MIXED VEHICLE FOR COLLECTING WASTES AND WASHING IGLOO-TYPE CONTAINERS

VEHICULE HYBRIDE DESTINE AU RAMASSAGE DE RESIDUS ET AU LAVAGE DE CONTENEURS DE TYPE IGLOO

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Description

OBJECT OF THE INVENTION

[0001] The present specification refers to a Patent Application regarding a mixed vehicle for collecting waste and washing igloo type containers, whose purpose is to permit the collection and evacuation of waste contained in igloo type containers, generally for the recovery of glass, as well as washing an disinfecting the container using devices fitted to the vehicle itself.

[0002] It should be also mentioned that said vehicle may be converted into a fixed washing plant if the components carried by the vehicle are deposited on the ground, simultaneously performing container disinfection, equal to vehicles applicable to these operations.

FIELD OF THE INVENTION

[0003] This invention is applicable to the industry dedicated to the manufacture of equipment, vehicles and auxiliary components for the collection of waste deposited in containers.

BACKGROUND OF THE INVENTION

[0004] The applicant knows that the use of vehicles provided with automatic container washing systems is well known, especially as a complementary function to waste collection.

[0005] In these cases, container loading and unloading may or may not be automatic and moreover, in these cases, the washing processes may be controlled by means of programmable robots. Systems are even known which incorporate probes to continually know the status of the cleaning cycle and timers to set times.

[0006] Document DE-A-4425808 discloses a mobile washing system which can be installed on a vehicle, which system comprises brush cylinders for cleaning the exterior of a container that is rotatable on a rotary bedplate.

[0007] Through Patent FR 2,645,775 a VEHICLE TO WASH CONTAINERS, PARTICULARLY CONTAINERS FOR THE AUTOMATIC COLLECTION OF URBAN WASTE is known, said vehicle being provided with a washing tunnel with a rear door and loading means to introduce the containers in said tunnel.

[0008] Cleaning is carried out by means of a programmable robot, remotely activated and which supports a washing mechanism and a chamber.

[0009] All the operations, washing and loading-unloading may follow an automatic programmed cycle and be remotely activated by an operator mainly thanks to the images sent by the camera.

[0010] By means of Patent GB 2,196,446 a DEVICE FOR THE CLEANING OF A TANK INTERIOR is known which consists of a set of injectors located inside the tank and which may move in different directions and at different heights thanks to remote control means.

[0011] The system has a predetermined program and includes probes indicating the liquid level in the tank and a timer which sends a process stopping signal after a determined period of time.

[0012] The whole process is followed from an operations room where there is a control panel with activation switches and detection units.

[0013] The US Patent number 5,329,949 describes a HOME WASHING SYSTEM WITH RADIOFREQUENCY REMOTE CONTROL and is configured as an automatic washing system for cars, with remote control activated by an infrared position probe, applicable to any private garage or similar building.

[0014] By means of a portable transmitter, that is a remote command, the user activates the washing system and opening of the garage door.

[0015] The system processor consists of a programmed microcontroller to receive signals from the garage door, a radiofrequency transmitter-emitter, a thermostartor and an infrared position probe.

[0016] By means of Patent FR 2,608,076 an ASSEMBLY FOR WASHING CARRIAGES, CONTAINERS AND CISTERNS is known, which is fitted over a platform and consists of a power unit and the means necessary to wash containers, that is, aspiration pumps, water tanks, boilers, water conduits, etc.

[0017] The system is characterised in that it may be remotely controlled by a single person, who after activating the power unit, may activate the different operations, from change of detergent to selection of the recovery tank.

[0018] Moreover, the assembly has devices for coupling to a truck or similar devices for its displacement.

[0019] Patent FR 2,697,511 describes a PORTABLE DEVICE FOR CLEANING CONTAINERS, consisting of a portable device fitted on a container washing vehicle, consisting of liquid tanks, a mechanical lift and internal and external container cleaning ramps.

[0020] The cleaning cycle is controlled by electrically operated valves which are in turn activated by a programmable robot or a microprocessor.

[0021] Patent E93400518 describes a FACILITY FOR THE CLEANING OF CONTAINERS, SUCH AS RUBBISH BINS, which is configured as from a washing tray, provided with an opening for container passage, loading means to introduce at least one container inside the tray and to remove one of them at the end of the washing operation, having airtight closing means for each opening and a plurality of washing heads arranged inside said tray, at least one of said washing heads being arranged in such a way as to project pressurised water inside the container introduced in the tray, whilst at least one of the other washing heads is arranged so as to project water over the outside walls of said container.

[0022] According to the invention, the central washing head is fixed to a mechanical dragging device, permitting it to be moved to the interior of said container in the
direction of its depth and also in the two perpendicular directions.

[0023] From the Patent ES0513593 some IMPROVEMENTS IN CONTAINER WASHING VEHICLES, ESPECIALLY RUBBISH, are known, which are configured as water deposits which have washing heads supplied with washing liquid, specifically water under pressure, being arranged in a washing tray in the rear part of the vehicle, having an opening for the introduction of containers, some loading means to introduce the containers inside the tray through the opening and means to close the latter, said means likewise being loading means and preferably having the shape of a tub.

[0024] Patent ES0527357 describes a CONTAINER AND BIN WASHING EQUIPMENT which may be located over a container chassis, consisting of a cleaning roller which rotates and is displaced following the inside walls of the container, as well as a mechanism which lifts the containers to be cleaned, as well as the washing tub door and afterwards, and then lowers the containers when finishing the washing stage, having a pump which takes clean water from a general tub and projects it under pressure through the washing circuit.

[0025] Thanks to the Patent ES0536517 the existence of IMPROVEMENTS IN WASHING INSTALLATIONS AND CAVITY DISINFECTING is known, which is configured as an installation for washing and disinfecting containers installed in the street, specifically destined to the collection of rubbish, etc., consisting of a rotating lift (3) device, arranged in the rear part of the truck (2), which is destined to couple with a street container provided with wheels, to clean it, lift and rotate it, with the object of having it inverted by a spray unit and deposit it on the surface after washing.

[0026] The invention is provided with a spray unit consisting of a jet fed through a conduit by the boiler pressurising unit, the base of the jet being inserted in a support, and one or several water deposits.

[0027] The US Patent number 4,694,846 describes a SYSTEM FOR THE CLEANING AND DISINFECTING OF RUBBISH CONTAINERS, specifically formed by a vehicle incorporating an air container supplied by the compressor and connected to another container with water and disinfectant, which is supplied with air until the necessary pressure is reached to project the mixture of water, air and disinfectant through the nozzles directed towards the inside surface of the container.

[0028] The cleaning process is carried out by means of an electromagnetic valve activated from the vehicle command board.

[0029] The Spanish Patent applied for with the number 8801602, published with the number 2,007,878, describes a HANDLING AND CLEANING SYSTEM FOR SOLID WASTE CONTAINERS, which consists of locating at different points, some underground sheaths of an airtight material, whose function is to support or contain hermetic containers of a cylindrical or prismatic shape, in which the waste is stored, which are introduced through an upper opening communicating with the surface by means of a hermetic sluice pipe.

[0030] The upper cover of the container emerges at the surface, which once opened provides access to two rings on which the container is hooked, pulling from its upper part to handle the loading, unloading, emptying or eventual cleaning.

[0031] The existence of communication in the container has been foreseen, the system being completed by a truck-crane having a crane-arm with two hooks, one fixed and the other mobile, whose mission is to pick up the containers to deposit them outside.


[0033] Patent GB 2,283,409 describes a MOBILE CLEANING MACHINE FOR DISINFECTING.

[0034] US Patent number 743,155 describes an APPARATUS AND METHOD FOR CONTAINER CLEANING.

[0035] US Patent number 5,098,023 describes an APPARATUS FOR VEHICLE CLEANING.

[0036] US Patent number 4,880,346 describes REMOTE CONTROL FOR CLEANING.

[0037] However, according to the know-how mentioned above, the existence of a mixed vehicle for the collection of waste and washing of igloo type containers, which may be later transformed on locating it on the ground as a fixed plant for the washing and disinfecting of igloo type waste containers is not known.

DESCRIPTION OF THE INVENTION

[0038] The mixed vehicle for the collection of waste and washing of igloo type containers, proposed by the invention, is itself configured as an evident novelty in its specific field of application, on combining a plurality of specific features, which provides the quality of performing cleaning through the external and internal area of an igloo type container, generally used for containing glass waste and its future recovery, the vehicle simultaneously having the quality of being configured as a fixed plant for washing and disinfecting containers of waste of the mentioned types, that is, "igloo" type.

[0039] More specifically, the mixed vehicle for the collection of waste and washing of igloo type containers object of the invention, is constituted as from a truck provided with the pertinent chassis, over which is located a crane jib for the handling and positioning of the container, said crane jib being provided with a double hook and in turn situating over the truck chassis a truck box provided with a side safety door as well as a deposit for waste, glass, paper, etc.

[0040] The truck box incorporates the washing means, consisting of a clean water deposit, a set of pumps, a foaming station, a vertical brush, a dome shaped brush, a washing bench, an external rinsing arch and an external foaming arch, as well as the rele-
vant internal rinsing heads.

Moreover, the invention has the relevant system or arrangement for the evacuation of waste water, being provided with a collector, a filtering unit, a waste water pump as well as a deposit for dirty water.

Finally, the vehicle is provided with a pressure jet for manual use.

The vehicle configured as a truck arrives at its destination and by means of the crane jib, provided with a double hook, hooks the two rings of the container and once hooked, proceeds to its lifting until locating it above the waste deposit, which has the upper part open to facilitate unloading.

The crane jib hooks are automated, such that on pulling one of them, the unloading sluices open followed by emptying of the container contents, it being necessary to mention that the unloading doors or sluices are located in the lower part of the container.

Once the container has been unloaded and with the sluices open, it is located over the washing bedplate and in a vertical movement and downwards direction, the container is deposited over the bedplate, it being necessary to say that this movement must be performed such that the pressurised water dispensing heads are introduced inside the container through the lower sluices, which are open, having designed the bedplate in such a way that as the container is lowered, the unloading sluices close until ajar, and it is through this opening, that the waste water produced during the washing process are evacuated.

Once the container has been positioned over the washing bedplate, the crane jib hooks are released and the washing area is hermetically closed by means of the upper lateral door, with the purpose of reducing the production of noise and leakage of waste to the outside.

Once isolated from the outside, the washing area, the brushes, the foaming arch and that of rinsing are arranged in a washing position by means of conventional hydraulic or pneumatic cylinders.

As from here, the washing process itself is started.

DESCRIPTION OF THE DRAWINGS

To complement the description being made and to permit a better understanding of the features of the invention, the present specification is accompanied by a set of drawings showing the following with an illustrative and non-limiting character.

Figure No. 1 shows a side elevation view of the object of the invention, regarding a mixed vehicle for the collection of waste and washing of igloo type containers.

Figure No. 2 shows a view of the waste container, specifically a closed glass waste container.

Figure No. 3 shows a similar view to that shown in figure No. 2, but with the container open.

Figure No. 4 corresponds to a detailed view of the cleaning mechanism and the retaining component of the container doors to facilitate the entry of the cleaning nozzles through the internal area of the container itself.

PREFERRED EMBODIMENT OF THE INVENTION

Following these figures, it may be observed how the mixed vehicle for the collection of waste and washing of igloo type containers, is formed from a chassis (1) provided with a crane jib (2) for the handling and positioning of the container (30), the crane jib having a double hook (3) and there being over the truck chassis (1), a box (4) provided with a side safety door (5) and a deposit for waste (6), that is to incorporate the waste contained inside the container.

The vehicle is provided with a washing system, configured as a deposit for clean water (7), a set of pumps (8), a foaming station (9), a vertical brush (10), a dome shaped brush (11), a washing bedplate (12), an external rinsing arch (13), an external foaming arch (14) and some internal rinsing heads (15) and (15').

The vehicle has a waste water evacuation system, consisting of a collector (16), a filtering unit (17), a waste water pump (18), a waste water deposit (19) and in turn is provided with a pressure jet (20) for manual use.

In figures Nos. 2 and 3, it is observed how the container (30) is provided with rings in the upper part (31) and (31'), as well as openings (32) for the introduction of waste, a hooking component (35) derived from the support and lifting fixings (31) and (31') which directly acts by means of some traction parts (33) over the lower doors (34) and (34'), constituting the closing and evacuation trap doors.

The invention is implemented, as may be seen in figure number 4 with a part (45) provided with two rollers (44) and (44') located over a rotary part (41) which keeps the doors (34) and (34') open, whilst the cleaning heads (15) and (15') act and in turn, permitting the contents to run out.

The two rings (31) and (31') are destined, one of them to lift the container with the covers closed and the other, to lift the hood, leaving the sluices (34) and (34') located in the lower part, free, producing the opening for the unloading manoeuvre of the container contents.

The towlines (33) connecting the sluices (34) and (34') with the rings (31) and (31') are located inside.

The container (30) is manufactured in glass fibre or similar.

The truck arrives at the destination and by means of the crane jib (3) incorporated over the crane (2), which is provided with a double hook, hooks the two
rings (31) and (31') of the container (30) and once hooked, lifts the container (30) until locating it above the waste deposit (6) which has the upper part open.

[0059] The crane jib (3) hooks are automated, so that on pulling one of them, the unloading sluices (34) and (34') are opened, permitting the emptying of the container contents.

[0060] Once the container (30) has been unloaded with the purpose of allowing the chemical product to face and once covered, it is left a while before brushing, to be covered with foam on its entire external surface and once covered, it is left a while before brushing.

[0061] This movement should be made such that the pressurised water dispensing heads (15) and (15') are introduced inside the container (30) through the lower sluices (34) and (34') which are open.

[0062] The bedplate (12) is designed such that as the container (30) descends, the unloading sluices close and until ajar, and through this opening, the waste water produced in the washing process is evacuated.

[0063] Once the container has been positioned over the washing bedplate, the crane jib (3) hooks are released and the washing area is hermetically closed by means of the upper side door (5) with the purpose of reducing noise production to a minimum and leakage of waste to the outside.

[0064] Once isolated from the outside, the washing area, the brushes (10) and (11), as well as the foaming arch (13) and the rinsing arch (14) are arranged in the washing position by means of conventional hydraulic or pneumatic cylinders, commencing the washing process itself.

[0065] To perform internal washing, the set of pumps (8) takes water from the clean water deposit (7) and impulses it at a high pressure, dispensing it by means of two rotating heads (15) and (15') throughout the interior of the container (30).

[0066] The supply of the two rotating heads is carried out from the bedplate (12) centre by means of a rotary joint (41), permitting the circular movement or rotation of the entire bedplate (12).

[0067] The external washing consists of external foaming, external brushing and external rinsing.

[0068] Simultaneously to washing of the interior of the container (13), foaming of the container on the outside is produced by means of the dispensing arch (14) which projects to the exterior, a chemical cleaning product like soap or detergent, which together with a motor providing rotation to the washing bedplate, over which the container (30) is positioned.

[0069] The arch (14) is fixed and connected to a dosing station which takes the soap or liquid detergent from a deposit and dispenses it as foam.

[0070] When the foam is sprayed, the bedplate (12) begins to move and starts to rotate, permitting the container to be covered with foam on its entire external surface and once covered, it is left a while before brushing, with the purpose of allowing the chemical product projected by the arch (14) to act.

[0071] The external brushing is carried out by means of the brushes (10) and (11), that is, the vertical brush and the dome shaped brush, which as may be appreciated is in a vertical position, that is, the (10), whilst the dome shaped brush is displaced remaining attached to the container (30) dome, producing its cleaning in this area unreachable by the vertical brush (10).

[0072] External rinsing is carried out by means of the dispensing arch (13) which projects high pressure water in combination with a motor which provides rotation to the washing bedplate (12) over which the container (30) is positioned in a similar way to the foaming system explained above.

[0073] After a time considered as perfect, the washing cycle finishes.

[0074] The waste water produced in the washing process, is collected in the base of the bedplate and carried to a collector (16) where it is filtered by a filtering unit (17) together with a waste water pump (18), transferring the dirty water (19) to the deposit.

[0075] This deposit stores the water used for its further reuse or for its evacuation in a suitable place.

[0076] On finishing washing, the side doors (5) are opened and the already rinsed container is hooked by the crane jib (3) and deposited in its place.

[0077] Summarising, as may be interpreted from the explanation made, the mixed vehicle for the collection of waste and washing of igloo type containers is configured as an appropriate invention for the washing of igloo type containers, using chemical agents, brushes and pressurised water, combining the three mechanisms.

[0078] The vehicle itself is configured as a mixed vehicle simultaneously performing the functions of waste collection and container cleaning, being provided with a special bedplate (12) which permits the container to be fixed, rotating it, accessing to the interior by means of rotating heads (15) and (15') and collecting the waste water in a deposit (19).

[0079] The crane (2) crane jib (3) is provided with a double hook.

Claims

1. A mixed vehicle for the collection of waste and washing of igloo type containers, formed from a truck chassis (1) with a crane jib (2) for the handling and positioning of the container (30), having a truck box (1) upon which a crane jib (2) is fixed, provided with a double hook (3), the truck box (4) being provided with a side safety door (5), having a washing system consisting of a clean water deposit (7), a set of pumps (8), a foaming station (9), a vertical brush (10), a dome-shaped brush (11), a washing bedplate (12), an external rinsing arch (13), an external foaming arch (14), internal rinsing heads (15) and (15'), likewise having waste water evacuation
means, consisting of a collector (16), a filtering unit (17), a waste water pump (18), a waste water deposit (19) and a pressure jet (20) for manual use, the vehicle further having a deposit (6) for the collection of waste deposited in the container (30), the washing bedplate (12) being provided with a motor to produce its circular displacement, having a vertical component or piston (45) provided with two side rollers (44) and (44') which directly act over the doors (34) and (34') of the container (30), keeping them open during the previous operation, permitting the introduction of the internal rinsing heads (15) and (15') as well as the evacuation of the liquid used.

2. A mixed vehicle for the collection of waste and washing of igloo type containers according to the first claim, characterised in that the double hook (3) is suitable for hooking the rings (31) and (31') of the container (30), lifting the container (30) and situating it over the waste deposit (6) with the upper part open, the crane jib hooks (3) of the crane (2) being automated, pulling one of them over the rings (31) or (31') and producing the opening of the unloading sluices (34) and (34') of the container (30).

3. A mixed vehicle for the collection of waste and washing of igloo type containers according to the second claim, characterised in that the pressurised water heads (15) and (15') are suitable for being introduced inside the container (30) through the lower does (34) and (34') of the container (30).

4. A mixed vehicle for the collection of waste and washing of igloo type containers according to the previous claims, characterised in that the container (30) situated over the washing bedplate (12) is released from the crane jib hooks (3) of the crane (2) hermetically closing the wash area by means of the side door (5), activating the vertical and dome shaped brushes (10) and (11) respectively, as well as the foaming arch (14) and the rinsing arch (13) by means of hydraulic or pneumatic cylinders.

5. A mixed vehicle for the collection of waste and washing of igloo type containers according to the third and fourth claims, characterised in that for internal washing, the pump (8) takes water from the clean water deposit (7) pumping it under pressure by means of two rotary heads (15) and (15') inside the container (30), the supply of the rotary heads being made from the central area of the bedplate (12) by means of a rotating joint (41) enabled to be displaced in a circular manner or in rotation like the entire bedplate.

6. A mixed vehicle for the collection of waste and washing of igloo type containers according to the fourth claim, characterised in that the external foaming is carried out by means of the dispensing arch (14) of the chemical cleaning product, and together with the motor which provides rotation to the washing bedplate (12), the external foaming arch (14) being fixed and connected to a dosing station which takes the soap or liquid detergent from a deposit, dispensing it as foam.
Gemischtes Fahrzeug zur Reststoffsammlung und Waschen von Containern des Typs Iglu, nach den vorhergehenden Ansprüchen, dadurch gekennzeichnet, dass der äußere Schaumkran (14) feststeht und mit einer Dosierungsanlage verbunden ist, welche die Seife oder das flüssige Reinigungsmittel aus einem Tank, der sie in Form von Schaum abgibt, nimmt.

Gemischtes Fahrzeug zur Reststoffsammlung und Waschen von Containern des Typs Iglu nach Anspruch 1, dadurch gekennzeichnet, dass der Doppelhaken (3) geeignet ist, um in die Metallringe (31) und (31') des Containers (30) einzuhaken, den Container (30) emporzuheben und über den Reststoffbehälter (6) zu stellen, dessen Oberteil offen ist, wobei die Hacken (3) des Auslegerkrans (2) automatisiert sind und einer von beiden an den Metallringen (31) oder (31') zieht und damit das Öffnen der Entleerungsklappen (34) und (34') des Containers bewirkt.

Gemischtes Fahrzeug zur Reststoffsammlung und Waschen von Containern des Typs Iglu nach Anspruch 2, dadurch gekennzeichnet, dass die Druckwassertöpfe (15) und (15') geeignet sind, um in das Innere des Containers (30) durch die Entleerungsklappen (34) und (34') des Containers (30) einzudringen.

Gemischtes Fahrzeug zur Reststoffsammlung und Waschen von Containern des Typs Iglu nach den vorhergehenden Ansprüchen, dadurch gekennzeichnet, dass der Container (30) auf der Waschgrundplatte (12) gestellt wird und nach dem Positionieren über jener die Haken (3) des Auslegerkrans (2) ausgehakt werden und der Waschbereich mittels der seitlichen Tür (5) hermetisch verschlossen wird, wobei die vertikalen Bürsten (10) und die Bürste für die Kuppel (11) wirken und sich die Grundplatte (12) in eine drehende Bewegung setzt, wobei das chemische Produkt ausgespritzt wird, das chemische Produkt ausgespritzt wird.

Gemischtes Fahrzeug zur Reststoffsammlung und Waschen von Containern des Typs Iglu nach Anspruch 3 und 4, dadurch gekennzeichnet, dass zum Waschen des Inneren, die Pumpe (8) das Wasser aus dem Tank des sauberen Wassers (7) nimmt und sie anhand von zwei Drehköpfen (15) und (15') im Inneren des Containers (30) mittels Druck antriebt, wobei die Versorgung der Drehköpfe über den zentralen Bereich der Grundplatte (12) mittels eines Drehanschlusses (41), der wie die ganze Grundplatte zur kreisförmigen oder zur Rotationsbewegung fähig ist, vorgenommen wird.

Gemischtes Fahrzeug zur Reststoffsammlung und Waschen von Containern des Typs Iglu nach Anspruch 4, dadurch gekennzeichnet, dass der äußere Schaum mittels dem ein chemisches Reinigungsmittel spendenden Bogen (14) und in Kombination mit dem Motor, welcher die Rotation auf die Waschgrundplatte (12) überträgt, erzeugt wird, wobei der äußere Schaumkran (14) feststeht und mit einer Dosierungsanlage verbunden ist, welche die Seife oder das flüssige Reinigungsmittel aus einem Tank, der sie in Form von Schaum abgibt, nimmt.
(31') et en générant l'ouverture des portes (34) et (34') de décharge du conteneur (30).

3. Véhicule mixte pour le ramassage de déchets et le lavage de conteneurs de type igloo, selon la deuxième revendication, caractérisé en ce que les têtes (15) et (15') d'eau pressurisée sont appropriées pour s'introduire à l'intérieur du conteneur (30) à travers les portes (34) et (34') inférieures du conteneur (30).

4. Véhicule mixte pour le ramassage de déchets et le lavage de conteneurs de type igloo, selon les revendications précédentes, caractérisé en ce que le conteneur (30) situé sur le banc de lavage (12), en se positionnant sur celui-ci, il se libère des crochets (3) de la flèche (2) de la grue, la zone de lavage se fermant hermétiquement au moyen du hayon (5) latéral, les brosses (10) et (11) verticales et de dôme respectivement, ainsi que l'arc de moussage (14) et de rinçage (13) agissant au moyen de cylindres hydrauliques ou pneumatiques.

5. Véhicule mixte pour le ramassage de déchets et le lavage de conteneurs de type igloo, selon la troisième et quatrième revendications, caractérisé en ce que pour le lavage intérieur, la pompe (8) prend de l'eau du réservoir (7) d'eaux propres en les poussant à pression au moyen des têtes (15) et (15') tournantes à l'intérieur du conteneur (30), l'alimentation des têtes tournantes depuis la zone centrale du banc (12) étant effectuée au moyen d'un joint (41) rotatif, apte à se déplacer circulairement ou en rotation comme tout le banc.

6. Véhicule mixte pour le ramassage de déchets et le lavage de conteneurs de type igloo, selon la quatrième revendication, caractérisé en ce que le moussage extérieur est effectué au moyen de l'arc (14) de distribution du produit chimique de nettoyage, et en combinaison avec le moteur qui met en rotation le banc (12) de lavage, l'arc (14) de moussage extérieur étant fixe et relié à une unité de dosage qui prend le savon ou le détergent liquide à partir d'un réservoir, en le distribuant sous forme de mousse.

7. Véhicule mixte pour le ramassage de déchets et le lavage de conteneurs de type igloo, selon les revendications précédentes, caractérisé en ce que lorsque l'arc (14) de moussage extérieur commence àasperger du produit chimique, le banc (12) se met en marche en commençant à tourner, les brosses verticales (10) et de dôme (11) agissant postérieurement pour que, par la suite l'arc de distribution d'eau à pression ou de rinçage extérieur (13) agisse, en distribuant de l'eau à pression élevée en combinaison avec le moteur qui met en rotation le banc...