

EUROPEAN QUALIFYING EXAMINATION 1994

PAPER C

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INSTRUCTIONS TO CANDIDATES

1. Attached you will find a letter from a client to a professional representative with annexed documents.
2. Your task is to put yourself in the position of the representative and, using only the information provided by the client, to prepare a notice of opposition, which when typed would be ready for filing. You may use the pre-printed opposition form provided, but you are not obliged to do so and marks will not be lost if you do not.
3. If in the notice of opposition
 - you have not taken account of a particular piece of prior art,
 - there is a claim which you have not attacked,
 - you have made no use of a possible line of attack on a claim, or
 - you have attacked a given claim in circumstances where there is real doubt whether the attack would be successful,you should justify this briefly on a separate sheet of paper.
4. All claims should be treated separately.
5. The documents should only be referred to by their annex number.
6. If not needed for the sake of argumentation, avoid word for word reproduction of the claims in your work. In particular, a mere listing of the features of the claims of Annex 1 should not be given by way of an introduction to the arguments presented.
7. You are not called upon to prepare documents which might be necessary for supporting the opposition, e.g. evidence from experts, authorisations, receipts or statements by witnesses.
8. You are to accept all dates as correct; in particular it is to be assumed that for all Annexes which claim a priority, the disclosures of the Annexes are identical with those of the corresponding priority documents unless there is evidence to suggest otherwise. Regardless of the date of the client's letter you are to assume there is no possibility to confer with the client.
9. Explanations regarding the manner of filing the opposition to meet the deadline are not required.
10. You should be aware that Annex 1 is fictitious and is not necessarily in a form that would have lead to a patent granted by the European Patent Office.
11. In addition the following points from »Instructions to candidates for preparing their answers« (Text dated 2 February 1994) should be taken into account:

.../...

I. Applicable to papers A, B, C and D

1. Candidates are to accept the facts given in the paper and to base their answers upon such facts. Whether and to what extent these facts are used is the responsibility of the candidate.
2. Candidates are not to use any special knowledge they may have of the subject-matter of the invention, but are to assume that the prior art given is in fact exhaustive.

IV. Applicable to paper C

• Duration: 5 hours; third day, morning

8. The paper will be presented in the form of a letter from a client to a professional representative. The candidate is expected to draw up a notice of opposition which satisfies the requirements regarding filing, other than those relating to typing and the keeping of certain margins.

The notice of opposition prepared by the candidate should comply with Article 100 and Rule 55, bearing in mind the relevant recommendations in the Guidelines for examination in the EPO, Part D. However, in order to maintain the candidate's anonymity he is not to use his real name in the papers but, instead, the candidate should use the name of the representative to whom the client's letter is addressed. The grounds of Article 100(b) will not be used.

The candidate must also briefly set out on a separate sheet reasons why he adopted or did not adopt the suggestions of the client. In addition any questions the client may have posed should be answered.

Detailed analysis of documents done in rough on separate sheets is not regarded as part of the answer and should not be included or attached; nor should the test paper itself or any rough notes. Candidates should therefore concentrate more on the contested patent claims and less on analysis of the documents of the prior art.

9. The notice of opposition should contain all (and only those) grounds – as far as possible against all the claims – which the candidate in that particular case considers prejudicial to the maintenance of the patent.

Omission of a good ground for opposition will lead to a loss of marks, commensurate with the importance of the ground in the particular case.

11. The European patent to be opposed will be furnished in all three official languages. The candidate must indicate which of the three versions he chose to oppose.

Publicidad Consulting SA, Miguel Angel, 43 28010 MADRID

to Mr. Orviz Gonzales
34, rue de la Mairie
F - 75116 PARIS (FR)

Madrid, 12.04.94

Dear Sir,

We would like you to file an opposition on our behalf. The patent enclosed as Annex 1 should be revoked in its entirety for ES, FR and IT, for the other designated States the patentee may pay the annual fees.

We would like you to file the opposition in Spanish and to provide the translation later at your convenience, if our overall costs are thereby reduced.

From a file inspection we have established--

- (i) that during the examination procedure method claims were added to the original apparatus claims. This is not in order since the protection is now wider than that of the claims as originally filed.
- (ii) that the feature "fluorescent dye is mixed with the water" now claimed in claim 6 had not been included in the documents as originally filed but only in the US document cited on page 1 of Annex 1.

To enable you to check this aspect we enclose, as Annex 2, page 2 of the description and the two claims as originally filed. Page 1 of the description and the drawings have not been changed during the examination procedure. In both Annexes 1 and 2, we have indicated the different paragraphs on page 2 by underlining.

Independent claims 1 and 4 seem to be invalid since the feature defining the range of the spacing between the air curtains (see Annex 2, originally filed claims) can not be omitted.

Furthermore we would like to draw your attention to the two-part form of the claims as originally filed. This indicates that the suction conduit opposite the row of nozzles was prior art at the date of filing.

We demonstrated a fog screen apparatus at an exhibition in Narbonne in May 1990 in the manner exactly as defined in claim 5. A copy of a letter to the responsible exhibition manager including our leaflet no 1234 is seen in Annex 3. We offer as witnesses before the opposition division our employees Mr. Elza-Quijano and Mr. Dominguez-Montes who unfortunately only speak Spanish. Can you advise us whether you think their testimony is necessary. Do we have to expect additional costs ?

Both witnesses are presently on holiday, but we will provide you with their sworn statement certainly within one month. Please advise us whether the EPO will allow an appropriate short extension of the period for filing the opposition containing their sworn statement.

Further relevant prior art is represented by Annexes 4 to 6.

Sincerely yours,



Diaz-Narganes
(director general)

enclosures: EP-B-0 455 676 (Annex 1)
 page 2 and claims
 as orig. filed (Annex 2)
 our letter of 12.01.90
 and leaflet 1234 (Annex 3)
 DE-U-90 00 813 (Annex 4)
 GB-A-2 122 460 (Annex 5)
 EP-A-0 454 830 (Annex 6)


 Europäisches Patentamt
 European Patent Office
 Office européen des brevets

Publication number:

0 455 676
B1

12

EUROPEAN PATENT SPECIFICATION

- 45 Date of publication of patent specification: 21.07.93 51 Int. Cl.5: F 21 P 7/00
 21 Application number: 90 110 306.7
 22 Date of filing: 30.05.90

54 Water-fog screen

30 Priority:

42 Date of publication of application:

04.12.91 Bulletin 91/49

45 Publication of the grant of the patent:

21.07.93 Bulletin 93/29

84 Designated Contracting States:

AT CH DE ES FR IT LI

50 References cited:

US - A - 4 321 000

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Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European patent convention).

Courier Press, Leamington Spa, England.

EP 0 455 676

This invention relates to water fog projection screens. It is known to produce such screens from a row of water ejection nozzles arranged along a generally straight line. Visual images can then be projected onto the screen, e.g. for advertising. Sound may
5 accompany the projected images as is conventional when projecting images onto mechanical screens.

The prior art water fog screens have the disadvantage that the image is not sharp over the whole screen because the fog diffuses
10 into the ambient air, thereby deteriorating the clarity of the displayed image. The present invention is intended to provide a better image.

Whilst Figs. 1a, 1b show prior art water fog screens, Figs. 2 and 3
15 show different embodiments of the invention.

In Figs. 1a and 1b the reference numeral 1 denotes a water feed conduit, 1A segments with nozzles, 1B flexible joints without nozzles. Piece 1C connects the water feed conduit 1 to a pump 2 disposed near a swimming pool 6 (Fig. 1a) or on a boat 5 (Fig. 1b).
20 A projector 4 projects the image 3. Such a fog screen is known from US-A-4 321 000 incorporated herein by reference.

Improvements according to the invention are shown in Figs. 2 and 3. The water feed conduit 12 is connected to a water pump 2 and
25 comprises a row of regularly spaced nozzles 11 arranged along a generally straight line to produce fog screen 15. A generally straight suction conduit 14 can be arranged opposite the water feed conduit 12.

The conduit 14 has suction slit 13 and is connected to a suction device 9 to aspirate the water droplets of the screen.

Air feed conduits 10 arranged on both sides of water feed conduit 12 and connected by a joint feed 8 to an air pump 7 produce air curtains 16 sandwiching the fog screen 15 to avoid diffusion of the fog into the ambient air.

The spacing between the air curtains is preferably 6 to 9 cm. The conduits 12 and 14 may be disposed either horizontally or vertically.

A fluorescent dye can be mixed with the water being ejected from the nozzles to achieve a pleasant image.

The air feed conduits 10 are preferably arranged parallel to conduit 12, in which case they can be mounted on a common carrier 17. They can however be arranged perpendicular to conduit 12.

The nozzles normally used produce water droplets having a diameter of about 20 micrometres. A dramatic effect is achieved when spectators can walk through the screen generated near ground level. The nozzles are then selected to eject droplets of around 10 micrometres diameter, such nozzles being known as dry fog nozzles.

A further improvement is shown in Fig. 4. The displayed image is more homogeneous if two sets of different nozzles are employed, one set of nozzles 11A having spray pattern A, the other set of nozzles 11B having spray pattern B.

Claims

1. Apparatus for generating a fog screen (15), comprising a row of regularly spaced water ejection nozzles (11) arranged along a generally straight line and connected to a water feed conduit (12) which itself is connected to a water pump (2),
characterised by two air feed conduits (10) connected to an air pump (7) and arranged to produce air curtains (16) on both sides of the fog screen (15),
and by a generally straight suction conduit (14) arranged opposite the row of nozzles and connected to a suction device (9).
2. Apparatus for generating a fog screen (15), in particular according to claim 1, comprising a row of regularly spaced water ejection nozzles (11) arranged along a generally straight line and connected to a water feed conduit (12) which itself is connected to a water pump (2),
characterised by two air feed conduits (10) connected to an air pump (7) and arranged to produce air curtains (16) on both sides of the fog screen (15),
said water feed conduit (12) and said two air feed conduits (10) being mounted on a common carrier (17).
3. Apparatus according to claim 1 or 2, wherein two sets of water ejection nozzles (11A,11B) are provided, the nozzles (11A) of one set ejecting water droplets at a smaller angle than the nozzles (11B) of the other set, so that the fog screen has complementary spray patterns (A,B).

4. Method of generating a fog screen (15) by ejecting water from a row of regularly spaced nozzles (11) arranged along a generally straight line,
characterised in that pressurized air is ejected to produce air curtains (16) on both sides of the fog screen (15).
5. Method according to claim 4, wherein said screen is generated near ground level as a dry fog screen so that spectators can walk through the screen.
6. Method according to claim 4 or 5, wherein a fluorescent dye is mixed with the water to be ejected from the nozzles (11).

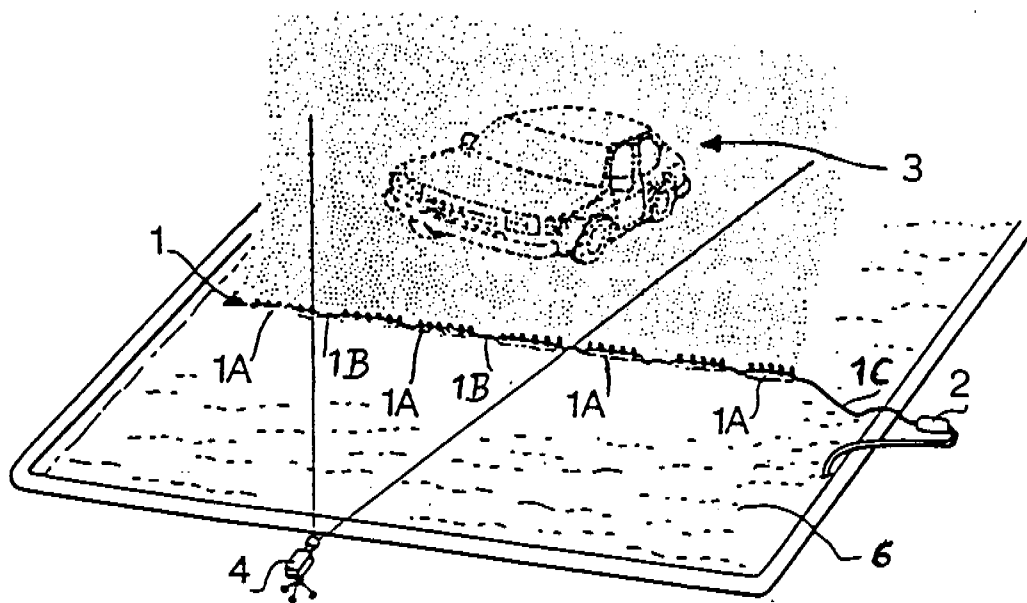


FIG. 1a

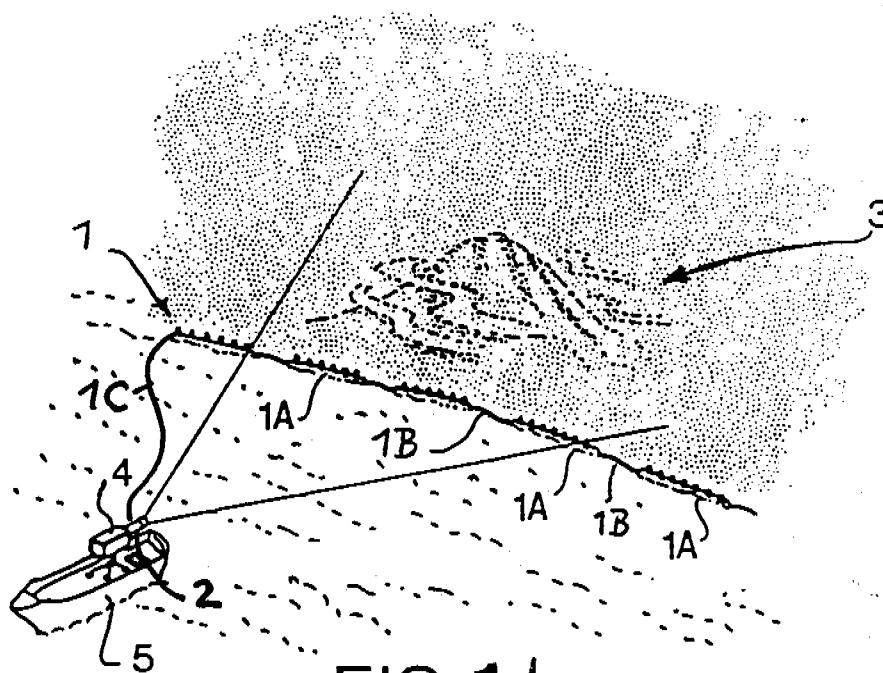


FIG. 1 b

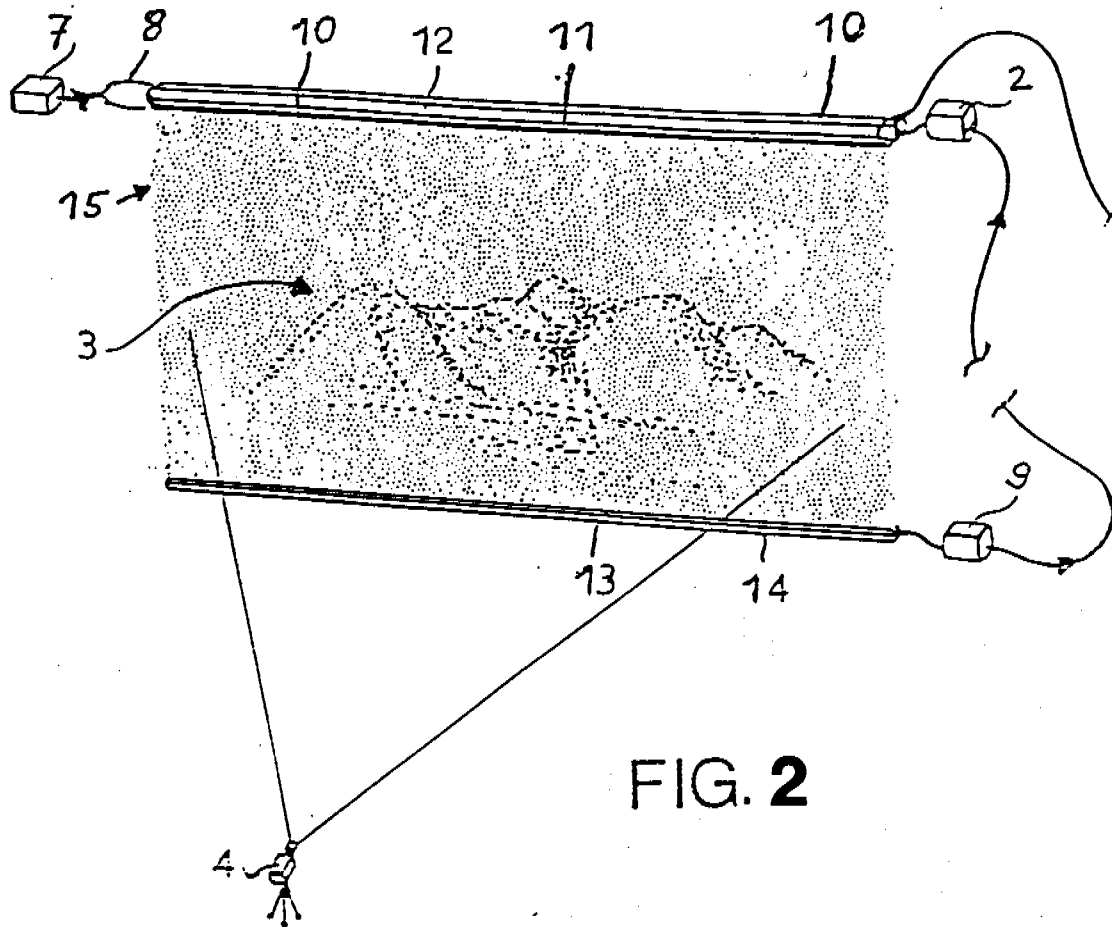


FIG. 2

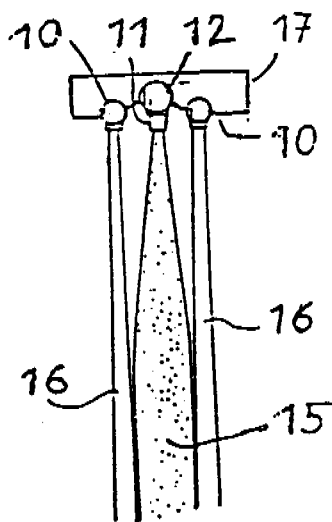


FIG. 3

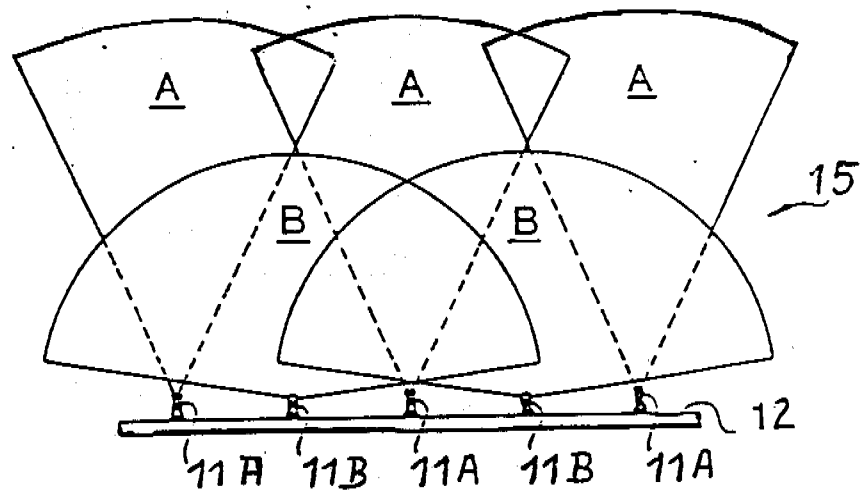


FIG. 4

The conduit 14 has suction slit 13 and is connected to a suction device 9 to aspirate the water droplets of the screen.

Air feed conduits 10 arranged on both sides of water feed conduit 12 and connected by a joint feed 8 to an air pump 7 produce air curtains 16 sandwiching the fog screen 15 to avoid diffusion of the fog into the ambient air.

With a prototype according to the invention, wherein the spacing between the air curtains and other parameters, such as the air flow could be adjusted, we achieved good results when the water flow was about 240 m³ per hour, the water pressure was about 12 bar and the screen size 12 m². It was found that a spacing greater than 9 cm gave too much diffusion of the fog particles thereby deteriorating the clarity of the image and a spacing smaller than 6 cm did not provide sufficient image density.

The air feed conduits 10 are preferably arranged parallel to conduit 12, in which case they can be mounted on a common carrier 17. They can however be arranged perpendicular to conduit 12.

The nozzles normally used produce water droplets having a diameter of about 20 micrometres. A dramatic effect is achieved when spectators can walk through the screen generated near ground level. The nozzles are then selected to eject droplets of around 10 micrometres diameter, such nozzles being known as dry fog nozzles.

A further improvement is shown in Fig. 4. The displayed image is more homogeneous if two sets of different nozzles are employed, one set of nozzles 11A having spray pattern A, the other set of nozzles 11B having spray pattern B.

Claims

1. Apparatus for generating a fog screen (15), comprising a row of regularly spaced water ejection nozzles (11) arranged along a generally straight line and connected to a water feed conduit (12) which itself is connected to a water pump (2) and comprising a generally straight suction conduit (14) arranged opposite the row of nozzles and connected to a suction device (9),
characterised by two air feed conduits (10) connected to an air pump (7) and arranged to produce air curtains (16) on both sides of the fog screen (15), wherein the spacing between the air curtains (16) is between 6 and 9 cm.
2. Apparatus for generating a fog screen (15), comprising a row of regularly spaced water ejection nozzles (11) arranged along a generally straight line and connected to a water feed conduit (12) which itself is connected to a water pump (2),
characterised by two air feed conduits (10) connected to an air pump (7) and arranged to produce air curtains (16) on both sides of the fog screen (15), wherein the spacing between the air curtains (16) is between 6 and 9 cm, said water feed conduit (12) and said two air feed conduits (10) being mounted on a common carrier (17).

Publicidad Consulting SA, Miguel Angel, 43 28010 MADRID

Madrid, le 12.01.1990

à Mr. Jean-Paul Duvrier

Directeur Général du Service des Foires de Narbonne

référence: votre lettre du 20.12.89

Foire des Produits Culinaires du 25 au 31 mai 1990

Monsieur,

Je me réfère à votre demande concernant le prix de la publicité avec nos écrans de projection.

Si vous pouvez nous garantir au plus tard début avril un temps de projection de 300 minutes par journée de foire, nous serions prêts à installer un écran du type "Ecran d'excitation 2000" permettant une projection de bonne qualité d'un format de 3 sur 6 mètres à l'extérieur.

Vous pouvez indiquer aux firmes intéressées que le prix de projection s'élève à 300 FF par minute. Si la projection n'était pas possible à cause d'intempéries, il faudrait quand même compter 100 FF par minute de projection commandée.

Le type d'écran de publicité susmentionné a déjà fait ses preuves dans de nombreuses foires.

Il consiste en un écran à gouttelettes d'eau générées par deux buses d'eau oscillantes installées dans des bassins des deux côtés du chemin piétonnier.

Veuillez agréer, Monsieur, l'expression de nos sentiments les meilleurs.



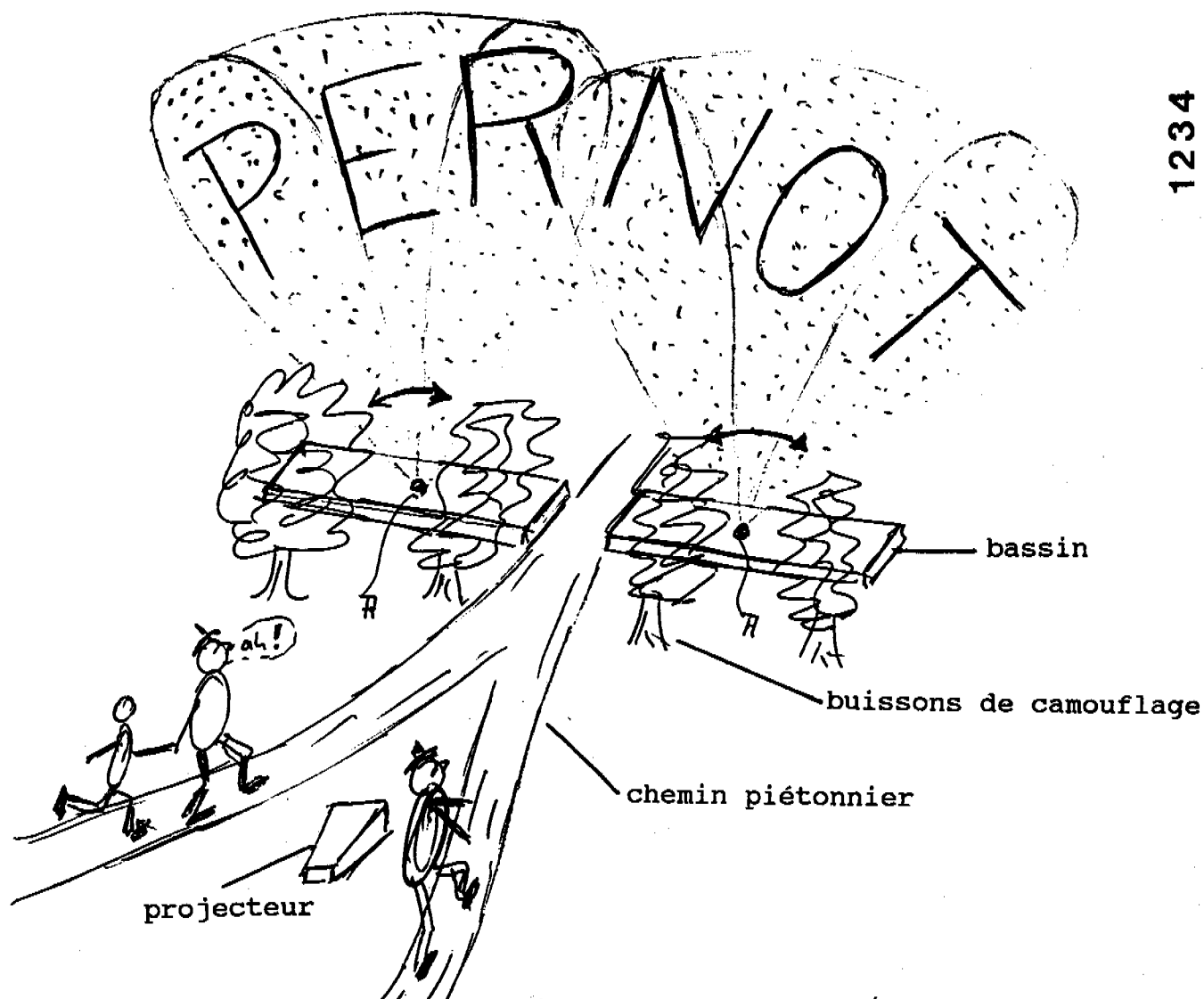
Diaz-Narganes

(Directeur général)

P.-J.: 100 exemplaires de notre prospectus n° 1234

ECRAN D'EXCITATION 2000

1234



L'écran formé par les deux buses d'eau oscillantes A permet la projection d'un format 3 sur 6 mètres de vos diapositives publicitaires.

Pour tous renseignements veuillez consulter S.V.P.:

PUBLICIDAD CONSULTING SA,

Miguel Angel, 43

28010 MADRID

tél. 034-1-234234

①9 BUNDESREPUBLIK DEUTSCHLAND

⑫ **Gebrauchsmuster**

U1

- (11) Rollennummer G 90 00 813.2
- (51) Hauptklasse G 09F 9/00
Nebenklasse(n) G 03B 21/60
- (22) Anmeldetag 22.01.90
- (47) Eintragungstag 14.03.90
- (43) Bekanntmachung
im Patentblatt 02.04.90
- (54) Bezeichnung des Gegenstandes Schaufenster-Dekoration
- (71) Name und Wohnsitz des Inhabers Eva Witzig, 8223 Schnaizldreuth
- (74) Vertreter Dr.-Ing. Max Billig, 8200 Rosenheim

Schutzanspruch

Schaufenster-Dekoration mit einem periodisch betriebenen Projektions-
schirm (S) aus Wassertropfen, der von einer in einem Becken (2)
angeordneten Düse (1) erzeugt wird, sowie einem hinter einer Wand
verborgenen Dia-Projektor,

dadurch gekennzeichnet, daß zwei weitere Düsen (1a, 1b) zwei
seitliche Schirmteile (Sa, Sb) erzeugen, wodurch ein etwa
rechteckiger Projektionsschirm entsteht.

Beschreibung

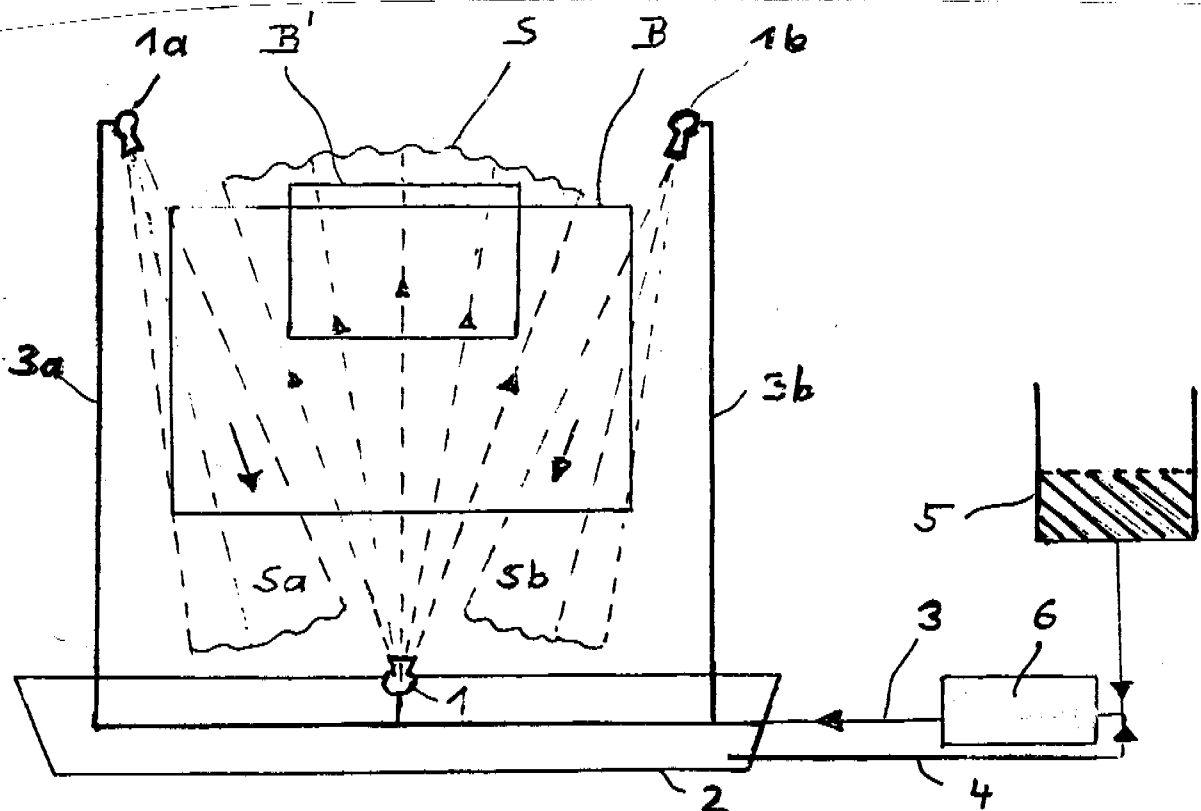
Eine Dekoration gemäß dem Oberbegriff des Schutzanspruchs ist in
unserem deutschen Gebrauchsmuster Nr. 87 10 321 beschrieben. Solche
Dekorationen haben sich in der Praxis nicht bewährt, weil die für
die Projektion von Dias im normalen Format 24 x 36 mm nutzbare
Schirmfläche sehr klein ist.

Die Erfindung will hier Abhilfe schaffen.

In unserem früheren Gebrauchsmuster ist eine einzige Zerstäuber-
Düse 1 mittig in einem Wasserbecken 2 vorgesehen. Das Wasser wird
über die Leitung 3 dem Becken zugeführt bzw. über die Leitung 4
entnommen. Eine Pumpe 6 und ein Wasser-Reservoir 5 zum Ersatz von
verlorengangenen Wasser sind für den Betrachter unsichtbar
angeordnet. Der erzeugte Schirm (S) hat etwa dreieckige Form. Zur
Bild-Projektion dient ein hinter der Rückwand des Schaufensters
verborgener Projektor. Um die Aufmerksamkeit des Betrachters zu
erregen, werden Pumpe und Projektor nur periodisch betrieben.
Die nutzbare Schirmfläche gemäß unserer früheren Erfindung ist in
der Figur mit B' bezeichnet.

Gemäß der vorliegenden Erfindung kann eine wesentlich größere nutzbare Schirmfläche B erzielt werden, wenn zwei weitere Düsen 1a, 1b über Zuleitungen 3a, 3b an die Pumpe angeschlossen werden und von oben seitliche Schirmteile Sa und Sb erzeugen. Es versteht sich von selbst, daß die Düsen 1a, 1b und die Zuleitungen 3a, 3b ebenfalls für den Betrachter unsichtbar angeordnet sind.

FIGUR



90 00 813

(12) UK Patent Application (19) GB (11) 2 122 460 A

(21) Application No 8244200 (54)

(22) Date of filing

18 October 1982

(30) Priority data

(31)

(57)

(32)

(33)

(43) Application published

19 April 1984

(51) INT CL

F21P 7/00

(52) Domestic classification

F21P 7/00

(56) Documents cited US-A-3 789 191

(58) Field of search

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GB 2 122 460 A

The present invention relates to an apparatus for forming a fog screen for display of an optical image from a projector, in lieu of an ordinary screen in the form of a sheet or a board.

Such water fog screens suitable for outdoor large-scale displays are known. However they have the disadvantage that the fog particles diffuse into the ambient air as it travels far and away from the nozzles. With consequent increase of screen thickness the projected image becomes blurred so that the image is sharp only in the neighbourhood of the nozzles. As stray air currents also tend to distort the image a faithful reproduction of images has so far not been achieved.

To overcome these drawbacks we have devised two separate solutions each of which keeps production costs low.

15 First Solution--

In Figures 1 and 2 a pair of suitably spaced substantially parallel air curtains is provided on either side of the water fog screen. In Figure 1, a fog screen 1 is formed by a vertically arranged expirator 2, the optical image being projected by slide projector 4. Two air curtains 5, 5' are emitted from outlet slits 7,7' of expirator 2, fog 6 is expelled from fog outlet 8 of expirator 2 into the space between the air curtains. The axial length of the fog outlet 8 may be set in the field, according to the screen height desired by the customer. Figure 2 illustrates the expirator 2 in more detail.

25 The air is supplied by fans 10,10' through the vertically extending outlet slits. The spacing between the centers of air curtains 5,5' is 5 to 20 cm. Since the diffusion of the fog particles is restricted by the air curtains, our fog screen is uniform and of high density. Conventional nozzles 9 connected to water conduit 3 are disposed in a single row within outlet 8. The nozzles may be dry fog nozzles, to form a fog with a mean particle diameter of 10 to 30 microns. Preferably, the distance between the nozzles at the bottom of outlet 8 is larger than at the top since the fog particles sink due to gravitation.

A horizontal arrangement of the expirator 2 expelling fog upwards is unfavourable since the sinking fog particles may hinder the air emission.

5

Second Solution--

To hold the fog particles within their plane, as an alternative to the air curtains, a vertically arranged aspirator (not shown) is disposed opposite a conventional fog expirator.

- 10 The aspirator is provided with a row of aspirating orifices and, behind them, a plurality of wire-meshes to convert the aspirated fog to water which is drained and pumped back to the fog expirator.

Claims

1. Apparatus for forming a fog screen for display thereon of an optical image, comprising a pair of vertically extending air outlets for forming parallel air curtains at a spacing of 5 to 20 cm, and vertically arranged means for expelling fog into the space between said air curtains.
2. Apparatus for forming a fog screen for display thereon of an optical image, comprising vertically arranged means for expelling fog forming the screen, and an aspirator arranged opposite the means for expelling fog.

Fig. 1

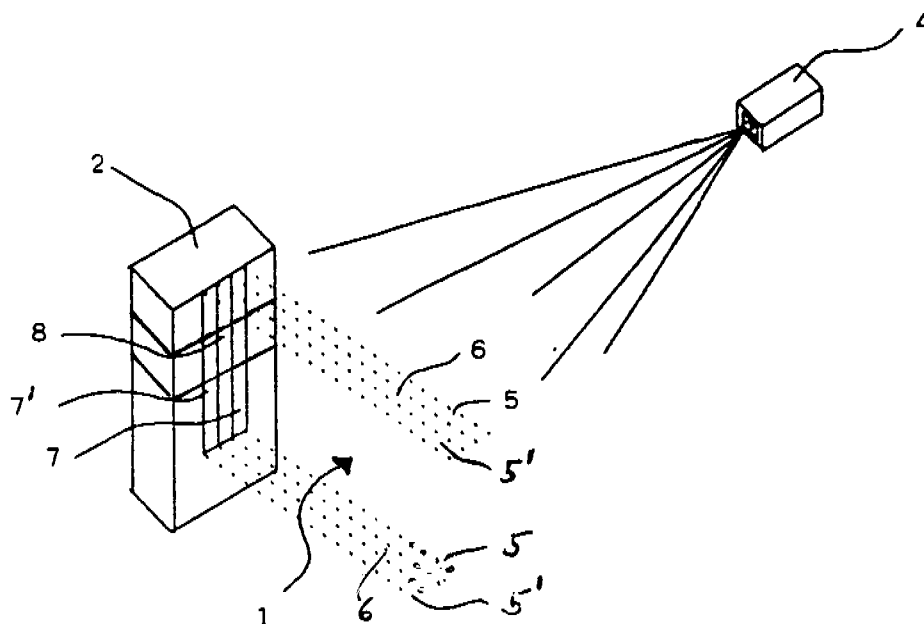
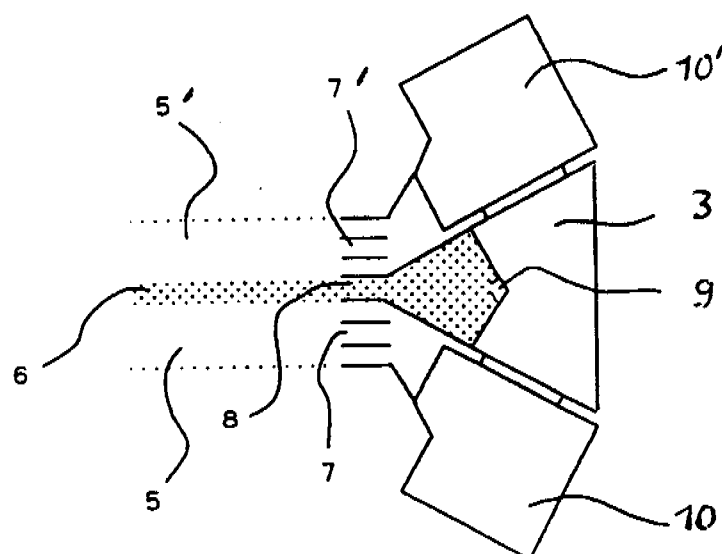


Fig. 2




 Europäisches Patentamt
 European Patent Office
 Office européen des brevets

(11) Numéro de publication: **0 454 830 A1**

(12) **DEMANDE DE BREVET EUROPEEN**

(21) Numéro de dépôt: **91401281.9**

(51) Int. Cl. **G03B 21/60**

(22) Date de dépôt: **17.05.91**

(30) Priorité: **23.05.90 ES 90-2255**

(43) Date de publication de la demande:
27.11.91 Bulletin 91/48

(84) Etats contractants désignés:
ES FR IT

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(54) **Ecran de projection à brouillard d'eau**

EP 0 454 830 A1

La présente invention concerne un dispositif de projection d'eau selon le préambule de la revendication.

L'utilisation d'un tel dispositif a pour objectif la réalisation de spectacles nocturnes en plein air, sans qu'il soit nécessaire de disposer d'un écran matériel.

Des dispositifs de projection d'eau pour former un écran réfléchissant sont connus et consistent à disposer côte à côte, de manière alignée, un grand nombre de jets d'eau obtenus à partir de buses d'eau.

L'inconvénient majeur d'un tel système est la mauvaise qualité de l'écran d'eau issu d'un grand nombre de buses conventionnelles générant des jets juxtaposés se gênant mutuellement.

Le dispositif de projection d'eau selon la présente invention réduit ledit grand nombre de buses en principe à un seul dispositif de buse.

L'invention sera mieux comprise à l'aide des figures 1 et 2 représentant schématiquement des dispositifs selon l'invention, la figure 1 étant une coupe transversale et la figure 2 une vue de dessus, sans le système de projection d'images.

Selon la figure 1, un rétroprojecteur 1 fixé au support 1a projette une image à l'aide d'un miroir 2 sur un écran 3 constitué de gouttelettes transparentes le rendant ainsi récepteur d'images animées ou fixes, aptes à être perçues au point visuel 9, la partie 1b du support 1a empêchant le passage direct de la lumière du projecteur 1 au point visuel 9. Le dispositif de buse 4 consiste essentiellement en une pièce cylindrique 6 qui est fermée, du côté sortie d'eau, par une plaque d'éclatement 5 et pourvue, en amont de cette plaque, d'une ouverture semi-circulaire dirigée vers le haut.

La plaque d'éclatement 5 est disposée perpendiculairement à un conduit d'eau 8 horizontal connecté à un surpresseur 7. Ce dispositif de buse permet l'obtention d'un écran 3 en forme d'éventail couvrant un angle de près de 180°. Le dispositif de buse 4 se trouve dans une cuvette 10 pour récupérer l'eau retombée et pour la renvoyer au surpresseur 7 à l'aide d'un tuyau 11 (figure 2).

Des conduits 13 émettant des jets d'air sont prévus le long des deux pans longitudinaux de la cuvette 10. Les conduits 13 sont alimentés, dans la direction des flèches, par l'intermédiaire de tuyaux 12.

5

Nos essais ont démontré qu'avec une alimentation en eau de 200 m³ par heure et d'une pression de 20 bar, et un conduit de diamètre interne de 10 cm, on obtient un écran de 10 mètres de haut et 20 mètres de large. En ajoutant deux autres dispositifs de

10 projection d'eau, comme représentés dans la figure 2, on peut obtenir un écran d'environ 40 mètres de large tout en conservant une définition suffisante de l'image.

Revendication

Dispositif de projection d'eau sous pression pour former un écran (3) constitué de gouttelettes transparentes susceptibles de réfléchir des rayons lumineux le frappant par rétroprojection et le rendant ainsi récepteur d'images, caractérisé en ce qu'il comprend un dispositif de buse (4) consistant en une pièce cylindrique (6) qui est fermée, du côté sortie d'eau, par une plaque d'éclatement (5) et pourvue, en amont de cette plaque, d'une ouverture semi-circulaire dirigée vers le haut, ladite plaque étant disposée perpendiculairement à un conduit d'eau (8) horizontal connecté à un surpresseur (7).

FIG. 1

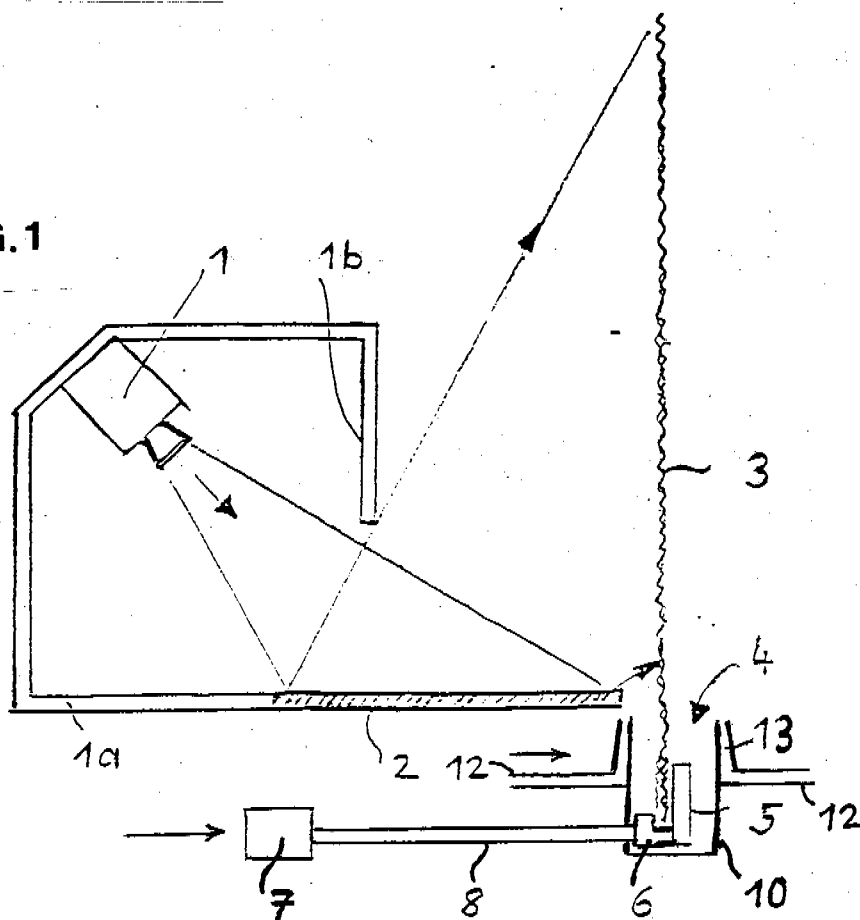
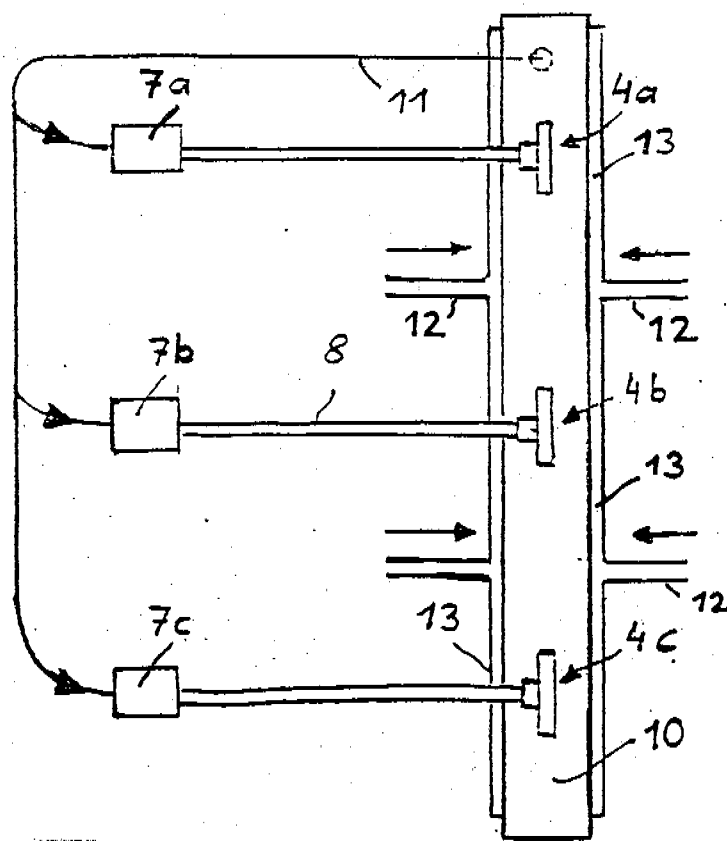


FIG. 2



ÜBERSETZUNG DER ANLAGEN 3 BIS 6

Anlage 3: auf Deutsch

Anlage 4: auf Englisch

Anlage 5: auf Deutsch

Anlage 6: auf Englisch

TRANSLATION OF ANNEXES 3 TO 6

Annex 3: into German

Annex 4: into English

Annex 5: into German

Annex 6: into English

TRADUCTION DES ANNEXES 3 à 6

annexe 3: en allemand

annexe 4: en anglais

annexe 5: en allemand

annexe 6: en anglais

Publicidad Consulting SA, Miguel Angel, 43 28010 MADRID

Madrid, den 12.01.1990

an Herrn Jean-Paul Duvrier
Generaldirektor der Messegesellschaft Narbonne

Bezug: Ihr Schreiben vom 20.12.89
Messe für Feinkost-Produkte vom 25. bis 31. Mai 1990

Sehr geehrter Herr Duvrier,

wir kommen hiermit auf Ihre Anfrage betreffend die Preise für
Reklame mittels unserer Projektionsschirme zurück.

Falls Sie uns bis spätestens Anfang April eine Projektionszeit
von 300 Minuten pro Messetag garantieren können, wären wir bereit
einen Schirm vom Typ "Schirm Excitation 2000" zu installieren, der
eine Projektion im Format 3 x 6 Meter in guter Qualität im Freien
ermöglicht.

Bitte teilen Sie den interessierten Firmen mit, daß der Preis pro
Minute Projektion 300 FF beträgt. Sollte wegen widrigen Wetters
keine Projektion möglich sein, sind trotzdem 100 FF pro bestellter
Minute Projektion zu entrichten.

Der Reklame-Schirm vom oben genannten Typ hat sich schon auf vielen
Messen bewährt.

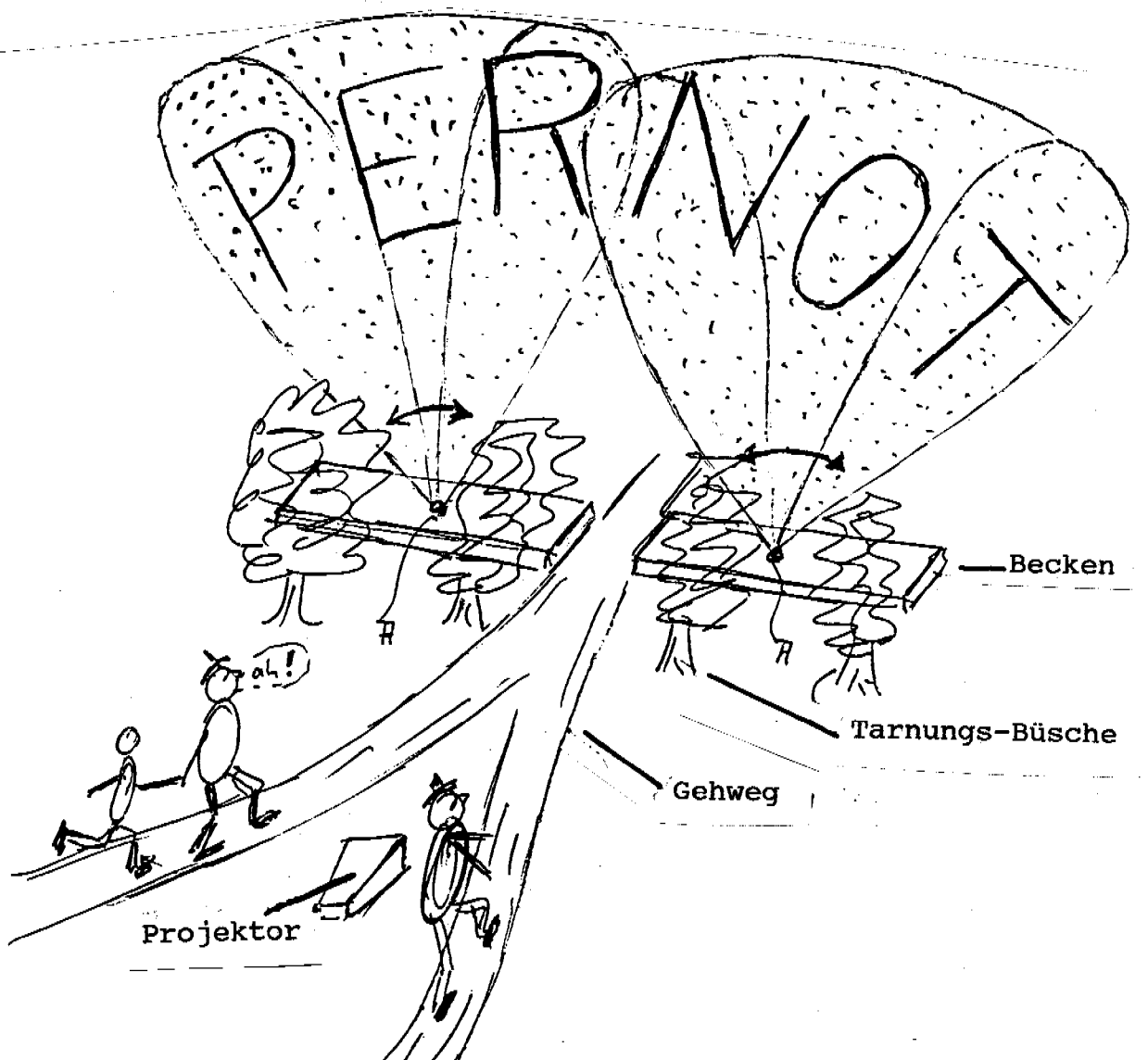
Er besteht aus einem Schirm aus Wassertröpfchen, die von zwei
oszillierenden Düsen ausgestoßen werden, die in Wasserbecken zu
beiden Seiten eines Gehwegs installiert sind.

Mit freundlichen Grüßen



Diaz-Narganes
(Generaldirektor)

Anlage: 100 Exemplare unseres Prospekts Nr. 1234

SCHIRM EXCITATION 2000

1234

Der Schirm, der von zwei oszillierenden Wasser-Düsen A erzeugt wird, erlaubt eine Projektion Ihrer Reklame-Diapositive im Format 3 x 6 Meter.

Bitte richten Sie alle Anfragen an

Publicidad Consulting SA,

Miguel Angel, 43

28010 MADRID

Tel: 034-1-234234

Federal Republic of Germany
German Patent Office

UTILITY MODEL

U1

(11) roll number G 90 00 813.2

(51) main class G09F 9/00
secondary class G03B 21/60

(22) filing date 22.01.90

(47) inscription date 14.03.90

(43) date of mention in
patent bulletin 02.04.90

(54) designation Window display decoration

(71) name and address of proprietor
Eva Witzig, 8223 Schnaizlreuth

(74) representative Dr.-Ing. Max Billig, 8200 Rosenheim

Claim:

Window display decoration having a periodically operated projection screen (S) composed of water droplets, which is produced from nozzles (1) arranged in a basin (2), as well as a slideprojector concealed behind a screen,

characterised in that two further nozzles (1a, 1b) produce two lateral screen sections (Sa, Sb) whereby an essentially rectangular projection screen is formed.

Description:

A decoration according to the preamble of the claim is described in our German utility model no. 87 10 321. This type of decoration has not been used in practice since the screen cross-sectional area available for the projection of slides having the normal format 24 by 36 mm is very small.

The invention aims to offer a remedy for this.

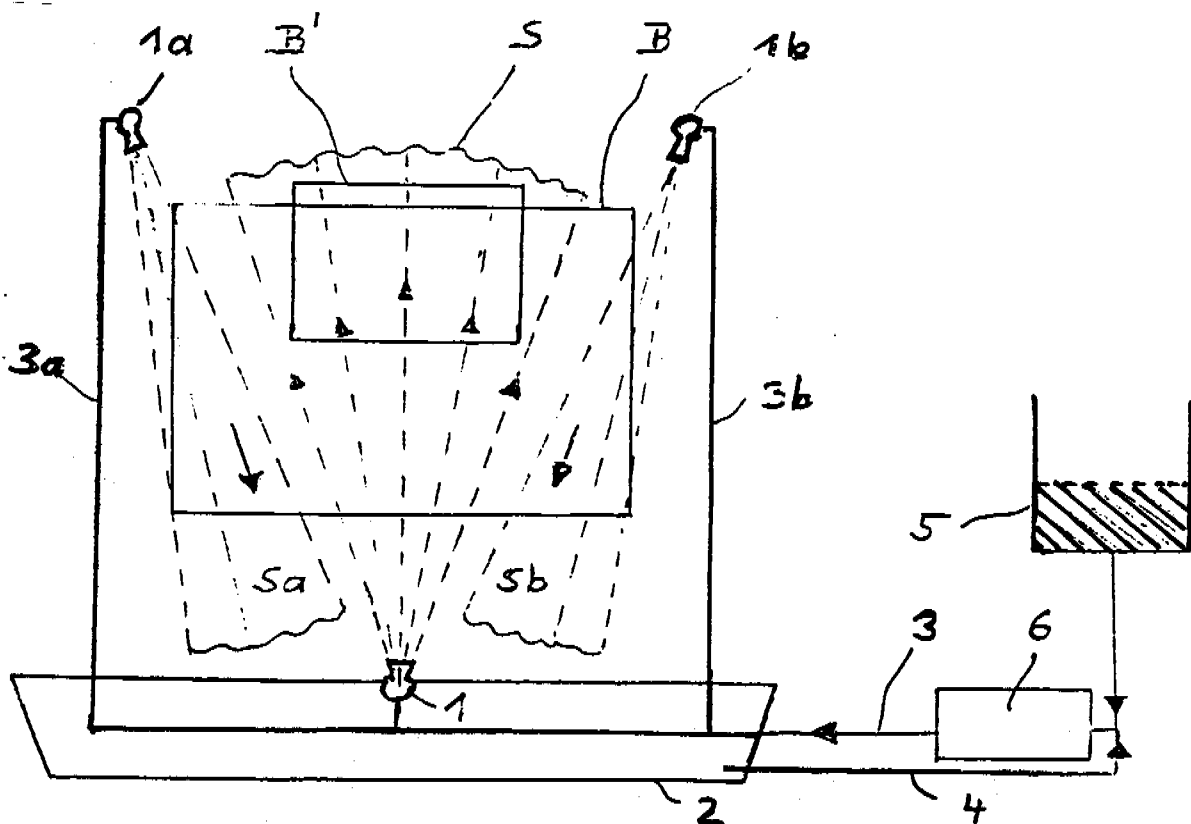
In our earlier utility model it is envisaged that a sole spray nozzle 1 is present in a water basin 2. Water is conducted to the basin via a conduit 3 or removed via a conduit 4. A pump 6 and a water reservoir 5 serving to replace lost water are arranged so as to be unseen by the spectators. The screen (S) produced in this fashion is in essentially triangular form. A projector concealed behind the rear screen of the display window serves to project an image. In order to attract the attention of the spectators the pump and projector are only operated periodically.

The effective screen area according to our earlier invention is indicated in the figure as B'.

According to the present invention an appreciably larger effective screen area B can be achieved if two further nozzles 1a, 1b, connected to the pump via conduits 3a, 3b, create lateral screen portions Sa and Sb from above.

It goes without saying that nozzles 1a, 1b and conduits 3a, 3b are arranged so as to be unseen by the spectator.

FIGURE



90 00 813

(12) Britische Patentanmeldung (19) GB (11) 2 122 460 A

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(22) Anmeldetag 18. Oktober 1982
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(51) Intern. Klassifikation F21P 7/00
(52) Nationale Klassifikation F21P 7/00

(56) Zitierte Dokumente US-A-3 789 191

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 31 King Street
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Die vorliegende Erfindung bezieht sich auf ein Gerät zum Erzeugen eines Nebelschirms zur Darbietung optischer Bilder mittels eines Projektors, statt der üblichen Schirme in Form einer Leinwand oder Tafel.

- 5 Solche Wassernebel-Schirme geeignet für großformatige Projektion im Freien sind bekannt. Sie haben aber den Nachteil, daß die Nebelteilchen mit wachsendem Abstand von den Düsen in die Umgebungsluft wegdiffundieren. Mit wachsender Dicke des Schirms wird das projizierte Bild verschwommener, so daß es nur in Nähe der Düsen
- 10 scharf ist. Da unkontrollierte Luftströmungen das Bild verzerren, ließ sich bisher keine getreue Reproduktion der Bilder erreichen. Zur Vermeidung dieser Nachteile haben wir zwei getrennte Lösungen entwickelt; jede für sich hält die Herstellkosten niedrig.

15 Erste Lösung--

- Gemäß den Figuren 1 und 2 werden in geeignetem Abstand zwei parallele Luftwände zu beiden Seiten des Wassernebel-Schirms erzeugt. Wie der Figur 1 entnehmbar ist, wird der Nebelschirm 1 mittels eines vertikal angeordneten Ausstoßers 2 gebildet. Das
- 20 optische Bild wird von einem Diaprojektor 4 projiziert. Zwei Luftwände 5, 5' werden von Auslaßschlitzen 7, 7' des Ausstoßers 2 emittiert. Der Nebel 6 wird vom Nebel-Auslaß 8 des Ausstoßers 2 in den Raum zwischen den Luftwänden gesprüht. Die axiale Länge des Nebel-Auslasses 8 läßt sich am Einsatzort einstellen, je nach der
- 25 vom Kunden gewünschten Schirmhöhe. Figur 2 zeigt den Ausstoßer 2 im Detail.

- Die Luft wird von Gebläsen 10, 10' den vertikalen Auslaßschlitzen zugeführt. Der Abstand zwischen den Mitten der Luftwände 5, 5' beträgt 5 bis 20 cm. Da die Luftwände die Diffusion der Nebel-
- 30 teilchen beschränken, ist unser Schirm gleichmäßig und von hoher Dichte.

- Gebräuchliche Düsen 9, angeschlossen an die Wasserleitung 3, sind in einer einzigen Reihe längs des Auslasses 8 angeordnet. Die Düsen können Trockennebel-Düsen sein, die einen Nebel mit einem mittleren
- 35 Teilchendurchmesser von 10 bis 30 Micron bilden. Vorzugsweise ist der Abstand zwischen den Düsen im unteren Teil des Auslasses 8 größer als im oberen Teil, da die Nebelteilchen wegen der Schwerkraft niedersinken.

Sprühen des Nebels nach oben bei horizontaler Anordnung des Ausstoßers 2 wäre ungünstig, da die niedersinkenden Nebelteilchen den Luftaustritt behindern könnten.

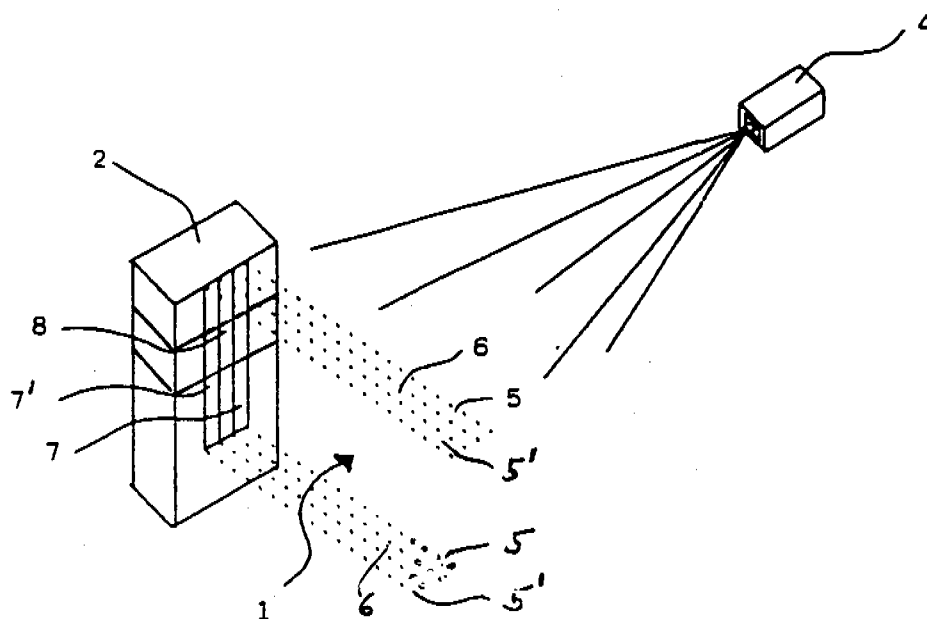
5 Zweite Lösung--

Um die Nebelteilchen in ihrer Ebene zu halten, wird anstatt der Lufwände ein vertikal angeordneter Ansauger (nicht dargestellt) gegenüber einem konventionellen Nebel-Ausstoßer angeordnet. Der Ansauger ist mit einer Reihe von Ansaugöffnungen versehen, hinter
10 denen sich mehrere Drahtgitter befinden, die den angesaugten Nebel in Wasser verwandeln, das dann abgeleitet und zurück zum Nebel-Ausstoßer gepumpt wird.

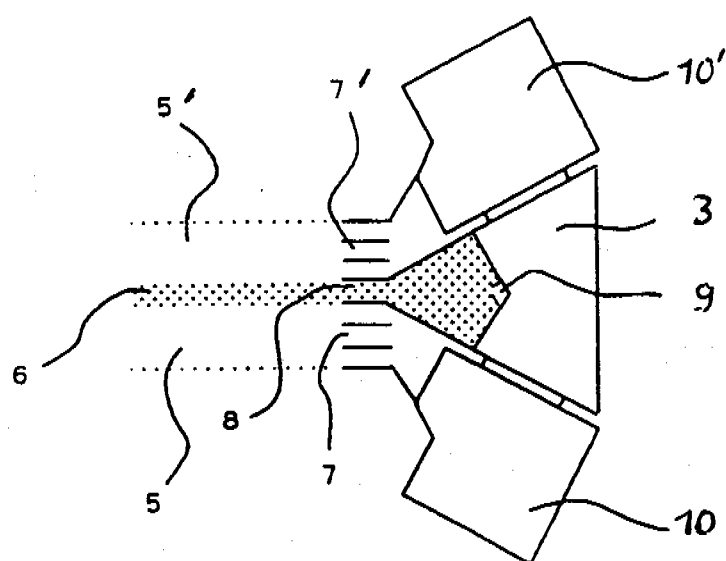
- Ansprüche

1. Gerät zum Erzeugen eines Nebelschirms zur Darbietung optischer Bilder, enthaltend ein Paar von sich vertikal erstreckenden Luft-Auslässen zum Erzeugen paralleler Luftwände in einem Abstand von 5 bis 20 cm und vertikal angeordnete Mittel zum Sprühen von Nebel in den Raum zwischen den Luftwänden.
2. Gerät zum Erzeugen eines Nebelschirms zur Darbietung optischer Bilder, enthaltend vertikal angeordnete Mittel zum Sprühen von den Schirm bildendem Nebel und einen Ansauger, der gegenüber den den Nebel sprühenden Mitteln angeordnet ist.

F i g . 1



F i g . 2



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(54) Water fog projection screen

The present invention is concerned with an apparatus for projecting water according to the preamble of the claim.

The use of such an apparatus enables the projection of displays in the open air after dark without the necessity of using a solid screen.

Apparatus for the projection of water for forming a reflecting screen are known and consist of placing side by side in a linear manner, a large number of water jets resulting from water nozzles. The main disadvantage of such a system is the poor quality of the water screen issuing from the large number of commercially available nozzles generating the juxtaposed jets which obstruct each other.

The projection apparatus according to the present invention in principle reduces the large number of nozzles to one nozzle apparatus.

For a better understanding of the invention reference should be made to figures 1 and 2, which show schematically apparatuses according to the invention. Figure 1 shows a crosssectional view and figure 2 a plan view without the image projection system.

As shown in figure 1, the rearprojector 1, fixed to a support 1a, projects an image by means of a mirror 2 onto a screen 3, comprising transparent droplets, thus rendering it a receiver of animated or still images, capable of being seen at viewing point 9, the section 1b of the support 1a hindering the direct passage of the projected light to the viewing point 9. The nozzle apparatus 4 consists essentially of a cylindrical component 6 which is closed, at the water exit side, by an impact plate 5, and provided, upstream of said plate, with a semi-circular opening directed upwards.

The impact plate 5 is disposed perpendicularly to a horizontal water conduit 8 connected to a compressor 7. Said nozzle apparatus allows the creation of a fan-shaped screen 3 extending to an angle of almost 180°. The nozzle apparatus 4 is situated in a basin 10 for capturing the falling water and for returning it to the compressor 7 by means of a pipe 11 (Fig.2).

Air jet ejecting conduits 13 are provided along the two longitudinal side walls of the basin 10. The conduits 13 are supplied, in the direction of arrows, by means of tubes 12.

- 5 Our tests have shown that having a flow of water of 200 m^3 an hour and a pressure of 20 bar as well as a conduit having an internal diameter of 10 cm, leads to a screen 10 metres in height and 20 metres in width. By adding two other water projection systems as shown in figure 2, one can create a screen having an approximate
10 width of 40 metres whilst maintaining sufficient definition of the image.

Claim

Apparatus for projecting water under pressure for producing a screen (3) comprising transparent droplets capable of reflecting light rays, which strike it by means of rear-projection thus rendering it a receiver of images, characterised in that it comprises a nozzle apparatus (4) consisting of a cylindrical component (6) which is closed, at the water exit side, by an impact plate (5), and provided, upstream of said plate, with a semi-circular opening directed upwards, which plate is disposed perpendicularly to a horizontal water conduit (8) connected to a compressor (7).

EP 0 454 830 A1

FIG. 1

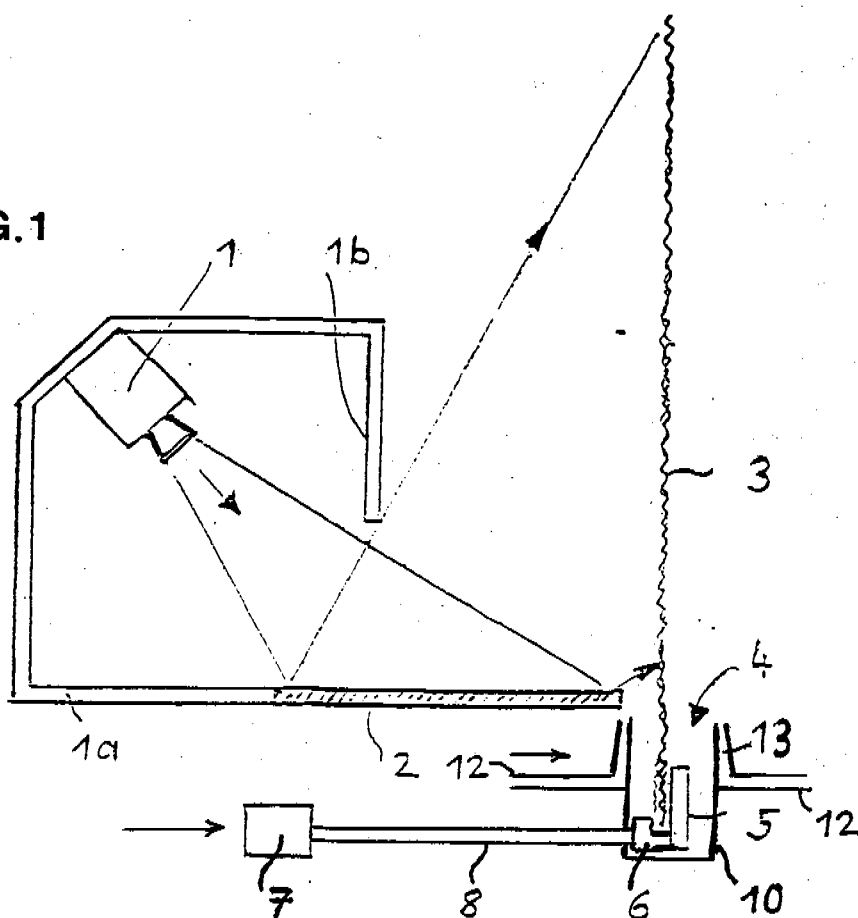
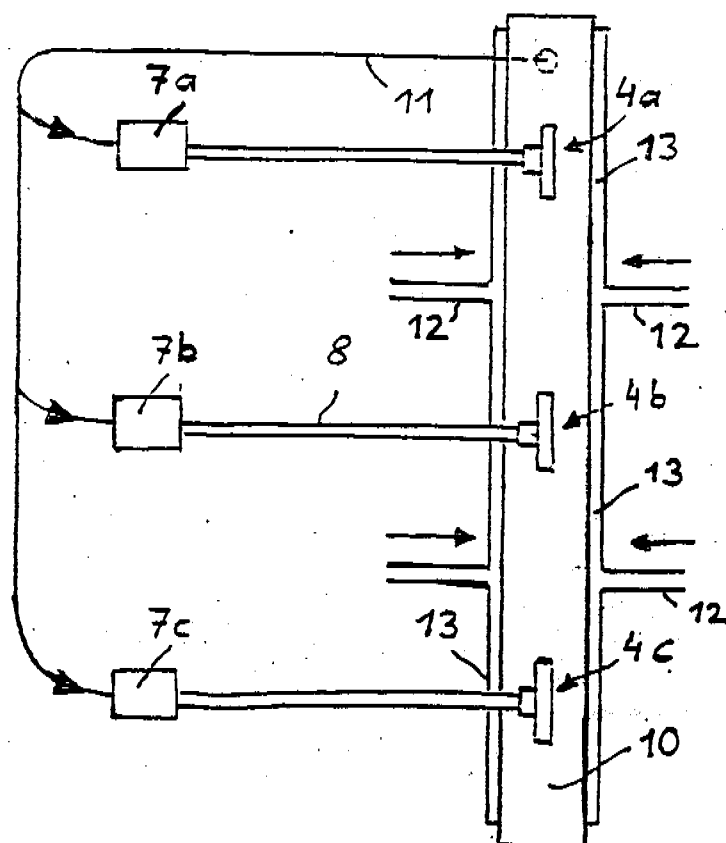


FIG. 2



ANLAGE 1 / ANNEX 1 / ANNEXE 1

Deutsch	English	Français	Dansk	Italiano	Nederlands	Svenska
Projektions-Schirme	projection screens	écrans de projection	projektionskærm	schermi di proiezione	projektle schermen	projiceringskärmar
Wasser ausstoßende Düsen	water ejection nozzles	buses d'éjection d'eau	vanddyser	ugelli d'espulsione d'acqua	waterspuit mond	vattenutslipande munstycken
Ansaugschlitz	suction slit	fente d'aspiration	indsugningsspalte	fessura d'aspirazione	aanzuig sleut	insugningsspringa
Leitungen	conduits	conduits	vandledning	condotti	leidingen	ledningar
Wassertröpfchen	water droplets	gouttelettes d'eau	små vanddråber	goccoline d'acqua	water druppels	vatten droppar
ansaugen	aspirate	aspirer	indsuge	aspirare	afzuigen	suga in
Luftwände	air curtains	rideaux d'air	luftvaegge	corrine pneumatiche	lucht gordijnen	luftgardin
gefälliges Bild	pleasant image	image agréable	behageligt billede	immagine esteticamente valida	aangenaam beeld	trevlig bild
Druckluft	pressurized air	de l'air pressurisé	trykluft	aria compressa	perslucht	tryckluft
Sprühmuster	spray patterns	motif de pulvérisation	spray mønster	modello distributivo della nebulizzazione	sproei patronen	spray mönster

ANLAGE 2 / ANNEX 2 / ANNEXE 2

Deutsch	English	Français	Dansk	Italiano	Nederlands	Svenska
Schirmgröße	screen size	taille de l'écran	skærmsstørrelse	dimensioni dello schermo	scherm grootte	skärmstorlek

ANNEXE 3

Deutsch	English	Français	Dansk	Italiano	Nederlands	Svenska
widriges Wetter	bad weather	intempéries	dårligt vejr	intemperie	slecht weer	dåligt väder
oszillierende Wasser-Düsen	oscillating water nozzles	buses d'eau oscillantes	svingende vanddyser	ugelli oscillanti dell'acqua	oscillerende water monden	oscillerande vatten munstycken

ANLAGE 4

Deutsch	English	Français	Dansk	Italiano	Nederlands	Svenska
Schaufenster	(shop)-window	devanture	(butik)-vindue	vetrina	etalage venster	skyffönster
Dia-Projektor	slide-projector	projecteur de diapositives	diaprojektor	proiettore per diapositive	dia projektor	diaprojektor
Wasser-Reservoir	water reservoir	réservoir d'eau	vand reservoir	serbatoio d'acqua	water reservoir	vattenreservoir

ANNEX 5

Deutsch	English	Français	Dansk	Italiano	Nederlands	Svenska
verschwommenes Bild	blurred image	image brouillée	uskrapt billede	immagine sfocata	vaag beeld	suddig bild
unkontrollierte Luftströmungen	stray air currents	courants d'air incontrôlés	ukontrollerede luftstroeme	correnti d'aria sporadiche	zwerf luchtstroomen	okontrollerade luftströmmar
In der Nähe	in the neighbourhood	dans le voisinage	i nærheden af	nelle vicinanze	aangrenzend	inärheten
Ansauger	aspirator	dispositif d'aspiration	indsug	dispositivo d'aspirazione	afzuig toestel	insugningsapparat
Ausstoßer	expirator	dispositif d'expulsion	dyse	dispositivo d'espulsione	blaas toestel	utsprutningsapparat
gesprüht	expelled	lancé	udstoede	espulso	uitsloten	sprutas ut
Nebel-Auslaß	fog outlet	sortie de brouillard	taage dyse	orifizio d'uscita del nebulizzato	nevel uitlaat	utsläpp för vattendimma
Gebläse	fans	souffleries	blaeser	ventilatori	ventilator	fläkt
Drahtgitter	wire-meshes	treillis métalliques	trådgitter	reti metalliche	gaas	trådgaller

ANNEXE 6

Deutsch	English	Français	Dansk	Italiano	Nederlands	Svenska
nebeneinander angeordnete Sätze	juxtaposed sets	jeux juxtaposés	sammenstillede sæt	getti giustapposti	naast elkaar geplaatst stel	intill varandra liggande uppsättningar
Prall-Platte	Impact plate	plaque d'éclatement	slagplade	piastra d'urto	botsplaat	anslagsplatta
Kompressor	compressor	surpresseur	kompressor	compressore	kompressor	kompressor
Düsen-Vorrichtung	nozzles apparatus	dispositif de buse(s) ?	dyse	dispositivo di spruzzo	straalbus apparat	munsttycksapparat
Becken	basin	cuvette	basin	bacino	bekken	becken