The spring **18** resiliently biases the frame member **10** in an upward direction while permitting simultaneous rearward tilting of the backrest **21** and downward tilting of the rear portion **11**. Thus a user seated in the chair is able to recline the backrest and rear portion of the seat and tilt the seat rearwardly while maintaining his or her thighs in a substantially fixed position.

When the height of the prior art chair is adjusted to a point where the user can comfortably work on a given surface, the surface may be at such a height that the user of the chair cannot comfortably place his or her feet upon the floor that supports the chair. If an attempt is made by the user to place his or her feet upon the floor, the prior art chair seat, which has a fixed front portion that remains in a horizontal plane, will exert an undesirable upward pressure on the thighs of the person sitting in the chair, resulting in substantial discomfort and adverse working conditions.

In order to overcome the disadvantages of the prior art, this invention involves a seat having a front portion and a rear portion with the rear portion fixed to the chair support structure and the front portion can be adjusted for the comfort of the user.

THE INVENTION

The embodiments of the present invention are illustrated FIGS. 3 and 4 below.

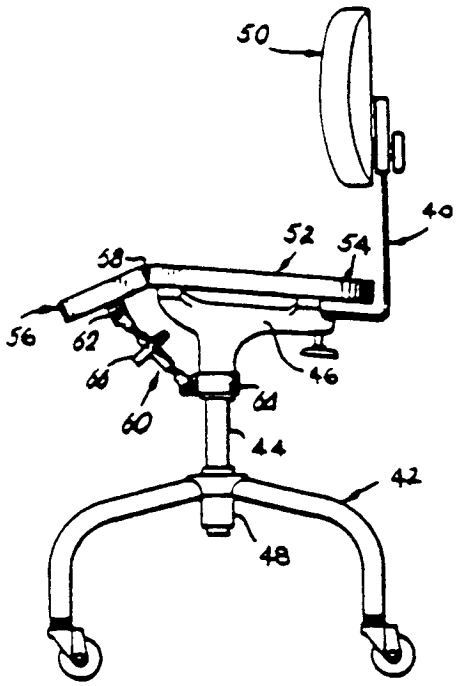


FIG. 3

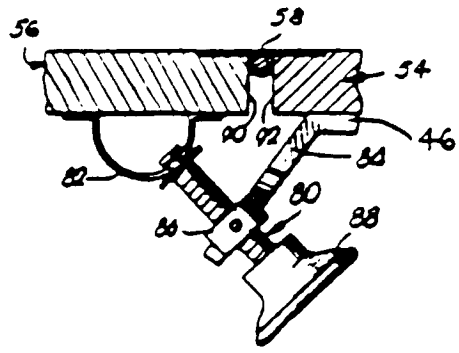


FIG. 4

The chair, indicated generally at **40** includes a base **42** made up of a plurality of legs, with casters normally provided at the lowermost ends of the legs to facilitate movement of the chair. A support column **44** is connected at its lower end to the base **42**, and a mounting bracket **46** is connected to the upper end of the support column. The support column **44** is adjustably mounted to the base **42** using a conventional threaded adjustment means **48** to permit vertical adjustment of the seal height. A conventional backrest **50** is provided and the backrest may be attached to either a rear portion of a seat **52** (not illustrated in Fig. 3) or to the mounting bracket **46**.

The chair seat **52** of the present invention is made up of a rear portion **54** and a front portion **56**. The front portion is swingable relative to the rear portion, whereby the front portion may be inclined angularly downwardly with respect to the rear portion to thereby lessen the upward pressure on the thighs of a user and permit a more comfortable working posture. While rear portion **54** and front portion **56** are of the same width, rear portion **54** is of greater depth and therefore comprises the major area of the overall surface of chair seat **52**. The mounting bracket **46** must be substantially rigid and fixed to rear portion **54**, thus fixedly supporting the rear portion **54**, but permitting controlled swinging movement of the front portion **56** in a downward direction.

The front portion **56** is made of a single length of material and is connected to the rear portion **54** by a hinge **58**. The hinge **58** must be attached to the upper surfaces of the front and rear portions whereby the front portion **56** may be swung relative to the rear portion **54** without pinching the clothes or thighs of the user. An adjustment means must be provided between the mounting bracket **46** and the front portion **56** for adjusting the angular position of the front portion **56** relative to the rear portion **54**. Two embodiments of the adjustment means are illustrated in FIGS. 3 and 4, respectively.

The first embodiment of the adjustment means is illustrated in FIG. 3 and includes a turnbuckle **60** with an operating knob **66**. The turnbuckle **60** is pivotally connected at one end to a first bracket **62**. The bracket is attached to the lower surface of the front portion **56**. The other end of the turnbuckle **60** is pivotally connected to a second bracket **64**. The second bracket **64** is attached to the mounting bracket **46** adjacent the upper end of the support column **44**. Upon actuation of the operating knob **66** of the turnbuckle **60**, the overall length of the turnbuckle **60** can be decreased, thereby causing the front portion **56** to swing from its initial position wherein it and rear portion **54** are in a common, substantially horizontal plane to a position extending angularly downwardly with respect to the rear portion **54**. As can be appreciated, the user of the chair may, by convenient actuation of operation knob **66**, create a desired angular inclination of front portion **56**.

The second embodiment of the adjustment means is illustrated in FIG. 4. In this embodiment, the mounting bracket **46** includes a forwardly and downwardly extending portion **84** to which an internally threaded bearing **86** is pivotally attached. A U-shaped bracket **82** is attached to the lower surface of front portion **56**. The U-shaped bracket **82** includes a slot intermediate the ends of the U which is sized to receive one end of an externally threaded screw **80** for rotation relative to the U-shaped bracket **82**. The screw **80** is threadedly received in the bearing **86**. An operating knob **88** is attached to the other end of screw **80**. Upon rotation of the operating knob **88** in either direction, the front portion **56** is caused to swing about hinge **58** to a selected angularly adjusted position with respect to rear portion **54**. As apparent from viewing FIG. 4, the downward swinging movement of front portion **56** is limited in that the rear edge **90** thereof will,

after a predetermined angularity has been achieved, be brought into abutting engagement with front edge **92** of rear portion **54**, which serves to stop or limit the relative downward inclination of front portion **56** with respect to rear portion **54**. The same is true with the structure shown in FIG. 3 above.

DIRECTIONS: Please place your answers to the following questions in **SECTION 5** of the Answer Sheet.

1. Assume that the following partial claim has been drafted for the invention disclosed above:

Claim 1. A chair comprising

a base,

a support column having an upper end and a lower end,

a substantially rigid mounting bracket fixedly connected to the upper end of said column,

a seat having a front portion and a rear portion, each portion having an upper surface and a lower surface, the lower surface of said rear portion being fixed to said mounting bracket,

the lower end of said column being adjustably mounted to said base to permit vertical adjustment of the height of said seat,

a means for interconnecting said front and rear portions and attached to the lower surfaces thereof, and

Which of the following limitations meets the written description requirement and must be included to avoid the prior art?

(A) casters attached to the lower most end of said column to facilitate movement of the chair.
(B) an assembly comprising a spring, bolt, nut, and washer combination for resiliently biasing the front and rear portions of the seat.
(C) an adjustment means comprising an adjustable screw contained inside said interconnecting means for locking said means in place, whereby the angle of inclination of the front portion may be adjusted and the front portion may be retained in a selected position.
(D) an adjustment means connecting said front portion to said mounting bracket for adjusting the extent of downward swinging movement of said front portion, whereby the angle of inclination of the front portion may be adjusted and the front portion may be retained in a selected position.
(E) a backrest connected to said support column for providing back support.

2. Assuming that Claim 1 written in question 1 is complete and particularly points out and distinctly claims the disclosed invention, which of the following dependent claims best further particularly points out one of the two embodiments disclosed?

(A) 2. A chair according to Claim 1 wherein said backrest is flexible so as to relieve pressure on the thighs of the user and allow the user to rest in a comfortable manner.

(B) 2. A chair according to Claim 1 wherein said adjustment means comprises a turnbuckle having two ends and an operating knob, one of said turnbuckle ends being pivotally connected to said first bracket, and another turnbuckle pivotally connected to said second bracket, whereby said operating knob may be actuated to create a desired angular inclination of said front portion.

(C) 2. A chair according to Claim 1 including an adjustment means comprising a first bracket attached to the lower surface of said front portion of the seat, a second bracket attached to said mounting bracket adjacent the upper end of said support column, and a turnbuckle having two ends and an operating knob, one of said turnbuckle ends being pivotally connected to said first bracket, and the other of said turnbuckle ends being pivotally connected to said second bracket, whereby said operating knob may be actuated to create a desired angular inclination of said front portion.

(D) 2. A chair according to Claim 1 wherein said adjustment means comprises a U-shaped bracket attached to said lower surface of said front portion of the seat, said U-shaped bracket having two ends and including a slot intermediate said U-shaped bracket ends, and said externally threaded screw having two ends and being threadedly received in an internally threaded bearing, one of said screw ends being rotatably received within said U-shaped bracket slot for rotation of said screw relative to said U-shaped bracket and the other of said screw ends being attached to an operating knob, whereby rotation of the operating knob in either direction causes said front portion to swing about said hinge to a selected angularly adjusted position with respect to said rear portion.

(E) 2. A chair according to Claim 1 wherein said adjustment means comprises a first flange connected to said front portion of said seat, a second flange connected to said second portion of said seat, a bolt running through said first and second flanges, and a spring captured on said bolt so as to resiliently bias the front portion of said seat and thereby relieve pressure on a user's thighs.

3. Assuming that Claim 1 as written in question 1 is complete and particularly points out and distinctly claims the disclosed invention, which of the following dependent claims best further particularly points out one of the two embodiments disclosed?

(A) 3. A chair according to Claim 1 wherein the rear portion of the seat is fixedly secured to a backrest.

(B) 3. A chair according to Claim 1 wherein the rear portion of the seat is fixedly connected to a frame, said frame being fixed to a backrest.

(C) 3. A chair according to Claim 1 wherein a backrest is fixed to the upper end of said support column.

(D) 3. A chair according to Claim 1 wherein a backrest is fixed to said base.

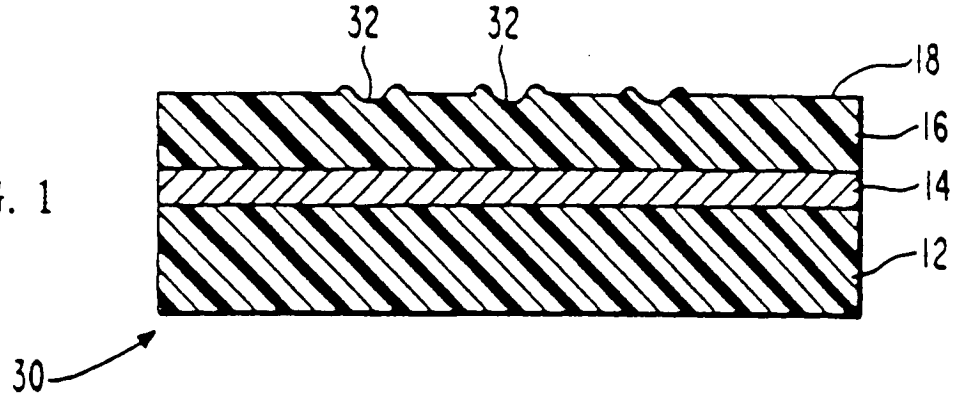
(E) 3. A chair according to Claim 1 wherein the front portion of the seat is connected to the rear seat portion solely through a bracket beneath the seat.

OPTION SECTION 6 - OPTICAL RECORDING MEDIA

Optical recording and reading media enjoy perfect freedom from wear because they do not come into contact with mechanical read and write heads. Information is written on a medium by forming small holes, called pits. The pits are formed by removing or melting off a part of the medium with a recording light, such as a laser. The pits in the recording layer are read by detecting change in the reflection of reading light while rotating the optical recording medium. The recorded information is read by sensing the pits with a reading light.

Fig. 1 illustrates the invention. The optical recording medium **30** includes a substrate **12**, a film liner **14**, and a recording layer **16**. The recording layer contains pits **32** in the outer surface **18** of the recording layer.

FIG. 1



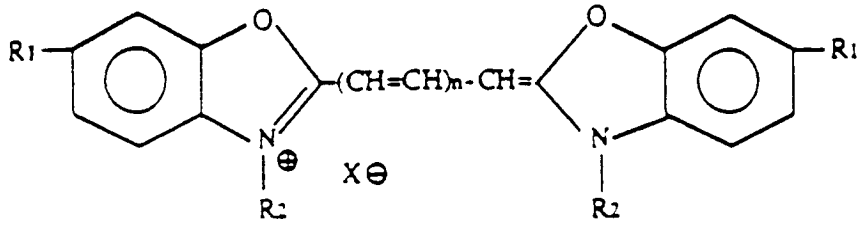
The substrate **12** is not limited to a particular material, so long as it is substantially transparent to write and read light. Examples of such materials include glass, polymethyl methacrylate, acrylic resin, epoxy resin, polycarbonate resin, polysulfone resin, and polyether sulfone. The film liner **14** is formed by vapor depositing an optically transparent film of an inorganic material, such as silicon oxide, titanium oxide, zirconium oxide, aluminum oxide, silicon nitride, or silicon carbide. The film liner provides a barrier to water and gas, and improves the preservation stability of the recording layer.

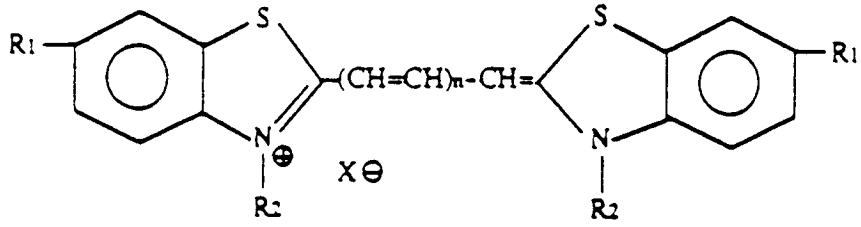
The recording layer **16** comprises a cyanine dye constituent as the optical recording medium and a quencher, such as a transition metal chelate of a bis(phenyldithiol) compound. The quencher improves the photostability of the cyanine dye by preventing decoloring (reproduction deterioration) caused by reading light. The recording layer is formed by first dissolving the cyanine dye and quencher in an organic solvent, such as ethanol or acetone, applying the solution to the film liner, rotating the substrate to distribute the recording medium over the film liner, and then irradiating the medium with pulses of laser light to form pits in the recording layer surface. The cyanine dye, quencher, and solvent mixture may optionally, but not preferably, include a surfactant, antistatic agent, lubricant, flame retardant, stabilizer, dispersant, antioxidant, and crosslinking agent.

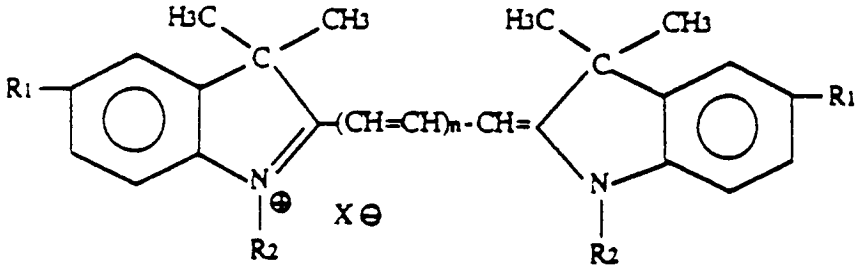
The thickness of the recording layer is in the range of 100 to 1000Å, preferably 300 to 600Å, more

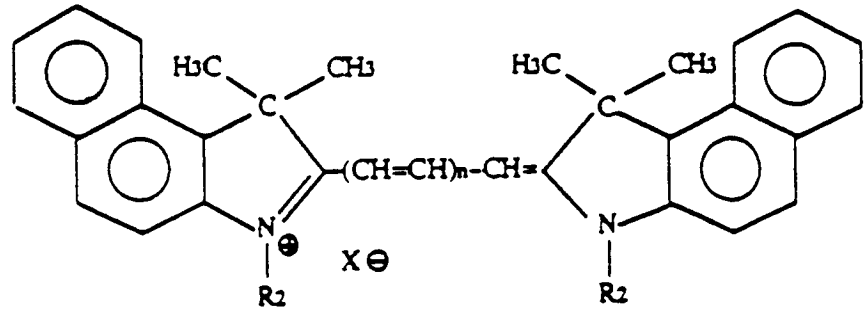
preferably 300 to 500Å. The quencher is contained in the recording layer in an amount of 15 to 50 moles per 100 moles of cyanine dye, preferably 15 to 35 moles of quencher per 100 moles of cyanine dye. The amount of quencher is critical. When more than 50 moles of quench per 100 moles of dye is used, the sensitivity of the dye rapidly deteriorates. The writing light applied to the recording medium is selected according to the wavelength of light absorbed by the cyanine dye contained in the recording layer. Laser light having a wavelength of 760 to 830Å is preferred.

The cyanine dyes used in the present invention are generally well known. Examples of cyanine dyes suitable for the present invention have the following structural formulas (I through V):

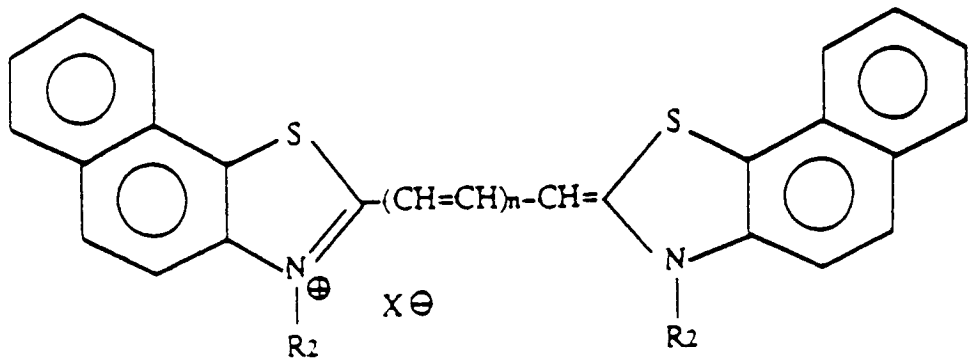
I 

II 

III 

IV 

V

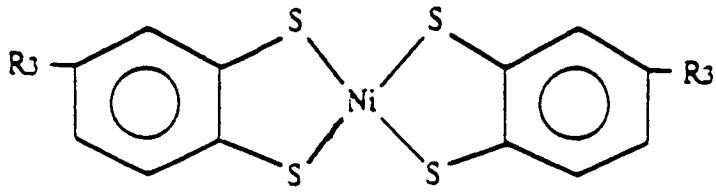


wherein R1 is hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, or hydrogen; R2 is unsubstituted alkyl, cycloalkyl, hydoxyalkyl, or alkylyalkyl; X is a halide; and n is 1 to 3.

The following table lists 29 cyanine dyes used in the present invention having one of the aforesaid structural formulas.

Dye No.	Formula	R_1	R_2	n	X
1	I	H	CH_3	3	Cl
2	I	H	CH_2CH_3	3	Cl
3	I	H	$CH_2CH_2CH_3$	3	Cl
4	I	H	$C_4H_8CH_3$	3	Cl
5	I	CH_3	CH_3	3	Cl
6	II	H	CH_3	3	Cl
7	II	H	CH_2CH_3	3	Cl
8	II	H	CH_2CH_3	3	Br
9	II	H	$CH_2CH_2CH_3$	3	Cl
10	II	H	$CH_2CH_2CH_3$	3	Br
11	II	H	cycol-C_6H_{11}	3	Cl
12	II	CH_3O	CH_2CH_3	3	I
13	III	H	CH_3	3	Cl
14	III	Cl	CH_3	3	Cl
15	III	Cl	CH_3	3	Br
16	III	H	CH_2CH_3	3	Cl
17	III	phenyl	$CH_2CH_2CH_3$	3	Cl
18	III	Cl	cycol-C_5H_9	3	Cl
19	III	H	cycol-C_5H_9	2	Cl
20	III	H	cycol-C_5H_9	1	Cl
21	III	H	cycol-C_6H_{11}	3	Cl
22	III	Cl	cycol-C_6H_{11}	3	Cl
23	III	Cl	cycol-C_6H_{11}	3	Br
24	III	NO_2	$C_2H_4OCH_3$	3	Cl
25	III	C_2H_4OH	CH_2CH_3	3	Cl
26	IV	-	CH_3	3	Cl
27	V	-	CH_3	3	Cl
28	V	-	CH_2CH_3	3	Br
29	V	-	CH_3	3	I

The following is the general formula for the quencher used in the present invention:



wherein R3 represents hydrogen, alkyl, or hydrogen.

The preferred embodiment requires the use of cyanine dyes having structural formulas II and III wherein R2 is an unsubstituted alkyl or cyclo group due to improved solubility of the dye in the solvent. The most preferred embodiment uses cyanine dyes having structural formula III wherein R1 is chlorine and R2 is alkyl or cycloalkyl and 25 to 35 moles of the quencher are used per 100 moles of the cyanine dye. The dyes of the most preferred embodiment have outstanding solubility, and provide outstanding reproduction characteristics and repeated reading characteristics.

THE PRIOR ART

Recording media using cyanine dyes are old in the art. The closest prior art is a patent to Smith issued on August 21, 1989. The patent includes the following disclosure:

FIG. 2

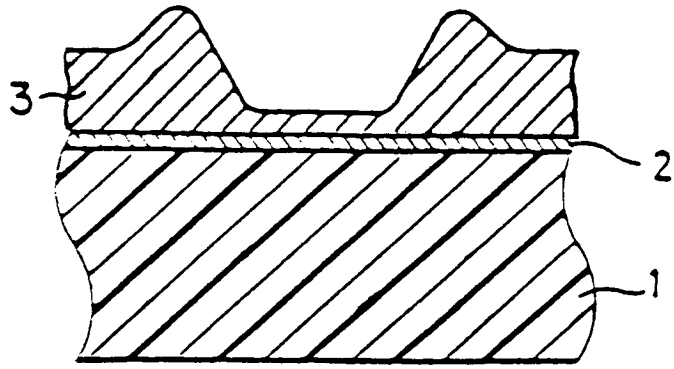
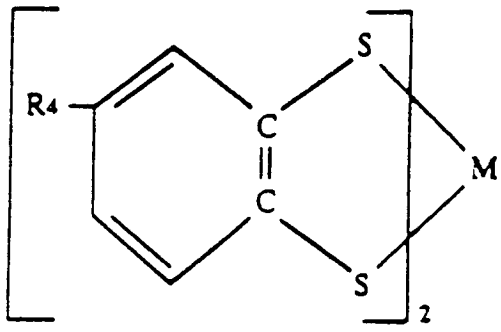
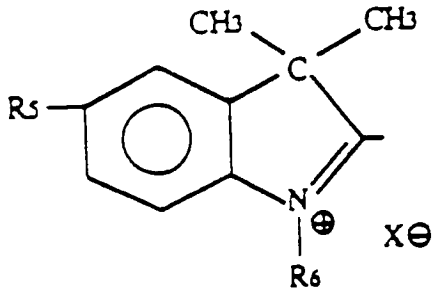


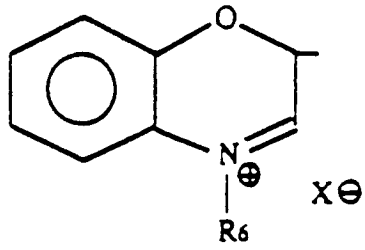
FIG. 2 shows a pitted optical recording medium having a recording layer **3**, a dielectric layer **2**, and a transparent substrate **1**. The substrate **1** can be any material which is transparent to laser light, such as polymethyl methacrylate or polycarbonate. The dielectric layer **2** can be any inorganic material which is optically transparent to laser light, such as silicon dioxide or titanium dioxide. The dielectric layer is deposited by using a conventional vapor deposition technique.

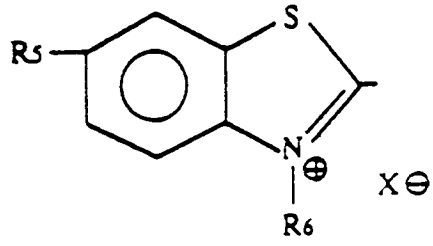
The recording layer 3 is formed by dissolving a cyanine dye and a substituted benzenedithiol chelate in acetone, applying the solution to the dielectric layer, spinning the substrate to spread the cyanine dye mixture over the surface of the dielectric layer, and then irradiating the medium with pulses of laser light to form pits in the recording layer surface. The substituted benzenedithiol chelate used by Smith is disclosed as having the general formula:



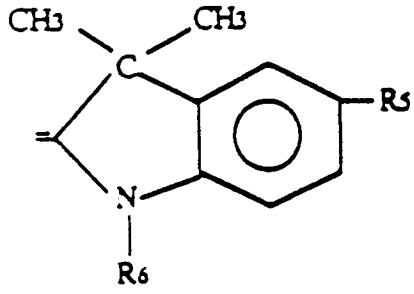
wherein M is Pt, Pd, or Ni and R4 represents hydrogen, an alkyl, or halogen. The cyanine dyes used by Smith are described as A-$(CH=CH)_n$-CH=B wherein n is 1, 2, or 3, and A is described as being:

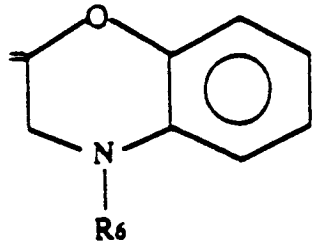


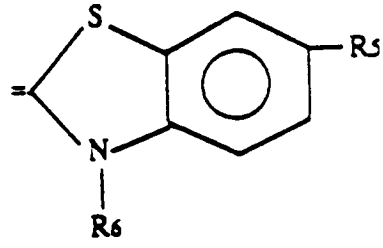




and B is described as being:

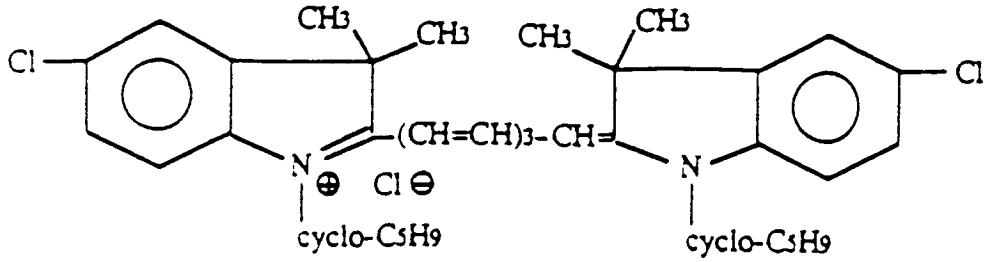






wherein R5 is hydrogen, alkyl, and halogen and R6 is unsubstituted alkyl or alkoxyalkyl, and X is a halide.

Smith discloses that the thickness of the recording layer 3 is between 300 and 700Å. He also discloses that the substituted benzenedithiol chelate is contained in the recording layer in an amount of 40 to 60 moles per 100 moles of cyanine dye, preferably 55 to 60 moles per 100 moles of dye. Smith's preferred embodiment uses 53 moles of the benzenedithiol chelate per 100 moles of the following cyanine dye:

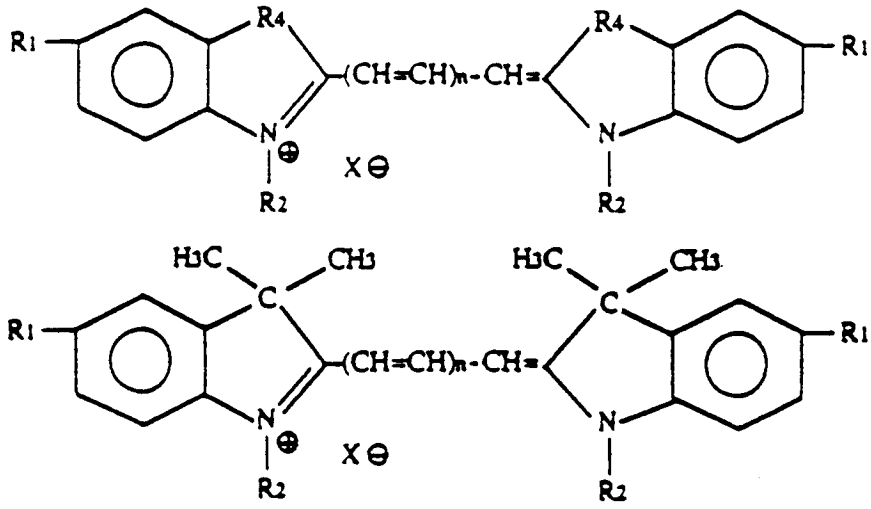


DIRECTIONS: Please place your answers to the following questions in **SECTION 6** of the Answer Sheet.

1. Your client naturally wants the broadest claim possible; however, a potential infringer is rapidly gaining market share and you have been told to "Get this thing issued fast or I'll get another lawyer!" Accordingly, you will file these claims with the specification and want these claims to sail through the PTO with no problems: a first action allowance. Presented below are the first three lines of Claim 1. You are to select one of the choices below which completes the claim, protects the invention, and avoids prosecution problems.

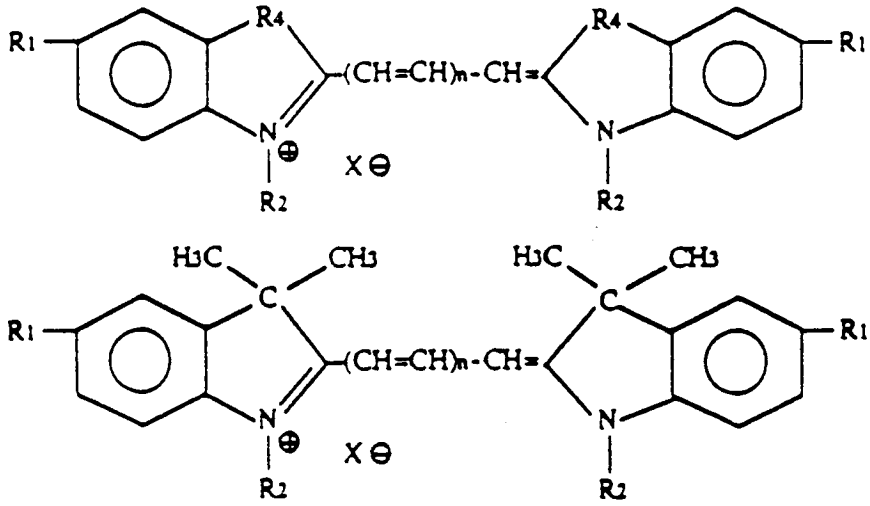
Claim 1. An optical recording medium comprising:
(i) an optically transparent substrate;
(ii) an optically transparent layer of inorganic film; and

(A) (iii) a recording layer of said optically transparent layer of inorganic film, said recording layer comprising 25 moles of a quencher per 100 moles of a cyanine dye of the formula:



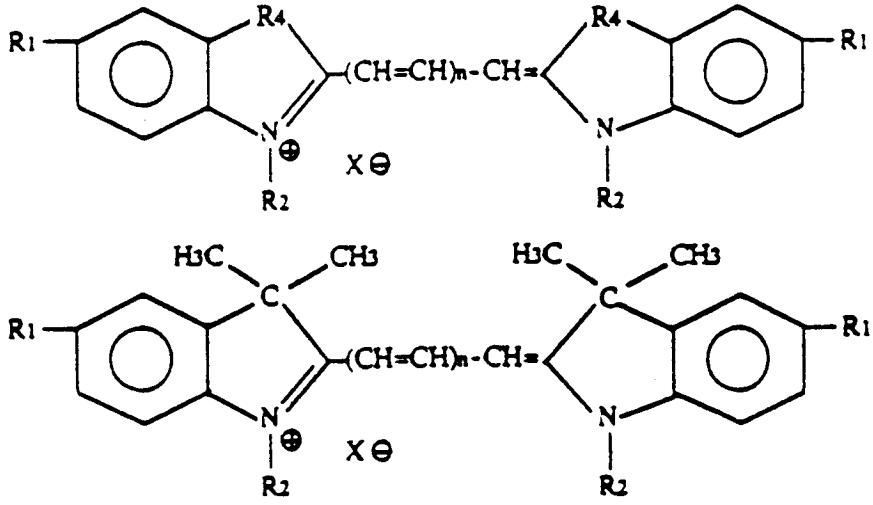
wherein R1 is selected from the group comprising hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, and halogen; R2 is alkyl; X is a halide; R4 is sulfur; and n is 1 to 3.

(B) (iii) a recording layer of said optically transparent layer of inorganic film, said recording layer comprising 15 moles of a quencher per 100 moles of a cyanine dye of the formula:



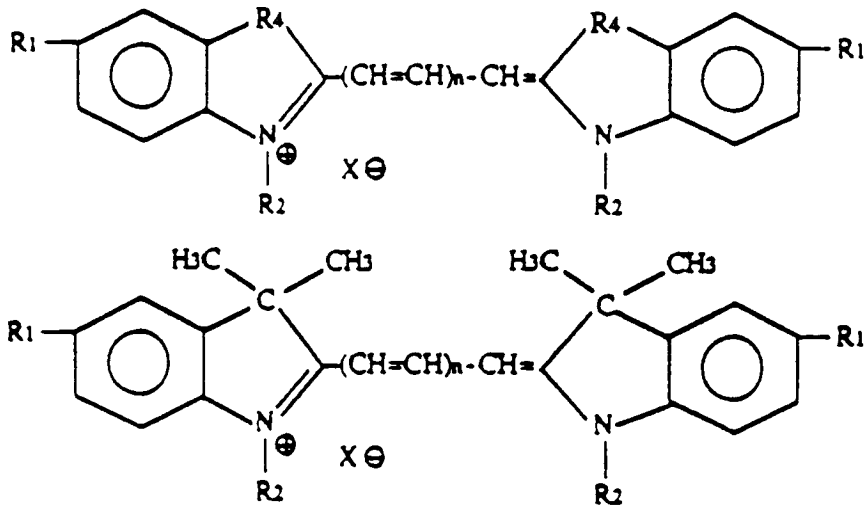
wherein R1 is selected from the group consisting essentially of hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, and halogen; R2 is alkyl; X is a halide; R4 is sulfur; and n is 1 to 3.

(C) (iii) a recording layer of said optically transparent layer of inorganic film, said recording layer comprising 15 moles of a quencher per 100 moles of a cyanine dye of the formula:



wherein R1 is selected from the group consisting of hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, and halogen; R2 is alkyl; X is a halide; R4 is sulfur; and n is 1 to 3.

(D) (iii) a recording layer of said optically transparent layer of inorganic film, said recording layer comprising 15 moles of a quencher per 100 moles of a cyanine dye of the formula:



wherein R1 is selected from the group comprising hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, and halogen; R2 is alkyl; X is a halide; R4 is a chalcogen; and n is 1 to 3.

(E) (A) and (C).

2. You are under the same situation as in question 1. Presented below are the first three lines of Claim 2. You are to select one of the choices below which completes the claim, protects the invention, and avoids prosecution problems.

Claim 2. An optical recording medium comprising:
(i) an optically transparent substrate;
(ii) an optically transparent layer of inorganic film; and

(A) (iii) a recording layer of said optically transparent layer of inorganic film, said recording layer comprising a cyanine dye and containing 15 to 35 moles of said quencher per 100 moles of said cyanine dye.

(B) (iii) a recording layer of said optically transparent layer of inorganic film, said recording layer comprising a cyanine dye wherein said recording layer contains a quencher.

(C) (iii) a recording layer of said optically transparent layer of inorganic film, said recording layer comprising 15 to 35 moles of a quencher per 100 moles of a cyanine dye.

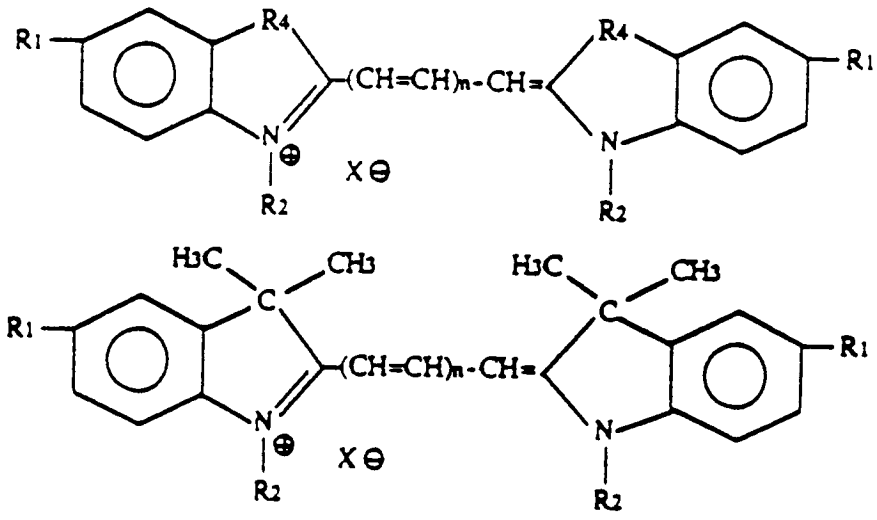
(D) (iii) a recording layer of said optically transparent layer of inorganic film, said recording layer comprising a cyanine dye wherein said recording layer contains 15 to 35 moles of said quencher per 100 moles of said cyanine dye, preferably 25 to 35 moles of said quencher.

(E) (B) and (C).

3. You are under the same situation as in question 1. Presented below are the first two lines of Claim 3. You are to select one of the choices below which completes the claim, protects the invention, and avoids prosecution problems.

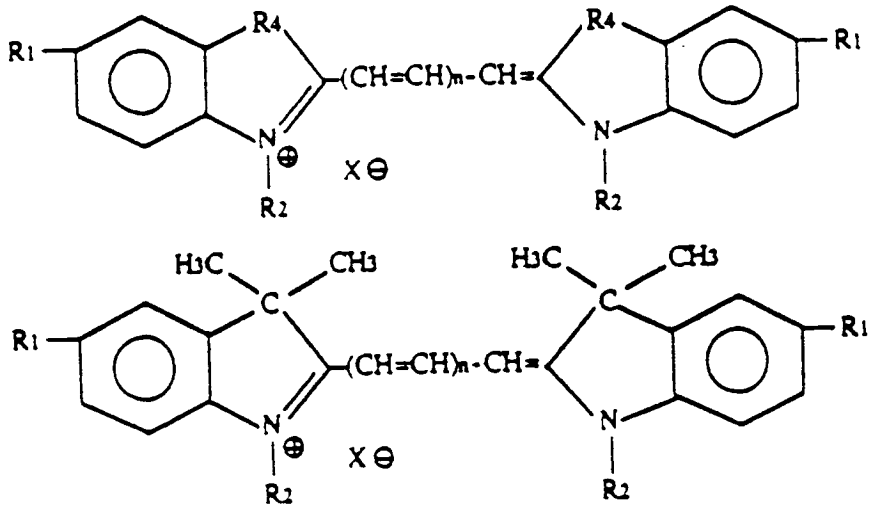
Claim 3. An optical recording medium of claim 2 where the cyanine dye has either of the following formulas:

(A)



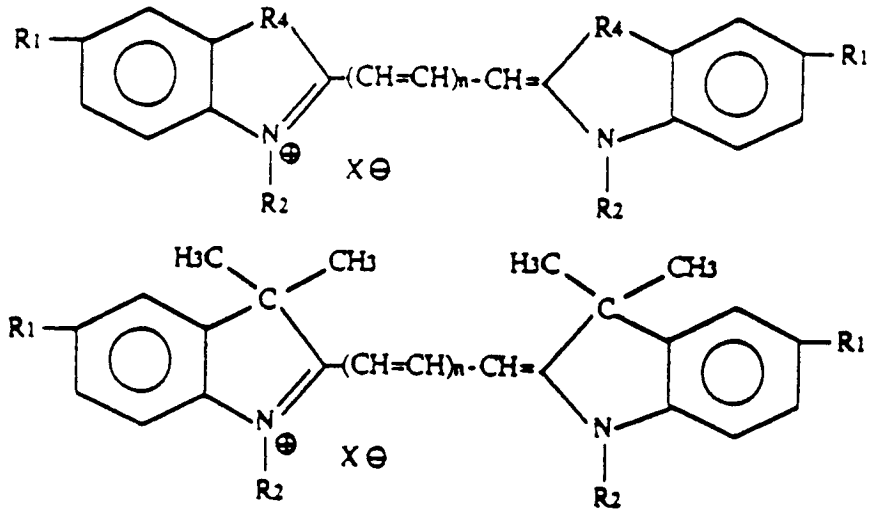
wherein R1 is selected from the group consisting of hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, fluorine, chlorine, bromine or iodine; R2 is alkyl; X is a halide; R4 is sulfur or oxygen; and n is 1 to 3.

(B)



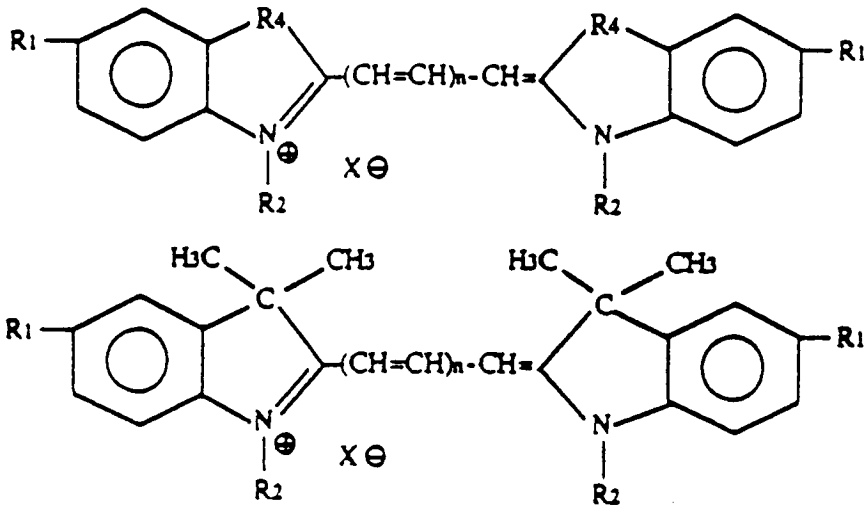
wherein R1 is selected from the group consisting of hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, or halogen; R2 is alkyl; X is a halide; R4 is sulfur; and n is 1 to 3.

(C)



wherein R1 is selected from the group consisting of hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, or halogen; R2 is alkyl; X is a halide; R4 is chalcogen; and n is 1 to 3.

(D)



wherein R1 is selected from the group consisting of hydrogen, unsubstituted alkyl, alkoxy, nitro, aryl, fluorine, chlorine, bromine and iodine; R2 is alkyl; X is a halide; R4 is chalcogen; and n is 1 to 3.

(E) (C) and (D).

*U.S. Government Printing Office: 1997 - 428-393