EXHIBIT 1

PART 5 OF 5

different thicknesses may be used in the same drawing where different thicknesses have a different meaning.

(m) Shading. The use of shading in views is encouraged if it aids in understanding the invention and if it does not reduce legibility. Shading is used to indicate the surface or shape of spherical, cylindrical, and conical elements of an object. Flat parts may also be lightly shaded. Such shading is preferred in the case of parts shown in perspective, but not for cross sections. See paragraph (h)(3) of this section. Spaced lines for shading are preferred. These lines must be thin, as few in number as practicable, and they must contrast with the rest of the drawings. As a substitute for shading, heavy lines on the shade side of objects can be used except where they superimpose on each other or obscure reference characters. Light should come from the upper left corner at an angle of 45°. Surface delineations should preferably be shown by proper shading. Solid black shading areas are not permitted, except when used to represent bar graphs or color.

(n) Symbols. Graphical drawing symbols may be used for conventional elements when appropriate. The elements for which such symbols and labeled representations are used must be adequately identified in the specification. Known devices should be illustrated by symbols which have a universally recognized conventional meaning and are generally accepted in the art. Other symbols which are not universally recognized may be used, subject to approval by the Office, if they are not likely to be confused with existing conventional symbols, and if they are readily identifiable.

(o) Legends. Suitable descriptive legends may be used, or may be required by the Examiner, where necessary for understanding of the drawing, subject to approval by the Office. They should contain as few words as possible.

(p) Numbers, letters, and reference characters.

(1) Reference characters (numerals are preferred), sheet numbers, and view numbers must be plain and legible, and must not be used in association with brackets or inverted commas, or enclosed within outlines, e.g., encircled. They must be oriented in the same direction as the view so as to avoid having to rotate the sheet. Reference characters should be arranged to follow the profile of the object depicted.

(2) The English alphabet must be used for letters, except where another alphabet is customarily used, such as the Greek alphabet to indicate angles, wavelengths, and mathematical formulas.

(3) Numbers, letters, and reference characters must measure at least .32 cm. (1/8 inch) in height. They should not be placed in the drawing so as to interfere with its comprehension. Therefore, they should not cross or mingle with the lines. They should not be placed upon hatched or shaded surfaces. When necessary, such as indicating a surface or cross section, a reference character may be underlined and a blank space may be left in the hatching or shading where the character occurs so that it appears distinct.

(4) The same part of an invention appearing in more than one view of the drawing must always be designated by the same reference character, and the same reference character must never be used to designate different parts.

(5) Reference characters not mentioned in the description shall not appear in the drawings. Reference characters mentioned in the description must appear in the drawings.

(q) Lead lines. Lead lines are those lines between the reference characters and the details referred to. Such lines may be straight or curved and should be as short as possible. They must originate in the immediate proximity of the reference character and extend to the feature indicated. Lead lines must not cross each other. Lead lines are required for each reference character except for those which indicate the surface or cross section on which they are placed. Such a reference character must be underlined to make it clear that a lead line has not been left out by mistake. Lead lines must be executed in the same way as lines in the drawing. See paragraph (l) of this section.

(r) Arrows. Arrows may be used at the ends of lines, provided that their meaning is clear, as follows:

(1) On a lead line, a freestanding arrow to indicate the entire section towards which it points;

(2) On a lead line, an arrow touching a line to indicate the surface shown by the line looking along the direction of the arrow; or

(3) To show the direction of movement.

(s) Copyright or Mask Work Notice. A copyright or mask work notice may appear in the drawing, but must be placed within the sight of the drawing immediately below the figure representing the copyright or mask work material and be limited to letters having a print size of .32 cm. to .64 cm. (1/8 to 1/4 inches) high. The content of the notice must be limited to only those elements provided for by law. For example, "©1983 John Doe" (17 U.S.C. 401) and "*M* John Doe" (17 U.S.C. 909) would be properly limited and, under current statutes, legally sufficient notices of copyright and mask work, respectively. Inclusion of a copyright or mask work notice will be permitted only if the authorization language set forth in § 1.71(e) is included at the beginning (preferably as the first paragraph) of the specification.

(t) Numbering of sheets of drawings. The sheets of drawings should be numbered in consecutive Arabic numerals, starting with 1, within the sight as defined in paragraph (g) of this section. These numbers, if present, must be placed in the middle of the top of the sheet, but not in the margin. The numbers can be placed on the right-hand side if the drawing extends too close to the middle of the top edge of the usable surface. The drawing sheet numbering must be clear and larger than the numbers used as reference characters to avoid confusion. The number of each sheet should be shown by two Arabic numerals placed on either side of an oblique line, with the first being the sheet number and the second being the total number of sheets of drawings, with no other marking.

(u) Numbering of views.

(1) The different views must be numbered in consecutive Arabic numerals, starting with 1, independent of the numbering of the sheets and, if possible, in the order in which they appear on the drawing sheet(s). Partial views intended to form one complete view, on one or several sheets, must be identified by the same number followed by a capital letter. View numbers must be preceded by the abbreviation "FIG." Where only a single view is used in an application to illustrate the claimed invention, it must not be numbered and the abbreviation "FIG." must not appear.

(2) Numbers and letters identifying the views must be simple and clear and must not be used in association with brackets, circles, or inverted commas. The view numbers must be larger than the numbers used for reference characters.

(v) Security markings. Authorized security markings may be placed on the drawings provided they are outside the sight, preferably centered in the top margin.

(w) Corrections. Any corrections on drawings submitted to the Office must be durable and permanent.

(x) Holes. The drawing sheets may be provided with two holes in the top margin. The holes should be equally spaced from the respective side edges, and their center lines should be spaced 7.0 cm. (2 3/4 inches) apart. (See § 1.152 for design drawings, § 1.165 for plant drawings, and § 1.174 for reissue drawings.)

Drawings in compliance with 37 CFR 1.84 prior to its revision will be acceptable and in compliance with 37 CFR 1.84, as revised, effective Oct. 1, 1993.

Drawings on paper are acceptable although bristol board is preferred. Corrections thereto must be made in the form of replacement sheets since the Office does not release drawings for correction. See 37 CFR 1.85.

Good quality copies made on office copiers are acceptable if the lines are uniformly thick, black, and solid. Facsimile copies of drawings however, are not acceptable (37 CFR 1.6(d)(4)).

Drawings are currently accepted in four different size formats. It is, however, required that all drawings in a particular application be the same size for ease of handling and reproduction.

Design patent drawings, 37 CFR 1.152, MPEP § 1503.02.

Plant patent drawings, 37 CFR 1.165, MPEP § 1606.

Reissue application drawings, MPEP §608.02(k) and § 1413.

Correction of drawings, MPEP § 608.02(p). Prints, preparation and distribution, MPEP § 508 and § 608.02(m). Prints, return of drawings, MPEP § 608.02(y).

For pencil notations of classification and name or initials of assistant examiner to be placed on drawings, see MPEP § 717.03.

The filing of a divisional or continuation case under the provisions of 37 CFR 1.60 (unexecuted case) does not obviate the need for formal drawings. See MPEP § 608.02(b).

DEFINITIONS

A number of different terms are used when referring to drawings in patent applications. The following definitions are used in this Manual.

Original drawings: The drawing submitted with the application when filed. It may be either a formal or an informal drawing.

Substitute drawing: A drawing filed later than the filing date of an application. Usually submitted to replace an original informal drawing.

Formal drawing: A drawing in a form that complies with 37 CFR 1.84. Formal drawings are stamped "approved" by the Draftsman.

Informal drawing: A drawing which does not comply with the form requirements of 37 CFR 1.84. Drawings may be informal because they are not on the proper size sheets, the quality of the lines is poor, or for other reasons such as the size of reference elements. Such objections are made by the Draftsman on form PTO–948.

Drawing print: This term is used for the white paper print prepared by the Micrographics Branch of the Office Services Divisions of all original drawings. The drawing prints contain the notation "Print of Drawing as originally filed" near the top. Drawing prints should be placed on the top on the right-hand flap of the application file wrapper.

Interference print: This term is used to designate the copy prepared of the original drawings filed in file cabinets separate from the file wrappers and are used to make interference searches.

The following Form Paragraphs should be used when notifying applicants of drawing corrections.

¶ *6.38 Acknowledgment of Proposed Drawing Correction*

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on [1] have been [2].

Examiner Note:

1. In bracket 2, insert either approved or disapproved.
2. If approved, form paragraph 6.39 and one or more of paragraphs 6.40 or 6.41 or 6.44 must follow.
3. If disapproved, an explanation must be provided.

¶ *6.39 PTO No Longer Makes Drawing Changes*

The Patent and Trademark Office no longer makes drawing changes. 1017 O.G.4. It is applicant's responsibility to ensure that the drawings are corrected. Corrections must be made in accordance with the instructions below.

Examiner Note:

This paragraph is to be used whenever the applicant has filed a request for the Office to make drawing changes. Form paragraph 6.40 must follow.

¶ *6.40 Information on How To Effect Drawing Changes*

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85; 1097 OG 36

New formal drawings must be filed with the changes incorporated therein. The art unit number, application number (including series code) and number of drawing sheets should be written on the reverse side of the draw-

ings. Applicant may delay filing of the new drawings until after receipt of the "Notice of Allowability" (PTOL–37). If delayed, the new drawing **MUST** be filed within the **THREE MONTH** shortened statutory period set for response in the "Notice of Allowability" (PTOL–37) to avoid extension of time fees. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a) for filing the corrected drawings (but not for the payment of the issue fee). The drawing should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. **Corrections other than Informalities Noted by Draftsperson on form PTO–948.**

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the Examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the Examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the THREE MONTH shortened statutory period set in the "Notice of Allowability" (PTOL–37). Within that THREE MONTH period, TWO WEEKS should be allowed for review of the new drawings by the Office. If a correction is determined to be unacceptable by the Office, applicant must arrange to have an acceptable correction resubmitted within the original THREE MONTH period to avoid the necessity of obtaining an extension of time with extension fees. Therefore, applicant should file corrected drawings as soon as possible.

Failure to take corrective action within the set (or extended) period will result in ABANDONMENT of the application.

¶ 6.41 Reminder That PTO No Longer Makes Drawing Changes

Applicant is reminded that the Patent and Trademark Office no longer makes drawing changes and that it is applicant's responsibility to ensure that the drawings are corrected in accordance with the instructions set forth in paper no. [1], mailed on [2].

Examiner Note:

This paragraph is to be used when the applicant has been previously provided with information on how to effect drawing changes (i.e., either by way of form paragraph 6.40 or a PTO–948 has been previously sent).

¶ 6.42 Reminder That Applicant Must Make Drawing Changes

Applicant is reminded that in order to avoid an abandonment of this application, the drawings must be corrected in accordance with the instructions set forth in paper no. [1] mailed on [2].

Examiner Note:

This paragraph is to be used when allowing the application and when applicant has previously been provided with information on how to effect drawing changes (i.e., by way of form paragraph 6.40 or a PTO–948 has been previously sent).

¶ 6.43 Drawings Contain Informalities, Application Allowed

The drawings filed on [1] are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftperson's Patent Drawing Review" (PTO–948). In order to avoid abandonment of this application, correction is required.

Examiner Note:

Use this paragraph when allowing the application, particularly at time of first action issue. Form paragraph 6.40 or 6.41 must follow.

¶ 6.44 Drawing Informalities Previously Indicated

In order to avoid abandonment, the drawing informalities noted in paper no. [1], mailed on [2], must now be corrected. Correction can only be effected in the manner set forth in the above noted paper.

Examiner Note:

Use this paragraph when allowing the application and applicant has previously been informed of informalities in the drawings.

¶ 6.47 Examiner's Amendment Involving Drawing Changes

The following changes to the drawings have been approved by the examiner and agreed upon by applicant: [1]. In order to avoid abandonment of the application, applicant must make these agreed upon drawing changes.

Examiner Note:

1. In bracket 1, insert the agreed upon drawing changes.
2. Form paragraphs 6.39 and 6.40 must follow.

DRAWING SYMBOLS

37 CFR 1.84(n) indicates that graphic drawing symbols and other labeled representations may be used for conventional elements where appropriate, subject to approval by the Office. Also, suitable legends may be used, or may be required, in proper cases.

The publications listed below have been reviewed by the Office and the symbols therein are considered to be generally acceptable in patent drawings. Although the Office will not "approve" all of the listed symbols as a

group because their use and clarity must be decided on a case-by-case basis, these publications may be used as guides when selecting graphic symbols. Overly specific symbols should be avoided. Symbols with unclear meanings should be labeled for clarification.

These publications are available from the American National Standards Institute Inc., 11 West 42nd Street, New York, New York 10036.

The publications reviewed are the following:

Y32.2-1970 Graphic Symbols for Electrical & Electronics Diagrams

Y32.10-1967 Graphic Symbols for Fluid Power Diagrams

Y32.11-1961 Graphic Symbols for Process Flow Diagrams in the Petroleum & Chemical Industries

Y32.14-1962 Graphic Symbols for Logic Diagrams

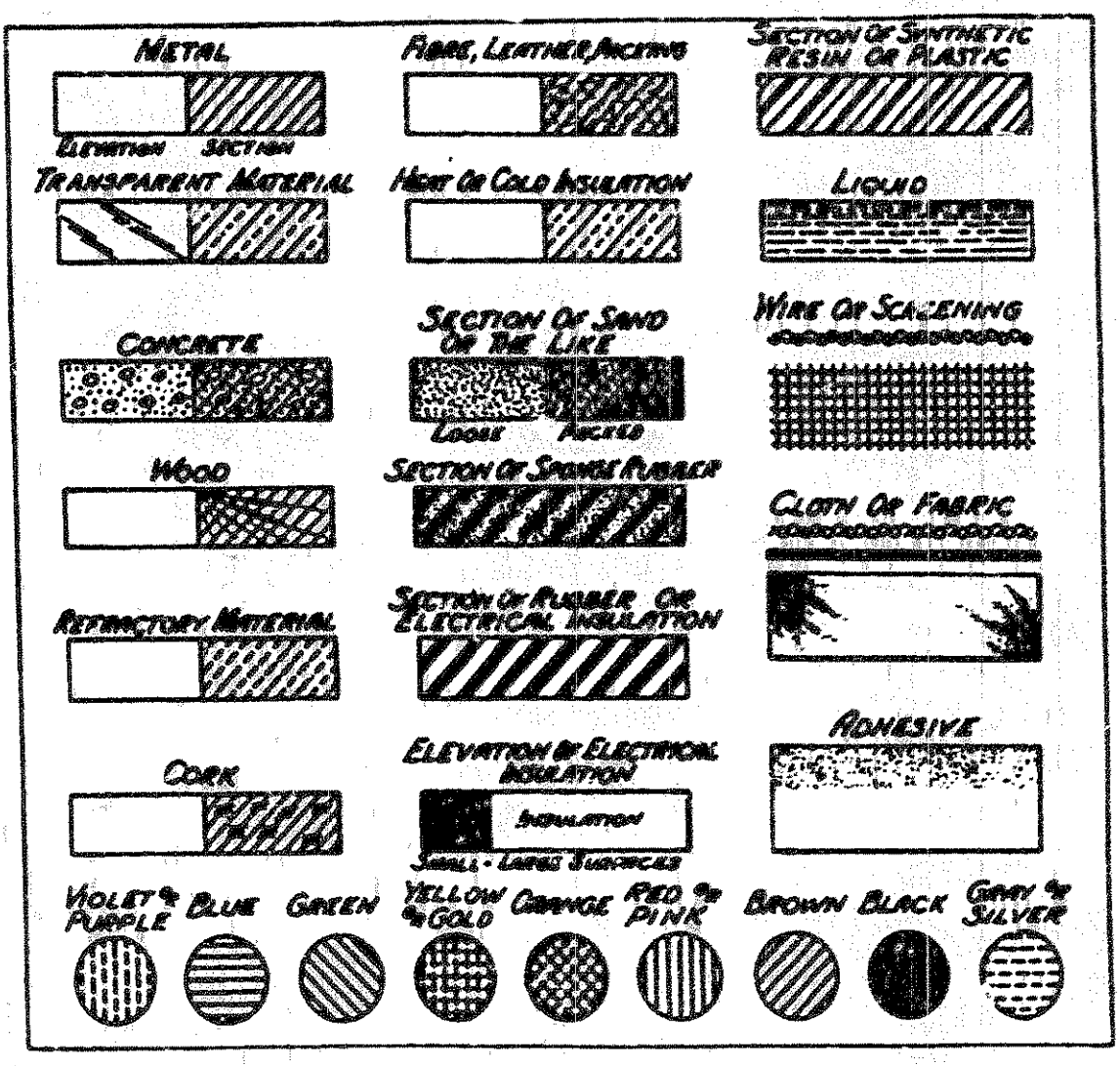
Z32.2.3-1949 (R1953) Graphic Symbols for Pipe Fittings, Valves and Piping

Z32.2.4-1949 (R1953) Graphic Symbols for Heating, Ventilating & Air Conditioning

Z32.2.6-1950 Graphic Symbols for Heat-Power Apparatus

608.02

The following symbols should be used to indicate various materials where the material is an important feature of the invention. The use of conventional features is very helpful in making prior art searches.



** >See MPEP § 601.01(f) for treatment of applications filed without drawings and MPEP § 601.01(g) for treatment of applications filed without all figures of drawings.<

ILLUSTRATION SUBSEQUENTLY REQUIRED

The acceptance of an application without a drawing does not preclude the examiner from requiring an illustration in the form of a drawing under 37 CFR 1.81(c) or 37 CFR 1.83(c). In requiring such a drawing, the examiner should clearly indicate that the requirement is made under 37 CFR 1.81(c) or 37 CFR 1.83(c) and be careful not to state that he or she is doing so "because it is necessary for the understanding of the invention," as that might give rise to an erroneous impression as to the completeness of the application as filed. Examiners making such requirements are to specifically require, as a part of the applicant's next response, at least an ink sketch or permanent print of any drawing proposed in response to the requirement, even though no allowable subject matter is yet indicated. This will afford the examiner an early opportunity to determine the sufficiency of the illustration and the absence of new matter. See 37 CFR 1.118 and 37 CFR 1.81(d). The description should of course be amended to contain reference to the new illustration. This may obviate further correspondence where an amendment places the case in condition for allowance, except for the formal requirement relating to the drawing. In the event of a final determination that there is nothing patentable in the case, a formal drawing will not be required.

BLACK AND WHITE PHOTOGRAPHS

37 CFR 1.84. Standards for drawings.

*****

(b) Photographs.

(1) Black and white. Photographs are not ordinarily permitted in utility and design patent applications. However, the Office will accept photographs in utility and design patent applications only after granting a petition filed under this paragraph which requests that photographs be accepted. Any such petition must include the following:

(i) The appropriate fee set forth in § 1.17(h); and

(ii) Three (3) sets of photographs.

Photographs must either be developed on double weight photographic paper or be permanently mounted on bristol board. The photographs must be of sufficient quality so that all details in the drawing are reproducible in the printed patent.

(2) Color. Color photographs will be accepted in utility patent applications if the conditions for accepting color drawings have been satisfied. See paragraph (a)(2) of this section.

*****

Photographs are not normally considered to be proper drawings. Photographs are acceptable for a filing date and are generally considered to be informal drawings. Photographs may be acceptable as formal drawings when a petition filed under the provisions of 37 CFR 1.84 (b) is granted. The petition must be accompanied by the fee set forth in 37 CFR 1.17 (h) and three (3) sets of the photographs in question. Photolithographs of photographs are never acceptable. See *In re Taggart et al.*, 1957 C.D. 6,725 O.G. 397 and *In re Myers*, 1959 C.D. 2, 738 O.G. 947.

PETITIONABLE SUBJECT MATTER

The Patent and Trademark Office is willing to accept photographs or photomicrographs (not photolithographs or other reproductions of photographs made by using screens) printed on sensitized paper in lieu of India ink drawings, to illustrate inventions which are incapable of being accurately or adequately depicted by India ink drawings; e.g., crystalline structures, metallurgical microstructures, textile fabrics, grain structures and ornamental effects. The photographs or photomicrographs must show the invention more clearly than they can be done by India ink drawings and otherwise comply with the rules concerning such drawings.

Such photographs to be acceptable must be made on photographic paper having the following characteristics which are generally recognized in the photographic trade: double weight paper with a surface described as smooth; tint, white, or be photographs mounted on proper size bristol board.

See MPEP § 1503.02 for discussion of photographs used in design patent applications.

COLOR DRAWINGS OR COLOR PHOTOGRAPHS

37 CFR 1.84. Standards for drawings.

(a) Drawings. There are two acceptable categories for presenting drawings in utility patent applications:

*****

(2) Color. On rare occasions, color drawings may be necessary as the only practical medium by which to disclose the subject matter sought to be patented in a utility patent application or the subject matter of a statutory invention registration. The Patent and Trademark Office will accept color drawings in utility patent applications and statutory invention registrations only after granting a petition filed under this paragraph explaining why the color drawings are necessary. Any such petition must include the following:

(i) The appropriate fee set forth in § 1.17(h);

(ii) Three (3) sets of color drawings; and

(iii) The specification must contain the following language as the first paragraph in that portion of the specification relating to the brief description of the drawing:

"The file of this patent contains at least one drawing executed in color. Copies of this patent with color drawing(s) will be provided by the Patent and Trademark Office upon request and payment of the necessary fee."

If the language is not in the specification, a proposed amendment to insert the language must accompany the petition.

(b) Photographs.

*****

(2) Color. Color photographs will be accepted in utility patent applications if the conditions for accepting color drawings have been satisfied. See paragraph (a)(2) of this section.

*****

Limited use of color drawings in utility patent applications is provided for in 37 CFR 1.84(a)(2) and (b)(2). Unless a petition is filed and granted, the Draftsman will not approve color drawings or color photographs in a utility or design patent application. The examiner must object to the color drawings or color photographs as being improper and require applicant either to cancel the drawings or to provide substitute black and white drawings.

Under 37 CFR 1.84(a)(2) and (b)(2), the applicant must file a petition with fee requesting acceptance of the color drawings or color photographs. The petition is decided in the Office of the Group Director.

Where color drawings or color photographs are filed in a continuing application, applicant must renew the petition under 37 CFR 1.84(a)(2) and (b)(2) even though a similar petition was filed in the prior application. Until the renewed petition is granted, the examiner must object to the color drawings or color photographs as being improper.

In light of the substantial administrative and economic burden associated with printing a utility patent with color drawings or color photographs, the patent copies which are printed at issuance of the patent will depict the drawings in black and white only. However, a set of color drawings or color photographs will be attached to the Letters Patent. Moreover, copies of the patent with color drawings or color photographs attached thereto will be provided by the Patent and Trademark Office upon special request and payment of the fee necessary to recover the actual costs associated therewith.

Accordingly, the petition must also be accompanied by a proposed amendment to insert the following language as the first paragraph in the portion of the specification containing a brief description of the drawings:

The file of this patent contains at least one drawing executed in color. Copies of this patent with color drawing(s) will be provided by the Patent and Trademark Office upon request and payment of the necessary fee.

It is anticipated that such a petition will be granted only when the Patent and Trademark Office has determined that a color drawing or color photograph is the only practical medium by which to disclose in a printed utility patent the subject matter to be patented.

It is emphasized that a decision to grant the petition should not be regarded as an indication that color drawings or color photographs are necessary to comply with a statutory requirement. In this latter respect, clearly it is desirable to file any desired color drawings or color photographs as part of the original application papers in order to avoid issues concerning statutory defects (e.g., lack of enablement under 35 U.S.C. 112 or news matter under 35 U.S.C. 132). The filing of the petition, however, may be deferred until acceptable formal drawings are required by the examiner.

NOTIFYING APPLICANT

If the original drawings are informal but may be admitted for examination purposes, the draftsman indicates on a 2-part form, PTO-948, what the informalities are and that new corrected drawings are required. In either case, the informal drawings are accepted as satisfying the requirements of 37 CFR 1.51.

The examiners are directed to advise the applicants by way of form PTO-948 (see MPEP § 707.07(a)) in the first Office action of the conditions which the draftsman considers to render the drawing informal.

Drawing corrections should be made when the application is in issue unless the examiner requires correction at an earlier date.

If the examiner discovers a defect in the content of the drawing, the applicant should be notified by using a Form Paragraph, where appropriate.

¶ *6.21 New Drawings, Competent Draftperson*

New formal drawings are required in this application because [1]. Applicant is advised to employ the services of a competent patent draftperson outside the Office, as the Patent and Trademark Office no longer prepares new drawings.

¶ *6.22 Drawings Objected To*

The drawings are objected to because [1]. Correction is required.

Examiner Note:

Follow with paragraph 6.27, if appropriate.

¶ *6.23 Subject Matter Admits of Illustration*

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81.

Examiner Note:

When requiring drawings before examination, use PTOL–90 form and set a two–month time period.

¶ *6.24. Informal Drawings*

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

¶ *6.24.01 Photographs and Color Drawings, Petition Required*

The drawings are considered to be informal because they fail to comply with 37 CFR § 1.84 (a)(1) which requires black and white drawings using India ink or its equivalent.

Photographs and color drawings are acceptable only for examination purposes unless a petition filed under 37 CFR 1.84 (a)(2) or (b)(1) is granted permitting their use as formal drawings. In the event applicant wishes to use the drawings currently on file as formal drawings, a petition must be filed for acceptance of the photographs or color drawings as formal drawings. Any such petition must be accompanied by the appropriate fee as set forth in 37 CFR 1.17 (h), three sets of drawings or photographs, as appropriate, and, if filed under the provisions of 37 CFR 1.84 (a)(2), an amendment to the first paragraph of the brief description of the drawings section of the specification which states:

> "The file of this patent contains at least one drawing executed in color. Copies of this patent with color drawing(s) will be provided by the Patent and Trademark Office upon request and payment of the necessary fee."

Color photographs will be accepted if the conditions for accepting color drawings have been satisfied.

Examiner Note:

This form paragraph should be used after form paragraph 6.24 only if the application contains photographs or color drawings as the drawings required by 37 CFR 1.81.

¶ *6.26 Informal Drawings Do Not Permit Examination*

The informal drawings are not of sufficient quality to permit examination. Accordingly, new drawings are required in response to this Office action.

Examiner Note:

Use PTOL–90 form and set a 2–month time period.

¶ *6.27 Correction Held in Abeyance*

Applicant is required to submit a proposed drawing correction in response to this Office action. However, execution of the noted defect will be deferred until the application is allowed by the examiner.

DRAWING REQUIREMENTS

The first sentence of 35 U.S.C. 113 requires a drawing to be submitted upon filing where such drawing is necessary for the understanding of the invention. In this situation, the lack of a drawing renders the application incomplete and, as such, the application cannot be given a filing date until the drawing is received. The second sentence of 35 U.S.C. 113 deals with the situation wherein a drawing is not necessary for the understanding of the invention, but the case admits of illustration and no drawing was submitted on filing. The lack of the drawing in this situation does not render the application incomplete but rather is treated much in the same manner as an informality. The examiner should require such drawings in almost all such instances. Such drawings could be required during the processing of the application but do not have to be furnished at the time the application is filed. The applicant is allowed at least 2 months from the date of the letter requiring drawings to submit them.

Handling of Drawing Requirements Under the First Sentence of 35 U.S.C. 113

The ** >Initial Application Examination Division< will make the initial decision in all new applications as to whether a drawing is "necessary" under the first sentence of 35 U.S.C. 113. A drawing will be considered necessary under the first sentence of 35 U.S.C. 113 in all cases where the drawing is referred to in the specification and one or more figures have been omitted.

The determination under 35 U.S.C. 113 (first sentence) as to when a drawing is necessary will be handled in the ** >Initial Application Examination Division< according to the following procedure. The ** >Initial Application Examination Division< will make the initial determination whether or not drawings are required for the understanding of the subject matter of the invention. Mechanical and electrical cases which lack a drawing, but in which one appears to be needed for an understanding of the invention, will be referred to the Classification and Routing Unit of the ** >Initial Application Examination Division< for advice. If the Classification and Routing Unit cannot reach a prompt and decisive response, the application will be referred to the supervisory primary examiner for a determination. When drawings are required, the application is treated as incomplete and the applicant is so informed by the ** >Initial Application Examination Division<. The filing date will

not be granted and applicant will be notified to complete the application (37 CFR 1.53). However, the practice with respect to chemical cases is that, unless a drawing or drawing figure is specifically referred to in the specification of the application, the application will initially be considered by the **>Initial Application Examination Division< formality examiner as being complete and will be given a filing date. Only in those chemical cases wherein there is a reference in the specification to a drawing and no drawing was present on filing will a chemical application initially be held incomplete and denied a filing date. If a drawing is later furnished, a filing date may be granted as of the date of receipt of such drawing.

If an examiner feels that a filing date should not have been granted in an application because it does not contain drawings, the matter should be brought to the attention of the supervisory primary examiner (SPE) for review. If the SPE decides that drawings are required to understand the subject matter of the invention, the SPE should return the application to the Application Branch with a typed, signed, and dated memorandum requesting cancellation of the filing date and identifying the subject matter required to be illustrated.

608.02(a) New Drawing — When Required [R-1]

Utility and design patent applications should be taken up for the first Office action without a request for formal drawings unless the informal drawings are so unclear that they do not facilitate an understanding of the invention as to permit examination of the application. If at the time of the initial assignment of an application to an examiner's docket, or if at the time the application is taken up for action, the supervisory primary examiner believes the informal drawings to be of such a condition as to not permit reasonable examination of the application, applicant should be required to immediately submit formal drawings. However, if the informal drawings do not permit examination and the supervisory primary examiner believes the drawings are of such a character as to render the application defective under 35 U.S.C. 112, examination should begin immediately with a requirement for formal drawings and a rejection of the claims as not being in compliance with 35 U.S.C. 112, first paragraph, being made.

Formal drawings should be required when the application is allowed.

Forms PTOL-326 and 37 now provide items for requiring formal drawings.

Form Paragraph 6.45 may also be used to inform applicant that formal drawings are required.

¶ *6.45 Application Allowed, Formal Drawings Needed*

Formal drawings are now required and must be filed within the **>THREE MONTH< shortened statutory period set for response in the "Notice of Allowability" (PTOL-37). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit the drawings will result in **ABANDONMENT** of the application. The drawings should be submitted as a separate paper with a transmittal letter which is addressed to the Official **>Draftperson<. The art unit number, **>application< number, and number of drawing sheets should be written on the reverse side of the drawings.

Handling of Drawing Requirements Under the Second Sentence of 35 U.S.C. 113

35 U.S.C. 113 deals with the situation wherein the drawing is not necessary for the understanding of the invention, but the subject matter admits of illustration by a drawing and the applicant has not furnished a drawing. The lack of the drawing in this situation does not render the application incomplete but rather is treated as an informality. A filing date will be accorded with the original presentation of the papers, despite the absence of drawings. In these situations, a drawing or further illustration will normally be required by the examiner. This should be done prior to examination in a separate letter. The examiner should require additional drawings, where appropriate, as early as possible since the possession of the additional drawings would facilitate the examination process. A letter requiring drawings may contain wording similar to the following:

> The examiner has decided that the subject matter of this application admits of illustration by a drawing and that a drawing would facilitate the understanding of the subject matter disclosed. (Continue with a specific mention of those items of which drawings are desired.) Applicant is required to furnish a drawing under 37 CFR 1.81 (Incorporate in Office action or send a separate letter setting a 2-month period for response.)

The applicant should be given at least 2 months from the date of a requirement to submit drawings made in a separate letter. If the requirement for drawings is included in an Office action, the time for supplying the additional drawings will be the same as the time for response to the Office action.

RECEIPT OF DRAWING AFTER THE FILING DATE

If new matter is noticed by the examiner in a substitute or additional drawing, the drawing should not be entered. It should be objected to as containing new matter. A new drawing without such new matter may be required if the examiner feels a drawing is needed under 37 CFR 1.81 or 1.83. The examiner's decision would be reviewable by petition to the Commissioner under 37 CFR 1.181. The decision on such a petition would be handled by the group director.

UNTIMELY FILED DRAWINGS

If a drawing is not timely received in response to a letter from the examiner who requires a drawing, the application becomes abandoned for failure to respond.

For the handling of additional, duplicate, or substitute drawing, see MPEP § 608.02(h).

608.02(b) Informal Drawings [R–1]

37 CFR 1.85. Corrections to drawings.

(a) The requirements of § 1.84 relating to drawings will be strictly enforced. A drawing not executed in conformity thereto, if suitable for reproduction, may be admitted for examination but in such case a new drawing must be furnished.

(b) The Patent and Trademark Office will not release drawings in applications having a filing date after January 1, 1989, or any drawings from any applications after January 1, 1991, for purposes of correction. If corrections are necessary, new corrected drawings must be submitted within the time set by the Office.

(c) When corrected drawings are required to be submitted at the time of allowance, the applicant is required to submit acceptable drawings within three months from the mailing of the "Notice of Allowability." Within that three–month period, two weeks should be allowed for review of the drawings by the Drafting Branch. If the Office finds that correction is necessary, the applicant must submit a new corrected drawing to the Office within the original three–month period to avoid the necessity of obtaining an extension of time and paying the extension fee. Therefore, the applicant should file corrected drawings as soon as possible following the receipt of the Notice of Allowability. The provisions with respect to obtaining an extension of time relates only to the late filing of corrected drawings. The time limit for payment of the issue fee is a fixed three–month period which cannot be extended as set forth in 35 U.S.C. 151.

In instances where the drawing is such that the prosecution can be carried on without the corrections, applicant is informed of the reasons why the drawing is objected to on Form PTO–948 or in an examiner's action, and that the drawing is admitted for examination purposes only (see MPEP § 707.07(a)). To be fully responsive, an amendment must include a request for drawing corrections when the application is allowed or an appeal is filed. See 37 CFR 1.111(b).

INFORMAL DRAWINGS

To expedite filing, applicants sometimes submit applications with informal drawings. Such applications are accepted by Application Branch for filing only, provided the informal drawings are readable and reproducible. Applicant is notified on Form PTO–948 or in an Office action that formal drawings, in compliance with 37 CFR 1.84 will be required when the application is allowed. Form Paragraph 6.24 may be used for this purpose.

¶ *6.24 Informal Drawings*

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

This form paragraph may be followed by Form Paragraph 6.24.>0<1 if applicable.

Alternatively, the examiner may check the appropriate box on the Office Action Summary, PTOL–326.

HANDLING OF NEW DRAWINGS

In those situations where an application is filed with informal drawings, applicants are requested to wait until they receive their "Notice of *>Draftperson's< Patent Drawing Review" form, PTO–948 or the first Office action utilizing form PTOL–326 or PTOL–37 from the group art unit before submitting the formal drawings. The letter of transmittal accompanying the formal drawings should identify the group art unit indicated on form PTO–948 or form PTOL–326. If the informal notification appears on form PTOL–37, the date of the mailing of the Notice of Allowance and Issue Fee as well as the Issue Batch Number must be given. Also, each sheet of the drawing should include the serial number and group art unit in the upper right margin. In the past, some drawings have been misdirected because the group art unit indicated on the filing receipt was used rather than that indicated on the informal notice forms.

The draftsman is the judge of drawings, as to the execution of the same, and the arrangement of the views thereon, while the examiner is the judge as to the sufficiency of the showing. The drawings received with an application are inspected by the *>draftperson<. If the drawing is satisfactory, he or she stamps on each sheet "Approved by Draftsman" and checks the approved box on Form PTO–948. See also MPEP § 608.02.

RECEIPT OF SUBSTITUTE DRAWINGS

If substitute drawings are timely filed, the clerk should immediately send the new substitute drawings with the file wrapper to the *>Draftperson< for approval as to form.

If the application is allowed on the first action, the examiner should require formal drawings using form PTOL–37.

COMPARISON OF SUBSTITUTE DRAWINGS

In utility applications, the examination will normally be conducted using any informal drawings presented. The sufficiency of disclosure, as concerns the subject matter claimed, will be made by the examiner utilizing the informal drawings. IT IS APPLICANT'S RESPONSIBILITY TO SEE THAT NO NEW MATTER IS ADDED when submitting substitute drawings since they will not normally be reviewed by an examiner. Of course, if the examiner notices new matter in the substitute drawings, appropriate action to have the new matter deleted should be undertaken.

608.02(c) Drawing Print Kept in File Wrapper

The drawing prints must always be kept on top of the papers on the right side of the file wrapper so as to be visible upon opening the wrapper and to permit them to be easily detached.

Applications may be sent to issue or to the Files Repository without the original drawing, if any, if the drawing cannot be located. For an application sent to issue with missing drawings, see MPEP § 608.02(z). For abandoned applications sent to the Files Repository, a notation should be made on the Contents portion of the file wrapper that the drawings were missing.

Upon initial processing, the original drawings are placed in the center portion of the application file wrapper underneath the application papers by the Micrographics Branch. The formal drawings should be retained in this position.

608.02(d) Complete Illustration in Drawings [R–1]

37 CFR 1.83. Content of drawing.

(a) The drawing must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (*e.g.* a labeled rectangular box).

(b) When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

(c) Where the drawings do not comply with the requirements of paragraphs (a) and (b) of this section, the examiner shall require such additional illustration within a time period of not less than two months from the date of the sending of a notice thereof. Such corrections are subject to the requirements of § 1.81(d).

Any structural detail that is of sufficient importance to be described should be shown in the drawing. (*Ex parte Good*, 1911 C.D. 43; 164 O.G. 739.)

Form Paragraph 6.36 should be used to require illustration.

¶ *6.36 Drawings Do Not Show Claimed Subject Matter*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the [1] must be shown or the feature ** cancelled from the claim. No new matter should be entered.

Examiner Note:

In bracket 1, insert the features that *>must< be shown.

See also MPEP § 608.02(a).

608.02(e) Examiner Determines Completeness of Drawings

The examiner should see to it that the figures are correctly described in the brief description of the specification and that the reference characters are properly applied, no single reference character being used for two different parts or for a given part and a modification of such part, but there should be no superfluous illustrations.

608.02(f) Modifications in Drawings

Modifications may not be shown in broken lines on figures which show in solid lines another form of the invention. *Ex parte Badger*, 1901 C.D. 195; 97 O.G. 1596.

All modifications described must be illustrated, or the text cancelled. (*Ex parte Peck*, 1901 C.D. 136; 96 O.G. 2409.) This requirement does not apply to a mere reference to minor variations nor to well–known and conventional parts.

608.02(g) Illustration of Prior Art [R-1]

Figures showing the prior art are usually unnecessary and should be cancelled. *Ex parte Elliott*, 1904 C.D. 103; 109 O.G. 1337. However, where needed to understand applicant's invention, they may be retained if designated by a legend such as "Prior Art."

If the prior art figure is not labeled, the * >form< paragraph >6.36.01< may be used.

>¶ *6.36.01 Illustration of "Prior Art"*<

Figure [1] should be designated by a legend such as Prior Art in order to clarify what is applicant's invention. (See MPEP § 608.02(g)).

608.02(h) Additional, Duplicate, or Substitute Drawings

When an amendment is filed stating that at the same time substitute or additional sheets of drawings are filed and such drawings have not been transmitted to the examining group, the docket clerk in the examining group should call the Application Branch before entering the amendment to ascertain if the drawing was not received. In the next communication of the examiner, the applicant is notified if the drawings have been received and whether or not the substitute or additional drawings have been entered in the application.

Additional and substitute drawings, together with the file wrapper, are routed through the Drafting Branch where any defects in execution will be noted. If there are none, they will be stamped, "APPROVED BY DRAFTSMAN." When such drawings are considered by the examiner, it should be kept in mind that the "APPROVED" stamp applies only to the size and quality of paper, lines rough and blurred, and other details of execution. The additional or substitute drawing sheets should be entered by the application clerk after approval by both the draftsman and the examiner.

The examiner should not overlook such factors as new matter, the necessity for the additional sheets and consistency with other sheets. Clerks will routinely enter all additional and substitute sheets on the file wrapper. Additional and substitute sheets of drawings are also indicated on the face of the file wrapper under the heading "Parts of application separately filed." If the examiner decides that the sheets should not be entered, applicant is so informed, giving the reasons. The entries made by the clerk will be marked "(N.E.)."

Form Paragraph 6.37 may be used to acknowledge corrected or substituted drawings.

¶ *6.37 Acknowledgment of Corrected or Substituted Drawings*

The corrected or substitute drawings have been received on [1]. These drawings are [2].

Examiner Note:

1. In bracket 2, insert either — acceptable — or — not acceptable —.
2. If not acceptable, an explanation must be provided.
3. If not acceptable because of informalities noted on the PTO-948, use form paragraph 6.43.

Alternatively, PTOL-326 Office Action Summary, includes a block for acknowledgment of corrected or substitute drawings.

If an additional sheet of drawing is considered unnecessary and the original drawing requires alterations which are taken care of in the proffered additional sheet, the latter may be used in lieu of the usual sketch required in making the correction of the original drawing.

For return of drawing, see MPEP § 608.02(y).

608.02(i) Transfer of Drawings From Prior Applications

Transfer of drawings from a first pending application to another will be made only upon the granting of a petition filed under 37 CFR 1.182 which must set forth a hardship situation requiring such transfer of drawings.

608.02(m) Drawing Prints

Preparation and distribution of drawing prints is discussed in MPEP § 508.

Prints are made of the drawings of an acceptable application. These prints are marked "Prints of drawing as originally filed" and are entered in the application, given a paper number, and kept on top of the papers on the right side of the file wrapper, see MPEP § 717.01(b).

All prints and inked sketches subsequently filed to be part of the record are endorsed with the date of their receipt in the Office and given their appropriate paper number.

The print being thus an official paper in the record should not be marked or in any way altered. The original drawing, of course, should not be marked up by the examiner. Where, as in an electrical wiring case, it is desirable to identify the various circuits by different colors, or in any more or less complex case, it is advantageous to apply legends, arrows, or other indicia, an additional

print for such use should be made or ordered by the examiner and placed unofficially in the file.

Prints remain in the file at all times except as provided in MPEP § 608.02(c).

INTERFERENCE PRINTS

A print is prepared of each drawing in all applications having a filing date. This interference print is in addition to the drawing print on white paper.

Primary examiners should place the classification and the name of the examiner on the interference print.

The interference prints are located above the drawing prints on the right-hand portion of the file wrapper when initially received in the examining group.

After the application has been classified and assigned to an examiner, the interference prints should be removed and placed in the drawing cabinets.

If an application has several sheets of drawings, the interference prints should be stapled together at their bottom edges before being filed. If the number of sheets of prints is too large to be stapled, a fastener should be placed through the holes at the top.

The time when the interference prints are removed from the drawing cabinets is determined by the group director.

The drawings filed by applicant remain in the file wrapper.

608.02(n) Duplicate Prints in Patentability Report Cases

In patentability report cases having drawings, the examiner to whom the case is assigned should normally obtain a duplicate set of the interference prints of the drawing for filing in the group to which the case is referred.

When a case that has had patentability report prosecution is passed for issue or becomes abandoned, notification of this fact is given by the group having jurisdiction of the case to each group that submitted a patentability report. The examiner of each such reporting group notes the date of allowance or abandonment on his or her duplicate set of prints. At such time as these prints become of no value to the reporting group, they may be destroyed.

608.02(o) Dates Entered on Drawing

The Incoming Mail Section (mail room) stamp and the "Corrected" stamp applied by the Drafting Branch are impressed on the back of the drawings. If the drawings are filed in the Examining Group, the group receipt date stamp should be applied to the back of the drawing near the top.

Approval of the Drafting Branch is indicated by a legend associated with the "O.G. Fig. Cl. . . . Sub. . . . " stamp on the front of each sheet.

608.02(p) Correction of Drawings

37 CFR 1.123. Amendments to the drawing.

No change in the drawing may be made except with permission of the Office. Permissible changes in the construction shown in any drawing may be made only by the submission of a substitute drawing by applicant. A sketch in permanent ink showing proposed changes, to become part of the record, must be filed for approval by the examiner and should be a separate paper.

NOTE.—Correction is deferrable, see MPEP § 608.02(b); correction at allowance and issue, see MPEP § 608.02(w) and MPEP § 1302.05.

A cancelled figure may be reinstated. An amendment should be made to the specification adding the brief description if a cancelled figure is reinstated.

608.02(q) Conditions Precedent to Amendment of Drawing [R-1]

No alterations will be permitted unless required by an examiner's letter in each case or proposed in writing by applicant or his or her attorney or agent. In either case, the alterations or corrections as indicated in the sketches filed with the request of the applicant or his or her attorney or agent must be given written approval by the examiner before the drawing is corrected.

Correction of Informalities
(Draftsman's Objections on PTO-948)

Form Paragraph 6.40 (reproduced in MPEP § 608.02) ** >,< the back page of PTOL-948, and the back page of PTOL-37, the "Notice of Allowability" provide detailed information on how to effect drawing changes.

In order to correct any informalities in the drawings, applicants *MUST* comply with (a) below. Failure to do so will result in *ABANDONMENT* of the application.

(a) File new drawings with the changes incorporated therein. Applicant may delay filing of the new drawings until the application is allowed by the examiner. If delayed, the new drawings *MUST* be filed within the pe-

riod set for response in the "NOTICE OF ALLOWABILITY" (PTOL–37). The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsman which indicates the following in the upper right–hand corner:

Date of the Notice of Allowability
Issue Batch Number
Serial Number

Corrections Other Than Informalities Noted by the Draftsman on the PTO–948

All changes to the drawings, other than informalities noted by the Draftsman, *MUST* be made in the same manner as above except that, normally, a sketch of the changes to be incorporated into the new drawings *MUST* be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

608.02(r) Separate Letter to Draftsman

Any proposal by the applicant for amendment of the drawing to cure defects must be embodied in a *separate* letter. Otherwise the case, unless in other respects ready for issue, cannot be corrected, and applicant must be so advised in the next action by the examiner.

NOTE:—Changes which may require sketches, MPEP § 608.02(v).

608.02(t) Cancellation of Figures

Cancellation of one or more figures which do not occupy entire sheets of the drawings is done by the clerk in the examining group who encloses a figure and its legend with a red ink line. No portion of the figure itself should be crossed by the red line. The words "CANCEL per" and the date of the amendment directing the cancellation or the date that substitute sheets are filed should be written in red ink within the red line. Cancellation of an entire sheet of drawings is done by stamping the words "CANCEL per" in the top right corner of the drawing. Cancelled drawing sheets should be placed at the bottom of the papers on the right fold of the file wrapper.

When the cancellation of some of the figures from one sheet of drawings has left the remaining figures with an inartistic arrangement, the draftsmen should be consulted as to whether the remaining figures should be transferred to other sheets already in the case or shown in additional drawings. Cancellation of a figure may necessitate renumbering of the remaining figures.

608.02(v) Drawing Changes Which Require Sketches

When changes are to be made in the drawing itself, other than mere changes in reference characters, designations of figures, or inking over lines pale and rough, a print or pen–and–ink sketch must be filed showing such changes in red ink or with the changes otherwise highlighted. Ordinarily, broken lines may be changed to full without a sketch.

Sketches filed by an applicant and used for correction of the drawing will not be returned. All such sketches must be in ink or permanent prints.

608.02(w) Drawing Changes Which May Be Made Without Applicant's Sketch

Where an application is ready for issue except for a slight defect in the drawing not involving change in structure, the examiner will prepare a letter indicating the change to be made and note in pencil on the drawing the addition or alteration to be made.

The correction must be made at applicant's expense.

As a guide to the examiner, the following corrections are illustrative of those that may be made by penciling in the change on the drawing without a sketch:

(1) Adding two or three reference characters or exponents.

(2) Changing one or two numerals or figure ordinals. *Garrett* v. *Cox*, 110 USPQ 52, 54 (CCPA 1956)

(3) Removing superfluous matter.

(4) Adding or reversing directional arrows.

(5) Changing Roman Numerals to Arabic Numerals to agree with specification.

(6) Adding section lines or brackets, where easily executed.

(7) Changing lead lines.

(8) Correcting misspelled legends.

608.02(x) Disposition of Orders for Amendment of Drawing

Where the correction of the drawing is approved by the examiner, the application and drawing are for-

warded to the Office of Publications along with the Notice of Allowance.

CORRECTION NOT APPROVED

Where the correction is not approved, for example, because the proposed changes are erroneous, or involve new matter or (although otherwise proper) do not include all necessary corrections, the case and request for correction of drawing are not approved. The examiner's reasons for not approving the corrections to the drawing should be set forth in the next Office action.

608.02(y) Return of Drawing

If there is a formal drawing in the case, non-entered drawings (except those originally filed) that have been finally denied admission will be returned to the applicant only at applicant's request.

A request for return of nonentered drawings must be filed within a reasonable time; otherwise, the drawing may be disposed of at the discretion of the Commissioner.

When a drawing is to be returned, the file, the examiner's letter stating that the drawing is being returned, and the drawing are taken to the Drafting Branch where the letter will be stamped and the drawing returned. The letter is mailed by the examining group.

Before drawings are returned, prints are made and put in the application file.

608.02(z) Allowable Applications Needing Drawing Corrections or Formal Drawings [R-1]

Allowable applications can be turned in for counting and forwarding to the Office of Publications without the drawings having been corrected. When sending allowed applications to the Office of Publications which require drawing corrections, use yellow tag form PTO-1364. The approved formal drawings requiring correction should be placed as the top papers in the center fold of the file wrapper. The drawing correction instructions should be stapled to the inside left flap of the file wrapper over the area having the search information. Care should be taken to make certain that the corrections have been approved by the examiner. Such approval should be made by the examiner prior to counting the allowance of the application.

The yellow tag procedure normally should be used only where drawing corrections are involved. The yellow tag procedure must be used where the draftsman has objected to the drawing because of an informality such as improper shading or pale lines and has indicated that this can be corrected.

The yellow tag procedure should not normally be used in other situations where corrected drawings have been filed but have not been approved by the draftsman unless the examiner is quite sure that the draftsman will approve the new drawings or in the situation where the application was examined utilizing an informal drawing and the request for formal drawings was not made until the Notice of Allowability was mailed. The yellow tag procedure should not be used in design applications where the drawings have not been approved by the draftsman because of shading problems which can arise. If the substitute drawings are not approved by the draftsman, the application should be promptly taken up for action by the examiner.

To: DRAFTING BRANCH via OFFICE of PUBLICATIONS
Return to: OFFICE OF PUBLICATIONS
Room 2-6C30

Serial no. _____
O.G. Fig. _____

Class _____ Subclass _____

PTO-1364 U.S. DEPT. of COMM. Pat. & TM Office

APPLICATIONS HAVING LOST DRAWINGS

A yellow tag is to be attached to the file wrapper and a "Drawing Missing" memo is to be stapled to the front of the file wrapper. The Notice of Allowability is verified and printed using PALM III, and the Notice is mailed to the applicant.

The application is then forwarded to Licensing and Review or the Allowed Files and Assembly Branch of the Office of Publications, as appropriate, using the PALM III transaction code after the application has been revised for issue.

UTILITY PATENT APPLICATIONS RECEIVING FORMAL DRAWINGS AFTER THE NOTICE OF ALLOWABILITY

Where substitute drawings are received in utility patent applications examined with informal drawings and the Notice

of Allowability was mailed prior to the receipt of the substitute drawings, the clerk should enter the substitute drawings into the application and forward the application to the Allowed Files and Assembly Branch of the Office of Publications via Licensing and Review, if appropriate, using the yellow tag procedure. Submission to the examiner is not necessary unless an amendment accompanies the drawings which changes the specification, such as where the description of figures is added or cancelled.

BORROWING FILES FROM DRAFTING BRANCH

Allowed files requiring drawing corrections are sent to the draftsman from the Office of Publications. At times, examiners have a need to borrow these applications. When borrowing applications, examining corps personnel must submit a request to the Office of Publications.

37 CFR 1.312 AMENDMENTS

In handling 37 CFR 1.312 amendments, the examining corps should process drawings cancelled in the normal manner. If there are corrections to the drawing, approval, if appropriate, is indicated by the examiner on form PTOL–271 in conjunction with form paragraph 6.48; the paragraph sets the appropriate period for effecting the approved drawing change.

¶ *6.48 Drawing Changes in * >37 CFR 1.312< Amendment*

Applicant is hereby given ONE MONTH from the date of this letter or until the expiration of the period set in the "Notice of Allowance" (PTOL–85) or Notice of Allowability (PTOL–37), whichever is longer, to file corrected drawings.

Examiner Note:

Use with 312 amendment notice where there is a drawing correction proposal or request *.

Formal drawings may be required in an allowed application by using Form Paragraph 6.25 in an Office action or by checking the appropriate box on Form letter PTOL–37.

¶ *6.25 Formal Drawings Required, Application Allowed*

The application having been allowed, formal drawings are required in response to this Office action.

>Examiner Note:

Use this form paragraph only with the Notice of Allowability/Examiner's Amendment.<.

608.03 Models, Exhibits, Specimens

35 U.S.C. 114. Models, specimens.

The Commissioner may require the applicant to furnish a model of convenient size to exhibit advantageously the several parts of his invention.

When the invention relates to a composition of matter, the Commissioner may require the applicant to furnish specimens or ingredients for the purpose of inspection or experiment.

37 CFR 1.91. Models not generally required as part of application or patent.

Models were once required in all cases admitting a model, as a part of the application, and these models became a part of the record of the patent. Such models are no longer generally required (the description of the invention in the specification, and the drawings, must be sufficiently full and complete, and capable of being understood, to disclose the invention without the aid of a model), and will not be admitted unless specifically called for.

37 CFR 1.92. Model or exhibit may be required.

A model, working model, or other physical exhibit, may be required if deemed necessary for any purpose on examination of the application.

With the exception of cases involving perpetual motion, a model is not ordinarily required by the Office to demonstrate the operativeness of a device. If operativeness of a device is questioned the applicant must establish it to the satisfaction of the examiner, but he or she may choose his or her own way of so doing.

A physical exhibit, not to be part of the case, is generally not refused except when bulky or dangerous.

37 CFR 1.93. Specimens.

When the invention relates to a composition of matter, the applicant may be required to furnish specimens of the composition, or of its ingredients or intermediates, for the purpose of inspection or experiment.

608.03(a) Handling of Models, Exhibits, and Specimens

All models and exhibits received in the Patent and Trademark Office should be taken to the examining group assigned the related application for examination. The receipt of all models and exhibits must be properly recorded on the "Contents" portion of the application file wrapper.

A label indicating the application serial number, filing date, and attorney's name and address should be attached to the model or exhibit so that is is clearly identified and easily returned after prosecution of the application is closed, if return is requested.

If the model or exhibit is too large to be kept in the examining group during prosecution of the application, it should not be accepted.

608.04

37 CFR 1.94. Return of models, exhibits or specimens.

Models, exhibits, or specimens in applications which have become abandoned, and also in other applications on conclusion of the prosecution, may be returned to the applicant upon demand and at his expense, unless it be deemed necessary that they be preserved in the Office. Such physical exhibits in contested cases may be returned to the parties at their expense. If not claimed within a reasonable time, they may be disposed of at the discretion of the Commissioner.

When a model is to be returned, a letter should be written to applicant by the examining group stating that it is being returned under separate cover, and the model should be forwarded with a copy of the letter and an address label to the Outgoing–Incoming Mail Branch for wrapping and return.

NOTE. — Disposition of exhibits which are part of the record, MPEP § 715.07(d).

Models, exhibits, and specimens may be presented to the Office for purposes of interview and taken away by the attorney at the end of the interview. See MPEP § 713.08.

NOTE.—Plant specimens, MPEP § 1607, 37 CFR 1.166.

37 CFR 1.95. Copies of exhibits.

Copies of models or other physical exhibits will not ordinarily be furnished by the Office, and any model or exhibit in an application or patent shall not be taken from the Office except in the custody of an employee of the Office specially authorized by the Commissioner.

608.04 New Matter [R–1]

37 CFR 1.118. Amendment of disclosure.

(a) No amendment shall introduce new matter into the disclosure of an application after filing date of the application (§ 1.53(b)). All amendments to the specification, including the claims, and the drawings filed after the filing date of the application must conform to at least one of them as it was at the time of the filing of the application. Matter not found in either, involving a departure from or an addition to the original disclosure, cannot be added to the application after its filing date even though supported by an oath or declaration in accordance with § 1.63 or § 1.67 filed after the filing date of the application.

(b) If it is determined that an amendment filed after the filing date of the application introduces new matter, claims containing new matter will be rejected and deletion of the new matter in the specification and drawings will be required even if the amendment is accompanied by an oath or declaration in accordance with § 1.63 or § 1.67.

In establishing a disclosure, applicant may rely not only on the specification and drawing, as filed but also on the original claims if their content justifies it. Note MPEP § 608.01(l).

While amendments to the specification and claims involving new matter are ordinarily entered, such matter is required to be cancelled from the descriptive portion of the specification, and the claims affected are rejected under 35 U.S.C. 112, first paragraph.

When new matter is introduced into the specification, the amendment should be objected to under 35 U.S.C. 132 (35 U.S.C. 251 if a reissue application) and a requirement made to cancel the new matter – clearly identified by the examiner. If the new matter has been entered into the claims or affects the scope of the claims, the claims affected should be rejected under 35 U.S.C. 112, first paragraph, because the new matter is not described in the application as originally filed.

A "new matter" amendment of the drawing is ordinarily not entered; neither is an additional or substitute sheet containing "new matter" even though stamped APPROVED by the Draftsman and provisionally entered by the clerk. See MPEP § 608.02(h).

The examiner's holding of new matter may be petitionable or appealable, MPEP § 608.04(c).

NOTE—New matter in reissue application, MPEP § 1411.02. New matter in substitute specification, MPEP § 714.20.

>NOTE—No amendment is permitted in a provisional application after it receives a filing date.<

608.04(a) Matter Not in Original Specification, Claims, or Drawings

Matter not in the original specification, claims, or drawings is usually new matter. Depending on circumstances such as the adequacy of the original disclosure, the addition of inherent characteristics such as chemical or physical properties, a new structural formula or a new use may be new matter. See *Ex parte Vander Wal, et al.*, 1956 C.D. 11; 705 O.G. 5 (physical properties), *Ex parte Fox*, 1960 C.D. 28; 761 O.G. 906 (new formula) and *Ex parte Ayers, et al.*, 108 USPQ 444 (new use). For rejection of claim involving new matter, see MPEP § 706.03(o).

NOTE—Completeness of disclosure, MPEP § 608.01(p); Trademarks and tradenames, MPEP § 608.01(v).

608.04(b) New Matter by Preliminary Amendment

An amendment is sometimes filed along with the filing of the application. Such amendment does not enjoy the status as part of the original disclosure in an application filed under 37 CFR 1.53 unless it is referred to in the

oath or declaration filed therewith. Once an oath or declaration is submitted in an application filed under 37 CFR 1.53 identifying the papers which the inventor(s) has "reviewed and understands" as required by 37 CFR 1.63, the original disclosure of the application is defined and cannot be altered merely by filing of a subsequent oath or declaration referring to different papers. If the application is filed without an executed oath or declaration pursuant to 37 CFR 1.53(b), the original oath or declaration submitted later than the filing date must refer to the preliminary amendment filed along with the application in order to comply with 37 CFR 1.63.

An amendment which adds additional disclosure filed with a request for a continuation-in-part application under 37 CFR 1.62 is automatically considered a part of the original disclosure of the application by virtue of the rule. Therefore, the oath or declaration filed in such an application must identify the amendment adding additional disclosure as one of the papers which the inventor(s) has "reviewed and understands" in order to comply with 37 CFR 1.63. If the original oath or declaration submitted in a continuation-in-part application filed under 37 CFR 1.62 does not contain a reference to the amendment filed with the request for an application under 37 CFR 1.62, the examiner must require a supplemental oath or declaration referring to the amendment.

608.04(c) Review of Examiner's Holding of New Matter

Where the new matter is confined to amendments to the specification, review of the examiner's requirement for cancelation is by way of petition. But where the alleged new matter is introduced into or affects the claims, thus necessitating their rejection on this ground, the question becomes an appealable one, and should not be considered on petition even though that new matter has been introduced into the specification also. 37 CFR 1.181 and 1.191 afford the explanation of this seemingly inconsistent practice as affecting new matter in the specification.

608.05 Deposit of Computer Program Listings

37 CFR 1.96. Submission of computer program listings.

Descriptions of the operation and general content of computer program listings should appear in the description portion of the specification. A computer program listing for the purpose of these rules is defined as a printout that lists in appropriate sequence the instructions, routines, and other contents of a program for a computer. The program listing may be either in machine or machine-independent (object or source) language which will cause a computer to perform a desired procedure or task such as solve a problem, regulate the flow of work in a computer, or control or monitor events. Computer program listings may be submitted in patent applications in the following forms:

(a) *Material which will be printed in the patent.* If the computer program listing is contained on 10 printout pages or less, it must be submitted either as drawings or as part of the specification.

(1) *Drawings.* The listing may be submitted in the manner and complying with the requirements for drawings as provided in § 1.84. At least one figure numeral is required on each sheet of drawing.

(2) *Specification.* (i) The listing may be submitted as part of the specification in accordance with the provisions of § 1.52, at the end of the description but before the claims.

(ii) The listing may be submitted as part of the specification in the form of computer printout sheets (commonly 14 by 11 inches in size) for use as camera ready copy when a patent is subsequently printed. Such computer printout sheets must be original copies from the computer with dark solid black letters not less than 0.21 cm high, on white, unshaded and unlined paper, the printing on each sheet must be limited to an area 9 inches high by 13 inches wide, and the sheets should be submitted in a protective cover. When printed in patents, such computer printout sheets will appear at the end of the description but before the claims and will usually be reduced about 1/2 in size with two printout sheets being printed as one patent specification page. Any amendments must be made by way of submission of a substitute sheet if the copy is to be used for camera ready copy.

(b) *As an appendix which will not be printed.* If a computer program listing printout is 11 or more pages long, applicants may submit such listing in the form of microfiche, referred to in the specification (see § 1.77(c)(2)). Such microfiche filed with a patent application is to be referred to as a microfiche appendix. The microfiche appendix will not be part of the printed patent. Reference in the application to the microfiche appendix should be made at the beginning of the specification at the location indicated in § 1.77(c)(2). Any amendments thereto must be made by way of revised microfiche. All computer program listings submitted on paper will be printed as part of the patent.

(1) *Availability of appendix.* Such computer program listings on microfiche will be available to the public for inspection, and microfiche copies thereof will be available for purchase with the file wrapper and contents, after a patent based on such an application is granted or the application is otherwise made publicly available.

(2) *Submission, requirements.* Computer-generated information submitted as an appendix to an application for patent shall be in the form of microfiche in accordance with the standards set forth in the following American National (ANSI) or National Micrographics Association (NMA) Standards (Note: As new editions of these standards are published, the latest shall apply):

ANSI PH 1.28-1976-Specifications for Photographic Film for Archival records, Silver-Gelatin Type, on Cellulose Ester Base.

ANSI PH 1.41-1976 Specifications for Photographic Film for Archival Records, Silver-Gelatin Type, on Polyester Base.

NMA-MSI (1971) Quality Standards for Computer Output Microfilm.

ANS1/NMA MS2 (1978) Format and Coding Standards for Computer Output Microfilm.

NMA MS5 (ANSI PH 5.9-1975) Microfiche of Documents.

ANSI PH 2.19 (1959)–Diffuse Transmission Density.

except as modified or clarified below:

(i) Either Computer–Output–Microfilm (COM) output or copies of photographed paper copy may be submitted. In the former case, NMA standards MS1 and MS2 apply; in the latter case, standard MS5 applies.

(ii) Film submitted shall be first generation (camera film) negative appearing microfiche (with emulsion on the back side of the film when viewed with the images right reading).

(iii) Reduction ratio of microfiche submitted should be 24:1 or a similar ratio where variation from said ratio is required in order to fit the documents into the image area of the microfiche format used.

(iv) Film submitted shall have a thickness of at least .005 inches (0.13 mm) and not more than .009 inches (0.23 mm) for either cellulose acetate base or polyester base type.

(v) Both microfiche formats A1 (98 frames, 14 columns x 7 rows) and A3 (63 frames, 9 columns x 7 rows) which are described in NMA standard MS2 (A1 is also described in MS5) are acceptable for use in preparation of microfiche submitted.

(vi) At least the left–most 1/3 (50 mm x 12 mm) of the header or title area of each microfiche submitted shall be clear or positive appearing so that the Patent and Trademark Office can apply serial number and filing date thereto in an eye–readable form. The middle portion of the header shall be used by applicant to apply an eye–readable application identification such as the title and/or the first inventor's name. The attorney's docket number may be included. The final right–hand portion of the microfiche shall contain sequence information for the microfiche, such as 1 of 4, 2 of 4, etc.

(vii) Additional requirements which apply specifically to microfiche of filmed paper copy:

(A) The first frame of each microfiche submitted shall contain a standard test target which contains five NBS Micro–copy Resolution Test Charts (No. 1010A), one in the center and one in each corner. See illustration on page 2 of NMA Recommended Practice MS104, Inspection and Quality Control of First Generation Silver Halide Microfilm. See also paragraph 7 of NMA–MS5.

(B) The second frame of each microfiche submitted must contain a fully descriptive title and the inventor's name as filed.

(C) The pages or lines appearing on the microfiche frames should be consecutively numbered.

(D) Pagination of the microfiche frames shall be from left to right and from top to bottom.

(E) At a reduction of 24:1 resolution of the original microfilm shall be at least 120 lines per mm (5.0 target) so that production copies may be expected to comply with provisions of paragraph 7.1.4 of NMA Standard MS5.

(F) Background density of negative appearing camera master microfiche of filmed paper documents shall be within the range of 0.9 to 1.2 and line density should be no greater than 0.08. The density shall be visual diffuse density as measured using the method described in ANSI Standard PH 2.19.

(G) An index, when included, should appear in the last frame (lower right hand corner when data is right–reading) of each microfiche. See NMA–MS5, paragraph 6.6.

(viii) Microfiche generated by Computer Output Microfilm (COM).

(A) Background density of negative–appearing COM–generated camera master microfiche shall be within the range of 1.5 to 2.0 and line density should be no greater than 0.2. The density shall be visual diffuse density as described in ANSI PH2.19.

(B) The first frame of each microfiche submitted should contain a resolution test frame in conformance with NMA standard MS1.

(C) The second frame of each microfiche submitted must contain a fully descriptive title and the inventor's name as filed.

(D) The pages or lines appearing on the microfiche frames should be consecutively numbered.

(E) It is preferred that pagination of the microfiche frames be from left to right and top to bottom but the alternative, i.e., from top to bottom and from left to right, is also acceptable.

(F) An index, when included, should appear on the last frame (lower right hand corner when data is right reading) of each microfiche.

(G) Amendment of microfiche must be made by way of replacement microfiche.

Special procedures for presentation of computer program listings in the form of microfiche in U.S. national patent applications are set forth in 37 CFR 1.96. Use of microfiche is desirable in view of the number of computer program listings being submitted as part of the disclosure in patent applications. Such listings are often several hundred pages in length. By filing and publishing such computer program listings on microfiche rather than on paper, substantial cost savings can result to the applicants, the public, and the Patent and Trademark Office.

BACKGROUND

A computer program listing, as used in these rules, means the printout that lists, in proper sequence, the instructions, routines, and other contents of a program for a computer. The listing may be either in machine or machine–independent (object or source) programming language which will cause a computer to perform a desired task, such as solving a problem, regulating the flow of work in computer, or controlling or monitoring events. The general description of the computer program listing will appear in the specification while computer program listing may appear either directly or as a microfiche as appendix to the specification and be incorporated into the specification by reference.

DISCUSSION OF THE BACKGROUND AND MAJOR ISSUES INVOLVED

The provisions of 37 CFR 1.52 and 1.84 for submitting specifications and drawings on paper have been found suitable for most patent applications. However, when lengthy computer program listings must be disclosed in a patent application in order to provide a complete disclosure, use of paper copies can become burdensome.

The cost of printing long computer programs in patent documents is also very expensive to the Patent and Trademark Office.

In the past, all disclosures forming part of a patent application were presented on paper with the exception of microorganisms. Under 37 CFR 1.96, several different methods for submitting computer program listings, including the use of microfiche, are set forth.

Relatively short computer program listings (10 pages or less) must be submitted on paper and will be printed as part of the patent. If the computer program listing is 11 or more pages in length, it may be submitted on either paper or microfiche, although microfiche is preferred.

Copies of publicly available computer program listings are available from the Patent and Trademark Office on paper and on microfiche at the cost set forth in 37 CFR 1.19(a)(5) and (6).

OTHER INFORMATION

The micrographic standards referred to in 37 CFR 1.96(b)(2) may be obtained from either the National Micrographic Association, 8719 Colesville Road, Silver Spring, Maryland, 20910 or the American National Standards Institute, 1430 Broadway, New York, New York 10018.

The effect of 37 CFR 1.96 is that if a computer program listing (printout) is 11 or more pages long, the applicant may submit such listing in the form of microfiche. Relatively short computer program listings (10 pages or fewer) must be submitted on paper and will be printed as part of the patent, as in the past. When the computer program listing is 11 or more pages in length, it may be submitted on either paper or microfiche, although microfiche is preferred. A microfiche filed with a patent application will be referred to as a "Microfiche Appendix," and will be identified as such on the front page of the patent but will not be part of the printed patent. "Microfiche Appendix," denotes the total microfiche, whether only one or two or more. One microfiche is equivalent to a maximum of either 63 (9x7) or 98 (14x7) frames (pages), or less.

The face of the file jacket will bear a label to denote that a Microfiche Appendix is included in the application. A statement must be included in the specification to the effect that a microfiche appendix is included in the application. The specification entry must appear at the beginning of the specification immediately following any cross-reference to related applications, 37 CFR 1.77(c)(2). The patent front page and the *Official Gazette* entry will both contain information as to the number of microfiche and frames of computer program listings appearing in the microfiche appendix.

When an application containing microfiche is received in the Correspondence and Mail Division, a special pocket will be affixed to the center section of the inside of the file wrapper underneath all papers, and the microfiche inserted therein. The application file will then proceed on its normal course, and when it reaches the Application Branch, a label which sticks up above the file wrapper will be placed at the center section of the face of the wrapper. When the application file reaches the Micrographics Division, the Microfiche Appendix label will be placed on the face of the file wrapper. When the Allowed Files and Assembly Branch of the Office of Publications receives the application file, the person placing the patent number on the face of the file, upon seeing the Microfiche Appendix label, will give the file to the Supervisor who will call Micrographics Division and give the serial number and patent number, and request copies of the microfiche. Micrographics Division personnel will then put the patent number on the microfiche(s), making certain each microfiche is the most recent, and numbering each correctly; e.g., 1 of 1, 1 of 2, etc. Upon completion, two copies will be produced and provided to Allowed and Assembly Branch Files -- one for the grant head and one for the file wrapper.

At the time of assembly, the Microfiche Appendix will be placed inside the grant head behind the patent grant for eyeletting, ribboning, and mailing to the patentee/attorney. During the signing of the grant heads by the Attesting Officer, the patent will be checked to assure proper assembly prior to mailing.

609 Information Disclosure Statement [R-2]

37 CFR 1.97. Filing of information disclosure statement.

(a) In order to have information considered by the Office during the pendency of a patent application, an information disclosure statement in compliance with § 1.98 should be filed in accordance with this section.

(b) An information disclosure statement shall be considered by the Office if filed:

(1) Within three months of the filing date of a national application;

(2) Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application; or

(3) Before the mailing date of a first Office action on the merits, whichever event occurs last.