

QUESTION PAPER REFERENCE: FD3

Claims

SPARE SET OF CLAIMS OF GB 1301301.3

Claims

1. A casing for variable-message display devices, of the type comprising a box-like body for housing electronic circuit panels and an array of light-emitting elements, closed at the front by a perforated plate with an array of holes, ~~in~~ ^① ~~which~~ each of the light-emitting elements ^② ~~is~~ aligned with a corresponding hole of the perforated plate, wherein the casing further includes a screen, arranged on the front of the perforated plate and provided with a plurality of horizontally projecting fins and an array of opening, the openings corresponding to the holes in the perforated plate, in order to allow the light from the corresponding light-emitting element to pass through the hole and the opening ~~X~~ ^③
2. A casing according to claim 1, in which the box-like body includes a plurality of metal side plates connected to the edges of the perforated plate, in order to provide a tight seal.
3. A casing according to claim 1 or 2, in which the fins extend over each row of openings in the screen.
4. A casing according to any preceding claim, in which both the perforated plate and the finned plate are made up of a plurality of adjoining mating portions.
5. A casing according to any preceding claim, ^{wherein the anti-reflective} ~~further~~ ~~incorporating~~ a sheet ^{is} made of a semi-opaque or translucent plastic material layer, for reducing the reflection of incident ambient light.
6. A casing substantially as described with reference to the attached drawings.

Amendments (see claims)

- ① the holes arranged so that when the casing is assembled with the array of light-emitting elements,
- ② is (don't amend here) (keep the is)

- ③ wherein the casing further includes an anti-reflective sheet, positioned between the perforated plate and the screen.

Claim X: A casing according to claim 1, wherein the anti-reflective sheet is formed of a transparent sheet with an anti-reflective coating.

Claim Y: A casing according to claim 1, configured such that an LED board is mountable simply in the casing.

Claim Z: A variable-message display comprising a casing according to any preceding claim and an array of light-emitting elements, housed within the casing.

Claim W: A casing according to claim 1 wherein each opening corresponds to more than one hole.

MARKS AWARDED: 28/35

Response Letter

UKIPO letter:

Amendment

Amended claims are attached.
Include new claims W, X, Y, Z.

Basis for amendments:

- ① p8 l 21-25 says that 'in the assembled display device each light element aligns with the corresponding hole'

so this discloses that the holes must be arranged so that this occurs when the assembly has taken place.

- ③ p5 l 22-27 says that "the casing can further incorporate a sheet" that is inherently anti-reflective or a sheet with an anti-reflective coating. Thus this discloses an 'anti-reflective sheet' – however it derives its anti-reflective quality.

This passage also discloses the sheet's position. Also see p7 5-10.

Claim S → wording change to match claims 1.

X: p5 l 9-10

Y: p6 l 3

Z: p8 l 2) and p4 l 4-6.

W: Figure 4 shows openings in the screen which are substantially wider than they are high. The holes in the perforated plate as seen in Fig 1 are substantially square, thus the skilled person is taught by Figure 4 that each opening can correspond to more than one hole.

Clarity

Claim 1 has been reworded to make clear the light elements are not a part of the casing but that holes are configured so that when light-emitting elements are added, they align with the holes.

Novelty

The examiner said that claim 1 is not novel or is obvious over D1 or D2.

We do not agree that claim 1 is not novel as: D1 does not disclose a “box-like body”. D2 does not disclose a “plurality of horizontally projecting fins”. – each device has only one light shield.

D2 also only has one ‘opening’ for window 28 and so does not have an ‘array of openings’ as required by claim 1. The two lamps 21 and 22 are separate devices with separate casings and are not one casing with an array of openings. Each has its own box-like body.

D1 also does not disclose an anti-reflective sheet.

Inventive Step

Skilled person (sp) = manufacturer of light-emitting displays.

Common general knowledge = common light displays and casings

Starting from D1:

Differences = box-like body and anti-reflective sheet. The anti-reflective sheet acts to increase visibility of the device. It would not be obvious for the SP to implement an anti-reflective sheet in the teaching of D1. There is no discussion in D1 of anti-reflective materials and the lens plate placed in front of the light emitting elements is specifically said to be “as transparent as possible” (p14 l 7).

This teaches away from the present invention which has an anti-reflective sheet and so claim 1 is not obvious to the SP in view of D1.

Starting from D2:

The differences between claim 1 and D2 are that D2 does not disclose:

- plurality of fins
- array of openings (more than 1)

The fins act to effectively improve visibility of the display device

It would not be obvious to add multiple fins to the device of D2. The “light shield” is for “cutting out glare from the sun” (line 9) and so the shield only needs to protect the display from above. Furthermore, the light shield is shown as being very large and

to add more than one shield would make the top of the display difficult to see from low angles, due to it being blocked by a lower light shield.

Thus it would not be obvious to add additional light shields to D2 to arrive at the present invention.

D1 and D2 are both in the field of light-emitting displays and so in principle, could be combined by the skilled person (SP).

Starting from D1, the SP would not add the “neutral gray” window of D2 to the device of D1, because the neutral gray window “reduces the brightness of the display” (p16 l 27) and as mentioned above D1 is concerned with increasing the brightness of the display by concentrating the output of the display (p12 l 10-11) by condensing the light using the lenses (p13 l 2).

Thus the SP would not as the examiner suggested, use a plate of this material to produce the lenses as this would not produce the effect the lens is supposed to have.

Furthermore, the window of D2 could not be incorporated in the device of D1 because the layers in D1 are carefully constructed to avoid differences in thermal expansion coefficients in the components (p12 l 5-6). The SP would not be able to incorporate a window according to D2 in D1 even if he went against the teaching of D1 (which he would not do either).

Starting from D2:

There is no motivation for the skilled person to add multiple fins and openings to the teaching of D2 because there is only one opening in D2.

Changing to add multiple openings and multiple fins would drastically change the teaching of D2 which already said to “make the display clearer”. Also see discussion above relating to multiple fins → sun, etc.

Railway signals need large field of view – no ...

MARKS AWARDED: 24/35

Notes to Clients

Client memo

Attached is a draft response + amended claims. I will file this at the UKIPO by the deadline of 16 November, if I don't hear from you before.

Amendment made distinguishes from D1 and D2. Possible examiner may think claims still not inventive over D2, but fall-back positions in claims 3 and X can be tried if he believes this – As you said it will be ‘quite a hill to climb’. I assume you are

ok with this tactic which may result in another exam report, rather than over-limiting the claim now in an attempt to get quick grant.

My notes on possible amendments are attached.

Regarding openings over whole row I am not certain this is covered by the current claims but we cannot add a claim/divisional to this aspect because there is no basis in the application for openings over whole row of holes. I have added a dependent claim to openings over more than one hole + argued this is disclosed in Fig 4. Using repurcussive effect, this may mean claim 1 interpreted to cover openings over row of holes.

Notes for client memo:

D1 and D2 are full prior art as they were published in 2005 + 1995 (granted then) respectively + we must have filed recently \approx 2014 due to search report last year.

Have added dependent claim to display device with casing + light-emitting elements as you say you may sell these in the future.

D1:

- Shows a casing for display devices (Fig 1)
- No box but client says it is well known to provide a box to protect against elements \rightarrow novel but obvious.
- shows array of light-emitting elements (numeral 1)
- perforated plate = numeral 2
- holes + lights alligned \rightarrow p12 | 14-15
- screen with fins = 4 and holes as shown is Fig 2 (41)

So claim 1 obvious over D1 \rightarrow we will have to amend.

Possible amendments

The only 'anti-reflective coating' of the prior art is D2's neutral gray window 28.

- a) We could amend to add "an anti-reflective sheet" positioned between the perforated plate and the screen (see p5 | 22-27).

This seems novel over D1 as there is no anti-reflective sheet in D1.

I also think this would not be obvious over a combination of D1/D2 because the neutral gray reduces brightness of the display and the lens of D1 is concerned with condensing the light from the LEDs to increase the display brightness.

- b) We could amend to add the anti-reflective sheet as above and also add that the sheet is a transparent sheet with an anti-reflective coating.

This is narrower than a) but means that even if a skilled person added the neutral gray window of D2 to D1, then they would not arrive at the present

invention, meaning a stronger inventiveness argument. This would also cover any future actions of client as they are 'going away' from semi-opaque version.

I think this is narrower than needed at this stage as the client has no rush (no potential infringer or other need for quick grant).

Will put this in as a dependent claim for a fall back position – may be useful to further distinguish from D2 in particular – may need to add later.

- c) could amend to make clear board 'simply mountable' (p6 l 1-3) which may give novelty over claim 1, but client says not main concern + similar designs, so a weak option.

If this option becomes attractive for commercial reasons, let me know ASAP – we could file a divisional to this concept.

- d) could add claim 3 to claim 1 as well, to further distinguish over D2, but this is narrowing and we already have it as a fall-back in claim 3. – May need to add this in future.

Decision: (a) as broadest defensible claim.

Client memo:

holes amendment → could delete phrase "in which → plate" but no basis to do this because holes always described as aligned with elements in description.

→ instead have amended to refer to "when assembled with elements" (see p8 l 21-25)

Client memo

The screen has openings "corresponding to the holes in the perforated plate". This may be construed as the holes matching the holes in the perforated plates as on p7 l 16-17, or a court may construe it broadly as the wording of the claim is different. I have added a dependent claim to this to show it is encompassed in claim 1 and arguing is shown in Figure 4 that openings 8 correspond to more than 1 hole as the holes in the perforated plate in Fig 1 are shown as roughly square and the holes 8 in Fig 4 are shaped to be wider than they are tall.

This may be rejected by the examiner as there is no wording basis in the description to support it and because of p1 l 16-17.

Thus the claim does not definitely cover screen holes being a whole row wide. If we want to be absolutely sure it is we could file a new application explicitly describing this as an option (if our app not yet published), but we cannot claim priority (if we file over a year ago – seems likely as search report was 'last year') so we the claim must be novel over this app.

If this app is published, then new app not worth it because this app would be full prior art + wide holes probably not inventive over disclosure of this app.

Client memo notes

UKIPO letter: no extension needed

no acceleration required (no reason in client letter)

Not forshadowed letter informing Examiner we might file a divisional – if 'simply mountable LED' divisional wanted let me know ASAP.

UKIPO now issue notification before grant so will let you know if/when we receive this. Once granted, no divisional can be filed.

MARKS AWARDED: 20/30