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(54) Title: SAFE MEDICAL WASHING

(57) Abstract:

SAFE MEDICAL WASHING

Washing of organs for different indications is among the most common medical interventions. Generally, the purpose is to remove foreign or biological materials that are considered undesirable and harmful to the area. Basically, water is used for washing. Sometimes, special features such as osmotic or oncotic pressure, viscosity, physiological pH, etc., are considered and special solutions are prepared. There are some important shortcomings of these devices that are still in use, which are forgotten or neglected. Among the features that must be taken into account are four basic points; temperature, pressure, volume and speed. The washing liquid contacting with the mucosa or epithelium of the organs should be at the organ-specific temperature and needs to reach a certain ideal pressure. Optimal volume and/or delivery rate are also important factors to be considered. One of the most commonly used washing devices for the medical purpose is the apparatus known as 'sinus rinse', which cleans basically the cavities, passages or channels in the nose. In this patent application, some ease of uses have been introduced and alternative solutions have been proposed that will substantially eliminate other adverse effects on routine use, primarily temperature, pressure, volume, and speed, in existing sinus washing devices. We have developed and/or improved additional apparatuses and/or modifications to the apparatus we have developed, in order to provide advantageous, problem-free and safer washing in other organs, especially in dental washing. In the safe washing system that we developed, alternative models are formed; those both use energy and do not require external energy. Innovations and modifications, each used individually or in combination, are described in the titles. While these new features alone are sufficient for a variety of clinical situations, in some cases all features must be used together.

Innovations and changes that we have developed that cover mainly nasal wash-out devices with more advantageous features, mainly anatomical suitability and/or temperature and/or pressure and/or volume and/or rate control and/or anti-infectivity are disclosed in detail. The safely application to other organs by making some modifications for the similar advantages have been explained. Our models (energy-dependent sinus washers-EDSW), which basically use electricity but also benefit from other energy types, and to be practical, relatively simple, portable (mobile sinus washers-MSW) models that do not require external

energy have been given similar features. Modifications made within the scope of its use for different indications are also explained.

SINUS OR NASAL PASSAGE WASHING

Anatomically compatible (anatomical fit);

In existing nasal washing systems, the applicators inserted into the nostrils are the round, hemisphere-like different structures. The physical shapes of these structures are not suited to the anatomical structures of the nasal entrance. These structures are pushed into the nose with some pressure to prevent fluid escape. The applied pressure due to the incompatible structure leads to the stretching the nose wings, and to the deformation and growth of the nostrils. Especially in frequent or prolonged use, this deformity can be partly permanent. It may lead to both aesthetic and medical negativity. To solve this problem, the physical structure of the part which enter into nasal inlet has been adapted to the nasal entry anatomy in the heat, pressure, volume or speed controlled sinus washers (EDSW and MSW) that we have developed (1). This figure is a prism with an approximate ellipse-like base whose lower portion is flattened from the sides (laterally pressed) whereas the top part is a cone-like shape which is truncated from the upper side (semi cone/ top cut cone like structure). The upper part is narrower than the lower part. The three-dimensional structure usually narrows toward the forward-proximal (upper) side (2). In general, there is an anatomical cavity in an uneven half cone-prism-like structure. The tips (caps/nozzles/headpieces) which transfer the liquid to the nasal cavity have a similar structure in the sinus washing devices we developed. These tips, which we have given new special shape, are placed more safely into the entrance of the nose. Owing to the physical fit, it does not physically damage the physiological shape of the nasal cavity (especially for the nose wings). The tips are made slightly smaller as an alternative, along with ensuring that the general lines fit the anatomy for more sensitive people. This structure is surrounded by air cushion (airbag) (3). Thus, when pushed upward to prevent fluid escaping, the pressure is evenly distributed by means of these cushions. Minimal leakages are prevented, no deforming effect does not occur and comfort is ensured. For more sensitive people, the model of this cushion that is inflated after roughly placed has also been developed. An alternative in this context is that the dispensed fluid first fills this cushion, and then goes into the nose. In another alternative embodiment, the pressure to dispense fluid is also imparted to the cushions by means of air conduction.

These anatomically compatible tips we have developed to transfer liquids for the nasal washing provide successful and safe delivery of other substances (saline, tonic fluids, liquid or gaseous medicines, various moisturizers, jellies, etc.) into the nose. It is possible to make changes in the scale (dimension) while maintaining the basic feature. Thus, they can be physically connected to different sinus washing apparatus and nasal drug administration systems (drop, spray) and used safely. In these devices, which are known as sinus washing devices, one of the neglected issues is the outlet hole (opening) of the liquid. It is observed that they are usually placed in the exact middle. The fluid delivered in this position causes swirl (whirlpool, vortex, turbulence) in the front part of the nasal cavity. This area, which is most affected by the external weather conditions, is the region where the most undesirable foreign particles are found. Due to the turbulence/vortex, these particles are separated from the region they are holding (especially from the nose hairs) and are transported to the inside by the liquid flow to the proximal part. This unwanted situation leads to some negativities. To solve this problem in this regard, the placement of the exit hole (opening) on the tip also has been modified in the sinus washers we developed. As an alternative embodiment, the liquid outlet opening is precisely directed towards the direction in which the liquid goes inward. To achieve this position, the direction is slightly shifted to the medial side (4). This position makes it easier for the liquid to move to the destination that has to go. Also, the flow of liquid swirls swirl (whirlpool, vortex, turbulence), and thus pressure on the nose wings and nasal cavity are prevented. Thus, they do not cause enlargement in the nose wings and the entrance.

In some clinical situations, forming swirl (whirlpool, vortex, turbulence) is intended to remove particles adhered to the mucosa. For these cases, the holes (openings) have been directed to different directions such as front-back, mid-down-up, and so on, with models of different diameters from each other. Still more than one exit holes are formed for certain clinical situations (12). The diameters of these holes also have been changed, the largest being directed medially. To ensure the pressure controls, each is taken individually or collectively under the control of a valve and / or one way valve. For situations where these holes cannot be used, specific valves (little caps, lids) have been developed which can securely close their mouths/openings and thereby cancel them. In a more practical model, the ability to rotate to the perforated part (where the holes are on) has been provided and thus, the direction of these holes or outlets can be changeable. Thus, using the same tip, it is possible to guide different directions in the nose, thus better washing of different mucosa areas.

This special tip (which has the hole or holes shifted to the medial side or to different directions, and the ability to rotate and to change the direction of these holes or outlets) we have developed to transfer liquids for the nasal washing provides successful and safe delivery of other substances (saline, tonic fluids, liquid or gaseous medicines, various moisturizers, jellies, etc.) into the nose. It is possible to make changes in the scale (dimensions) while maintaining the basic feature. Thus, it can be physically connected to different sinus washing apparatus and nasal drug administration systems and used safely.

Temperature display and / or heat control;

It has been reported that physiological temperature within the nose is within the limits of 30 - 36°C and the optimal temperature is around 33°C. In some studies it has been shown that ciliary movement slows down, when temperatures below 18°C or higher than 40°C, and that ciliary movement stops, when temperatures below 7°C, or higher than 45°C. In addition, it has been understood that changes in temperature effect the physiological pH value, and that hot application makes nasal passages acid, cold application makes alkali. For these reasons, the temperature of any liquid to be used for sinus washing must be optimal. It is not possible to have direct knowledge about the temperature of the liquid to be given in the existing nasal washing systems. People are generally not informed about this issue. It is often observed that the liquid is prepared with tap water, and the temperature is not taken care of. For knowledgeable and sensitive people, it is difficult to achieve an optimal temperature, or to measure the degree also. It is necessary to heat or cool the water or related liquid before putting into the device. Even in these applications, it is impossible to accurately estimate the temperature of the liquid used. In order to solve this problem and to be able to wash at the optimal temperature, the part where the liquid/water is stored (fluid tank, liquid storage, container, water tank, water chamber etc.) and/or the other parts of the washer have been given the ability of informing/ indicating the temperature of the liquid/water. Any part of the washer can show the temperature of the liquid/water before been sent into the nostrils. In this context, the fluid reservoir and/or other components of the washers are equipped with at least one temperature gauge which can utilize at least one of the thermometric properties such as length, volume, pressure, electrical resistance, potential difference, color change and radiation intensities of the surfaces. At least one of the any temperature gauges which may be mechanical, electrical, direct contact [expansion type thermometers (liquid expansion-bimetallic type, gas thermometers), thermistors, resistance thermometers, thermal couples (thermoeleman, thermocouple), liquid crystal thermometers, combined-circuit thermometers],

non-contact devices (optical thermometers, infrared thermometers) etc. has been used in the manufacture of the sinus washing device and / or has been subsequently mounted and/or glued and/or painted (5, 6). These temperature meters use at least one of the temperature scales included in the international or regional reference system. They have been given the ability to notify these temperature units visually and / or figuratively and/or audibly. These notifications are capable of providing numerical information for situations that need to be precise. For situations that need to be practical, models that simply classify as normal / appropriate, high or low have also been developed. In the models manufactured for children's use, all of the fixtures, especially the colors and/or sounds used in these notifications, have been made sympathetic/charming/lovely.

In the case of sinus washing models (MSW), which we have developed within the scope of being practical and mobile, thermometers that do not need any energy are preferred. In this context, at least one of the various temperature meters using energy-free systems has been utilized. In this scope, mechanical temperature gauges are used in an alternative model. In another practical alternative embodiment, the system using the liquid crystal has been incorporated and/or glued and/or mounted in the device. Models using other systems have also been prepared for situations that require more precision. Temperature display system that provides safety in terms of liquid temperature used during sinus washing can be easily and reliably adapted to the liquid storage, dispatch and other components of any sinus washing appliance and other medical washing devices that use or not use energy, whatever the physical form.

Thanks to these sinus wash devices with temperature indicators, it is easier to wash with liquid at the recommended temperature. However, in order to achieve optimal temperature in these devices, it is necessary to heat or cool the liquid inside the container or to add hot/cold liquid. This application provides safety from the viewpoint of temperature, which can be laborious or, in some cases, cause the liquid content to deviate from the ideal concentration. In an more advanced alternative model that solves this problem, it is equipped with at least one heater which can utilize at least one of various energy systems, including electricity, sound waves, microwaves, light waves, etc., which raise the temperature of the liquid in various ways to the optimal temperature. Thermostats have been added to these self-heating washers to stop automatically the heating process when the ideal temperature is reached. Thermostats can be adjusted in different degrees.

The ability of the heating and thermostat we added to the sinus washing device we have developed (which have temperature display system and the special tip which has the hole or holes shifted to the medial side or to different directions, and the ability to rotate and to change the direction of these holes or outlets) can be easily and reliably adapted to the liquid storage (container), dispatch and other components of any sinus washing appliance and other medical washing devices that use or not use energy, whatever the physical form.

Pressure control;

In existing washing systems, the pressure is provided gropingly by manual procedure in non-electrical ones. Sometimes this is inadequate; sometimes it is more, leading to much negativity. In systems utilizing gravity, it is tried to be adjusted by increasing the height of the device above the nose level, which is difficult in the treatment process. In order to solve these problems, the devices are equipped with valve systems that prevent and/or warn for over a certain pressure (13, 14). Even when excessive pressure is applied, thanks to the safe valve system that we have added, the sending liquid into the nose which may be harmful is prevented. In our temperature controlled models (EDSW) where the liquid is sent using energy, the pumping system is prevented from rising above certain pressures. Nevertheless, in order to be safer, these pressure-controlled valves have been added (14). In more advanced models, these pressure-controlled valves can be adjusted to different maximum values according to the age group and/or individual differences, and at the same, the ability of audio and/or visual warning has been added. For more precise conditions, at least one evacuation outlet is added (7, 19) to evacuate the excess fluid before reaching to the nasal cavity when the desired pressure is exceeded. With this evacuation outlet it is possible to transport the liquid elsewhere. This evacuation system is also equipped with improved valve systems that will control the pressure. These valves can also be adjusted to various pressure values which are required to function. When the tip of the washing device is in the nose, the pressure may drops or may be reset or even negative (In hand-squeezed models, when the squeezing process is finished, the wall returns to the previous position, a vacuum is formed on the end), and thus, liquid sent into the nose may return and enter into the container. In order to solve this problem and to make it safe, the control valves has been rendered to the one way valve system or the one way valve system has been added. In our energy-free system (MSW), the container has been turned into multiple sections for better control of the press (8). At least one valve is placed between the sections (9). At least one of the valves between the sections is one way. At least one of the sections has the ability to grow more (stretching easily/more flexible)

to prevent the overpressure. The section transfer the potential energy gained by extending or flexing to the system, and thus it makes some contribution in the washing.

The ability of adjustable maximum pressure control we added to the sinus washing device (which have temperature display system, the heating appliance with thermostat and the special tips, we have developed) can be easily and reliably adapted to the liquid container, dispatch and other components of any sinus washing appliance and other medical washing devices that use or not use energy, whatever the physical form.

Pressure measurement and monitoring;

Valve systems prevent excess pressure. However, they cannot be useful if the pressures fall below the ideal values. For situations where optimal pressure is to be monitored during treatment, both energy-dependent and energy-independent sinus washing devices are gained the ability of the measuring the pressures statically and/or dynamically generated by the application. The devices have the ability of the audible and/or visual notification-indication and warning features for these measurements. If the pressure is below or above a certain value, they provide the visual and/or audible alerts. The more advanced models can display as numerical value. In another embodiment, the ability of alert audibly the numerical pressure values are provided. In this context, it uses simple mechanical systems for some indications. There is no need for electricity. For some clinical situations, the ability to use all pressure measuring devices and methods and the ability to work with different indicators (complicated mechanical systems and /or electrical systems and/or hybrid systems included) has been added. The systems used in this context, fluid manometer, (micromanometer, barometer, differential manometers, oblique manometer), dead weight, Bourdan tube, Bridgman pressure gauge, diaphragm, capsule or blowing pressure gauge, gage pressure gauge, vacuum pressure gauge, differential pressure gauge, strain gage (shape change-extension), elastic tubes, membranes (displacement or stretching), semiconductor elements (preloaded elements), Piezoelectric elements, spring, silicone, elastic and optical elements, load cell (load cell-hydraulic, pneumatic, strain gauge etc.) are included. For some clinical situations, it has been given the ability to change color according to the pressure. To enhance this color change awareness, different colors, such as white, orange, yellow, blue, purple, red, green, combinations or tones of these colors are used. As a more improved model, shape of the part indicating color change is modified in a manner to provide information on pressure. In this context, colors indicate numbers of pressure values planned at production phase and/or

sign, color, number, letter, emblem, or symbol that correspond to a certain pressure. This color change can be ensured by numerous methods. A method employed for this purpose is coating technique. It is based on color change of semi-conductive sensor consisting of improved thin film polymer. A more improved alternative or additional method to make color change is to obtain conductive or different polymers by chemical means. In another alternative or additional method for color change, visible signs or figures are made visible according to the pressure in the device. These are indicators/markers that correspond to a certain pressure such as sign, color, number, letter, emblem, or symbol. For more distinctive situations, these constructions take a palpable shape that can be handled according to the pressure inside them. These shapes are markers that correspond to a certain pressure such as sign, color, number, letter, emblem, or symbol. An example of this last form is; the structures that exit from their houses according to the pressures and can display the values numerically.

The ability of pressure measurement and monitoring we added to the sinus washing device (which have temperature display system, the heating appliance with thermostat and the special tip, maximum pressure control we have developed) can be easily and reliably adapted to the liquid storage, dispatch and other components of any sinus washing appliance and other medical washing devices that use or not use energy, whatever the physical form.

Volum control;

The space to be washed shows individual differences in total area and volume. This is true even among people with the same body size. At the beginning and following periods of the washing, due to anatomical differences, needed or sufficient amount is personally specific. Increasing the volume of water and /or fluid from these quantities leads to undesirable results. Less given causes the washing to not take place at the ideal level. In order to solve this problem, the ability to control volume at every step of washing has been gained. In this way, it is possible to select the volume of liquid to be dispensed at the beginning and/or at the following periods of the washing and/or in total so as to make it more comfortable during the use. Apart from pressure control, it is an extra option. In this context, we have installed the application in the liquid dispensing device in our electrical washing systems. For situations where it is desired to be safer for volume controlled use, the maximum pressure limitation is also added. In our non-electrical systems (MSW), the container has been turned into multiple sections for better control of the volume (8). At least one valve is placed between the sections (9). At least one of the valves between the sections is one way. At least one of the sections has

the ability to grow more (stretching easily/more flexible) to prevent the overpressure. The section transfer the potential energy gained by extending or flexing to the system, and thus it makes some contribution in the washing.

The ability of volume control we added to the sinus washing devices (EDW and MSW which have temperature display system, the heating appliance with thermostat and the special tips and adjustable maximum pressure control, and the ability of pressure measurement and monitoring we have developed) can be easily and reliably adapted to the liquid container, dispatch and other components of any sinus washing appliance and other medical washing devices that use or not use energy, whatever the physical form.

Liquid Delivery Rate/Speed;

The washed medium is not a single space. The maximum pressure control alone is sometimes insufficient, because the washed space is linked to more than one anatomic structure and because the individual differences are at an advanced level. Because of the differences in anatomical structures and/or differences in the size of the persons, the resistance in the places/canals where the liquid is delivered varies. It is also often possible that this change is caused by the amount of fluid initially flowing in the beginning of the amount and direction of the washing. This causes the amount of liquid going into to change continuously and irregularly. That is to say, maximum pressure control system at the beginning and following steps of the washing can be safe; however, it may be insufficient for the ideal application. In the washing process, there are unexpected decreases or increases in the amount of liquid going into to the nose due to variability in the structure of the region that the liquid reaches, or due to the medical condition there or the swirl (whirlpool, vortex, turbulence) that may occur. Some people cannot tolerate these changes often. In order to provide a safer and more comfortable application, our temperature controlled sinus washers have also been equipped with speed control devices as an extra option. The speed control system, which is added as an alternative safety, also keeps the amount of fluid to be delivered constant in a certain time period and/or controlled during the application. While the speed to be applied during the treatment can be selected, for the more sensitive people, the ability of the setting to various values at the beginning, at the various steps, and at the end of the treatment is provided. When the speed kept constant, the pressure varies according to the resistance of the liquid being dispensed. One of the goals in the nasal washing is to make the water flow clean the sinuses by generating vacuum at the sinus orifices. Since the pressure in

this application is continuously changing, these fluctuations in pressure increase the vacuum effect. An adjustable maximum pressure limit is also added to avoid dangerous levels when changing this pressure. In this context, more than one valve is used in the system. In our models that use electricity, besides the adjustable maximum pressure option, the ability to determine the speed separately from the pressure is provided, equipped with the necessary attachments and the related application is installed. For increased safety in volume control applications, the maximum pressure limitation has also been added for extra safety. For situations where speed is to be better controlled in our non-electrical systems (MSW), the container has been turned into multiple sections (8). At least one valve is placed between the sections (9). At least one of the valves between the sections is one way. At least one of the sections has the ability to grow more (stretching easily/more flexible) to prevent the overpressure. This section transfer the potential energy gained by extending or flexing to the system, and thus it makes some contribution in the washing.

The ability of liquid delivery rate/speed control we added to the sinus washing device (EDW and MSW which have temperature display system, the heating appliance with thermostat and the special tip, adjustable maximum pressure control, volume control and the ability of pressure measurement and monitoring we have developed) can be easily and reliably adapted to the liquid container, dispatch and other components of any sinus washing appliance and other medical washing devices that use or not use energy, whatever the physical form.

It has been reported that the pressure of 30,000 Pascal (4.4 psi) to 480,000 Pascal (70 psi) is successful and safe for washing the nasal or sinus cavity. In similar investigations, the flow rate could be between 1-20 mL / sec. In another study, it was suggested that the pressure in the sinus wash process be between 0-5 psi. Some studies have shown that the total intranasal volume is approximately 16 mm^3, the opening of the nostrils is approximately 357 mm^2 on average, but the difference between the persons is too much. These values for adults are lower in the child age group. Even if age and body measurements are taken as basis, personal anatomical differences are very much. Considering the individual tolerance diversity, it is necessary to provide choices in a wide spectrum. Sinus washing devices are for long-term use. Users desire to practice specific to their needs and habits. In these sinus washers we have developed, temperature, pressure, volume, speed and many other variables are offered as options. They can reach the best settings in a short time by experimenting with these options,

which are all safe, reliable. They offer great advantages for later use. All these options provide a high level of compliance with the consumer.

Fight against infection;

The use of sinus washing devices has been claimed to cause serious infections such as meningitis. So sterilization of the device is important. Routine cleaning precautions are often sufficient. Some additional measures have been added to prevent infection in rare cases and for those very sensitive; it has been reported that microorganisms are damaged if direct or alternative electrical current is passed, especially for microorganisms suspended in liquid media. It has proven to be more effective if the electric current is intense and over time. To insure the sterilization of the liquid in the container, direct and/or alternate electric current are provided to pass through at different intensity and duration in our medical washing devices which use electricity. This setup can also be used for heating the fluid. In this context, the material used in the construction of the container can be transmitting the direct and/or alternating electric current. In this context, conductive plastic-polymer and/or metal constructions and/or metal structures in plastic and/or metal dust in plastic are used in some parts of the container. In terms of safety, some parts of the device are made nonconductor (dielectric) and some materials that can prevent the electric current from being transmitted uncontrollably to other parts have been added. The use of metal provides extra strength. In the system used manually, the metal material has been installed in a way that will not prevent the being squeezed of the containers to send the fluid.

When fluid reservoirs/containers are examined in some of the existing sinus washing devices, it has been determined that they were electrostatically charged due to the materials used in their construction. This situation, especially in the reservoirs/containers, causes the formation of the infective ground and pollution in other parts. To solve this problem, the ability of being antistatic or electrostatically permanent or for a different period of times neutral or close to neutrality is provided in our developed devices. In this context, being antistatic by the reduction of the electrical resistance of the inner and /or outer surfaces of the containers and /or by being conductive and /or by distributing effectively static load and /or by the use antistatic polymers / plastics in construction and/or by the antistatic surface coating are provided. The most practical of the various methods used is to add conductive filler/additives to the wall forming structure. Again for the same purpose, carbon black (carbon fibers) was used in varying amounts depending on the indications in the wall. In

addition to the antistatic function of these additives, they also have a protective effect against UV rays. For some indications, silver, as well as other metal powders or fibers, are used as filler/additives in various amounts in various regions. The use of silver and some elements also ensures that it is an infectious protective feature. Antistatic cord-cable has been developed as an appendage (as an additional attachment) for the devices where alteration of the container material is not desired, or when it is desired to immediately remove the electrostatic charge. This additional attachment (cord-cable), which can be easily connected to the reservoirs/containers, is connected to the ground connection (grounding). For situations where the electrostatic charge is too risky, as a more advanced application, special conductive fibers or metal wires which can be easily connected to this grounding line are placed in the wall of the container. While the fibers or metal strands used provide extra strength, they have been installed in a way that will not prevent the being squeezed of the containers to send the fluid in the system used manually. This configuration provides better discharge of static electricity. A further application is that the electrostatic charge can be changed. With external electricity, the static charge is reversed. The direction of this load (+/-) can be changed periodically. Thus, it is ensured that solid and/or liquid particles adhering to their inner or outer surfaces are securely separated without strongly adhering and growing better and earlier. This change also has a preventive effect on colonization of microorganisms. This conductive structure, equipped for antistatic purposes, can be used for electrical conduction. This antistatic frame also used in heating and disinfection processes by ensuring that it is more conductive against electricity. As a precaution against the risk of infection, it has been provided that reservoirs/containers are to take the advantage of sound waves. Ultrasonic vibrations have been shown to be effective in eliminating/destroying many gram positive and negative microorganisms. It has been proven that these vibrations are more effective in liquid. The more the frequency of the ultrasonic waves increases, the more its blasting/smasher effect goes up. Within this scope/within this framework, the features that will produce or transmit the ultrasonic waves are developed in the devices. In order for these waves to be transmitted to the liquid and not to spread around, the textures/structures that reflect these ultrasonic waves and/or prevent them from being transmitted by absorbing are also added in the reservoirs/containers of the devices. In order for these waves to be transmitted to the liquid and not to spread around, the textures/structures that reflect these ultrasonic waves and/or prevent them from being transmitted by absorbing are also added in the reservoirs/containers of the devices. These ultrasonic waves can also be used in the heating the fluid. An important and useful alternative for the fight against infections and for heating together (at the same

time) is the use of electromagnetic waves that are labeled/called as microwaves (super-high frequencies), which have germicidal effects. These waves, which are more effective especially in liquid-containing environments, are also very efficient in the heating process. For some indications, the formations which will reflect these waves and/or textures/structures which prevent them from being transmitted and spreading around by absorbing are also added in the reservoirs/containers of the devices. In some cases, a feature that can benefit from microwave oven used at home is gained to these reservoirs/containers. Another feature gained to our systems for similar purposes is the ability to transmit or produce light. Within this scope/within this framework, an application/embodiment benefits from high energy low-wavelength light. At the end of this washing application, it accelerates the drying process of the containers and prevents the formation of the basis for infection. Moreover, It also provides heating of the fluid at the beginning of the washing application. An option in lights, which is transmitted or produced, is ultraviolet (UV) that has antimicrobial effect. It is added to the equipment as an effective alternative for sterilization. In addition, by transmitting visible wavelength light to the system, in some cases it provides image clarity to the user in the devices and its attachments. Visible light waves are transmitted to the tip through materials such as clear/transparent plastic / polymer and / or unbreakable glass, fiber optic structure for some rare indications. They can also transmit the red light (approximately 630 nm wavelengths) and infrared (approximately 850 nm wavelengths), which have been proven analgesic and anti-inflammatory effect, separately or together via this light transmitting structures. Light sources capable of generating and modulating all of these light types, such as the types/genus, duration, intensity, etc., of all these types of light, which can be produced separately or in combination, are developed in the sinus washing devices or as a supplementary devices (10). In this context, the containers are made of transparent / clear plastic-polymer, unbreakable glass or blends for light-transmitting properties. For more secure situations, especially exterior surface and some areas are made and/or coated with a plastic-polymer which does not transmit light, particularly UV in terms of users and environment safety. The new equipment/novelties disclosed on the topic of the fight against infection which uses energy are added to the constitutions/structures of the EDW's, especially electrical energy, or introduced as extra features and/or incorporated as an additional apparatus. Our mobile, practical sinus washing devices (MSW), which do not require energy, are featured in such a way that they can benefit from them as an additional apparatus. In this context, as an embodiment, the liquid container benefits from these functions (infectious protection,

sterilization, antistatic, heating) with or without contact by placing it on, under or beside these apparatuses (11).

Vacuum formation;

An additional feature, which will make negative pressure in the nostril and form vacuum, has been developed to facilitate the sinus washing process, to use liquid in excess amount and to provide convenience in sinus washing for situations where it is not desirable to increase the pressure during washing. This additional apparatus is placed in the other nostril at the beginning of nasal washing. Thus, it is possible to withdraw from the one nostril by helping to push the liquid into the other nostril for nasal washing. It is easier to canalize to the destination where the liquid should go. In these apparatuses, the valves controlling the vacuum pressure and the anatomically compatible heads/tips we developed are also used. Since the nasal mucosa in babies is very sensitive, more than one aspiration hole is formed on the vacuum conducting pipe besides the valves as an alternative safety for this age group. When some of these holes come into contact with the mucosa, others will absorb and the mucosa will not be damaged. Alternatively, for situations in which the second hand is not to be occupied, it can be mounted (put together) to the sinus washers permanently or temporarily or it is possible to combine them in the production stage. In these situations, the manual effort is designed to help in both ways. The energy-using sinus washers (EDW) have also been added a feature to make vacuum. In this model, the vacuum forming structure is permanently or temporally connected to the liquid conducting structure and has the ability to move jointly or separately. This additional apparatus (when giving a liquid through the nostril, which can make vacuum in another to remove it) has an additional feature; it can clean and remove the material found at a distance easily accessible through the nostril, which is likely to be pushed forward unwantedly during the washing by making the vacuum before the nasal washing starts. This vacuum assisted application is more beneficial for those who cannot stay standing and are lying down. It also ensures that nasal washing is safer in the child's age group. At the end of the washing process, it also provides to remove the residual liquid in the nasal passages that may make the feeling of discomfort in the patient. It increases the comfort of the user. The control and safety mechanisms we have added in the nasal cleaning apparatus, which we have developed under the name of the sinus washer, minimize the complications for medical washing. In the washing of other organs also, these added control mechanisms provide similar advantages with the addition of some organ-specific innovations and modifications.

MOUTH (ORAL AND DENTAL) WASHING;

Many washing devices have been proposed for oral hygiene. The most important factor that is missing in these devices which provide advantages in different areas is the temperature factor. In existing washing systems, it is not possible to know and control the temperature of the liquid to be given. There are no systems to notify the temperature of the heater or the liquid in electrical appliances and apparatus attached to the tap. Hot or cold sensitivity is encountered in the teeth or gums problems. Even if this is not the case, sudden temperature changes in the tissues that it touches causes mechanical expansion and contraction. This effect causes some wear/ abrasion on the teeth. It may make the tooth coating, fillings and prostheses to slide minimally from where they are glued, and it causes to separate them early in case the long term use. The liquid to be used to wash should be close to the mouth temperature, ie the body temperature. Even when it is applied to the high-fever people for various reasons, the current body temperature should be considered. The parameters such as pressure, volume and speed to be used must be adjusted taking into account individual differences and preferences.

All the abilities we have added to the sinus washing devices which use electrical power (temperature display system and/or the heating appliance and/or the thermostat and/or adjustable maximum pressure control and/or the pressure measurement and monitoring and/or the volume control and/or the speed control and/or fighting against infection) have been adapted and added to the electrical or mobile mouth washing (oral and dental washer) devices (20, 21, 25). In these washing devices, only the relevant parameters are given different values. The other significant change has been made on the tips of the washers that send the liquid. The tips in these devices are basically required to condense into a narrow area that needs to be cleaned. Locations to be washed are the front face and upper side having some indentations where the residues can be easily gripped of the teeth, and the structures under prosthesis. It is rounded tip with narrower opening / hole for use here (16). A larger one for the gingival, palate and tongue structures in the mouth has been developed. The most needed part to be washed is interdental space. To wash them separately is time consuming. In order to save time, it is ensured that the tips of the dental flushing machines have multiple holes/ openings, and it is possible to clean more than one interdental space at the same time (18). In these tips we developed, the distances between the dispensing points are produced and prepared at

different values, or in the more complicated model, the distance between the holes at the same tip is adjustable. Thus, it can be customized according to differences such as ages, body size, tooth size, etc., so it provides a person-specific application. For those with longer teeth as the tooth spacing will be longer, to be more effective the exit hole has been made approximately rectangular in shape or it has been developed to be changeable. These tips with rectangular openings shorten the time for washing the interdental spaces when they are held vertically, and shorten the time for washing the tongue when it is held horizontally. In the more advanced model, a feature that the position of the tips can be changed without changing the grip of the device has been added. It also provides an advantage in washing the area between the gums and cheeks. The tips carrying these features can be produced in different sizes, and also the tips which are adjustable to show all these features in practice have been developed. Also having regard to the preferences, the tips with square, elliptical, triangular shaped openings have also been developed. It is also possible to use these tips by modifying in other routine devices. Apparatuses which are small enough to be entered into interdental spaces for some specific clinical situations have also been developed. For some occasions where very good cleaning has to be done, an apparatus has been developed which allows it to reach the back of the tooth and between the teeth from behind. While it can wash the part that appears in normal use, the tip can be manually moved forward and downward or upwards and it makes it possible to easily clean the tooth back surfaces and interdental spaces. All of the features we have developed have a very wide spectrum of parameters, and the more comprehensive electric device has been given the ability to be used both for tooth (oral and mouth) washing and sinus washing. Only by changing the tips, it is made and available for both purposes. Modes of relevant indications have been added. A new alternative apparatus that does not need electricity with the purpose of oral and tooth washing have also been developed.

This device, which is portable even on journeys, includes all the features and additional attachment/apparatuses that we have added on the sinus washers which don't need any power (MSW). The basic change is the tips. It is possible to use sinus washing devices that do not use electricity by only changing their tips. Nevertheless, mobile mouth washers with all the safety and comfort features have also been developed in terms of wider and more detailed coverage of the respective parameters. The liquid / water reservoir/container is organized larger according to personal preferences. The tips are similar to those of electric tooth washers. Models that benefit from tap water, which is very practical in tooth washing,

have also been developed. The biggest problem with these existing apparatuses that use this system is temperature control. It is not possible to know the temperature from tap water in detail. In order to solve this problem, the device has been provided with a apparatus for notifying the temperature at least one point in its components, especially the water-conveying structure. In these systems, it is used after the hot / cold setting of the water flowing from the faucet is brought up to the ideal (until the temperature reaches the appropriate level). Another problem is that some values such as the pressure-speed of the liquid coming from the tap are not known. It is equipped with the abilities that display of the temperature and/or maximum pressure limitation and/or pressure measurement and monitoring and/or volume and/or speed adjustment in sinus washing devices. In order to avoid from the sudden change in flow rate of tap water, at least an additional apparatus/attachment, which can absorb excess pressure by growing/expending due to special elasticity, and then return back the liquid stored to the flow when the pressure become normal, has been installed in the devices. Another alternative for similar purposes is the delivery of the excess liquid with the drain to the sink. Preferably, the drain is preceded by a valve placed for pressure control purposes. Thus, this helps to control the pressure. The system which takes advantage of this tap can also be successfully applied in sinus washing devices in cases where the necessary reorganization in the adjustable parameters and the use of tap water is not contraindicated. This mobile device has adapters to suit every tap. Relevant water-conveying pipes are spiraled for the convenience of transport. It takes up less space and has the ability to extend. Alternatively, at least one bendable structure or one piston rod bearing mechanism consists of at least two components is provided in the any compartments of the washing devices including a head-mounted adapters.

In cases of frequent relocation, as an alternative to take up less space, the pipes are formed of at least two parts and can be connected to each other and separated. In another alternative for similar purpose, it is made in a way that pipes can pass/enter into each other. A specific brush tip has been developed for the fact that our tooth washing machines is used for brushing. Mechanical cleaning can be done while washing with these brushes attached. Alternatively, it is equipped with a moving toothbrush that can rotate depending on the pressure we provide in the system. There is no need for hand movement for mechanical cleaning when using this brush. An additional storage that can give the substance such as drugs (antiseptics, etc.), whitening agents, fragrance, etc to the water reaching to the tooth has been added. It provides additional cleaning by mixing with washing water. The tip of the

vacuum forming device which we have developed for sinus washing has been modified so that it can be used for cleaning before tooth washing. It is used to clean the interdental spaces.

ADDITIONAL FEATURES;

All electric powered devices we developed are featured the ability of working by cell, battery or charger. It is marked with some determiners like the color, figure, number, symbol, etc. to know the volume and fullness rate of the containers and to understand the distance and direction of the tip entered within the nostril. These markings also help to understand that they are placed close to the ideal position during placement. All or at least certain components of the washing devices and/or at least one of the markers are made visible in absence or lack of light in order to provide the visibility of the device's position for a while during using. For this purpose, light producing and/or emitting and/or light storing and emitting and/or reflecting substances are used or covered or painted on the washing devices in their manufacture. In this context, an alternative application is to make some parts or all of the devices phosphorus. In addition, these features in the mouth washing system have been made especially for the models for children's age group. In existing devices, the fluid container, the conduit which transfer/convey the fluid to the nose and the tip are fixedly connected to each other. During the application, the device must change position while giving direction to the head. This makes manipulation difficult. Also, sometimes it causes the container not to drain completely. In order to overcome this problem and to provide easy use, the ability to change the direction and length has been added on the conduits which transfer/convey the fluid to the nose and the tip. In this context, at least one lockable bendable structure and/or a lockable piston rod bearing mechanism consists of at least two components is provided (17, 22, 23, 24). These novelties provide the ability to be rotated/oriented 360 degrees and/or extended at least 2 cm. This extension and deflection feature can also be added to the system which benefits from the gravity, and make it possible to easily increase the pressure. Also, these features have been added to the mouthwashing system. In addition, the liquid and water containers are shaped to be hand-held easily in terms of ergodynamic (15). The surface with which the hands or fingers come into contact has been made of various shapes, directions, depths and lengths, such as crooked, sawed, threaded, serrated, grooved, indented, protruding or notched etc. This feature provides ease of grip during manipulation and prevents slippage. For some people, It is a matter of not being able to tolerance (endurance, patience) the liquid mass during washing. To solve this problem for these people, Models which can deliver the air with liquid have been developed. Supplementary structure has been added to the liquid

container in a manner that it is possible to mix the desired amount/quantities of air with the liquid flow. It benefits from the same system used as the driving force at the same time. This additional section also has its own one-way valve. This supplementary different section from this liquid container has the ability to deliver medication in some medical situations. Its another function is to provide the removal of residual fluid which causes discomfort at nasal passageway at the end of the washing process by sending air only. It increases the comfort of the user. For some very sensitive situations, the sinus washer has been filtered. It guarantees the cleanliness of the liquid that is sent. Similarly, the air-delivering devices are also equipped with a filter to clean the air.

Accordion style (in the form of an accordion) container;

It is provided that the liquid container of the washing devices is partly or completely bellows structure/bellows like (accordion style/shape) in order to take up less space. When this container is empty, the opposite edges almost stick to each other. When the liquid is placed/filled, it opens like an accordion and reaches its full capacity. When it is full, its shape may be different models like rectangular prism, cone, sphere, etc. according to the preferences of the users. In this construction, the pressure does not drop to zero or become negative during the washing process, because the container is compressed manually and is not flexible enough. Thus, the return of dirty liquid to the container is prevented.

In the models of the safe washing devices manufactured for the use of children, the components of the devices have been cute/ pretty by given the form of some animals like elephants, dinosaurs, pandas, rabbits, chicks, squirrels, ducks, bear, etc. and toys like fire truck, police vehicle, etc. The shaping the components of the devices for the pleasant appearance have been provided so that it does not disrupt the function-washing process. For the same purpose (to be cute/pleasant), different colors have been used and / or alternatively, some sound can be produced during washing. All of these structures have also been given flexibility, softness, elasticity, transparency, non-adherence, anti-infectivity, non-allergic and sterilizable properties for some clinical situations. Materials resistant to heat, non-carcinogenic effect when heated, and substances with medical grade properties have been used in manufacturing. It can be uncomfortable/difficult to apply manual power to the containers of the washing devices which does not use electric power and may cause undesired changes in the pressure during washing process. To solve this problem, it has been given the ability to pre-store / potentiate the necessary energy to ensure that the liquid in the container

sent at the appropriate pressure. In this context, the necessary energy source is provided by adjustable metal or plastic spring systems.

After the container is filled with liquid, it is connected to the spring system to provide liquid movement. The spring is established with hand power (26). The pressure applied is checked again with the safety valves and the washing process is carried out. The alternative model we have developed to provide the required energy during washing is to supply the energy storage battery (pre-stored / potentiated) with the compressed gas system.

Before to start the washing, the gas in some kind of the pneumatic battery is compressed by the pump used manually (by human power) (27). During washing, the corresponding valve is opened to allow movement of the liquid by the energy in the compressed gas. The corresponding valve has the ability to adjust the pressure to the desired level. A similar energy storage system has also been gained in the storages we have developed to form a vacuum.

Descriptions of Figures;

Figure-1: Top-front view of mobile sinus washers (MSW) and its additional attachment

Figure-2: Top view of the fluid sending headpiece structure (tip, cap) and container of the mobile sinus washers (MSW) and of energy depentent sinus washer (EDSW).

Figure-3: Energy dependent sinus washer (EDSW) and fluid sending structure, view of the mouth washing device converted by replacing fluid sending structure end with mouth (intraoral and teeth) washing attachment (specific tip, cap, nozzles).

Figure-4: Appearance of mobile sinus washer (MSW) converted to mobile mouth washer by replacing headpiece end with mouth washing attachment (specific tip, cap, and nozzles) and the container made suitable for hand-grasping.

Figure-5: Appearance of energy dependent mouth (intraoral and teeth) washing device.

Explanations of references on figures

1. Structure of fluid sending headpiece (tip, cap, nozzle, end) suitable for anatomical structure of nostrils of mobile sinus washer (MSW) and energy dependent sinus washer (EDSW).

2. Fluid sending headpiece in semi conical- prism like structure of mobile sinus washer (MSW) and energy dependent sinus washer (EDSW) suitable for anatomical structure of nostrils.

3. Airbag around headpieces where mobile sinus washer (MSW) and energy dependent sinus washer (EDSW) transfer fluid into nasal cavity.

4. Slightly medial shifted structure of exit hole at the end of headpiece of mobile sinus washer (MSW) and energy dependent sinus washer (EDSW).

5. Temperature indicator of energy dependent sinus washer (EDSW)

6. Temperature indicator of mobile sinus washer (MSW)

7. Discharge end (evacuation exit) of mobile sinus washer (MSW)

8. Multiple sections of the container (multi-chamber structure) of mobile sinus washer (MSW)

9. Valve of the sections of the container (multi-chamber structure) of mobile sinus washer (MSW)

10. Light generating structure of energy dependent sinus washer (EDSW)

11. Additional apparatus (additional attachment) of mobile sinus washer (MSW)

12. Multi holed structure (more than one exit holes/openings) of fluid sending piece in mobile sinus washer (MSW) and energy dependent sinus washer (EDSW)

13. Pressure valve of mobile sinus washer (MSW)

14. Pressure valve of energy dependent sinus washer (EDSW)

15. Easy grasp ergonomic structure for container of mobile sinus washer (MSW) and mobile mouth washing devices.

16. Fine-tipped structure of the exit hole of mouth washing devices.

17. Lockable bendable structure and/or a lockable piston rod bearing mechanism of mobile sinus washer (MSW)

18. Multiple fluid output holes (more than one exit holes/openings) of headpiece of mobile mouth washing devices and energy dependent mouth washing devices.

19. Discharge port (evacuation exit) of energy dependent sinus washer (EDSW).

20. Light generating structure of energy dependent mouth washing devices.

21. Pressure valve of energy dependent mouth washing devices.

22. Lockable bendable structure and/or a lockable piston rod bearing mechanism of energy dependent sinus washer (EDSW)

23. Lockable bendable structure and/or a lockable piston rod bearing mechanism of mobile mouth washing devices.

24. Lockable bendable structure and/or a lockable piston rod bearing mechanism of energy dependent mobile mouth washing devices.

25. Temperature indicator of energy dependent mouth washing devices.

26. Spring system ensuring fluid movement of mobile washer.

27. Pneumatic battery, compressed gas section of mobile washers.

CLAIMS

1. The invention is mobile sinus washing device (MSW) and energy dependent sinus washing device (EDSW), its specification; physical structure of the part which enters into nasal inlet is in suitable with nostril anatomy (1).

2. The invention is an anatomically compatible (anatomical fit) headpiece (tip, cap, nozzle, end) of MSW and EDSW, its specification; featuring a prism with an approximate ellipse-like base and laterally pressed at distal (whose lower portion is flattened from the sides), whereas the top part is a cone-like shape (semi cone/ top cut cone like structure) which is truncated from the upper side in proximal, the upper part is narrower than the lower part (contracting towards proximally-upwards), the three-dimensional structure narrows toward the forward-proximal (upper) side, in general lines not regular semi cone-prism like(uneven half cone-prism-like) structure (2).

3. The invention is an anatomically compatible (anatomical fit) headpiece (tip, cap, nozzle, end) of MSW and EDSW, featuring with general lines entering into nostrils is concordant with anatomical structure/cavity and/or are made slightly smaller for more sensitive individuals.

4. The invention is an anatomically compatible (anatomical fit) headpiece (tip, cap, nozzle, end) of MSW and EDSW, it is characterized in that; the structure entering into nostrils surrounded with airbag (air cushion) like structure (3).

5. The invention is an anatomically compatible (anatomical fit) headpiece (tip, cap, nozzle, end) with airbag (air cushion) of MSW and EDSW according to claim 4, it is characterized in that; the bag can be inflated after roughly placed or the fluid delivered may first fill in the bag then can be delivered inside the nose.

6. The invention is an anatomically compatible (anatomical fit) headpiece (tip, cap, nozzle, end) with airbag (air cushion) of MSW and EDSW according to claim 4, it is characterized in that; the pressure applied to dispense fluid is provided to deliver air to these airbags to inflate them.

7. The invention is an anatomically compatible (anatomical fit) headpiece (tip, cap, nozzle, end) of MSW and EDSW according to claim 2, 3, 4, 5 or 6, it is characterized in that; featuring with its structure that is also usable to deliver other substances (such as

physiological saline solution, tonic fluids, medicines in fluid or gas form, various moisturizing substances) into the nose.

8. The invention is an anatomically compatible (anatomical fit) headpiece (tip, cap, nozzle, end) of MSW and EDSW according to claim 2, 3, 4, 5 or 6 ; featuring with its capability to be attached with other devices (sinus washing apparatus) or with medicine administration systems (drops, sprays) inside the nose by amending its dimensions preserving its physical structure which is its basic feature.

9. The invention is MSW and EDSW; it is characterized in that; the liquid outlet opening is precisely directed towards the direction in which the liquid goes inward, slightly shifted to the medial side (4).

10. The invention is MSW and EDSW; it is characterized in that; the liquid outlet opening (the holes) are directed to different directions such as front-back, mid-down-up, and so on, with different diameters from each other.

11. The invention is MSW and EDSW; it is characterized in that; more than one exit holes are formed and/or the diameters of these holes are different and the largest being directed medially (12).

12. The invention relates to the fluid outlet holes according to claim 9, 10 or 11, it is characterized in that; each is taken individually or collectively under the control of a valve and/or one way valve to ensure the pressure controls.

13. The invention relates to the fluid outlet holes according to claim 9, 10 or 11, it is featuring with specific valves (little caps, lids) which are capable to close the holes securely and tightly for cases where such a hole will not be used.

14. The invention relates to the headpiece's perforated part of MSW and EDSW which have the fluid outlet holes on it; featuring with capability of rotating and the direction of these holes or outlets can be changeable.

15. The invention relates sinus washing device as in any of the preceding claims, characterized in that: featuring with its structure enabling its use to administer other substances into the nose (like physiological saline solution, tonic fluids, medicines in fluid or gas form, various moisturizing agents, gels).

16. The invention relates an anatomic compatible headpiece (special tip) which has the hole or holes shifted to the medial side or to different directions, and the ability to rotate and to change the direction of these holes or outlets and/or end having output port or ports directed to different directions as in any of the preceding claims, characterized in that: featuring with its capability to use safely and successfully to administer other substances into nose and/or capability to be configured by connecting with other apparatus with different physical forms (sinus washing devices) or with medicine administering systems (drops, sprays) into the nose by changing dimensions but preserving physical structures ensuring main features.

17. The invention is secure MSW and secure EDSW; featuring with apparatus indicating temperature of water or fluid stored in sections (fluid tank, container, liquid storage, water chamber) and/or in other accessories/parts of the washer before delivering the liquid into nostrils to enable washing at optimal temperature.

18. The invention is secure MSW and secure EDSW; featuring with having at least one thermometer (temperature gauge) utilizing at least one thermometric specification (properties) such as length, volume, pressure, electrical resistance, and potential difference, color change and radiation intensities of the surfaces on the fluid reservoir (fluid tank, container, liquid storage, water chamber) and/or on the other components of the washers to indicate temperature.

19. The invention is secure MSW and secure EDSW; featuring with at least one of the any temperature gauges which may be mechanical, electrical, direct contact [expansion type thermometers (liquid expansion-bimetallic type, gas thermometers), thermistors, resistance thermometers, thermal couples (thermoeleman, thermocouple), liquid crystal thermometers, combined-circuit thermometers], non-contact thermometers (optical thermometers, infrared thermometers) is used in the manufacture of the sinus washing device and / or has been subsequently mounted and/or glued and/or painted (5, 6).

20. The invention relates to the temperature measurement apparatus of MSW and EDSW according to claim 17, 18 or 19, it is characterized in that; it uses at least one of the temperature scales included in the international or regional reference system.

21. The invention relates to the temperature measurement apparatus of MSW and EDSW according to claim 17, 18 or 19, it is featuring with having equipments indicating identified temperature values visually and/or in figures and/or audibly.

22. The invention relates to the temperature measurement apparatus of MSW and EDSW according to claim 17, 18 or 19; featuring with equipment to indicate identified temperature values numerically for sensitive situations and/or simply classifying as normal/suitable, high or low for practical situations.

23. The invention relates to the temperature measurement apparatus of MSW and EDSW according to claim 17, 18 or 19; featuring with all structure made sympathetic charming/lovely primarily with used colors and/or sounds for use of children.

24. The invention is secure MSW; it is characterized in that; mechanical temperature gauges or the system using the liquid crystals are incorporated and/or glued and/or mounted in the device to be practical for measuring the temperature.

25. The invention is secure MSW and secured EDSW; it is characterized in that; it is equipped with at least one heater which can utilize at least one of various energy systems, primarily electricity, sound waves, microwaves, light waves.

26. The invention relates to the secure MSW with heater and secure EDSW with heater according to claim 25; featuring with having a thermostat adjustable to various temperatures to stop heating process when optimum temperature is reached.

27. The invention is MSW and EDSW; featuring with having valve systems preventing to exceed preset pressure values and/or warning in case of exceeding preset pressure values to avoid delivering fluid at pressures that may be harmful for nose (13, 14).

28. The invention relates to the valve systems of MSW and EDSW according to claim 27; featuring with adjustability to various maximum values based on age group and/or personal differences and capable of delivering audible and/or visual warning.

29. The invention relates to the valve systems of MSW and EDSW according to claim 27; featuring with having additional single-way valve system or featured as single way valve to prevent return and entry of nose material to container.

30. The invention is MSW and EDSW; featuring with structure including at least one discharge (evacuation) outlet in order to discharge the excessive fluid out without delivering into nose when desired pressure is exceeded in cases necessitating additional sensitivity (7, 19).

31. The invention relates to the discharge (evacuation) outlets of MSW and EDSW according to claim 30; featuring with available advanced valve systems to control pressure on this discharge system and these valves are in adjustable structure to various functional pressure values as may be desired.

32. The invention is MSW; featuring with multi-chamber (multi-sections) structure of container for situations necessitating better control of pressure (8).

33. The invention relates to the container according to claim 32; featuring with at least one valve between chambers (sections) (9) and at least one of the sections has the ability to grow more (stretching easily/more flexible) to prevent the overpressure.

34. The invention is MSW and EDSW; featuring with capability to measure statically and/or dynamically the pressure generated by the application to enable monitoring of pressures during treatment and to indicate-display such measurement audibly and/or visually and to warn.

35. The invention relates to the pressure gauge of MSW and EDSW according to claim 34; featuring with a visual and / or audible warning if the pressure is below or above a certain value and / or have a numerical value or audible notification structure.

36. The invention relates to the pressure gauge of MSW and EDSW according to claim 34; featuring with its structure employing simple mechanical systems for pressure measurement and not needing electrical energy supply.

37. The invention relates to the pressure gauge of MSW and EDSW according to claim 34; featuring with its structure capable to use all pressure measurement apparatus and methods and employing at least one of complex mechanical systems and/or electrical systems and/or hybrid system to gain the feature enabling functioning of various indicators.

38. The invention relates to the pressure gauge of MSW and EDSW according to claim 34; featuring with its structure employing at least one of pressure measurement methods or apparatus such as fluid manometer (micro manometer, barometer, differential manometers, inclined-tube manometer) and/or dead weight and/or Bourdon tube and/or Bridgman pressure gauge and/or diaphragm and/or capsule or bellows type pressure gauge and/or gage pressure

gauge and/or vacuum pressure gauge and/or differential pressure gauge and/or strain gage (shape variation- expansion wire) and/or flexible tubes and/or membranes (displacement or straining) and/or semi-conductive elements (preloaded elements) and/or piezoelectric elements and/or spring, silicone, flexible and optical elements and/or Load cell (hydraulic, pneumatic, strain gauge) to gain property enabling use of all pressure measurement devices and methods and allowing functioning of various indicators.

39. The invention is MSW and EDSW, featuring with color changing structure depending on pressure.

40. The invention relates to the color changing structure depending on the pressure of MSW and EDSW according to claim 39; featuring with its structure using different colors such as white, orange, yellow, blue, purple, red, green, combinations or tones of these colors to enhance visibility of color change.

41. The invention relates to the color changing structures depending on the pressure of MSW and EDSW according to claim 39; featuring with informative nature of color changing section on pressure as of its shape; colors are either displaying pressure value numbers as planned during production and/or in a structure forming mark, color, number, letter, emblem, or symbols and/or they take a certain palpable shape according to the pressure found therein.

42. The invention is color changing structure according to pressure of MSW and EDSW; featuring with a structure formed by coating technique and/or semi conductive and/or conductive sensor made of developed thin film polymer or by obtaining different polymers by means of chemical methods allowing color change.

43. The invention is MSW and EDSW; featuring with structures becoming visible according to the pressure inside.

44. The invention relates to the structures becoming visible depending to pressure of MSW and EDSW according to claim 43; featuring with having identifiers visibly identifiable in the form of mark, color, number, letter, emblem, symbol corresponding to a specific pressure value.

45. The invention is MSW and EDSW; featured with integrated palpable structures showing up according to the pressure inside them.

46. The invention relates to the palpable structures depending to the pressure of MSW and EDSW according to claim 45; featured with determinants in the form of marks, color, number, letter, emblem, symbol corresponding to a specific pressure.

47. The invention relates to the palpable structures depending to the pressure of MSW and EDSW according to claim 45; featured with structures displaying pressure numerically getting out of their slots based on pressure.

48. The invention is EDSW; featured with volume control at each stage of washing in order to ensure use of optimum amount of fluid for washing. It has fitting selecting the total volume of fluid to be delivered at the beginning and/or continuance and/or at the end of washing.

49. The invention is volume controlled EDSW according to claim 48; featured with installed application on fluid delivery equipment of electrical washing system and/or in order to be safer for volume controlled use, featured with maximum pressure limiting structure.

50. The invention is MSW; featured with specification ensuring volume control at all stages of washing to ensure use of ideal amount of fluid. It has fitting selecting the total volume of fluid to be delivered at the beginning and/or continuance and/or at the end of washing.

51. The invention is volume controlled MSW; featured with multi-chamber (multi-sections) container for cases necessitating better volume control.

52. The invention is the container of volume controlled MSW according to claim 51; featured with at least one valve between chambers (sections) and at least one of these valves is single-way valve and at least one of chambers is flexible to ensure preventing of increase of pressure further by expanding in perimeter.

53. The invention is EDSW; featured with a mechanism keeping the amount of fluid to be delivered within a certain time period fixed and/or controlling during application and/ or ensuring speed control at the beginning and/or continuation and/or end of washing.

54. The invention is speed controlled EDSW according to claim 53; featured with relevant application installed on fluid delivery equipment of electrical washing system and/or to ensure further security in speed control, it is featured with more than one valve system enabling maximum pressure limitation.

55. The invention is speed controlled MSW; featured with mechanism keeping the amount of fluid to be delivered within a certain time period fixed and/or controlling during application and/ or ensuring speed control at the beginning and/or continuation and/or end of washing.

56. The invention is speed controlled MSW; featured with a container with multiple chambers (sections) to ensure better control of speed.

57. The invention is the container of speed controlled MSW according to claim 56; featured with at least one valve between chambers and at least one of these valves is single-way valve and at least one of chambers is in flexible structure to ensure preventing of increase of pressure further by expanding in perimeter.

58. The invention is EDSW; featured with a structure transmitting direct and/or alternative electrical current with different intensity and durations and/or ensuring heating of fluid in order to ensure sterilization of fluid in the container.

59. The invention is EDSW according to claim 58; featured with a container produced with direct and /or alternative electric current conductive material.

60. The invention is EDSW according to claim 58; featured with conductive plastic-polymer and/or metal constructions and /or metal structure in plastic and/or metal powder used in plastic on some parts of fluid container and/or in terms of security, some parts of structure are attached with insulating (nonconductor) materials avoiding uncontrolled conducting of current.

61. The invention is MSW and EDSW; featured with reduction of electrical resistance of internal and/or external surfaces of containers and/or with being conductive and/or being in a structure dispersing static loads effectively and/or with use of antistatic polymers/plastics in its production and /or made antistatic by coating with antistatic surface coat.

62. The invention is antistatic MSW and EDSW according to claim 61; featured with adding conductive filler/additives to the structure forming perimeter (the wall) and/or with use of varying amounts of carbon black (carbon fiber) in the perimeter (the wall) and/or with use of silver and/or metal powders or fiber in varying amounts in different sections of the structure.

63. The invention is antistatic MSW and EDSW according to claim 61; featured with a structure of container's perimeter (the wall) including special conductive fibers or metal wires better contacting with grounding lines for very risky electrostatic loads.

64. The invention is antistatic MSW and EDSW according to claim 61; featured with a structure connected to grounding line to remove electrostatic load immediately and/or as additional equipment, with having antistatic cable-cord.

65. The invention is antistatic MSW and EDSW according to claim 61; featured with a structure reversing static load by means of externally supplied electricity and with a structure periodically interchangeable the direction (+/-) of such load.

66. The invention is antistatic MSW and EDSW according to claim 61; featured with an antistatic frame equipped to make it antistatic has a structure ensured to be more electrical conductive in some cases to enable use for heating and disinfection.

67. The invention is MSW and EDSW; featured with capability to generate and transmit ultrasonic waves and/or its periphery (textures) is in a structure transmitting and/or reflecting such waves to regions of high infection risk and/or preventing their transfer to other regions by absorbing such waves and/or such waves may be utilized to heat the fluid.

68. The invention is MSW and EDSW; featured with its structure capable to use electromagnetic waves which are called as microwaves (super high frequency signals) evidenced for germicidal efficiency.

69. The invention is MSW and EDSW according to Claim 68; featured with having structures to transmit and/or to reflect such waves to container structure for some indications and/or to prevent their transmit by absorbing such waves and/or for some cases such container is in a structure equipped with a feature to employ microwave ovens used at home.

70. The invention is secure MSW and EDSW; featured with capability to generate or transmit light.

71. The invention is MSW and EDSW according to Claim 70; featured with its structure capable of utilizing light of high energy with low wave length to perform drying and/or heating process (10).

72. The invention is MSW and EDSW according to Claim 70; featured with having equipment capable to use ultraviolet with antimicrobial effect and/or to utilize light waves to facilitate visibility.

73. The invention is MSW and EDSW according to Claim 70, featured with light transmitting up to end points by means of clear plastic/polymer and/or unbreakable glass and/or fiber optic structures and by means of this structure transmitting light, visible light and/or red light evidenced for analgesic and anti-inflammatory effect (approximately 630 nm wavelengths) and infrared lights (approximately 850 nm wavelengths) can be separately or collectively transferable.

74. The invention is light source for secure MSW and EDSW; featured with arrangement capable of producing all such light types separately or in combination either as integrated within sinus washing devices or as additional apparatus (supplementary equipment) and capable of adjusting the parameters of all these light types such as type, duration, intensity (10).

75. The invention is the container for secure MSW and EDSW; features with its structure transmitting light by using transparent/clear plastic-polymer, unbreakable glass or their mixtures and for cases requiring further security in terms of safety of user and environment, especially outer surface and some sections is made of and/or coated with light proof plastic-polymer especially avoiding UV.

76. The invention is the additional apparatus for MSW; featured with ability to use either in contact or without contact by placing on, under or near water container and equipped to ensure all functions requiring energy such as protection from infection, sterilization, antistatic property and heating (11).

77. The invention is MSW and EDSW; features with a vacuum apparatus applying negative pressure to other nostril when water is being delivered for washing from one nostril in order to perform nose washing with excessive water or with low pressure. This apparatus has a structure allowing cleaning of nostril before washing.

78. The invention is the vacuum apparatus of MSW and EDSW according to Claim 77; featured with valves controlling vacuum pressure and anatomic compatible headpiece/ends (special tip we have developed).

79. The invention is the vacuum apparatus of MSW and EDSW according to Claim 77; featured with vacuum applying tube having more than one aspiration holes in addition to valve controlling vacuum pressure on the devices designed for babies.

80. The invention is vacuum apparatus for MSW; featured with temporarily or permanently mounting on sinus washer devices as an alternative for cases where second hand is needed to be free or may be incorporated to device during manufacturing process. In these cases, it is designed to ensure power delivered by hand helps for both matters.

81. The invention is vacuum apparatus for EDSW; featured with capability of vacuum producing structure connected temporarily or permanently to water delivering/conducting structure as well as to move commonly or separately.

82. The invention as specified in any of the preceding claims described under titles temperature display and/or heating and/or being equipped with thermostat and/or limitation of maximum pressure and/or pressure measurement and monitoring and/or volume and/or speed and/or fighting against infection; featured with capability of use by adapting to electrical and/or mobile mouth washing devices; in these washing devices only relevant parameters are assigned with different values (20, 21, 25).

83. The invention is electrical or mobile mouth washing device; featured with having all novelties (as explained in any of above mentioned claims) about temperature indicator and/or heating and/or having thermostat and/or maximum pressure limitation and/or pressure measurement and monitoring and/or volume and/or speed and/or anti-infection properties we have developed for MSW and EDSW (20, 21, 25).

84. The invention is electrical mouth (intraoral and teeth) washing device according to claim 82 and 83; featured with round fluid delivering port to wash front side of teeth and upper front of teeth in indented form where remains can adhere easily and for washing of structures below prosthesis with hole/passage narrower (16) while it is in wider structure for washing structures like gingival, palate and tongue.

85. The invention is electrical mouth (intraoral and teeth) washing device according to claim 82 and 83; features with multiple holed structure of fluid delivering headpiece (the tips) to wash more than one inter-dents (interdental space) simultaneously and/or with different

clearance between fluid delivering holes and/or distance between holes are in adjustable structure. (18).

86. The invention is fluid delivering end (port, the tips) of electrical mouth (intraoral and teeth) washing device; featured with output hole produced approximately rectangular to perform more effective washing and to shorten washing duration and/or it has a changeable structure.

87. The invention is fluid delivering end (port, the tips) of electrical mouth (intraoral and teeth) washing device; featured with changeable end (port) positions without changing hand-grasp of the instrument.

88. The invention is fluid delivering end (port, the tips) of electrical mouth (intraoral and teeth) washing device; featured with square, elliptical, triangle shaped fluid outputs for personal choices and/or with possibility to use with ordinary devices by modifying such end pieces.

89. The invention is special apparatus delivering fluid of electrical mouth (intraoral and teeth) washing device; featured with small structure capable of penetrating interdentally (entering into interdental spaces) for some specific clinical cases.

90. The invention is special apparatus delivering fluid of electrical mouth (intraoral and teeth) washing device; featured with capability to wash visible sections during normal use while end piece can be directed manually forward, downwards or upwards enabling reach to the inter-dents and to the back surfaces of the tooth from back (behind).

91. The invention is the device which can be used both to wash the mouth (intraoral and teeth) as well as to wash the sinus; featured with a wide spectrum of all developed properties to employ for both purposes by only replacing headpieces (the tips) and it has a structure added with all modes related to indications.

92. The invention is mobile mouth (intraoral and teeth) washing device without any need for electricity for secure intraoral and teeth washing; characterized so that; it has all properties we have added to mobile sinus washer (MSW) without electric use and its additional apparatus.

93. The invention is mobile mouth (intraoral and teeth) washing device; featured with a structure enabling use of mobile sinus washer by changing only headpieces (the tips).

94. The invention is mobile mouth (intraoral and teeth) washing device according to claim 92 and 93; featured with a larger fluid/water container and end pieces similar to electrical mouth washing device.

95. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with a structure specifying temperature at least to one section among components primarily the structure transferring the water.

96. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with fixtures of temperature indicator and/or ensuring maximum pressure limitation and/or pressure measurement and monitoring and/or adjusting volume and/or speed.

97. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with an equipped structure with capabilities of all temperature indicating and/or ensuring maximum pressure limitation and/or pressure measurement and monitoring and/or adjustment of volume and/or speed that MSW has.

98. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with has a structure at least on one point absorbing excessive pressure by expansion thanks to flexible nature in order to avoid from sudden change in flow rate of tap water and then delivering to system when pressure becomes normal.

99. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with a discharge outlet (evacuation exit) delivering water to washbasin in order to avoid from sudden flow rate changes of tap water.

100. The invention is the discharge outlet of mouth washing device receiving water from tap according to claim 99; featured with installment before valves in order to assist in pressure control.

101. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with a structure allowing setting necessary changes of parameters in order to use successfully for sinus washing where use of tap water is not contraindicated.

102. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with an adaptor suitable for all types of tap knob as a mobile instrument.

103. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with spiral tubing to ensure occupying smaller area and elongation of tubing.

104. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with bendable structure or one piston rod bearing mechanism at least at one section including tap adaptor to ensure practical use.

105. The invention is mouth (intraoral and teeth) washing device receiving water from tap; featured with tubing consisted of at least from two pieces and can be connected to and separated from each other and/or tubing is in interlacing structure.

106. The invention is secure mouth (intraoral and teeth) washing device; featured with a specific brush end to enable mechanical cleaning along with washing.

107. The invention is specific brush of mouth (intraoral and teeth) washing device according to 106; featured with rotating structure based on pressure of water.

108. The invention is secure mouth (intraoral and teeth) washing device; featured with an additional container capable of delivering medicine (antiseptic), whitener, odor giving substance to water reaching teeth at a certain dosage.

109. The invention is mouth (intraoral and teeth) washing device; featured with capability to clean inter-dents before teeth washing by modifying the tips of vacuum forming equipment developed for sinus washing.

110. The invention is EDSW and electrical mouth (intraoral and teeth) washing device; featured with cell, battery or chargeable systems to obtain needed energy in mobile status.

111. The invention is MSW and EDSW; featured with marked indicators in colors, figures, numbers, symbols to enable understanding of volume and fill factor of fluid container and progress distance and direction of progress the end piece in nostril.

112. The invention is MSW, EDSW, mouth (intraoral and teeth) washing device; featured with use of light transmitting and/or producing and/or emitting and/or storing then emitting

and/or reflecting materials during production to make position of device and/or some sections and/or at least one of indicators on it visible in the absence or lack of light for some time during use or coated or painted entirely or at least some parts or at least one of indicators to ensure visibility.

113. The invention is visible structures according to claim 112; featured with phosphoric substance used for production or coated or painted with such substance.

114. The invention is MSW, EDSW, mouth (intraoral and teeth) washing device; featured with water container having a lockable bellow and/or ball bearing mechanism at least on one section to ensure direction and length change capability to fluid delivering part and end into nostril and/or intraoral/ inter-dents (17, 22, 23, 24).

115. The invention is MSW, EDSW, mouth (intraoral and teeth) washing device; featured with hand or finger contact surface of fluid or water containers with different shapes, direction, depth and length, with jaws, rough, toothed like saw, indented, or notched structure to enable ergonomically easy grasp with hand and to avoid slipping (15).

116. The invention is MSW, EDSW, mouth (intraoral and teeth) washing device; featured with use of driving force to become capable to deliver air to water delivering systems along with water at desired amount and has an additional container.

117. The invention is an additional fixture and container of secure MSW, EDSW, mouth (intraoral and teeth) washing device according to claim 116; featured with discharge of fluid at the end of washing only by supplying air and/or with capability to deliver antiseptic from its container in some medical cases and/or with single way valve specific to instrument.

118. The invention is an additional fixture and container of secure MSW, EDSW, mouth (intraoral and teeth) washing device; featured with specific separate filters to ensure cleaning of delivered fluid and/or air.

119. The invention is MSW, EDSW, mouth (intraoral and teeth) washing device; featured with partially or completely below (accordion) form fluid container to ensure occupying smaller area. When it is empty corresponding sides are almost adhered to each other while filled with fluid it expands to reach its full capacity like an accordion.

120. The invention is bellow (accordion) shaped containers of secure MSW, EDSW, mouth (intraoral and teeth) washing device according to claim 119; featured with different shapes like rectangular prism, cone, sphere in its full position to meet personal preferences.

121. The invention is bellow (accordion) shaped containers of secure MSW, EDSW, mouth (intraoral and teeth) washing device according to claim 119; featured with inflexible structure to prevent return of dirty fluid to container.

122. The invention is MSW, EDSW, mouth (intraoral and teeth) washing device; it is characterized in that; the components of the devices for the use of children are manufactured in the forms of some animals like elephants, dinosaurs, pandas, rabbits, chicks, squirrels, ducks, bear and in the forms of some toys like firefighting vehicle, police vehicle in order to make them sympathetic (cute/ pretty) for children use. The shaping the components of the devices for the pleasant appearances have been provided so that it does not disrupt the function-washing process of the devices.

123. The invention is secure MSW, EDSW, mouth (intraoral and teeth) washing device made sympathetic (cute/ pretty) for children use according to claim 122; featured with use of different colors on all parts and/or with its sound generating structure during washing.

124. The invention is secure MSW, EDSW, mouth (intraoral and teeth) washing device; featured with used medical grade materials having flexibility, softness, elasticity, transparency, non-adhesiveness, anti-infected, non-allergen, sterilization, heat resistant, no-carcinogenic risk when heated for some clinical cases.

125. The invention is secure MSW, EDSW, mouth (intraoral and teeth) washing device; featured with metal or plastic spring systems (26) and /or safety valves for adjusting necessary pressure source and capable to store/ potentialize pressure beforehand to prevent undesired fluctuations of pressure and to get rid of need to spend effort with hand for application force.

126. The invention is secure MSW, EDSW, mouth (intraoral and teeth) washing device; featured with a structure capable of using compressed gas system (a type of pneumatic battery) operated with manpower (27) and/or adjustable valve for energy delivering fluid to avoid undesired pressure fluctuations and to get rid of effort to apply power by hand during washing.

127. The invention is secure MSW, EDSW, mouth (intraoral and teeth) washing device; featured with vacuum forming containers with adjustable metal or plastic spring systems and/or compressed gas system/pneumatic battery and/or adjustable valve/ safety valves.

1/2

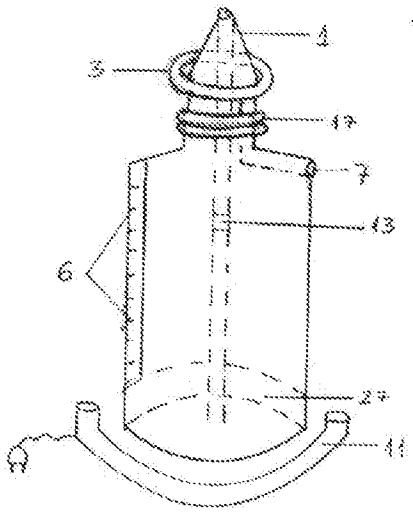

FIG. 1

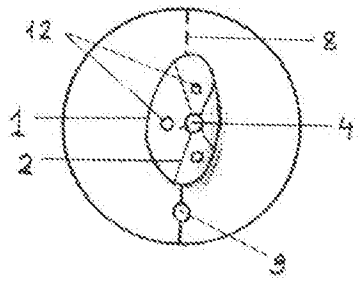

FIG. 2

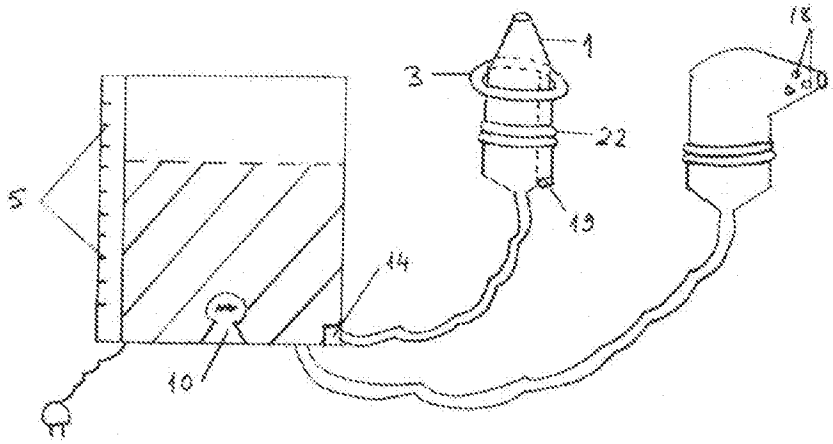

FIG. 3

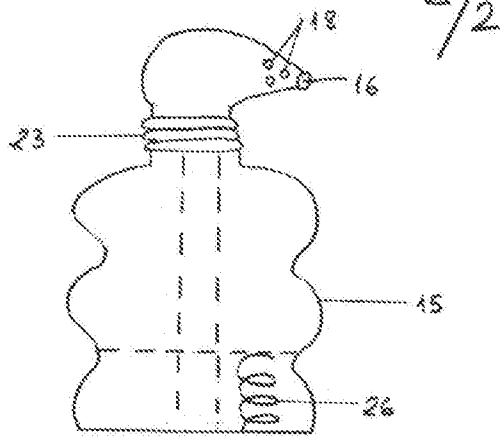

FIG. 4

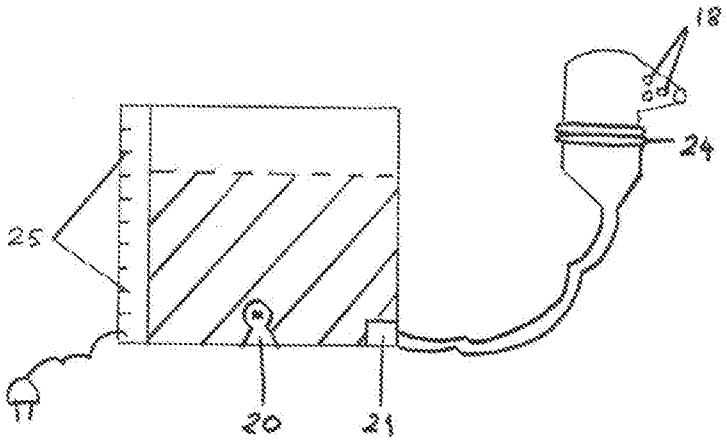

FIG. 5

PATENT COOPERATION TREATY

PCT

DECLARATION OF NON-ESTABLISHMENT OF INTERNATIONAL SEARCH REPORT

(PCT Article 17(2)(a), Rules 13ter.1(c) and Rule 39)

Applicant's or agent's file reference PCT-RUSEN	IMPORTANT DECLARATION	Date of mailing *(day/month/year)* 24 August 2017 (24-08-2017)
International application No. PCT/TR2017/050104	International filing date *(day/month/year)* 20 March 2017 (20-03-2017)	(Earliest) Priority date *(day/month/year)* 21 March 2016 (21-03-2016)
International Patent Classification (IPC) or both national classification and IPC A61H35/04, A61C17/02		
Applicant DÜNDARÖZ, MEHMET RU?EN		

This International Searching Authority hereby declares, according to Article 17(2)(a), that **no international search report will be established** on the international application for the reasons indicated below

1. [X] The subject matter of the international application relates to:
   - a. [ ] scientific theories.
   - b. [ ] mathematical theories
   - c. [ ] plant varieties.
   - d. [ ] animal varieties.
   - e. [ ] essentially biological processes for the production of plants and animals, other than microbiological processes and the products of such processes.
   - f. [ ] schemes, rules or methods of doing business.
   - g. [ ] schemes, rules or methods of performing purely mental acts.
   - h. [ ] schemes, rules or methods of playing games.
   - i. [ ] methods for treatment of the human body by surgery or therapy.
   - j. [ ] methods for treatment of the animal body by surgery or therapy.
   - k. [ ] diagnostic methods practised on the human or animal body.
   - l. [ ] mere presentations of information.
   - m. [ ] computer programs for which this International Searching Authority is not equipped to search prior art.

2. [X] The failure of the following parts of the international application to comply with prescribed requirements prevents a meaningful search from being carried out:
   [X] the description [X] the claims [ ] the drawings

3. [ ] The failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions prevents a meaningful search from being carried out:
   - [ ] the written form has not been furnished or does not comply with the standard.
   - [ ] the computer readable form has not been furnished or does not comply with the standard.

4. Further comments:

Name and mailing address of the International Searching Authority	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040 Fax: (+31-70) 340-3016	ULLRICH, Josef Tel: +49 (0)89 2399-8048

Form PCT/ISA/203 (July 1998)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 203

1 The present application contains 127 claims, of which at least 73 (!) are independent - even considering numerous unclear claims as dependent claims even though they might as well be independent (see e.g. claim 12 relating to "fluid outlet holes according to claim 9, 10, or 11", whereas these claims 9, 10, 11 do not relate to fluid outlet holes but to "MSW and EDSW").

There are so many claims, and they are drafted in such a way that the claims as a whole are not in compliance with the provisions of clarity and conciseness of Article 6 PCT to such an extend that it is impossible for the skilled person to establish the subject-matter for which protection is sought. Especially, the skilled reader has no guidance to establish what might be the invention and which might be the technical features essential to the definition of the invention. For example :

- Is the invention a mobile sinus washing device (MSW)? Or is it an energy dependent sinus washing device (EDSW)? Or is it the combination of both, i.e. is it a "mobile sinus washing device (MSW) and energy dependent sinus washing device (EDSW)" (see e.g. claim 1)?
- Or are specific liquid outlet openings essential (e.g. independent claim 9)? Or some specific outlet valves (e.g. claim 12)? Or a specific temperature gauge (e.g. independent claims 17-19)? Or a heater (e.g. independent claim 25)? Or a specific safety valve preventing exceed of pressure (e.g. independent claim 27)? Or an evacuation outlet (e.g. independent claim 30)? Or a specific multi-section structure of the container (e.g. independent claim 32)? Or a specific pressure gauge (e.g. independent claim 34)? Or a volume control (e.g. independent claim 48)? Or a flow control (e.g. independent claim 53)?
- Or ....

It is noted that for almost all of the numerous different concepts listed above, the claims merely define broad and generic ideas and/or attempt to define the subject-matter in terms of results to be achieved, instead of defining the necessary technical features.

2 Moreover, the application is not in compliance with the provisions of support, clarity and support in the sense of Articles 6 and 5 PCT to such an extend that the skilled person is precluded from establishing the subject-matter for which protection is sought. For example:

- Independent claim 1: What are the technical features of the mobile sinus washing device? What are the technical features of the energy dependent sinus washing device? What is the structural and functional relation of these two devices?
- Independent claim 2: According to the general understanding of the term, a prism is a polyhedron comprising an n-sided polygonal base, a second base which is a translated copy of the first, and n other faces joining corresponding sides of the two bases. In contradiction thereto, according to claim 2 the prism has "an approximate ellipse-like base and laterally pressed at distal (whose lower portion is flattened from the sides), whereas the top part is a cone-like shape (semi cone/ top cut cone like structure) which is truncated from the upper side in proximal ...". Thus, it is incomprehensible what is meant by a "prism" in the context of the present application.
- Claim 8: The feature "capability to be attached ... with medicine administration systems (drops, sprays) inside the nose by amending its dimensions preserving its physical structure which is its basic feature"

is incomprehensible. See also e.g. claim 16.
- ...

3 Even considering the application as a whole, the above fundamental problems remain.
The drawings are only schematic, not showing any details. There is no detailed description of the drawings, but only a brief description on page 20, lines 14-24 and a list of reference signs on pages 21, 22. Thus, for none of the embodiments details are disclosed. For example:
Fig. 1:
- According to page 22, reference sign 27 is a "pneumatic battery, compressed gas section of mobile washers". However, it is incomprehensible how this item should work, since the Fig. does not show any details.
- It is incomprehensible what exactly should be meant by reference sign 11, which according to page 21 is an "additional apparatus (additional attachment) of mobile sinus washer (MSW)". Is there any electrical connection/plug? What is the purpose of that "additional apparatus"?
- ...

4 The non-compliance with the substantive provisions is to such an extent that a meaningful search of the whole claimed subject-matter could not be carried out (Article 17(2) PCT and PCT Guidelines 9.30).
There being no reasonable basis in the application that clearly indicates the subject-matter which might be expected to form the subject of the claims later in the procedure, no search at all was deemed possible.
Remark: Full reasoning see separate sheet.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-IV, 7.2), should the problems which led to the Article 17(2) declaration be overcome.