

I, Ritva Lundsten, Iso-Roobertinkatu 23, 00120 Helsinki, Finland, do hereby declare that I am well acquainted with the Swedish and English languages and that the attached is a true translation into English of the accompanying officially certified copy of the documents in connection with an International patent application no. PCT/FI 94/00026 filed on January 21, 1994.

Helsinki, July 21, 1995


Ritva Lundsten

Translator

REPLACED SHEETS		SG
☒	Description : paged ...1... to paged ...3...	
☒	Claim(s) : paged ...4... to paged ...-	
☒	Drawing(s) : paged ...1... to paged ...-	
☒	Abstract : paged ...5... to paged ...-	
DATE OF RECEIPT		

1

Fire-extinguishing installation

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The present invention relates to a fire-extinguishing installation, especially for kitchen rooms and the like.

Fires in kitchen rooms, especially in restaurant kitchens and rooms comparable with them, which comprise friteuses and other inflammable objects, often become devastating.

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The object of the invention is to provide a novel fire-extinguishing installation, which is capable of extinguishing fires effectively in such rooms.

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The installation according to the invention comprises a number of preferably automatically releasable spray heads or sprinklers positioned at suitable places, extinguishing liquid being arranged to be delivered to these from at least one hydraulic accumulator, preferably having a high charging pressure, e.g. 30 to 200 bar.

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Upon release of at least one spray head on account of a fire broken out within the working range thereof, the pressure in the hydraulic accumulator starts falling as soon as extinguishing liquid is sprayed out through the released spray head. To the hydraulic accumulator is connected a pressure governor, which is arranged to give a signal for releasing the remaining spray heads in the space as well, when the pressure in the hydraulic accumulator has fallen to a predetermined value of e.g. 20 to 150 bar, respectively, for said limit values of 30 to 200 bar, respectively. The pressure governor may also be arranged to give a signal for interrupting the electric current to cooking apparatuses and the like and a signal for fire alarm.

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The spray heads are preferably implemented in accordance with what is disclosed in the international

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patent applications PCT/FI92/00060, PCT/FI92/00155 and PCT/FI92/00156, to provide mist-like liquid spraying with a good penetrating capacity. The drop diameter can preferably be within the interval of 30 to 200 micrometer.

The release of all the spray heads in the space attended to by the pressure governor may preferably be arranged to take place by means of heating coils positioned around release ampoules of the respective spray heads.

The initially released spray head is generally capable of extinguishing or at least pressing down the fire alone by utilizing the full capacity of the hydraulic accumulator; the continued liquid spraying with all the spray heads prevents a spreading and reignition of the fire and provides general cooling.

In the following, the invention will be described with reference to a preferred embodiment shown in the attached drawing.

In the drawing, a number of spray heads, most of which are usually arranged at the ceiling of the space, are indicated by the reference numeral 1. Extinguishing liquid to the spray heads 1 is delivered by at least one hydraulic accumulator 2 via a line 3 common for the spray heads 1. A pressure governor connected to the hydraulic accumulator 2 is indicated by 4. Release ampoules of the spray heads 1 are indicated by 5 and a heating coil positioned around respective ampoule is indicated by 6.

The hydraulic accumulator 2 is preferably implemented in accordance with what is disclosed in the Finnish Patent Application 924752, with an outlet pipe extending within the accumulator container and having openings in its wall, for the purpose of mixing propel-



lent gas in the extinguishing liquid as the liquid amount in the accumulator decreases.

5 The different electric couplings included in the installation do not cause any difficulties for one skilled in the art and are therefore not shown in the drawing.





Claims:

5 1. A fire-extinguishing installation, especially for kitchen rooms and the like, which installation comprises a number of preferably automatically releasable spray heads, extinguishing liquid being arranged to be delivered to these from at least one hydraulic accumulator preferably having a high charging pressure, characterized in that to the hydraulic accumulator (2)
10 is connected a pressure governor (4), which upon release of at least one spray head (1) on account of a fire broken out within the working area thereof is arranged to give a signal for releasing the remaining spray heads in the space, when the pressure in the hydraulic accumulator (2) has fallen to a predetermined value.
15

2. A fire-extinguishing installation according to claim 1, characterized in that the pressure governor (4) is arranged to give a signal for interrupting the current to electric apparatuses in the space.

20 3. A fire-extinguishing installation according to claim 1, characterized in that the pressure governor (4) is arranged to give a signal for fire alarm.

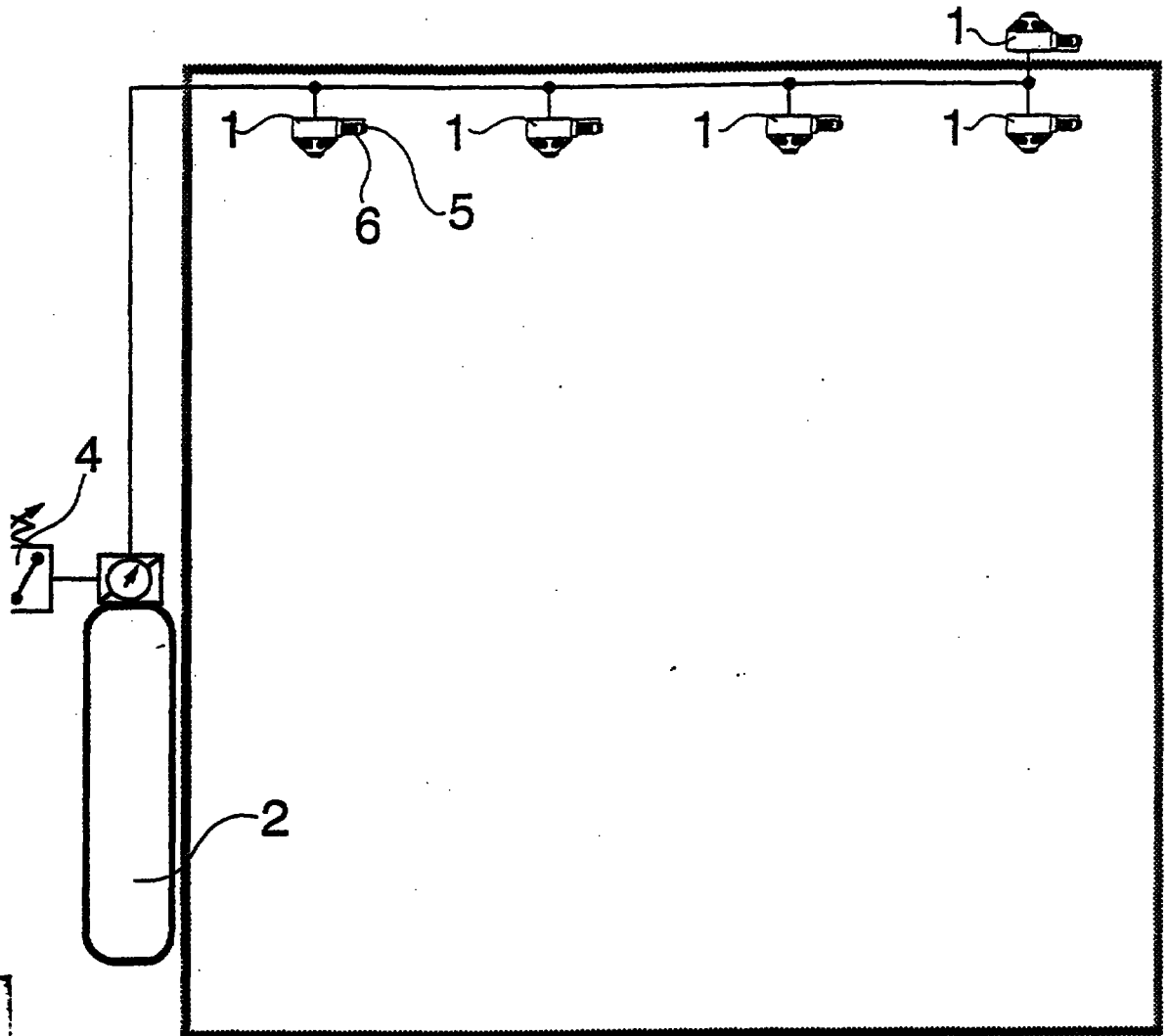
25 4. A fire-extinguishing installation according to claim 1, characterized in that the release of all the spray heads (1) of the space attended to by the pressure governor (4) is arranged to take place by means of a heating coil (6) positioned around a release ampoule (5) of respective spray head.



(57) Abstract

5 The object of the invention is to provide a
novel fire-extinguishing installation especially for
restaurant kitchens and similar spaces. A number of
automatically releasable spray heads (1) are positioned
in the space and at least one hydraulic high pressure
accumulator operates as drive unit. Upon release of a
10 spray head on account of a fire broken out, the pressure
in the accumulator (2) falls as soon as liquid is spray-
ed. At e.g. 75 % of the initial accumulator pressure,
a pressure governor (4) is arranged to produce a signal
for releasing all spray heads, by switching on electric
15 current to heating coils (6) positioned around respec-
tive release ampoules (5), for instance.





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REPLACED SHEETS	SG
☒ Description : paged 112 to paged 1	
☐ Claim(s) : paged 1 to paged 1	
☒ Drawing(s) : paged 1 to paged 1	
☒ Abstract : paged 1 to paged 1	
DATE OF RECEIPT	

1

Fire-extinguishing installation

REPLACEMENT SHEETS	SG
☒ Description : paged 1 to paged 3	
☒ Claim(s) : paged 4 to paged 1	
☒ Drawing(s) : paged 1 to paged 1	
☒ Abstract : paged 1 to paged 1	
DATE OF RECEIPT 5/5/96	

The present invention relates to a fire-extinguishing installation, especially for kitchen rooms and the like.

Fires in kitchen rooms, especially in restaurant kitchens and rooms comparable with them, which comprise friteuses and other inflammable objects, often become devastating.

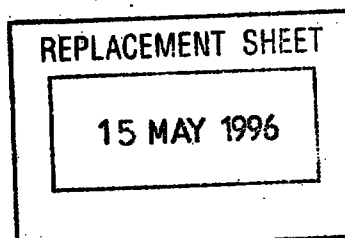
The object of the invention is to provide a novel fire-extinguishing installation, which is capable of extinguishing fires effectively in such rooms.

The installation according to the invention comprises a number of preferably automatically releasable spray heads or sprinklers positioned at suitable places, extinguishing liquid being arranged to be delivered to these from at least one hydraulic accumulator, preferably having a high charging pressure, e.g. 30 to 200 bar.

Upon release of at least one spray head on account of a fire broken out within the working range thereof, the pressure in the hydraulic accumulator starts falling as soon as extinguishing liquid is sprayed out through the released spray head. To the hydraulic accumulator is connected a pressure governor, which is arranged to give a signal for releasing the remaining spray heads in the space as well, when the pressure in the hydraulic accumulator has fallen to a predetermined value of e.g. 20 to 150 bar, respectively, for said limit values of 30 to 200 bar, respectively. The pressure governor may also be arranged to give a signal for interrupting the electric current to cooking apparatuses and the like and a signal for fire alarm.

The spray heads are preferably implemented in accordance with what is disclosed in the international

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patent applications PCT/FI92/00060, PCT/FI92/00155 and PCT/FI92/00156, to provide mist-like liquid spraying with a good penetrating capacity. The drop diameter can preferably be within the interval of 30 to 200 micrometer.

The release of all the spray heads in the space attended to by the pressure governor may preferably be arranged to take place by means of heating coils positioned around release ampoules of the respective spray heads.

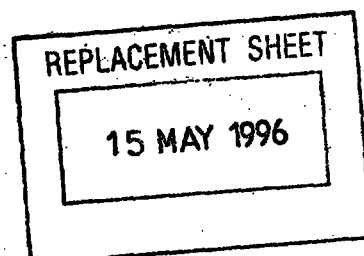
The initially released spray head is generally capable of extinguishing or at least pressing down the fire alone by utilizing the full capacity of the hydraulic accumulator; the continued liquid spraying with all the spray heads prevents a spreading and reignition of the fire and provides general cooling.

In the following, the invention will be described with reference to a preferred embodiment shown in the attached drawing.

In the drawing, a number of spray heads, most of which are usually arranged at the ceiling of the space, are indicated by the reference numeral 1. Extinguishing liquid to the spray heads 1 is delivered by at least one hydraulic accumulator 2 via a line 3 common for the spray heads 1. A pressure governor connected to the hydraulic accumulator 2 is indicated by 4. Release ampoules of the spray heads 1 are indicated by 5 and a heating coil positioned around respective ampoule is indicated by 6.

The hydraulic accumulator 2 is preferably implemented in accordance with what is disclosed in the Finnish Patent Application 924752, with an outlet pipe extending within the accumulator container and having openings in its wall, for the purpose of mixing propel-

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lent gas in the extinguishing liquid as the liquid amount in the accumulator decreases.

The different electric couplings included in the installation do not cause any difficulties for one skilled in the art and are therefore not shown in the drawing.

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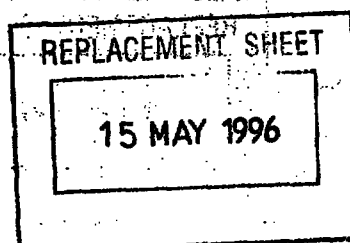
Claims:

1. A fire-extinguishing installation, especially for kitchen rooms and the like, which installation comprises a number of preferably automatically releasable spray heads, extinguishing liquid being arranged to be delivered to these from at least one hydraulic accumulator preferably having a high charging pressure, characterized in that to the hydraulic accumulator (2) is connected a pressure governor (4), which upon release of at least one spray head (1) on account of a fire broken out within the working area thereof is arranged to give a signal for releasing the remaining spray heads in the space, when the pressure in the hydraulic accumulator (2) has fallen to a predetermined value.

2. A fire-extinguishing installation according to claim 1, characterized in that the pressure governor (4) is arranged to give a signal for interrupting the current to electric apparatuses in the space.

3. A fire-extinguishing installation according to claim 1, characterized in that the pressure governor (4) is arranged to give a signal for fire alarm.

4. A fire-extinguishing installation according to claim 1, characterized in that the release of all the spray heads (1) of the space attended to by the pressure governor (4) is arranged to take place by means of a heating coil (6) positioned around a release ampoule (5) of respective spray head.



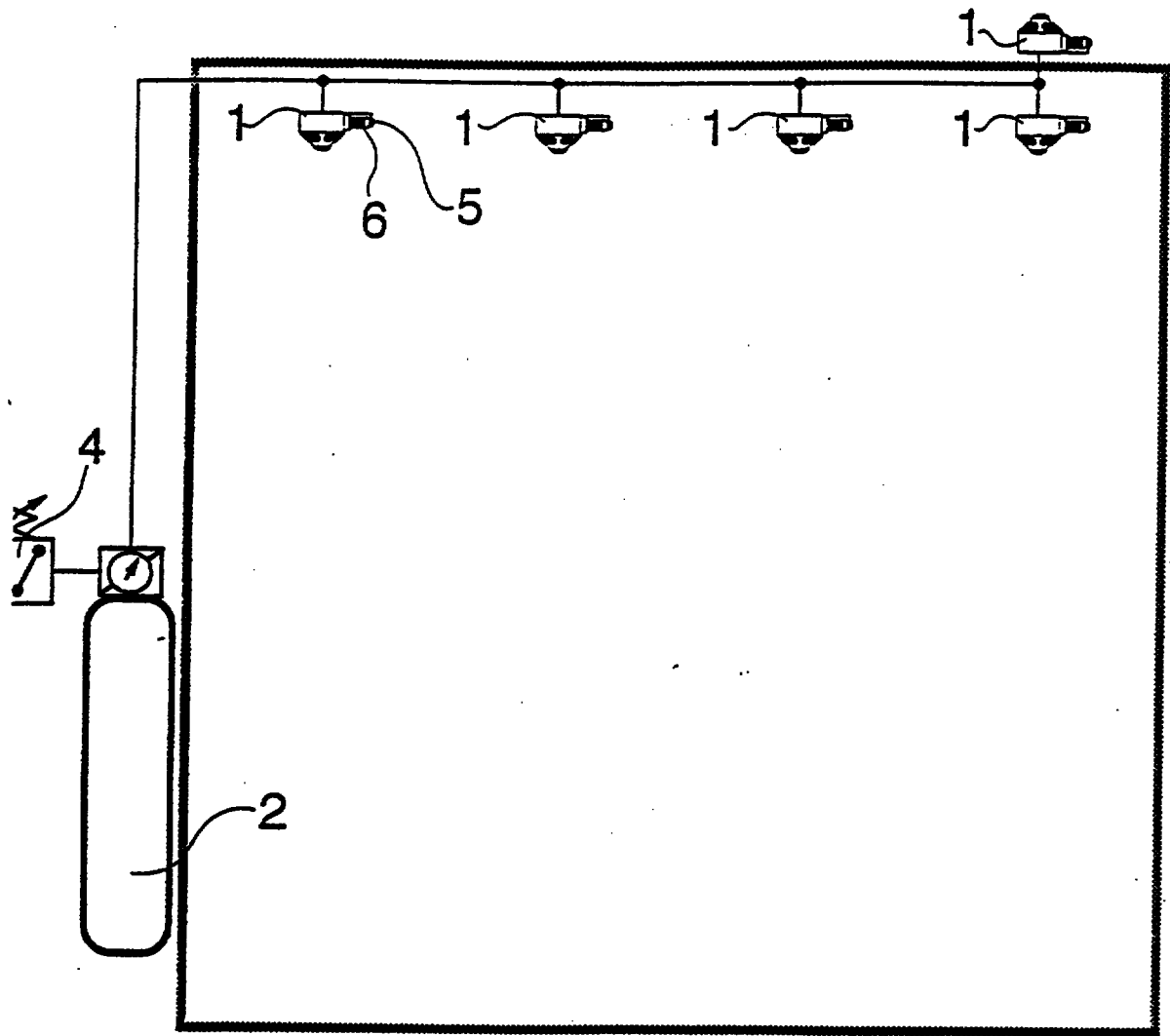
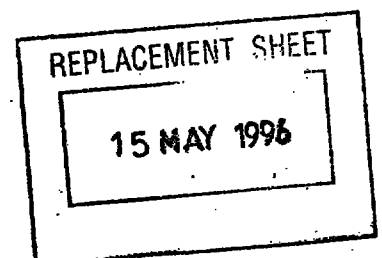


FIGURE 1

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Fire-extinguishing installation

Abstract

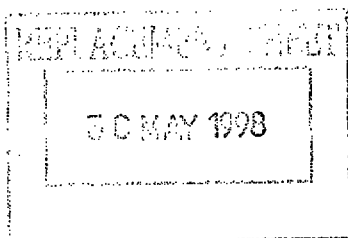
The object of the invention is to provide a novel fire-extinguishing installation especially for restaurant kitchens and similar spaces. A number of automatically releasable spray heads (1) are positioned in the space and at least one hydraulic high pressure accumulator operates as drive unit. Upon release of a spray head on account of a fire broken out, the pressure in the accumulator (2) falls as soon as liquid is sprayed. At e.g. 75 % of the initial accumulator pressure, a pressure governor (4) is arranged to produce a signal for releasing all spray heads, by switching on electric current to heating coils (6) positioned around respective release ampoules (5), for instance. FIGURE 1.

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REPLACEMENT SHEET

15 MAY 1996



REPLACEMENT SHEET

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Fire-extinguishing installation

The present invention relates to a fire-extinguishing installation, especially for kitchen rooms and the like spaces.

Fires in kitchen rooms, especially in restaurant kitchens and rooms comparable with them, which comprise friteuses and other inflammable objects, often become devastating.

The object of the invention is to provide a novel fire-extinguishing installation, which is capable of extinguishing fires effectively in such rooms.

The installation according to the invention comprises a number of preferably automatically releasable spray heads or sprinklers positioned at suitable places, extinguishing liquid being arranged to be delivered to these from at least one hydraulic accumulator, preferably having a high charging pressure, e.g. 30 to 200 bar.

Upon release of at least one spray head on account of a fire broken out within the working range thereof, the pressure in the hydraulic accumulator starts falling as soon as extinguishing liquid is sprayed out through the released spray head. To the hydraulic accumulator is connected a pressure governor, which is arranged to give a signal for releasing the remaining spray heads in the space as well, when the pressure in the hydraulic accumulator has fallen to a predetermined value of e.g. 20 to 150 bar, respectively, for said limit values of 30 to 200 bar, respectively. The pressure governor may also be arranged to give a signal for interrupting the electric current to cooking apparatuses and the like and a signal for fire alarm.

The spray heads are preferably implemented in accordance with what is disclosed in the international

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□ Claim(s) : paged ... to paged ...
✓ Drawing(s) : paged 4. to paged ...
✓ Abstract : paged 5. to paged ...

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REPLACEMENT SHEET

patent applications PCT/F192/00060(WO92/15370),

PCT/F192/00155(WO92/20453) and PCT/F192/00156(WO92/20454),

to provide mist-like liquid spraying with a good penetrating capacity. The drop diameter can preferably be within the interval of 30 to 200 micrometer.

The release of all the spray heads in the space attended to by the pressure governor may preferably be arranged to take place by means of heating coils positioned around release ampoules of the respective spray heads.

The initially released spray head is generally capable of extinguishing or at least pressing down the fire alone by utilizing the full capacity of the hydraulic accumulator; the continued liquid spraying with all the spray heads prevents a spreading and reignition of the fire and provides general cooling.

In the following, the invention will be described with reference to a preferred embodiment shown in the attached drawing.

In the drawing, a number of spray heads, most of which are usually arranged at the ceiling of the space, are indicated by the reference numeral 1. Extinguishing liquid to the spray heads 1 is delivered by at least one hydraulic accumulator 2 via a line 3 common for the spray heads 1. A pressure governor connected to the hydraulic accumulator 2 is indicated by 4. Release ampoules of the spray heads 1 are indicated by 5 and a heating coil positioned around respective ampoule is indicated by 6.

The hydraulic accumulator 2 is preferably implemented in accordance with what is disclosed in the Finnish Patent Application 924752(WO94/26356), with an outlet pipe extending within the accumulator container and having openings in its wall, for the purpose of mixing propel-

REPLACEMENT SHEET

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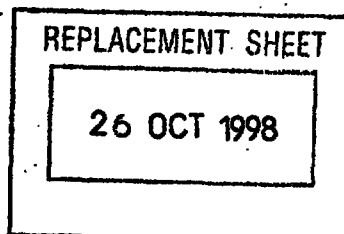
ABSTRACT

REPLACEMENT SHEET

FIRE-EXTINGUISHING INSTALLATION

The object of the invention is to provide a novel fire-extinguishing installation especially for restaurant kitchens and similar spaces. A number of automatically releasable spray heads (1) are positioned in the space and at least one hydraulic high pressure accumulator operates as drive unit. Upon release of a spray head on account of a fire broken out, the pressure in the accumulator (2) falls as soon as liquid is sprayed. At e.g. 75 % of the initial accumulator pressure, a pressure governor (4) is arranged to produce a signal for releasing all spray heads, by switching on electric current to heating coils (6) positioned around respective release ampoules (5), for instance.

Figure 1



REPLACEMENT SHEET

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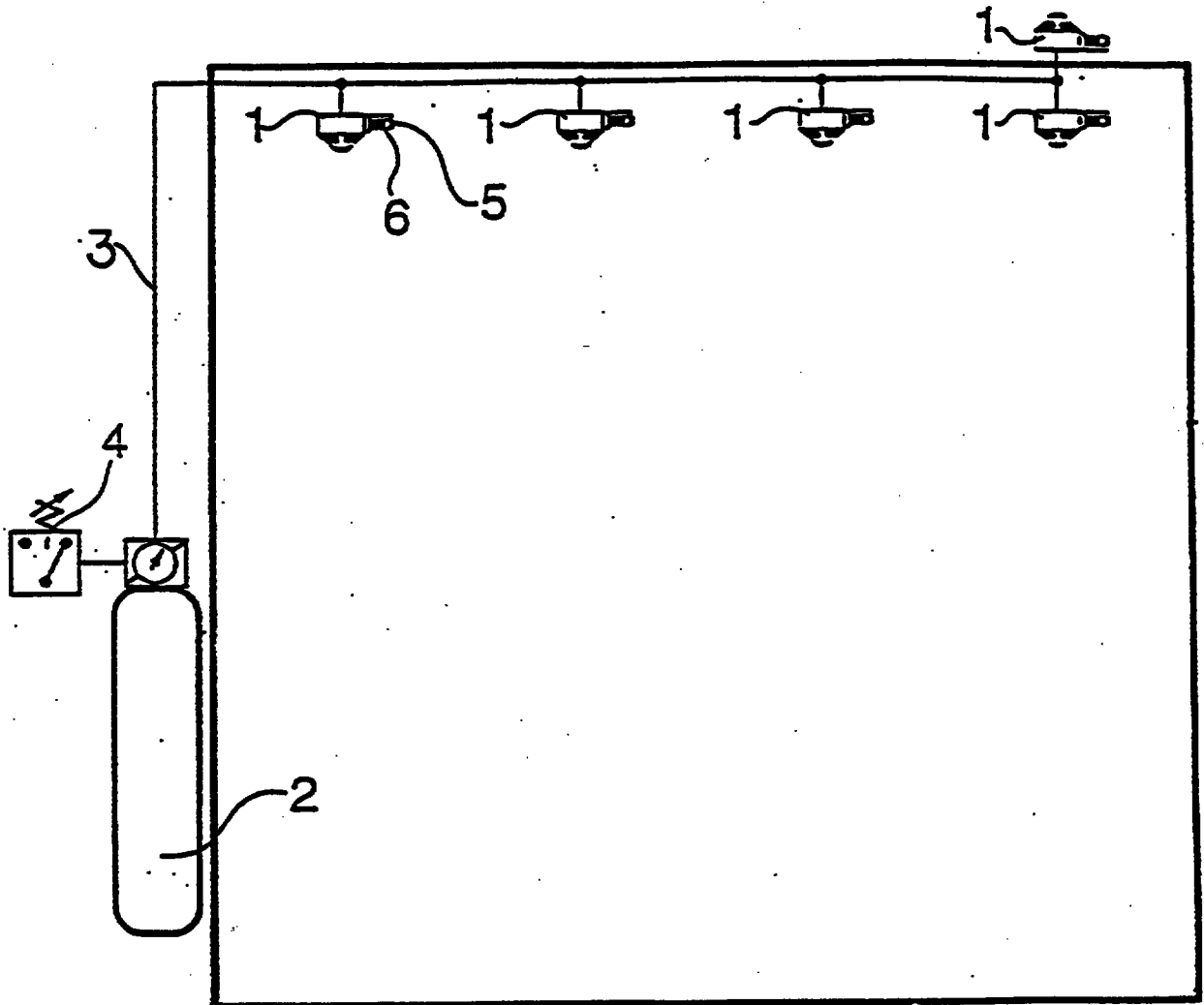


FIGURE 1

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