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THAILAND GROUP ANSWERS TO QUESTIONNAIRE
Asian Patent Attorneys Association (APAA)

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A. EVALUATION OF INVENTIVE STEP FOR HYPOTHETICAL CASE

This section considers whether or not hypothetical patent application (“patent application”), as applied only against prior art D1 and D2, involves an inventive step under present Thai patent practice.

I. Executive Summary

Based on the information provided in the questionnaire, the patent application, and prior art D1 and D2, we expect independent claims 1 and 2 would involve an inventive step under present Thai patent practice. Bases for our assessment are briefly discussed in the following sections.

II. Applicable Law


An invention shall be taken to involve an inventive step if it is not obvious to a person of ordinary skill in the art.

Section 7 of the Thai Patent Act.

The Thai Manual of Patent and Petty Patent Applications Examination provides further guidance on examining inventive step, including the requirement that an invention must provide an advantage or improvement resulting from at least one of the following:

- effect of design/form;
- task;
- selection;
- a need or problem, and a solution to the need or problem;
- effort;
- simplification;
- concentration of developmental steps;
- economic success;
- scientific technical research;
- progress;
- result of the invention;
- goals of the invention;
- exchangeable compounds; and/or
- surprising results.

III. Present Thai Patent Practice

In general, patent applications filed in the Thai Department of Intellectual Property (“Thai Patent Office”) will enter the substantive examination stage upon filing a request for substantive examination.

Presently, while the Thai Patent office can perform the entirety of the substantive examination stage itself, for patent applications in which there are no known corresponding foreign patent applications, the Thai Patent Office may request (and prefer) search assistance from a foreign examining patent office, such as the Australian office. In such cases, substantive examination of the patent application will be performed by the Thai Patent Office based on Thai patent law and in view of the foreign patent office search results.

The Thai Patent Office may recognize the results of substantive examination of a corresponding foreign application. The Thai Patent Office will generally require, among other things, that the claims on file in the Thai Patent Office correspond to, or be amended to correspond to, those issued in the corresponding foreign application. In this regard, the Thai Patent Office may additionally perform substantive examination of the patent application so as to ensure the foreign-examined claims adhere to Thai patent law.

In addition to the inventive step requirements stipulated in the Thai Patent Act and theThai Manual of Patent and Petty Patent Applications Examination, Thai patent practice will generally comprise the following non-exhaustive procedure:

1. Identify the elements of each claim.
2. Perform a search of relevant prior art based on the claim elements.
3. Identify the closest prior art.
4. Identify the claim element(s) that are missing from the closest prior art.
5. Identify the next closest prior art that discloses the missing claim element(s).
6. In view of one or more of the inventive step requirements listed in the Thai Manual of Patent and Petty Patent Applications Examination, assess whether one of ordinary skill in the art would readily combine the closest prior art with the next closest prior art to arrive at the claimed invention.
IV. The Patent Application

1. The Specification

The present patent application considers problems encountered in conventional approaches of fire protection, including impeding the flow of smoke through gaps formed between one or more moveable parts (such as gaps formed between a door and a door frame). In particular, prior art reference D1 teaches the use of intumescent sealing elements, but such an approach is limited to sealing gaps only after the sealing elements themselves directly experience an increase in temperature above a certain threshold temperature ("activated") from a fire. The present application recognizes that, before such conventional sealing elements are activated by a fire, dangerous gases and smoke are allowed to pass through the gaps.

The claimed approach of the present patent application solves this newly discovered problem through an improved fire protection seal 1, and system 7 thereof, comprising intumescent sealing element 3 having electrical heating means 2 arranged to heat the intumescent material. In the event of a fire, fire detector 8 sends a signal to control unit 9, which correspondingly sends current through electrical heating means 2 to heat intumescent sealing element 3 of fire protection seal 1. As a result, fire protection seal 1 is activated to impede the flow of smoke without requiring sealing elements 3 themselves to directly experience an increase in temperature.
2. The Claims

Claims 1 and 2 are reproduced below. For simplicity, the multiple elements of claims 1 and 2 have been selectively highlighted to better reveal the required limitations.

1. A fire protection seal (1) comprising

   a sealing element (3) of intumescent material for sealing a gap,

   characterised in that the seal comprises an electrical heating means (2)
   arranged to heat the intumescent material to seal the gap.

2. A fire protection system (7) having

   a control unit (9),

   at least one fire detector (8) and

   at least one fire protection seal (1) according to claim 1 that is activated by
   said control unit (9) in response to a signal from said fire detector (8).

V. Prior Art

1. Prior Art D1

D1 is directed to solving a specific problem pertaining to sealing gaps/spaces formed between a door and a door frame in the event of a fire. D1 solves this problem through use of seal 104 made of intumescent material fitted into groove 105 of door frame 101. When a fire heats intumescent material 104 above a certain activation temperature, intumescent material 104 expands to seal the gap or space between door 102 and door frame 101.
2. Prior Art D2

D2 is directed to solving a specific problem pertaining to mechanically installing window frames and door frames. Intumescent material 303 is placed at each fixing point of frame 301, such as corners 304, between frame 301 and wall 300. The plurality of intumescent materials 303 are interrelated by resistive heating wire 302. Free ends of resistive heating wire 302 are connected to a current source. By applying a current from the current source, resistive heating wire 302 is operable to transform intumescent materials 303 at corners 304 into foam, and frame 301 is fixed in place by the foam.

VI. Inventive Step Analysis

1. Independent Claim 1

A Thai Patent Examiner would consider D1 as the closest prior art. In assessing D1, a Thai Patent Examiner would consider D1 to be generally directed to a similar problem solved by the claimed approach, which pertains to fire protection. However, the claimed approach of a seal comprising “an electrical heating means arranged to heat the intumescent material,” which solves the above-stated newly discovered problem of D1 pertaining to dangerous gases and smoke being allowed to pass through gaps before a fire activates the seal, is wholly missing in D1. Since this element that is missing in D1 appears to be disclosed in D2, a Thai Patent Examiner would consider D2 as the next closest prior art.

In assessing inventive step of independent claim 1 in view of D1 and D2, a Thai Patent Examiner would consider combining the above-stated solution disclosed in D2 with D1 so as to arrive at the claimed approach. However, a Thai Patent Examiner would recognize that the above-stated solution of D2 is directed to solving a patentably distinct problem than D1. That is, whereas D1 is directed to the problem of preventing (sealing) the flow of gas through gaps formed between a movable part (door) and a non-movable part (door frame) in the event of a fire, D2 is directed to the problem of mechanically fixing in place a part intended to be non-movable (window frame) to another non-movable part (wall) at certain fixing points. In view of this distinction between the problem of D1 and the solution of D2, a Thai Patent Examiner would consider independent claim 1 as involving an inventive step since one of ordinary skill in the art of fire protection
reading D1 would not be motivated to search for, consider, and/or combine the teachings of D2 pertaining to mechanically installing window frames.

2. Independent Claim 2

In assessing inventive step of independent claim 2 in view of D1, a Thai Patent Examiner would recognize that the claimed approach of “a control unit (9),” “at least one fire detector (8),” and “at least one fire protection seal (1) comprising an electrical heating means (2) arranged to heat the intumescent material that is activated by said control unit (9) in response to a signal from said fire detector (8)” is wholly missing in D1. Furthermore, these deficiencies of D1 are not cured by D2 since D2 is entirely silent on these deficiencies. As such, a Thai Patent Examiner would consider independent claim 2 as involving an inventive step since, even if one were to attempt to combine the teachings of D1 with D2, a person of ordinary skill in the art would not arrive at the claimed approach of independent claim 2.
B. ADDITIONAL GENERAL QUESTIONS CONCERNING EVALUATION OF INVENTIVE STEP

a. Which of the following does your country or region's Patent Office belong to when examining inventive-step/non-obviousness?

   i) My country or region's Patent Office examines the inventive-step/non-obviousness of an invention before granting a patent (If so, please answer question c. below.)

   ii) My country or region's Patent Office fully recognizes the results of examination of inventive-step/non-obviousness of an invention by another country’s Patent Office. (If so, please answer question b. below.)

   iii) Both of i) and ii) (If so, please answer questions b. and c.)

   iv) My country or region's Patent Office does not examine inventive-step/non-obviousness (If so, you may answer to the remaining questions only when appropriate).

[Your Answer]

(iii)

b. If your country or region's Patent Office recognizes the inventive-step/non-obviousness examination results of another country’s patent office, please list the names of the countries for which your country’s Patent Office recognizes the examination results.

[Your Answer]

The Thai Patent Office recognizes inventive step examination results for corresponding patent applications filed in patent offices of other examining countries.

c. If your country or region's Patent Office examines the inventive-step/non-obviousness of an invention, are there applicable laws/rules/examination guidelines on which the examination is based?

- Provide the relevant parts and the name of the applicable laws/regulations/examination guidelines

[Your Answer]

Section 7 of the Thai Patent Act states:

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The Thai Manual of Patent and Petty Patent Applications Examination provides further guidance on inventive step, including the requirement that an invention must provide an advantage or improvement resulting from at least one of the following:

- effect of design/form;
- task;
- selection;
- a need or problem, and a solution to the need or problem;
- effort;
- simplification;
- concentration of developmental steps;
- economic success;
- scientific technical research;
- progress;
- result of the invention;
- goals of the invention;
- exchangeable compounds; and/or
- surprising results.

d) What is the purpose or intent (such as technical progress) of the law/rules/examination guidelines that provide for inventive-step/non-obviousness examination? Is the purpose or intent specifically stated in the law/rules/examination guidelines? If so, please provide the specific part of the law/rules/examination guidelines.

[Your Answer]