

Collegio Italiano dei Consulenti in Proprietà Industriale

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FÉDÉRATION INTERNATIONALE DES CONSEILS
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- This presentation is not intended as a „methodology”



THE OPPONENT'S LETTER

- Opposition to be filed in the name of the company
- The patent to be opposed claims priority from German patent application; priority document and European patent application as filed are identical
- Claim 5 was added during examination
- Annex 6 is from the same Applicant as the patent to be opposed
- All the requirements pursuant to Rule 159(1) EPC have been fulfilled for Annex 6, except payment of filing fee (time limits for legal means of redress have expired)



ANNEX 1 (I)

[0001] The present invention concerns a device for soaking and cleaning the teats of a dairy animal (e.g. a cow) outside a milking robot, a method for milking a dairy animal, as well as a soaking fluid.

[0002] Dairy animals are used in farms to produce milk for human consumption. One of the most important issues during the milking process is hygiene. Contamination of milk with dirt must be avoided.

[0004] A problem which is typically encountered is that wet dirt such as mud dries on the teat, from which it is particularly difficult to remove. The cleaning process can thus be very time consuming.

[0005] The invention solves this problem by soaking the relevant part of the animal to soften the dirt on it. In this context, soaking must be understood as applying a fluid onto the surface of said part.

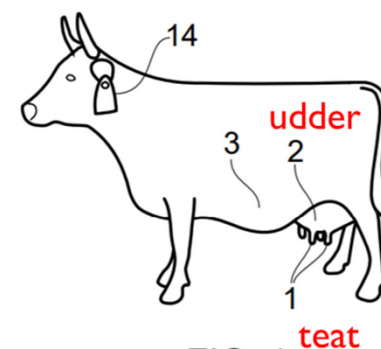


FIG. 1

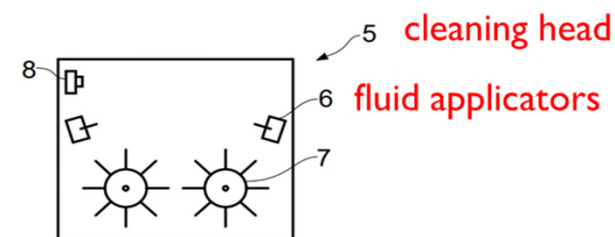


FIG. 3

ANNEX 1 (II)

[0008] Some patches of dirt are more difficult to remove, and soaking is not always sufficient. In a preferred embodiment the cleaning head 5 comprises two brushes 7 which are arranged inside said cleaning head. Each brush 7 will gently brush the surface of the teat, or of the teat and the udder, by rotating during application of the soaking fluid, thus ensuring a complete removal of all the dirt.

[0009] However, a second and much more important positive effect of the use of a brush 7 is that the soaking fluid will be spread by the brush in a uniform manner over the teat. This will be achieved independently of the spray pattern provided by the fluid applicators 6, which can get partially clogged during operation. The brush ensures that the whole of the teat is covered by a sufficient amount of soaking fluid. In that way the soaking fluid can properly perform its function.

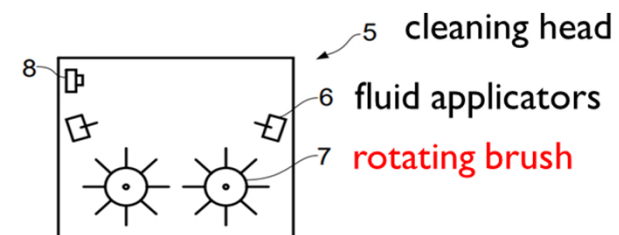


FIG. 3

ANNEX 1 (III)

[0010] A failure in the application of soaking liquid onto the teats of the animal would jeopardize the achievement of reliable hygienic conditions. Therefore, checking means may be provided to verify that a teat has actually been soaked.

[0011] Preferably, said checking means is formed by one or more sensors 8 arranged inside the cleaning head 5. During the movement of the cleaning head 5 downwards along the mast 9, after the soaking, the sensors 8 measure the humidity on the teat. In case the checking means does not sense a given minimum level of humidity, an alarm will be actuated to indicate that soaking was not successful. Any other means for detecting directly or indirectly the presence of the soaking fluid on the teat would also be suitable for that purpose.

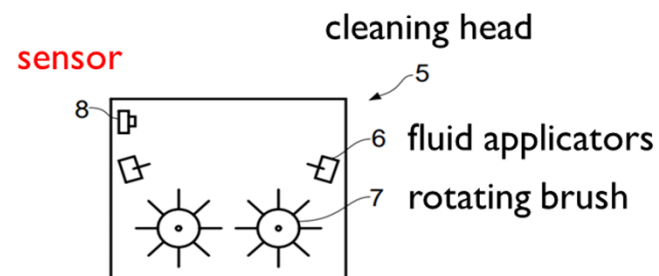


FIG. 3

ANNEX 1 (IV)

[0013] Cleaning the teats of animals is time-consuming and is usually performed inside the milking robot. In order to maximize the availability of the milking robot, the device 4 of the invention is used outside said milking robot 10. Preferably, the device 4 is provided with the necessary means for reaching the cows outside said milking robot.

[0014] The device 4 may be provided with wheels 11 (see figure 2). Each of said wheels 11 is connected to an individual electric motor, each of which can drive the corresponding wheel 11. In operation, the individual electric motors can be separately actuated to change the direction of movement of the device 4.

[0015] In order to render it autonomous, the device 4 may contain navigation means comprising electronic location indicating means. The electronic location indicating means supplies information about the positions of both the device 4 and the animal. Once the positions of the device and of the animal are known, a control unit (not shown in the figures) can give instructions to the electric motors in response to said information in order to guide the device 4 towards the animal.

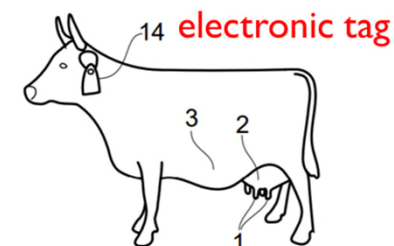


FIG. 1

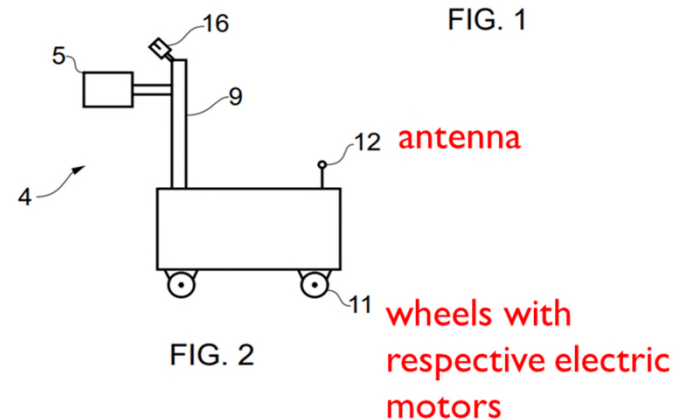


FIG. 2

ANNEX 1 (V)

[0017] Only milk from animals whose teats have been cleaned can be allowed for human consumption. Since the cleaning takes place outside the milking robot it has to be ensured that clean animals can be recognised as such at the milking robot.

[0018] This can be achieved by marking the clean animal, i.e. associating information to it by appropriate means which reveals that soaking took place. The device 4 may comprise marking means 16. Marking means 16 sprays a colourant on the udder 2 after receiving a confirmation from the checking means that soaking was successful.

[0019] The device can be simplified by performing marking with the fluid applicators 6. In this case, a colourant contained in the soaking fluid is applied onto the teats 1 during the soaking step. The soaking fluid is preferably an aqueous solution comprising soap, ethanol and a non-toxic colourant. Colourant concentrations of 0.4 % by volume are sufficient for marking and the colourant thus does not fade too quickly.

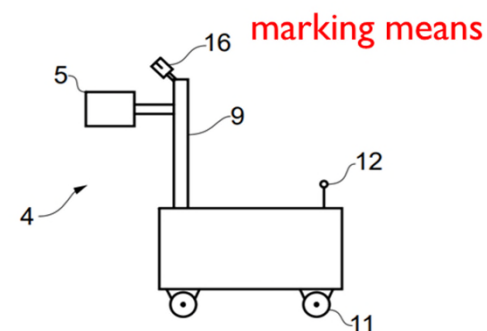


FIG. 2

ANNEX 1 (VI)

[0020] Cleaned dairy animals can get dirty again. Therefore it is important to guide them to milking directly after cleaning. This can be achieved by training the animals to go to the milking robot by using an external stimulation which they associate with going to be milked. This effect is known as conditioning.

[0021] When the method is used for soaking the teats 1, external stimulation is achieved by applying a conditioning composition containing a lower alcohol onto the teats 1 after the soaking. As the teats 1 are a particularly sensitive area, the animals will feel a cooling action due to the evaporation of the lower alcohol.

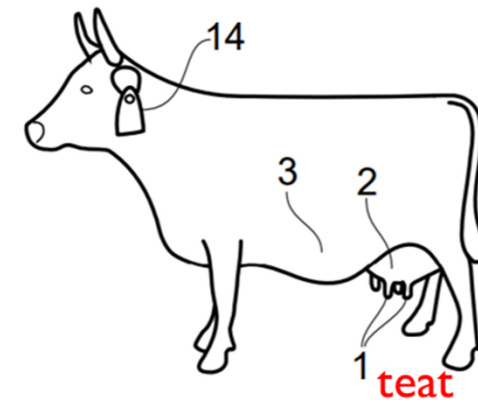


FIG. 1


CLAIMS OF ANNEX I (I)

1. A device (4) for soaking and cleaning the teats of a dairy animal outside a milking robot (10), comprising:
 - soaking means (6) for applying a soaking fluid, and
 - at least one rotating brush (7) which is arranged to rotate and simultaneously contact the teats during application of said soaking fluid.
2. The device according to claim 1, further comprising:
 - a reservoir for storing the soaking fluid,
 - wheels (11),
 - electronic location indicating means for supplying information about the positions of both the device (4) and the animal,
 - an individual electric motor for each wheel (11), and
 - a control unit arranged such that, in response to said information about the positions of both the device (4) and the animal, it actuates said individual electric motors.
3. The device according to claim 1, further comprising:
 - checking means (8) for verifying outside the milking robot (10) that the soaking fluid has actually been applied onto the teats; and
 - means to apply at least two litres of soaking fluid per dairy animal per application.

CLAIMS OF ANNEX I (II)


4. A method for milking a dairy animal, said method comprising the following steps in the following order:
 - soaking the teats of the animal outside a milking robot (10), wherein at least two litres of a soaking fluid are used per animal,
 - marking the animal outside the milking robot (10),
 - letting the animal enter the milking robot (10), and
 - milking the animal.
5. The method according to claim 4 further comprising:
 - using heated nozzles for applying the soaking fluid, and
 - after soaking, applying a conditioning composition to the teats, or to both the teats and the udder, said conditioning composition comprising 30-45% by volume of a lower alcohol.
6. Fluid comprising water, soap, ethanol and a colourant, the colourant concentration being 0.4% by volume.

FROM CLAIMS TO CLAIM OBJECTS

CLAIMS		CLAIM OBJECTS
1 (independent)		1
2 (dependent from claim 1)		1+2
3 (dependent from claim 1)		1+3
4 (independent)		4
5 (dependent from claim 4)		alternative 1: applying a conditioning composition to the teats 4+5 (alt 1)
		alternative 2: applying a conditioning composition to both the teats and the udder 4+5 (alt 2)
6 (independent)		6

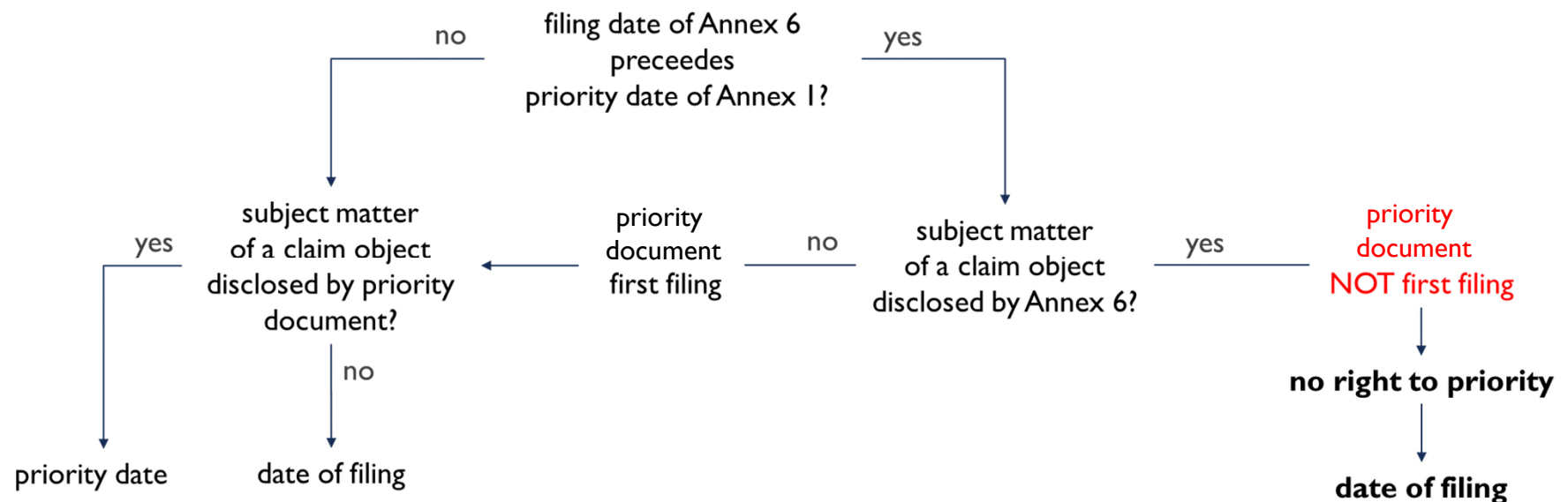
EFFECTIVE DATES

CLAIM OBJECTS		PRIORITY DATE 16.12.2013	DATE OF FILING 15.12.2014	NO EFFECTIVE DATE
I	contained in priority document			
I+2	contained in priority document			
I+3	contained in priority document			
4	contained in priority document			
4+5 (alt 1)	contained in priority document (par. [0021]-[0023])			
4+5 (alt 2)	contained neither in priority document nor in application as filed			X
6	contained in priority document			



ANNEX 6 SAME APPLICANT AS ANNEX I : PRIORITY ISSUE MAY ARISE!

PRIORITY ISSUE ANNEX 6



READING ANNEX 6

Annex 6 / Page 1 of 3

(19) World Intellectual Property Organisation
(12) International Application published under the Patent Cooperation Treaty (PCT)

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(10) International Publication Number: WO 2014/185937 A1
(22) International Filing Date: 15.05.2013
(43) International Publication Date: 20.11.2014
(51) International Patent Classification: A01J7/04

10 (71) Applicant: ODYSSEUS GmbH
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(74) Agents: O. Nobody
(81) Designated States: CN, JP, US
(84) Designated States: European (AL AT BE BG CH CY
15 CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LT LU LV MC MK MT NL
NO PL PT RO RS SE SI SK SM TR)

A cleaning solution

20 [0001] Hygiene regulations in dairy farms are becoming more and more restrictive in order to ensure safety of final consumers of dairy products. The teats have to be clean for milking, which is usually ensured by application of a cleaning solution compatible with human consumption.

25 [0002] Said application has been gradually automated by means of devices which can be used once the cow is inside a milking robot. However, automatic cleaning may fail, resulting in polluted milk being mixed with the rest of the daily production.

[0003] In order to detect such failure, the present invention proposes adding a
30 colourant called European Blue to a cleaning solution, which can be composed of a water-based solution of soap and ethanol.

2018/C/EN/31

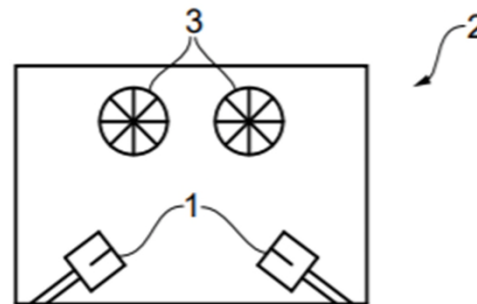


FIG. 1

Cleaning solution

- inside milking robot
- nozzles 1
- rotatable hair rollers 3
- marking by colourant

ANNEX 6 – CLAIM OBJECTS 1, 1+2, 1+3

CLAIM OBJECT I	Annex 6
A device (4) for soaking and cleaning the teats of a dairy animal outside a milking robot (10), comprising:	inside milking robot (par. [0002])
soaking means (6) for applying a soaking fluid, and at least one rotating brush (7) which is arranged to rotate and simultaneously contact the teats during application of said soaking fluid.	contact to teat undisclosed (par. [0005])



CLAIM OBJECTS I, I+2, I+3 : PRIORITY DATE

ANNEX 6 – CLAIM OBJECTS 4, 4+5

CLAIM OBJECT 4	Annex 6
A method for milking a dairy animal, said method comprising the following steps in the following order:	
- soaking the teats of the animal outside a milking robot (10), wherein at least two litres of a soaking fluid are used per animal,	teats soaked inside milking robot (par. [0002]), at least two litres undisclosed
- marking the animal outside the milking robot (10),	marking while soaking inside milking robot
- letting the animal enter the milking robot (10), and	
- milking the animal.	



CLAIM OBJECT 4, 4+5: PRIORITY DATE

ANNEX 6 – CLAIM OBJECT 6

CLAIM OBJECT 6	Annex 6
Fluid comprising water, soap, ethanol and a colourant,	par. [0003]
the colourant concentration being 0.4% by volume.	par. [0006]



CLAIM OBJECT 6: FILING DATE



EFFECTIVE DATES

CLAIM OBJECTS		PRIORITY DATE 16.12.2013	DATE OF FILING 15.12.2014	NO EFFECTIVE DATE
I	contained in priority document	X		
I+2	contained in priority document	X		
I+3	contained in priority document	X		
4	contained in priority document	X		
4+5 (alt 1)	contained in priority document (par. [0021]-[0023])	X		
4+5 (alt 2)	contained neither in priority document nor in application as filed			X
6	contained in priority document BUT		X	



USABILITY OF PRIOR DOCUMENTS

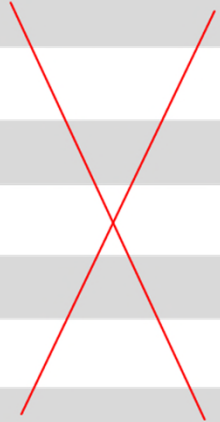
CLAIM OBJECTS	A2	A3	A4	A5	A6	PRIORITY DATE 16.12.2013	A6	DATE OF FILING 15.12.2014	NO EFFECTIVE DATE
I	04.07.2001	04.09.2003	30.09.2009	02.2013	filing 15.05.2013	X	publication 20.11.2014		
I+2						X			
I+3						X			
4						X			
4+5 (alt 1)						X			
4+5 (alt 2)									X
6								X	

54(2)
all claim objects

no 54(3)
for other claim objects

54(2)
claim object 6

DETERMINE ATTACKS (I)

CLAIM OBJECTS	Art. 123(2)	Art. 54(2)	Art. 54(3)	Art. 56
I				
I+2				
I+3				
4				
4+5 (alt 1)				
4+5 (alt 2)	X			
6		Annex 6		

READING ANNEX I (I)

CLAIM I	DEFINITIONS/TECHNICAL EFFECTS
A device for soaking and cleaning the teats of a dairy animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005])
outside a milking robot (10)	TE: maximize availability of milking robot (par. [0012]-[0013])
soaking means (6) for applying a soaking fluid	soaking means in the form of fluid applicators (par. [0007]) TE: softens dirt, dirt removed more easily (par. [0007])
at least one rotating brush (7) which is arranged to rotate and simultaneously contact the teats during application of said soaking fluid.	TE: ensure complete removal of dirt (par. [0008]) TE: soaking fluid spread in uniform manner, even when fluid applicators partially clogged (par. [0009])

READING ANNEX I (II)

CLAIM 2	DEFINITIONS/TECHNICAL EFFECTS
a reservoir for storing the soaking fluid,	
wheels (11),	
electronic location indicating means for supplying information about the positions of both the device (4) and the animal,	may comprise antenna (par. [0016])
an individual electric motor for each wheel (11), and	TE: each motor separately actuated to change direction (par. [0014])
a control unit	
arranged such that, in response to said information about the positions of both the device (4) and the animal, it actuates said individual electric motors.	TE: allow device to autonomously reach animals outside milking robot (par. [0015])

READING ANNEX I (III)

CLAIM 3	DEFINITIONS/TECHNICAL EFFECTS
checking means (8) for verifying that the soaking fluid has actually been applied onto the teats; and	preferably one or more humidity sensors. Any other means directly or indirectly detecting fluid on teat (par. [0011]) TE: checks fluid has actually been applied (par. [0010])
outside the milking robot (10)	TE: maximize availability of milking robot (par. [0012]-[0013])
means to apply at least two litres of soaking fluid per dairy animal per application.	TE: ensures adequate softening of the dirt (par. [0007])

READING ANNEX I (IV)

CLAIM 4	DEFINITIONS/TECHNICAL EFFECTS
A method for milking a dairy animal, said method comprising the following steps in the following order:	
soaking the teats of the animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005]) TE: soften dirt, dirt removed more easily (par. [0007])
outside a milking robot (10),	TE: maximize availability of milking robot
wherein at least two litres of a soaking fluid are used per animal,	TE: ensure adequate softening of the dirt (par. [0007])
marking the animal outside the milking robot (10),	marking = associating information to clean animal by means which reveals that soaking took place (par. [0018]) TE: ensure that clean animals can be recognized by milking robot (par. [0017])
letting the animal enter the milking robot (10), and milking the animal.	

READING ANNEX I (V)

CLAIM 5 (alt I)	DEFINITIONS/TECHNICAL EFFECTS
using heated nozzles for applying the soaking fluid, and	TE: reinforces subsequent conditioning effect provided by conditioning composition (par. [0023])
after soaking, applying a conditioning composition to the teats	conditioning = training animals to go to milking robot by using external stimulation which they associate with going to be milked (par. [0020]) TE: guide animals to milking robot directly after cleaning (par. [0020])
said conditioning composition comprising a lower alcohol.	TE: animals will feel cooling action due to evaporation (par. [0021])
30-45% by volume of a lower alcohol.	TE: particularly suitable for providing the necessary stimulation (par. [0022])

READING ANNEX I (VI)

CLAIM 6	DEFINITIONS/TECHNICAL EFFECTS
Fluid comprising	
water,	
soap,	
ethanol and	TE: animals will feel cooling action due to evaporation (par. [0021])
a colourant,	non toxic colourant (par. [0019]) TE: marking soaked animals
the colourant concentration being 0.4% by volume.	TE: sufficient for marking and does not fade to quickly (par. [0019])

ANNEX 2

Annex 2 / Page 1 of 4

(19) Hellenic Industrial Property Organisation
 (21) Application number: 20000100297
 (11) Publication number: GR 1 003 623 B
 (22) Date of filing: 10.08.2000
 (45) Publication of the patent: 04.07.2001
 (51) Int. Cl.: A01J7/04
 (71) Proprietor: Tilemachos Ltd.
 (72) Inventor: Eumaeus Ctesiopoulos
 (74) Representative: Kastoras Guestopateras

Portable teat cleaner

[0001] The invention concerns a portable cleaner for cleaning the teats of a cow before said cow is milked in a milking robot.

[0002] Milking robots comprise a robot arm which automatically places teat cups in contact with the teats of a cow, where they are attached by suction. Modern milking robots incorporate very advanced technological solutions, such as readers obtaining information from electronic ear tags. However, the cleaning of the teats before attaching the teat cups is still manually carried out by an operator. The cleaning step is slow and cumbersome, and its efficiency largely depends on the skill of the operator. Therefore there is a need to make cleaning easier and faster.

[0003] Experience has shown that the application of water alone is not enough to dislodge dirt which is sticking to the teat. The present invention addresses this problem and provides a fast and reliable cleaning of the teats of a cow inside a milking robot before milking takes place.

[0004] The present invention relates to a portable cleaner having a cleaning mechanism comprising at least one nozzle 4 and at least one hair roller 5.

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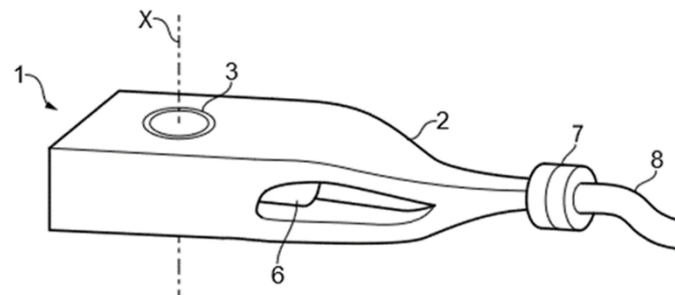


FIG. 1

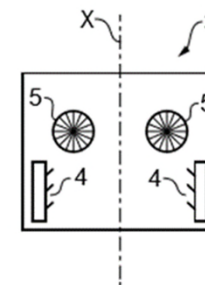


FIG. 2

Portable teat cleaner

- intended for use within milking robot
- spray cold water
- rotatable hair rollers
- no built in water tank

READING ANNEX 2 (I)

CLAIM I	DEFINITIONS/TECHNICAL EFFECTS	Annex 2
A device for soaking and cleaning the teats of a dairy animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005])	par. [0001] (clean) + [0008] (application of fluid)
outside a milking robot (10)	TE: maximize availability of milking robot (par. [0012]-[0013])	par. [0010] but use outside milking robot less preferred
soaking means (6) for applying a soaking fluid	soaking means in the form of fluid applicators (par. [0007]) TE: softens dirt, dirt removed more easily (par. [0007])	par. [0004] nozzles 4 spray cold water
at least one rotating brush (7) which is arranged to rotate		par. [0004] hair rollers - same TE (par. [0007])
and simultaneously contact the teats during application of said soaking fluid.	TE: ensure complete removal of dirt (par. [0008]) TE: soaking fluid spread in uniform manner, even when fluid applicators partially clogged (par. [0009])	par. [0007] - same TE (par. [0007])

READING ANNEX 2 (II)

CLAIM 2	DEFINITIONS/TECHNICAL EFFECTS	Annex 2
a reservoir for storing the soaking fluid,		par. [0009] teach away
wheels (11),		no
electronic location indicating means for supplying information about the positions of both the device (4) and the animal,	may comprise antenna (par. [0016])	no
an individual electric motor for each wheel (11), and	TE: each motor separately actuated to change direction (par. [0014])	no
a control unit		no
arranged such that, in response to said information about the positions of both the device (4) and the animal, it actuates said individual electric motors.	TE: allow device to autonomously reach animals outside milking robot (par. [0015])	no

READING ANNEX 2 (III)

CLAIM 3	DEFINITIONS/TECHNICAL EFFECTS	Annex 2
checking means (8) for verifying that the soaking fluid has actually been applied onto the teats; and	preferably one or more humidity sensors. Any other means directly or indirectly detecting fluid on teat (par. [0011]) TE: checks fluid has actually been applied (par. [0010])	no, par. [0011] operator checks if teat is clean
outside the milking robot (10)	TE: maximize availability of milking robot (par. [0012]-[0013])	no
means to apply at least two litres of soaking fluid per dairy animal per application.	TE: ensures adequate softening of the dirt (par. [0007])	par. [0009]: connecting point 7, hose 8, at least three litres per cow - same TE

READING ANNEX 2 (IV)

CLAIM 4	DEFINITIONS/TECHNICAL EFFECTS	Annex 2
A method for milking a dairy animal, said method comprising the following steps in the following order:		par. [0001]
soaking the teats of the animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005]) TE: soften dirt, dirt removed more easily (par.	par. [0008] : spray cold water
outside a milking robot (10),	TE: maximize availability of milking robot (par. [0012]-[0013])	par. [0010] but use outside milking robot less preferred
wherein at least two litres of a soaking fluid are used per animal,	TE: ensure adequate softening of the dirt (par. [0007])	par. [0009] : at least three litres per cow - same TE
marking the animal outside the milking robot (10),	marking = associating information to clean animal by means which reveals that soaking took place (par. [0018]) TE: ensure that clean animals can be recognized by milking robot (par. [0017])	no
letting the animal enter the milking robot (10), and milking the animal.		par. [0010]

READING ANNEX 2 (V)

CLAIM 5 (alt I)	DEFINITIONS/TECHNICAL EFFECTS	Annex 2
using heated nozzles for applying the soaking fluid, and	TE: reinforces subsequent conditioning effect provided by conditioning composition (par. [0023])	no
after soaking, applying a conditioning composition to the teats	conditioning = training animals to go ... (par. [0020]) TE: guide animals to milking robot directly after cleaning (par. [0020])	par. [0008] spray cold water, reduces pressure sensation during milking
said conditioning composition comprising a lower alcohol.	TE: animals will feel cooling action due to evaporation (par. [0021])	no
30-45% by volume of a lower alcohol.	TE: particularly suitable for providing the necessary stimulation (par. [0021])	no

READING ANNEX 2 (VI)

CLAIM 6	DEFINITIONS/TECHNICAL EFFECTS	Annex 2
Fluid comprising		par. [0008]
water,		par. [0008]
soap,		no
ethanol and	TE: animals will feel cooling action due to evaporation (par. [0021])	no
a colourant,	non toxic colourant (par. [0019]) TE: marking soaked animals	no - par. [0012] : European Blue fades away within 8 hours when applied to plastics - to sterilize cleaner
the colourant concentration being 0.4% by volume.	TE: sufficient for marking and does not fade to quickly (par. [0019])	no

ANNEX 3

Annex 3 / Page 1 of 5

(19) The Netherlands Patent Office

(21) Application number: 1020255

(11) Publication number: NL 1020255 C

(22) Date of filing: 11.03.2002

(45) Publication of the patent: 04.09.2003

(51) Int. Cl.: A01J7/04

(73) Proprietor: Hades Livestock Management

(72) Inventor: Teiresias Thebanaar

(74) Representative: Circe van Aa

Mobile cleaner for teats

[0001] The use of milking robots in recent years has dramatically increased the automation level of dairy farms. However, some steps of the procedure in dairy farms are still performed manually.

[0002] One of those steps which are still performed manually is that of cleaning the teats of a cow to be milked, which is usually carried out by an operator equipped with a piece of cloth and a bucket containing a cleaning solution. This manual cleaning takes place while the cow is inside the milking robot, or on its way towards it.

[0003] The current invention seeks to partially automate the cleaning procedure by furnishing a mobile cleaner which can clean the teats of a cow present in a particular milking robot. In order to do so, the mobile cleaner 1 comprises four wheels 2 driven by a central electric motor controlled by a central unit. A single electrical motor is sufficient, which optimises the electricity consumption.

2018/C/EN/17

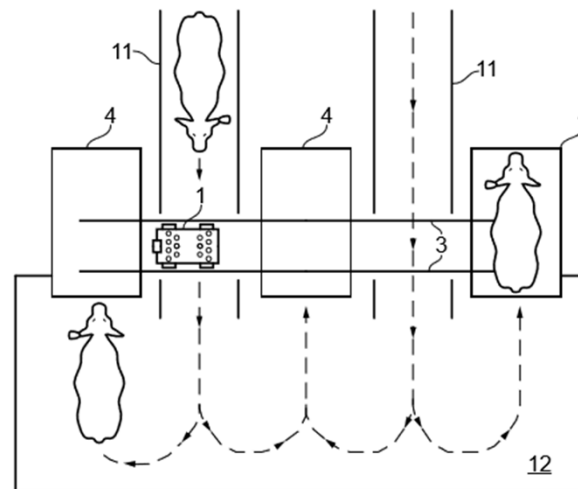


FIG. 1

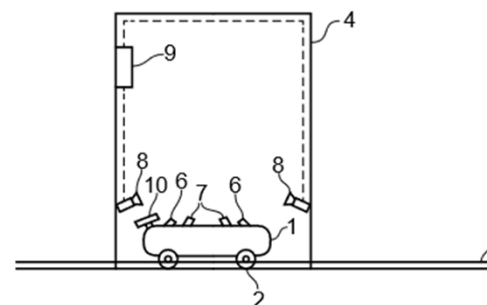


FIG. 2

Mobile cleaner for teats

- wheels
- on rails
- spray cleaning solution
- no brushes

READING ANNEX 3 (I)

CLAIM I	DEFINITIONS/TECHNICAL EFFECTS	Annex 3
A device for soaking and cleaning the teats of a dairy animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005])	par. [0001] mobile cleaner + par. [0005] nozzles project fluid
outside a milking robot (10)	TE: maximize availability of milking robot (par. [0012]-[0013])	par. [0007] : mobile cleaner manually proceeded to position where cow stopped - same TE (save time in milking robot)
soaking means (6) for applying a soaking fluid	soaking means in the form of fluid applicators (par. [0007]) TE: softens dirt, dirt removed more easily (par. [0007])	par. [0005] : nozzles 7 start projecting fluid par. [0005] : nozzles are commonly used fluid applicators on farms
at least one rotating brush (7) which is arranged to rotate		no
and simultaneously contact the teats during application of said soaking fluid.	TE: ensure complete removal of dirt (par. [0008]) TE: soaking fluid spread in uniform manner, even when fluid applicators partially clogged (par. [0009])	no

READING ANNEX 3 (II)

CLAIM 2	DEFINITIONS/TECHNICAL EFFECTS	Annex 3
a reservoir for storing the soaking fluid,		par. [0008] : fluid for cleaning contained in a large reservoir
wheels (11),		par. [0003] : four wheels 2
electronic location indicating means for supplying information about the positions of both the device (4) and the animal,	may comprise antenna (par. [0016])	par. [0005] : array of laser sensors 6 par. [0006] : use of optical or heat sensor discouraged (sensitive to dirt fluid)
an individual electric motor for each wheel (11), and	TE: each motor separately actuated to change direction (par. [0014])	par. [0003] : single electric motor to optimizes electricity consumption par. [0004] rails, no need to steer
a control unit		par. [0003] : central unit
arranged such that, in response to said information about the positions of both the device (4) and the animal, it actuates said individual electric motors.	TE: allow device to autonomously reach animals outside milking robot (par. [0015])	par. [0005] : once there (below teats of cow) the mobile cleaner is allowed to stop motor

READING ANNEX 3 (III)

CLAIM 3	DEFINITIONS/TECHNICAL EFFECTS	Annex 3
checking means (8) for verifying that the soaking fluid has actually been applied onto the teats; and	preferably one or more humidity sensors. Any other means directly or indirectly detecting fluid on teat (par. [0011]) TE: checks fluid has actually been applied (par. [0010])	no, cameras 8 are in the milking robot (par. [0010]) or no checking at all (par. [0012])
outside the milking robot (10)	TE: maximize availability of milking robot	no
means to apply at least two litres of soaking fluid per dairy animal per application.	TE: ensures adequate softening of the dirt (par. [0007])	no

READING ANNEX 3 (IV)

CLAIM 4	DEFINITIONS/TECHNICAL EFFECTS	Annex 3
A method for milking a dairy animal, said method comprising the following steps in the following order:		par. [0005] [0007] or [0010]
soaking the teats of the animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005]) TE: soften dirt, dirt removed more easily (par. [0007])	par. [0005] : nozzles 7 start projecting fluid against teats
outside a milking robot (10),	TE: maximize availability of milking robot (par. [0012]-[0013])	par. [0007] : mobile cleaner manually proceeded to position where cow stopped - same TE (save time in milking robot)
wherein at least two litres of a soaking fluid are used per animal,	TE: ensure adequate softening of the dirt (par. [0007])	no
marking the animal outside the milking robot (10),	marking = associating information to clean animal by means which reveals that soaking took place (par. [0018]) TE: ensure that clean animals can be recognized by milking robot (par. [0017])	par. [0012] : information concerning cleaning recorded on electronic tag as soon as nozzles 7 finishes projecting fluid par. [0007] soaking can take place outside milking robot
letting the animal enter the milking robot (10), and milking the animal.		par. [0007]

READING ANNEX 3 (V)

CLAIM 5 (alt I)	DEFINITIONS/TECHNICAL EFFECTS	Annex 3
using heated nozzles for applying the soaking fluid, and	TE: reinforces subsequent conditioning effect provided by conditioning composition (par. [0023])	par. [0005] : projecting fluid against teats through a set of electrically heated nozzles
after soaking, applying a conditioning composition to the teats	conditioning = training animals to go ... (par. [0020]) TE: guide animals to milking robot directly after cleaning (par. [0020])	par. [0008] : teaches away – application of fluid at 38.5 °C to avoid discomfort to the animal
said conditioning composition comprising a lower alcohol.	TE: animals will feel cooling action due to evaporation (par. [0021])	no
30-45% by volume of a lower alcohol.	TE: particularly suitable for providing the necessary stimulation (par. [0021])	no

READING ANNEX 3 (VI)

CLAIM 6	DEFINITIONS/TECHNICAL EFFECTS	Annex 3
Fluid comprising		par. [0008]
water,		par. [0008]
soap,		par. [0008]
ethanol and	TE: animals will feel cooling action due to evaporation (par. [0021])	no
a colourant,	non toxic colourant (par. [0019]) TE: marking soaked animals	no
the colourant concentration being 0.4% by volume.	TE: sufficient for marking and does not fade to quickly (par. [0019])	no



ANNEX 4

Annex 4 / Page 1 of 5

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Mobile treatment device using a soaking solution

[0001] One of the major problems concerning dairy animals such as cows is the presence of infections of the teats of the animal, which seriously compromise the health of the animal and pose a public health risk. Teats must be cleaned and disinfected.

[0002] Early detection of infections is of utmost importance when addressing the problem, and therefore the present invention seeks to provide means for removing sources of infection from the animals as early as possible, such that said infections cannot be passed into the milk. A key point for early detection is the constant supervision of the animals, but that would normally require to collect the animals at a place where they can all be inspected.

[0003] As dairy animals usually spend most of their time in quite large areas within which they can walk freely it is difficult to check their teats on a regular basis. Animals go regularly to the milking robot. If an infection is discovered at the milking robot it is too late to carry out a disinfection before milking, and the milk has to be discarded.

2018/C/EN/22

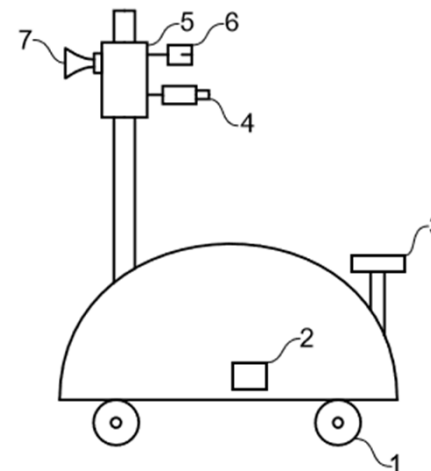


FIG. 1

Mobile treatment device

- intended to treat infections
- spray aqueous solution of disinfectant
- wheels

READING ANNEX 4 (I)

CLAIM I	DEFINITIONS/TECHNICAL EFFECTS	Annex 4
A device for soaking and cleaning the teats of a dairy animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005])	par. [0004] : mobile treatment device for treating cows from infection by soaking teats with aqueous solution of disinfectant par. [0008]: disinfectant clean teats par. [0011] ultrasonic cleaner
outside a milking robot (10)	TE: maximize availability of milking robot (par. [0012]-[0013])	par. [0003]-[0004] but different technical effect (inside milking robot is too late for treating infection)
soaking means (6) for applying a soaking fluid	soaking means in the form of fluid applicators (par. [0007]) TE: softens dirt, dirt removed more easily (par. [0007])	par. [0007] : nozzle 6 spraying aqueous solution of disinfectant
at least one rotating brush (7) which is arranged to rotate		no
and simultaneously contact the teats during application of said soaking fluid.	TE: ensure complete removal of dirt (par. [0008]) TE: soaking fluid spread in uniform manner, even when fluid applicators partially clogged (par. [0009])	no

READING ANNEX 4 (II)

CLAIM 2	DEFINITIONS/TECHNICAL EFFECTS	Annex 4
a reservoir for storing the soaking fluid,		par. [0014] : 1 litre reservoir for aqueous solution of disinfectant
wheels (11),		par. [0004] : four wheels 1
electronic location indicating means for supplying information about the positions of both the device (4) and the animal,	may comprise antenna (par. [0016])	par. [0005] : navigation antenna 3 provide information on position of device and cow
an individual electric motor for each wheel (11), and	TE: each motor separately actuated to change direction (par. [0014])	par. [0004] : each wheel 1 driven by an electric motor
a control unit		par. [0004] : controlled by an on-board computer
arranged such that, in response to said information about the positions of both the device (4) and the animal, it actuates said individual electric motors.	TE: allow device to autonomously reach animals outside milking robot (par. [0015])	par. [0005] : on-board computer receives information from navigation antenna 3 and sends corresponding instructions to motors - same TE

READING ANNEX 4 (III)

CLAIM 3	DEFINITIONS/TECHNICAL EFFECTS	Annex 4
checking means (8) for verifying that the soaking fluid has actually been applied onto the teats; and	preferably one or more humidity sensors. Any other means directly or indirectly detecting fluid on teat (par. [0011]) TE: checks fluid has actually been applied (par. [0010])	par. [0012] : infrared sensors 4 measure temperature of surface of teats once disinfectant has been applied - same TE
outside the milking robot (10)	TE: maximize availability of milking robot	par. [0003]-[0004] : inside milking robot is too late – reach cows wherever they can be found
means to apply at least two litres of soaking fluid per dairy animal per application.	TE: ensures adequate softening of the dirt (par. [0007])	no, par. [0014] : 1 litre reservoir for aqueous solution of disinfectant

READING ANNEX 4 (IV)

CLAIM 4	DEFINITIONS/TECHNICAL EFFECTS	Annex 4
A method for milking a dairy animal, said method comprising the following steps in the following order:		no
soaking the teats of the animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005]) TE: soften dirt, dirt removed more easily (par. [0007])	par. [0007] : aqueous solution sprayed by nozzles 6
outside a milking robot (10),	TE: maximize availability of milking robot (par. [0012]-[0013])	par. [0003]-[0004] but different technical effect (inside milking robot is too late for treating infection)
wherein at least two litres of a soaking fluid are used per animal,	TE: ensure adequate softening of the dirt (par. [0007])	no, par. [0014] : 1 litre reservoir for aqueous solution of disinfectant
marking the animal outside the milking robot (10),	marking = associating information to clean animal by means which reveals that soaking took place (par. [0018]) TE: ensure that clean animals can be recognized by milking robot (par. [0017])	no
letting the animal enter the milking robot (10), and milking the animal.		no

READING ANNEX 4 (V)

CLAIM 5 (alt I)	DEFINITIONS/TECHNICAL EFFECTS	Annex 4
using heated nozzles for applying the soaking fluid, and	TE: reinforces subsequent conditioning effect provided by conditioning composition (par. [0023])	no
after soaking, applying a conditioning composition to the teats	conditioning = training animals to go ... (par. [0020]) TE: guide animals to milking robot directly after cleaning (par. [0020])	par. [0014] : small amount of aqueous solution which provokes refreshing feeling that can be used to train cows to go to a predetermined place same TE
said conditioning composition comprising a lower alcohol.	TE: animals will feel cooling action due to evaporation (par. [0021])	par. [0014] : ethanol
30-45% by volume of a lower alcohol.	TE: particularly suitable for providing the necessary stimulation (par. [0021])	par. [0014] : 20-40%

READING ANNEX 4 (VI)

CLAIM 6	DEFINITIONS/TECHNICAL EFFECTS	Annex 4
Fluid comprising		par. [0007]
water,		par. [0007]
soap,		no
ethanol and	TE: animals will feel cooling action due to evaporation (par. [0021])	par. [0007]
a colourant,	non toxic colourant (par. [0019]) TE: marking soaked animals	no
the colourant concentration being 0.4% by volume.	TE: sufficient for marking and does not fade to quickly (par. [0019])	no

ANNEX 5

Annex 5 / Page 1 of 4

Journal "A Odisseia do campo", PAC Lançamentos, Lisbon (Portugal),
Ed. February 2013, "Modernising Traditional Milking Facilities in Spain".

It is a common need for farmers of traditional milking facilities to modernise in order to stay at a reasonable level of profitability. Our magazine recently learned of an experiment in Galicia, North-West Spain, which might be of interest for our readers. Mrs Lampetia Pazos, the owner of the farm, explained to us the basics of her project.

The modernisation of the farm began with the incorporation of a milking robot 1, which for logistical reasons had to be placed on the west side of a river 9 which divides her fields. The milking robot 1 comprises a typical robot arm 8 and a vertically movable integrated cleaner 2, in which two hair rollers 10 with polymer bristles are installed to clean the teats of the cow inside the milking robot 1 by rotation. The hair rollers 10 can remove all the dirt present on the skin, even if dirt is sticking to the teats. Hair rollers are a well known soft kind of brush.

An important feature is the presence of a paint roller 3 before the railings 11 which lead to the entrance of the milking robot 1. Said paint roller 3 descends and applies a green stripe on the back of the cow before it enters the milking robot 1. The green stripe is applied using a colourant composition. The aqueous colourant composition comprises a green colourant and 24-44% by volume of a lower alcohol such as ethanol or isopropanol. The green stripe gradually fades out after application.

By means of this visual indication, Mrs Pazos can identify the cows which were prompted to go to the milking robot in the previous hours - since cows do not spontaneously go to the milking robot -, and identify cows which should be prompted to go to the milking robot as soon as possible. In this way cows can be checked, and prompted to go to the milking robot when needed. The check is carried out at a place where a salt block 4 is located, since cows regularly go there during the day to lick it.

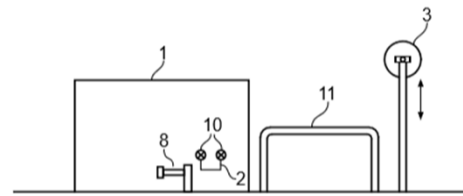


FIG. 1

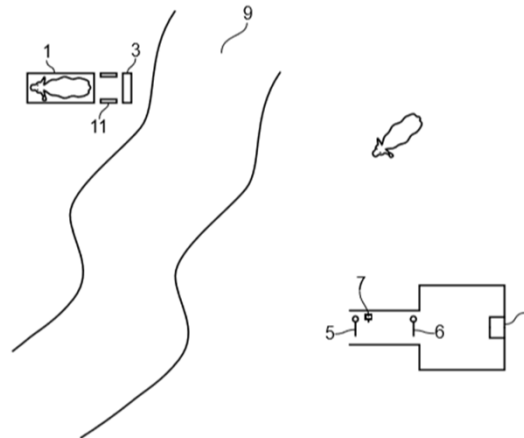


FIG. 2

Milking facility

- cows conditioned (powder with irritant agent) at salt block 4
- cows cross river to go from salt block to milking robot
- application of green stripe at the entrance of milking robot, allows to identify cows milked recently
- teat cleaner with hair rollers integrated in milking robot

2018/C/EN/27



FÉDÉRATION INTERNATIONALE DES CONSEILS
EN PROPRIÉTÉ INTELLECTUELLE
INTERNATIONAL FEDERATION OF
INTELLECTUAL PROPERTY ATTORNEYS
INTERNATIONALE FEDERATION
VON PATENTANWÄLTEN

READING ANNEX 5 (I)

CLAIM I	DEFINITIONS/TECHNICAL EFFECTS	Annex 5
A device for soaking and cleaning the teats of a dairy animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005])	no, cleaner 2 does not soak
outside a milking robot (10)	TE: maximize availability of milking robot (par. [0012]-[0013])	pag. 1 line 12: integrated inside milking robot
soaking means (6) for applying a soaking fluid	soaking means in the form of fluid applicators (par. [0007]) TE: softens dirt, dirt removed more easily (par. [0007])	no
at least one rotating brush (7) which is arranged to rotate		pag. 2 line 20: hair rollers 10 remove remaining dirt on skin pag. 1 line 15 : hair rollers are a well known soft kind of brush
and simultaneously contact the teats during application of said soaking fluid.	TE: ensure complete removal of dirt (par. [0008]) TE: soaking fluid spread in uniform manner, even when fluid applicators partially clogged (par.	no

READING ANNEX 5 (II)

CLAIM 2	DEFINITIONS/TECHNICAL EFFECTS	Annex 5
a reservoir for storing the soaking fluid,		no - river
wheels (11),		no
electronic location indicating means for supplying information about the positions of both the device (4) and the animal,	may comprise antenna (par. [0016])	no
an individual electric motor for each wheel (11), and	TE: each motor separately actuated to change direction (par. [0014])	no
a control unit		no
arranged such that, in response to said information about the positions of both the device (4) and the animal, it actuates said individual electric motors.	TE: allow device to autonomously reach animals outside milking robot (par. [0015])	no

READING ANNEX 5 (III)

CLAIM 3	DEFINITIONS/TECHNICAL EFFECTS	Annex 5
checking means (8) for verifying that the soaking fluid has actually been applied onto the teats; and	preferably one or more humidity sensors. Any other means directly or indirectly detecting fluid on teat (par. [0011]) TE: checks fluid has actually been applied (par.	no
outside the milking robot (10)		no
means to apply at least two litres of soaking fluid per dairy animal per application.	TE: ensures adequate softening of the dirt (par. [0007])	no



READING ANNEX 5 (IV)

CLAIM 4	DEFINITIONS/TECHNICAL EFFECTS	Annex 5
A method for milking a dairy animal, said method comprising the following steps in the following order:		pag. 1 line 9 : cows go to milking robot
soaking the teats of the animal	soaking = applying fluid onto the surface of a part of an animal (par. [0005]) TE: soften dirt, dirt removed more easily (par. [0007])	pag. 2 line 17-18 : cow crosses river which is deep enough to reach almost halfway up belly
outside a milking robot (10),	TE: maximize availability of milking robot	pag. 2 line 17-18 : in the river
wherein at least two litres of a soaking fluid are used per animal,	TE: ensure adequate softening of the dirt (par. [0007])	pag. 2 line 17-18 : implicit, cows cross the river
marking the animal outside the milking robot (10),	marking = associating information to clean animal by means which reveals that soaking took place (par. [0018]) TE: ensure that clean animals can be recognized by milking robot (par. [0017])	pag. 1 line 18-20 : paint roller applies green stripe before it enters milking robot. Is it marking?
letting the animal enter the milking robot (10), and milking the animal.		pag. 1 line 18-20 : cow enters milking robot

READING ANNEX 5 (V)

CLAIM 5 (alt I)	DEFINITIONS/TECHNICAL EFFECTS	Annex 5
using heated nozzles for applying the soaking fluid, and	TE: reinforces subsequent conditioning effect provided by conditioning composition (par. [0023])	no
after soaking, applying a conditioning composition to the teats	conditioning = training animals to go (par. [0020]) TE: guide animals to milking robot directly after cleaning (par. [0020])	pag. 2 line 9-14 : spray 7 projects powder comprising soap and irritant to condition cow same TE
said conditioning composition comprising a lower alcohol.	TE: animals will feel cooling action due to evaporation (par. [0021])	pag. 1 line 21-22 : lower alcohol such as ethanol or isopropanol but in colourant composition
30-45% by volume of a lower alcohol.	TE: particularly suitable for providing the necessary stimulation (par. [0021])	pag. 1 line 21-22 : 24-44% but in colourant composition

READING ANNEX 5 (VI)

CLAIM 6	DEFINITIONS/TECHNICAL EFFECTS	Annex 5
Fluid comprising		pag. I lines 20-22
water,		pag. I lines 20-22
soap,		no
ethanol and	TE: animals will feel cooling action due to evaporation (par. [0021])	pag. I lines 20-22: lower alcohol such as ethanol or isopropanol
a colourant,	non toxic colourant (par. [0019]) TE: marking soaked animals	pag. I lines 20-22
the colourant concentration being 0.4% by volume.	TE: sufficient for marking and does not fade to quickly (par. [0019])	no



ATTACK(S) TO CLAIM OBJECT I

CLAIM OBJECT I	DEFINITIONS	Annex 2	Annex 3	Annex 4	Annex 5
A device for soaking and cleaning the teats of a dairy animal	soaking = applying fluid onto the surface of a part of an animal	yes	yes	yes	device for cleaning but no soaking
outside a milking robot (10)		yes but use outside milking robot less preferred	yes	yes	no
soaking means (6) for applying a soaking fluid	soaking means in the form of fluid applicators	nozzles 4 spray cold water	nozzles are commonly used fluid applicators on farms	yes	no
at least one rotating brush (7) which is arranged to rotate		hair rollers	no	no	hair rollers are a well known soft kind of brush
and simultaneously contact the teats during application of said soaking fluid.		yes	no	no	no

ATTACK(S) TO CLAIM OBJECT I+2

CLAIM OBJECT I+2	TECHNICAL EFFECTS	Annex 2	Annex 3	Annex 4	Annex 5
A device for soaking and cleaning outside milking robot (10)	TE: maximize availability of milking robot	yes	yes	yes	no soaking
soaking means (6) for applying a soaking fluid	TE: softens dirt, dirt removed	yes	yes same TE	yes but different technical effect	teach away
at least one rotating brush (7) arranged to rotate		yes same TE	no	no	yes
and simultaneously contact the teats during application of said soaking fluid.	TE: ensure complete removal of dirt, soaking fluid spread in uniform manner	yes - same TE	no	no	no
a reservoir for storing the soaking fluid,		teach away	yes	yes	no
wheels (11),		no	yes	yes	no
electronic location indicating means for supplying information about positions of device and animal,		no	yes	yes	no
an individual electric motor for each wheel	TE: each motor separately actuated to change direction	no	teach away	yes	no
a control unit		no	yes	yes	no
in response to information about the positions of device and animal, it actuates	TE: allow device to autonomously reach animals	no	yes	yes - same TE	no

ATTACK(S) TO CLAIM OBJECT I+3

CLAIM OBJECT I+3	TECHNICAL EFFECTS	Annex 2	Annex 3	Annex 4	Annex 5
A device for soaking and cleaning outside a milking robot (10)	TE: maximize availability of milking robot	yes yes use outside milking robot	yes yes same TE	yes yes but different technical effect	no soaking teach away
soaking means for applying a soaking fluid	TE: softens dirt, dirt removed more easily	yes	yes	yes	no
at least one rotating brush arranged to rotate		yes same TE	no	no	yes
and simultaneously contact teats during application of soaking fluid.	TE: ensure complete removal of dirt, soaking fluid spread in uniform manner	yes same TE	no	no	no
checking means for verifying that the soaking fluid has actually been applied onto the teats	TE: checks fluid has actually been applied	no	no	yes same TE	no
outside the milking robot (10)		no	no	yes	no
means to apply at least two litres of soaking fluid per dairy animal per application.	TE: ensures adequate softening of the dirt	yes same TE	no	teach away	no

ATTACK(S) TO CLAIM OBJECT 4

CLAIM OBJECT 4	DEFINITIONS	Annex 2	Annex 3	Annex 4	Annex 5
A method for milking a dairy animal, said method comprising the following steps in the following order:		yes	yes	no	yes
soaking the teats of the animal	soaking = applying fluid onto the surface of a part of an animal	yes	yes	yes	yes
outside a milking robot (10),		yes use outside milking robot less preferred	yes	yes	yes
wherein at least two litres of a soaking fluid are used per animal,		yes	no	no	yes
marking the animal outside the milking robot (10),	marking = associating information to clean animal by means which reveals that soaking took place	no	yes	no	yes
letting the animal enter the milking robot (10), and milking the animal.		yes	yes	no	yes

ATTACK(S) TO CLAIM OBJECT 4+5 (alt. I)

CLAIM OBJECT 4+5 (ALT I)	TECHNICAL EFFECTS	Annex 2	Annex 3	Annex 4	Annex 5
A method for milking a dairy animal, comprising in the following order:		yes	yes	no	yes
soaking the teats of the animal	TE: soften dirt, dirt removed more easily	yes	yes	yes	yes
outside a milking robot (10),	TE: maximize availability of milking robot	yes but outside less preferred	yes same TE	yes but different TE	yes
at least two litres of a soaking fluid are used per animal,	TE: ensure adequate softening of the dirt	yes same TE	no	teach away	yes
marking the animal outside the milking robot (10),	TE: ensure that clean animals can be recognized by milking robot	no	yes	no	yes
letting the animal enter the milking robot and milking the animal.		yes	yes	no	yes
using heated nozzles	TE: reinforces conditioning effect	no	yes	no	no
after soaking, applying conditioning composition to teats	TE: guide clean cows directly to a desired place	no	no	yes same TE	yes
conditioning composition comprises a lower alcohol	TE: animals will feel cooling action due to evaporation	no	no	yes same TE	no
30-45% by volume of a lower alcohol.	TE: particularly suitable for providing the necessary stimulation	no	no	yes	yes

DETERMINE ATTACKS (IV)

CLAIM OBJECTS	Art. 123(2)	Art. 54(2)	Art. 54(3)	Art. 56
I		Annex 2		
I+2				Annex 4+Annex 2
I+3				Annex 2+Annex 4
4		Annex 5		
4+5 (alt 1)				Annex 3+Annex 2 Annex 3+Annex 4
4+5 (alt 2)	X			
6		Annex 6		