FINNISH PATENT AND REGISTRATION OFFICE

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Patent application details
Application number 20220068

Applicant's name
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Representative
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Your reference

Application rejected

Summary

Independent claim 1 is not inventive (Pat Act 2). Dependent claims 2 to 14 are not inventive either.

Subject matter of the claims

The applicant has made one formal addition to the original claims and splitting the original independent claim 1 to two: claim 1 and a new claim 14. The split causes claim 1 to define only the console to be placed opposite to one leg instead of a relation to a support arm as originally.

Independent claim 1 defines an intraoral scanner arrangement including a stand consisting of three wheeled legs, a vertical pole, an articulated support arm, a display, a holder and a control console attached to the pole in a direction opposite to a direction of one of the three legs. Dependent claim 2 defines dimensioning the console on legs of the stand. Dependent claims 3 to 13 define cooling of the console. The new claim 14 defines the support arm extending in opposite direction to the console.

Application documents constituting the basis for this rejection

This opinion is based on the following application documents:
- description, pages 1–11, 22.9.2023
- claims (in English), numbers 1–14, pages 12–15, 6.5.2024
- drawings, pages 1/4–4/4, figures 1–5, 10.11.2022
- abstract (in English), 22.9.2023

Cited documents

1. US 10799210 B1 (ZHANG JIMIN [US] et al.), 13.10.2020
2. US 2017/0128177 A1 (CHUNG JOA RAK [KR]), 11.5.2017
3. EP 2614768 A1 (ORMCO CORP [US]), 17.7.2013

4. FI 12746 Y1 (LH GROUP OY [FI]), 15.9.2020
5. FI 8457 U1 (VACON OYJ [FI]), 14.10.2009

Document 1 presents an intraoral device attached to a vertical pole of a stand on wheels arranged to four legs as well as a holder for the handheld parts of the equipment and a display as well as a battery (column 5 lines 30–62; figures 2, 3 and 4). It is seen that the control console is attached to the vertical pole over two adjacent legs.

Document 2 presents a dental arrangement including a vertical pole, an articulated horizontal arm and a display as well as arms for holding dental treatment devices (paragraphs [0004]–[0007]; figure 1). This solution don't include legs and wheels.

Document 3 presents an intra-oral imaging system that cools through vents in the bottom and vertical surface. The upper vent seemingly consists of smaller channels. The top of the system casing is seemingly horizontal and bends rounded down two times. The system casing includes a battery. (paragraphs [0076]–[0083]; figures 9–1 2).

Document 4 presents a casing that cools by airOow through two openings near the bottom and two on the sides near the top (page 2 lines 14–32; figures 2 and 3).

Document 5 presents cooling air flow optionally caused by a fan on the bottom taking air under the case and making it flow up turning to the outlet on the vertical wall higher (page 4 lines 7–13; figure 2).

Processing step 1

The following was described for the applicant in the first office action: Document 1 presents closest prior art. Differences between claims and prior art are the combinations of features in one claim set. Technical effect of the differences is in integration. Objective technical problem seems to be how to attach an intraoral scanner to dental fixings. It is obvious to a person skilled in the art to combine the known prior art in dentistry to end in the same structure.

Claim 1 is novel (PatAct 2(1)) in view of documents 1–5, because of defining in one claim the features of the stand such as an articulated arm and the intraoral scanner that are not present in one prior art document alone. Claims 2 to 13 are novel, because of including the novel features of the preceding claim 1.

The solution for an intraoral scanner arrangement defined in claim 1 does not include an inventive step in view of documents 1 and 2, describing dental supports, together (PatAct 2(1)), because of the intraoral scanner attached to a vertical pole of a stand on legs and wheels, a holder for handheld equipment as well as a display

in document 1 in combination with the articulated arms for the dentists equipment and the display in document 2 cause the structure defined in the claim obvious. It is intrinsically clear that the casing includes control electronics such as a computer and is a so-called control console for the system.

Claim 2 defining the dimensions of the console to fit above two adjacent legs does not include an inventive step in view of the same, because of dimensions in document being exactly the same i.e. fitting over two legs of the stand.

Claim 3 defining a cooled casing for the unit, openings for the cooling in the upper vertical wall and a horizontal to vertical without abrupt corners bending top part does not include an inventive step in view of the same and in addition document 3, because of defining only these known features. The solution defined in claim 4 does not include an inventive step in view of the same, because defining only similar structure than document 3 but the other way round. Claim 5 defining larger opening near the top is not inventive in view of the same, but obvious to a person skilled in the art of knowing the tendency of warm air flowing upwards. Claim 6 defining more or larger cooling openings is obvious if more cooling is needed and not inventive. The solutions of claims 7 and 8 defining sets of cooling openings extending from the top to the sides and being larger near the top differ from known ones but does not cause any unexpected effct that would not be obvious in view of the same and document 4 together. Claim 9 defining the back extending away from the front differs from the prior known regarding documents 1, 2 and 3 as a new form but does not cause any technical effect improving the cooling and is as such not inventive. Claim 10 defining an ascending concave surface for the airflow does not differ inventively from the rounded form of document 3 taken together with documents 1 and 2. Claim 11 defining no abrupt corners does not differ inventively from document 3 taken together with documents 1 and 2 because of not causing any technical advancement compared to the rounded corners of prior art. Claim 12 defining a fan inside at the bottom does not include an inventive step in view of documents 1 and 2 together with document 5 that include fan for improving airflow. Claim 13 defining a battery and the parts inside leaving room for airflow does not include an inventive step in view of documents 1 and 2 together with either document 4 or 5, because of the battery mentioned in the first one and a raised mounting frame as well as the space around parts seen from the figures of the latter ones.

All claims 1–13 are industrially applicable (PatAct 1(1)), because of obvious feasibility in practice.

Applicant's reply1

The applicant refused to amend the claims of the application for grant and in the reply of 22.9.2022, the applicant argued that the positioning of the console in relation to the support arm and the three legs in specific directions in relation to the console would be inventive and not known from the documents 1 and 2.

Processing step 2

The following was described for the applicant in the second offce action: It is true that the positioning of the console opposite to the support arm and the number and direction of legs are novel in view of the prior art. Document 1 presents the console at the same side as the support of the display. Further it presents four legs in directions that are 45 degrees off the direction of the console and the support of the display. It is anyway trivial to turn the console of document 1 to the opposite side around the vertical pole for example to balance the structure. Further the change of the number of the wheels from four to three is trivial. If the back side two wheels are unchanged, the front wheel is directed towards the front as is claimed. The support of the display in document 1 is quite short horizontally but it is a support arm extending from the vertical pole. In addition to that document 2 presents a longer support arm for the display. This cause the argued independent claim to be obvious to a person skilled in the art.

Applicant's reply 2

The applicant continued on refusing to amend technically the claims but corrected a minor formal issue. In addition to that it is claimed that document 2 is nothing else than something comparable to a photograph on a dentistry room in relation to the intraoral scanner of document 1 and the application.

Processing step 3

The problem for a person skilled in the art is how to form a steady structure and attach an intraoral scanner in dentistry on it. The devices for the intraoral scanner are generally known. It is obvious to a person skilled in the art to solve the problem by attaching the devices to a known stand in the field. Changing the number of wheels from four to three does not solve any known problem. Also it is obvious that a twisting horizontal arm must be positioned on the same side with one of the wheels if there is a danger of falling over. This solves the danger of falling most obvious way to any person. Specifically in regard the five subjects pointed at by the applicant. The first matter "articulated support arm" is not even novel as seen in document 2 figure 1 arms 120. The second matter "display connected to the arm" is neither novel as seen in the same figure display 180. The third matter "control arrangement" is obvious in view of the controller 42 housed in cabinet 40 of document 1 seen in figures 2 to 4. The fourth matter "control console at the bottom of the vertical pole" is obvious in view of the cabinet 40 attached as described. The fifth matter "the control console and

the arm extending outwards in opposite directions" or "three legs and the console in the opposite direction to one leg" includes only obvious alternative as the controller in the cabinet in document 1 can be turned to any direction aroung the vertical arm and changing the four legs to three does not solve any known problem as well as using one of the legs as a support for the horizontal arm is a natural way to do if there exists a danger of falling over because of few legs and big gaps in between them.

The patent publications are technical documents not photographs on a room.

Documents 1 and 2 describe dentistry equipment and stands in the same field as the application and are relevant as such.

The application will be rejected next if no grounds for grant is presented, such as technically amended claims that could be granted. Anyway it seems impossible to draft such claims using the application as filed.

The claims of the application do not define inventive subject matter over the prior art. It is obvious to a person skilled in the art to add the necessary dental equipment to the intraoral scanner arrangement of document 1 ending in the same conclusion.

Document 1 presents an intraoral device attached to a vertical pole of a stand on wheels arranged to legs as well as a holder for the handheld parts of the equipment and a display as well as a battery (column 5 lines 30–62; figures 2, 3 and 4), document 2 presents a dental arrangement including a vertical pole, an articulated horizontal arm and a display as well as arms for holding dental equipment (paragraphs [0004]–[0007]; figure 1), document 3 presents an intra-oral imaging system that cools through vents in the bottom and vertical surface (paragraphs [0076]–[0083]; figures 9–12) and documents 4 and 5 describe further cooling by air flow.

Documents 1, 2 and 3 describe all dental arrangements that in the first and the last one are specifically intraoral devices. It is obvious to a person skilled in the art to use any of these to build an intraoral scanner arrangement together.

Applicant's reply 3

The applicant denies the relevancy of document 2 based on an accusation that it only includes the word "dental". The document describes a stand for "dental treatment devices" (paragraph [0007]) that understandably includes an intraoral scanner.

The applicant also denies document 2 for not including wheels and legs, but as the document describes a stand for similar equipment it is obvious that the supports can be used for a wheeled one too.

Lastly the applicant requests a proper problem-solution approach to the case.

Grounds for the decision

The only difference between the amended claim 1 and the prior as documents 1 and 2 together, is the fewer amount of legs and wheels causing the opposite direction from the control console being the direction of one leg instead of a space between two legs. Claim 1 is not inventive in view of documents 1 and 2 together (Pat Act 2).

Claims 2 to 13 are already indicated not inventive.

New claim 14 adds to the subject matter of the preceding claims only the direction of the support arm as opposite to the control console, which is opposite to the structure of document 1 but obvious to a person skilled in the art. It is obvious that the direction must be opposite for weight reasons not to overturn the stand with a long support arm and as such not anything extraordinary or inventive.

The problem seems to be how improve the wheeled intraoral scanner stand. Document 1 presents an intraoral scanner stand and a display etc. It is seen from document 2 describing a dental unit chair including arms for a dental treatment device, that clearly includes also an intraoral scanner as a possibility, horizontal support arms with articulation. It would be obvious to a person skilled in the art to use the arms of the latter for improving the former for better reach. Of course then it is also obvious that the wheeled stand should not overturn, causing the console to be placed on the opposite side to the arm for balance. The reduction of legs and wheels from four to three doesn't serve any known purpose.

The two differences to the prior art document 1, namely the smaller amount of wheeled legs and the horizontal support arm do not include a synergist effect. This causes the differences to be judged individually.

Appeal

You may lodge an appeal with the Finnish Market Court within 60 days after you were notified of the decision. We enclose our [redacted] are subject to a fee.

FINNISH PATENT AND REGISTRATION OFFICE

Jesper Lundbom
Senior Patent Examiner

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This document has been electronically signed.

Enclosed documents

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