

Señores
DIVISIÓN DE NUEVAS CREACIONES
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
E. S. D.

Ref.: Modelo de Utilidad
Unidad portátil de reducido volumen
Exp.: 01-025.682
Solicitud de examen de patentabilidad

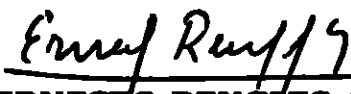
Estimados señores,

ERNESTO RENGIFO GARCIA, mayor de edad, identificado como aparece al pie de mi firma, actuando en mi condición de apoderado de **MARTHA OROZCO HENAO**, de conformidad con el poder especial que obra en el expediente, encontrándome dentro de la debida oportunidad legal, mediante el presente escrito me permito solicitar a su despacho se sirva dar trámite al examen de fondo del modelo de utilidad de la referencia, el cual fue publicado en la Gaceta número 511 del 26 de Diciembre de 2001.

Por lo tanto, anexo el comprobante de pago de la tasa de presentación de la solicitud.

MI representada y yo recibiremos notificaciones en la secretaría de su despacho o en mi oficina particular ubicada en la Cra. 13 No. 75-20 Of. 401 de la ciudad de Bogotá.

Atentamente,


ERNESTO RENGIFO GARCIA
C.C 14.232.210 de Bogotá
T.P. 49.467 del C.S de la J.



14

Industria y Comercio

SUPERINTENDENCIA

SUPERINDUSTRIA Y COMERCIO
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Fecha (AMD): 2002-03-26 12:29:14
Tramite : 003 PATENTES D 1 REGISTRO/ 536 PETICION
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

NIT : 900176089-2

RECIBO OFICIAL DE CAJA : 02 - 20,599
FECHA : MARZO 26 DE 2002

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	Vr. PAGO
ANDRE RICIO RENGIFO	CONSIGNACION	BANCO POPULAR	090-00110-6	134115	26/03/2002	212.000.00

***** CONCEPTO *****

CANT. CONTABILITICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-01 SOLICITUDES	86 EXAMEN DE PATENTABILIDAD DE MODELO	212.000.00
	TOTAL :	\$ 212.000.00

SON: DOSCIENTOS DOCE MIL PESOS

RECEBIBLE :

RECIBO DE CAJA APLICADO AL EXPEDIENTE No.

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**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISION DE NUEVAS CREACIONES**

2020

Bogotá, D.C., 15 de diciembre de 2004

Doctor (señor):
ERNESTO RENGIFO GARCIA.

ASUNTO:	Radicación No.	01-25682
	Trámite	003
	Evento	001
	Actuación	430
	Oficio	11549
	Folios	12

Como resultado del examen de patentabilidad, realizado con fundamento en el artículo 45 de la Comisión de la Comunidad Andina, se notifica el siguiente concepto técnico:

1. Documentos estudiados:

Para el presente estudio se tuvo en cuenta el capítulo descriptivo comprendido en los folios 5-6, el capítulo reivindicatorio conformado por 2 cláusulas que se encuentran en los folios 6-7 y los dibujos comprendidos en los folios 8 a 10 de la solicitud en estudio.

2. Objeto de la Invención:

El presente modelo de utilidad proporciona un módulo portátil para odontología, en el cual se soportan y se integran una serie de instrumentos o aparatos de trabajo, siendo funcional para trabajos a campo abierto, brigada de salud oral, comunidades apartadas de los centros urbanos y para consultorios tradicionales.

De acuerdo con el modelo de utilidad titulado, "Unidad odontológica portátil de reducido volumen", el cual se lleva a cabo de acuerdo con las características reivindicadas, donde la reivindicación 1 dice: *"Modelo de la unidad odontológica portátil que se caracteriza por comprender:*

- un cuerpo o núcleo prismático o módulo repartidor del flujo de aire comprimido y agua para la operación de instrumentos convencionales para la salud oral;*
- unos soportes a manera de secciones acanaladas situadas en la cara frontal exterior del módulo prismático, como soporte de los instrumentos de trabajo;*
- un soporte en la cara posterior opuesta a la anterior, que a manera de gancho de colgadura confiere la cualidad de portátil del presente modelo;*
- una red de conexiones a manera de tubería flexible para la conducción de agua y aire comprimido hacia el módulo prismático y desde éste hacia los instrumentos de trabajo;*
- elementos o cuerpos de válvula dispuestos al interior del módulo prismático para trasegar dosificadamente el aire comprimido y el agua circulante hacia los*

instrumentos de trabajo:
-medios de accionamiento manual al exterior del módulo prismático destinados a la dosificación de la velocidad de giro y a la regulación del caudal de agua para los instrumentos;
-un accionador de pedal operable por el usuario de la unidad conectando a un compresor de aire con derivados hacia el suministro de energía para el mismo compresor; y
-una conexión para conducir agua hacia el módulo prismático desde una fuente externa de suministro hidráulico."

El objeto de la invención definido anteriormente se clasificó de acuerdo con el IPC así: A61G 15/010.

3. Determinación del estado de la técnica:

El artículo 16 de la decisión 486 de la comisión de la Comunidad Andina que establece que *"El estado de la técnica comprenderá todo lo que haya sido accesible al público por una descripción escrita u oral, utilización, comercialización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida.*

Solo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el artículo 40".

Consultadas las bases de datos y los archivos con que cuenta la entidad se encontró que antes del 02 de abril de 2001, fecha de radicación de la solicitud en estudio, documentos relacionados con la materia de la presente solicitud:

N°	Documento	Título	Fecha de publicación
D1	US 4.043.041	DENTAL TREATMENT CONTROL UNIT	23-08-1977

4. Evaluación de los requisitos de patentabilidad:

El artículo 85 de la Decisión 486 de la Comisión de la Comunidad Andina establece que *"Son aplicables a las patentes de modelo de utilidad, las disposiciones sobre patentes de invención contenidas en la presente decisión en lo que fuere pertinente, salvo en lo dispuesto con relación a los plazos de tramitación, los cuales se reducirán a la mitad. Sin perjuicio de lo anterior, el plazo establecido en el artículo 40 quedara reducido a doce meses".*

En cumplimiento del artículo 85 de la Decisión 486, se procedió a evaluar el cumplimiento de los requisitos, con el fin de establecer la patentabilidad del modelo

de utilidad reivindicado en la solicitud en estudio.

Evaluación de la novedad:

El artículo 16 de la decisión 486 de la comisión de la Comunidad Andina que establece que *"El estado de la técnica comprenderá todo lo que haya sido accesible al público por una descripción escrita u oral, utilización, comercialización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida."*

Solo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el artículo 40".

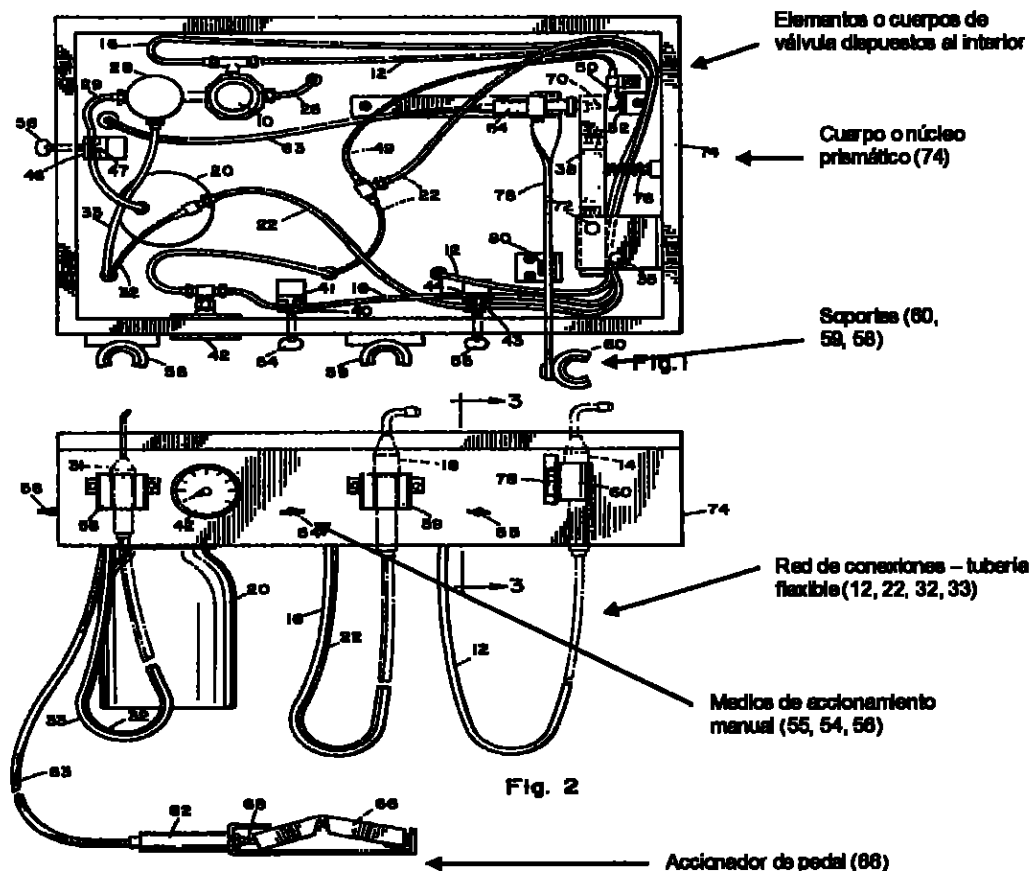
El presente modelo de utilidad, se lleva acabo de acuerdo con las características reivindicadas, donde la reivindicación 1 dice: *"Modelo de la unidad odontológica portátil que se caracteriza por comprender:*

- un cuerpo o núcleo prismático o módulo repartidor del flujo de aire comprimido y agua para la operación de instrumentos convencionales para la salud oral;*
- unos soportes a manera de secciones acanaladas situadas en la cara frontal exterior del módulo prismático. como soporte de los instrumentos de trabajo;*
- un soporte en la cara posterior opuesta a la anterior, que a manera de gancho de colgadura confiere la cualidad de portátil del presente modelo;*
- una red de conexiones a manera de tubería flexible para la conducción de agua y aire comprimido hacia el módulo prismático y desde éste hacia los instrumentos de trabajo;*
- elementos o cuerpos de válvula dispuestos al interior del módulo prismático para trasegar dosificadamente el aire comprimido y el agua circulante hacia los instrumentos de trabajo;*
- medios de accionamiento manual al exterior del módulo prismático destinados a la dosificación de la velocidad de giro y a la regulación del caudal de agua para los instrumentos;*
- un accionador de pedal operable por el usuario de la unidad conectando a un compresor de aire con derivados hacia el suministro de energía para el mismo compresor; y*
- una conexión para conducir agua hacia el módulo prismático desde una fuente externa de suministro hidráulico."*

De acuerdo con la definición de novedad del Artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina y basándonos en el objeto de la invención se realizó el siguiente análisis:

- 1) El documento **US 4.043.041** (mencionado de ahora en adelante como **D1**) proporciona una unidad de tratamiento dental para controlar el flujo de aire y/o agua a los instrumentos dentales (ver resumen, figuras).

Fig. 1 y 2 del documento US 4.043.041 (D1)



2) Al comparar la reivindicación 1 del presente modelo de utilidad en estudio con las características del documento US 4.043.041 (D1), vemos que dicho documento contiene las características de la reivindicación 1; donde el documento D1 proporciona una unidad de tratamiento dental (ver figuras 1 y 2) que comprende:

- Un cuerpo o núcleo prismático o modulo repartidor del flujo de aire y agua para la operación de los instrumentos convencionales (ver figuras),
- Unos soportes situadas en la cara frontal exterior del cuerpo o modulo (Ver figuras 1 y 2; numerales 60, 59, 58)
- Red de conexiones a manera de tubería flexible para la conducción de agua y aire (ver figuras y descripción)
- Elementos o cuerpos de válvula dispuestos al interior del modulo prismático (ver figuras 1 y 2)
- Medios de accionamiento manual al exterior del modulo (ver figuras; numerales 55, 54, 56)
- Un accionador de pedal operable por el usuario (ver figura 2)
- Una conexión para conducir agua hacia el módulo prismático desde una fuente externa de suministro hidráulico (ver descripción, figura 6)

3) Realizada la comparación del documento D1 con el presente modelo de utilidad, se observa que dicho documento contiene las características del modelo de utilidad en estudio; por lo tanto, el objeto de la solicitud en estudio

podría ser idéntico a lo comprendido en el estado de la técnica, con lo cual quedaría desvirtuada la novedad de esta.

No hay que olvidar que el tenor de las reivindicaciones es el que determina el alcance de la protección conferida por la patente (art. 51). Por ello, al analizar la novedad se deben interpretar las reivindicaciones tomando el sentido mas amplio de las definiciones empleadas.

En conclusión, los requisitos de patentabilidad de la presente solicitud se podrían ver afectados así:

N°	Documento	Reivindicaciones afectadas	Requisito que afecta
D1	US 4.043.041	1-2	Novedad

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de treinta días contados a partir de la fecha de la notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Unica N° 10 de 2001.


ALIX CÉSPÉDES DE VERGEL.
Jefe de la División de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista, de fecha 23 DIC. 2004

CONCEPTO TÉCNICO Número: 1641		EXAMINADOR TÉCNICO Código:202018
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[34] DENTAL TREATMENT CONTROL UNIT

[76] Inventor: John Robert Hornick, 24961 Whisler Drive, El Toro, Calif. 92630

[21] Appl. No.: 683,936

[22] Filed: May 6, 1976

[51] Int. Cl.² A61C 19/02

[52] U.S. Cl. 32/22

[58] Field of Search 32/22; 222/571; 141/115, 117, 119, 311 A, 116; 251/293, 5, 9, 57

[56] References Cited

U.S. PATENT DOCUMENTS

2,711,279	6/1955	Day et al.	141/117
3,536,394	10/1970	Rodriguez	251/293
3,759,483	9/1973	Baxter	251/5
3,986,262	10/1976	Caillies	32/22

Primary Examiner—Robert Peschok

Attorney, Agent, or Firm—Brown & Martin

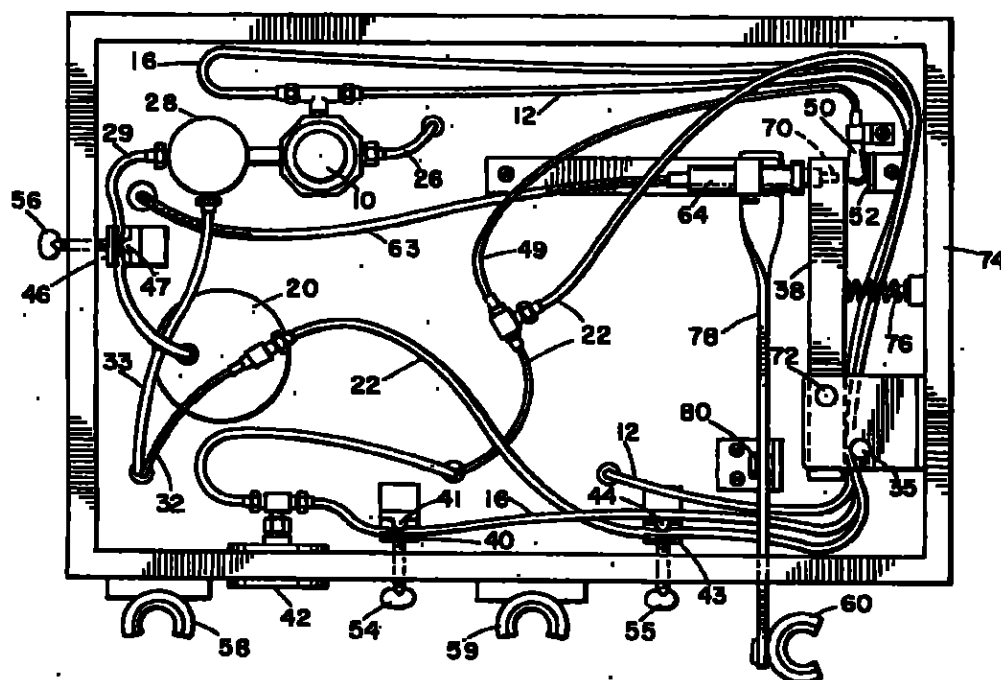
[57] ABSTRACT

A dental treatment control unit for controlling the flow of air and/or water to dental treatment instruments. The flow of air and/or water through flexible lines to selected ones of the dental instruments is regulated by line

squeezing lever arms that are normally biased for squeezing the flexible lines to prevent the flow of air and/or water therethrough. The lever arms are moved in response to the operation of a foot control mechanism to unsqueeze those air and/or water lines that are connected to the selected dental treatment instruments. A foot pedal controls a closed hydraulic system which includes a hydraulic actuator which operates a piston to move the line squeezing lever arms.

Flow of air and/or water to only selected dental treatment instruments is automatically programmed by positioning the hydraulic actuator and piston adjacent the squeezing lever arm corresponding to the selected instrument. Automatic programming is provided by a positioning lever arm having the hydraulic actuator and piston attached to one end thereof and a dental instrument receptacle attached to the other end. When a given selected dental treatment instrument is removed from the receptacle, the positioning lever arm responds by moving to position the hydraulic actuator and piston adjacent the squeezing lever arm corresponding to the given selected instrument.

11 Claims, 6 Drawing Figures



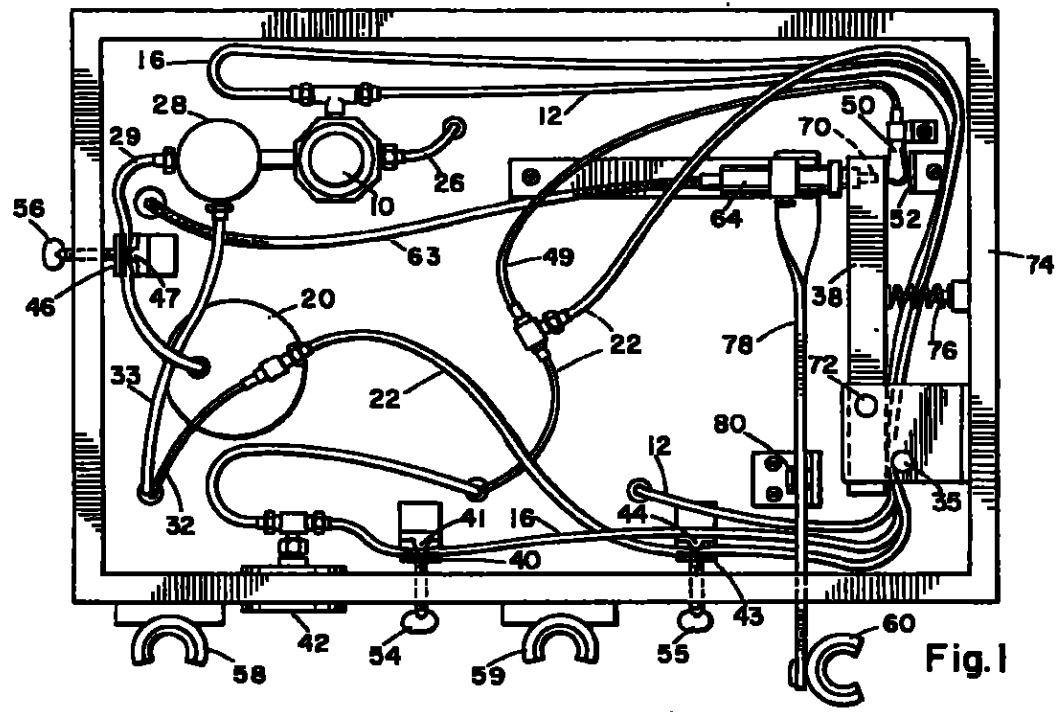


Fig. 1

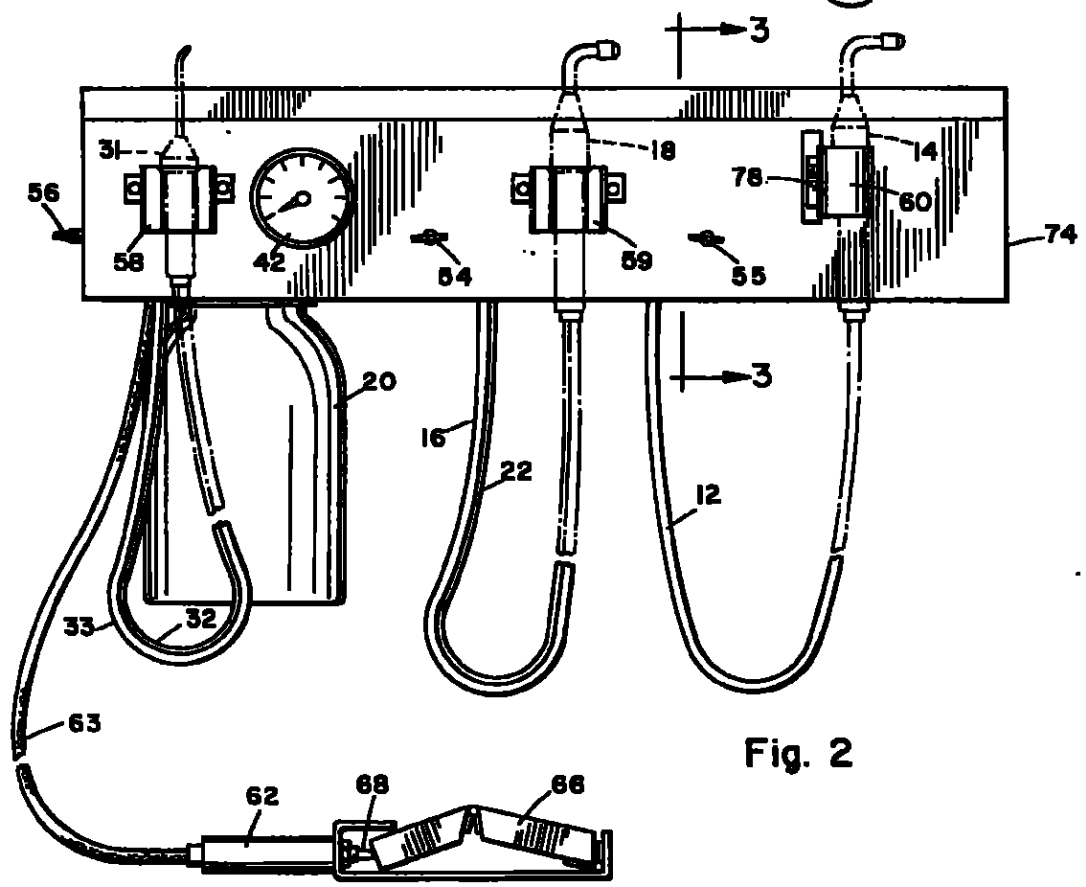
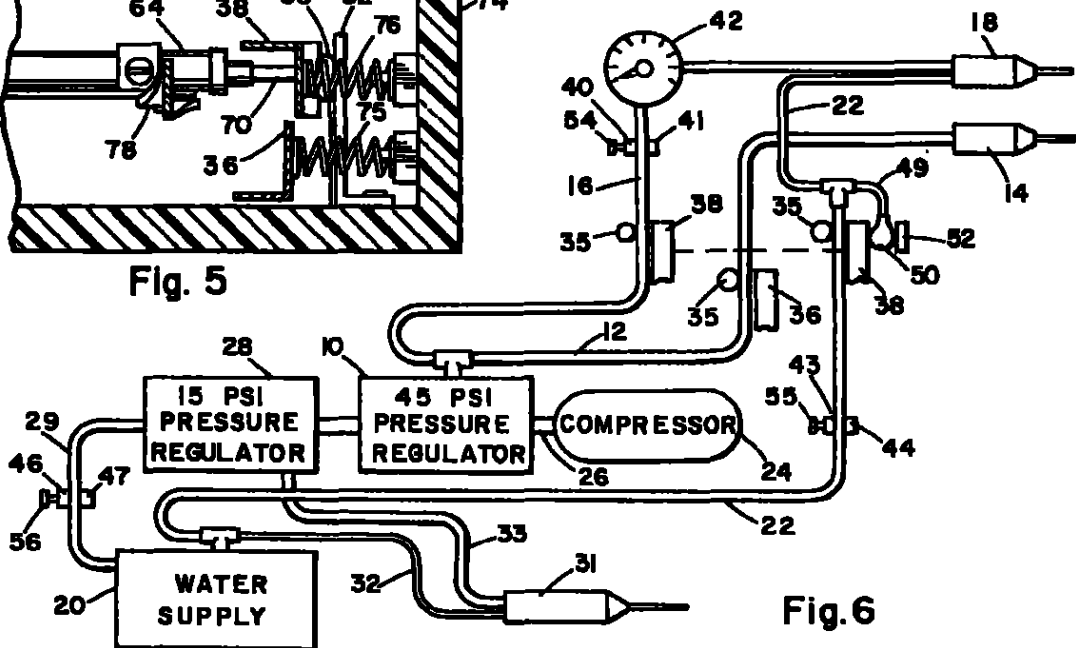
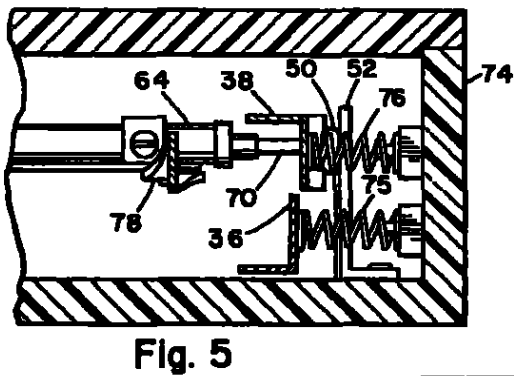
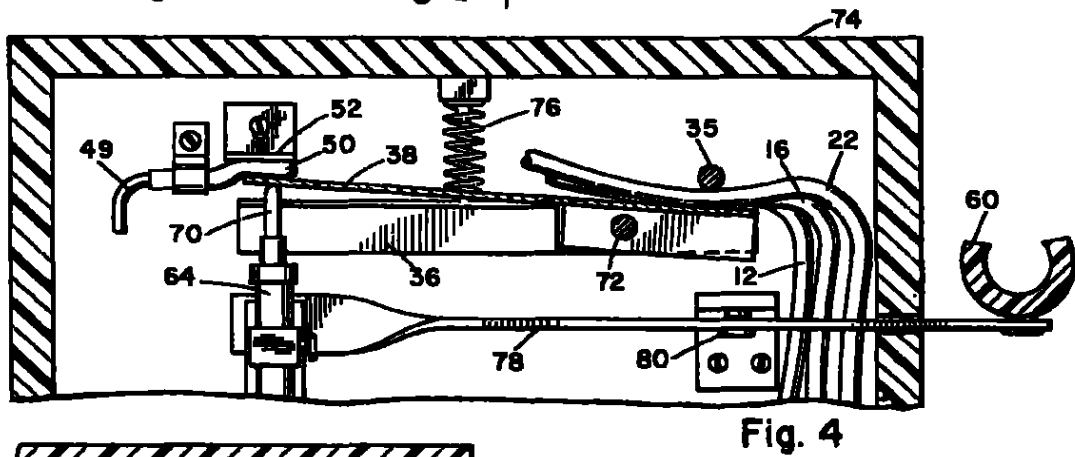
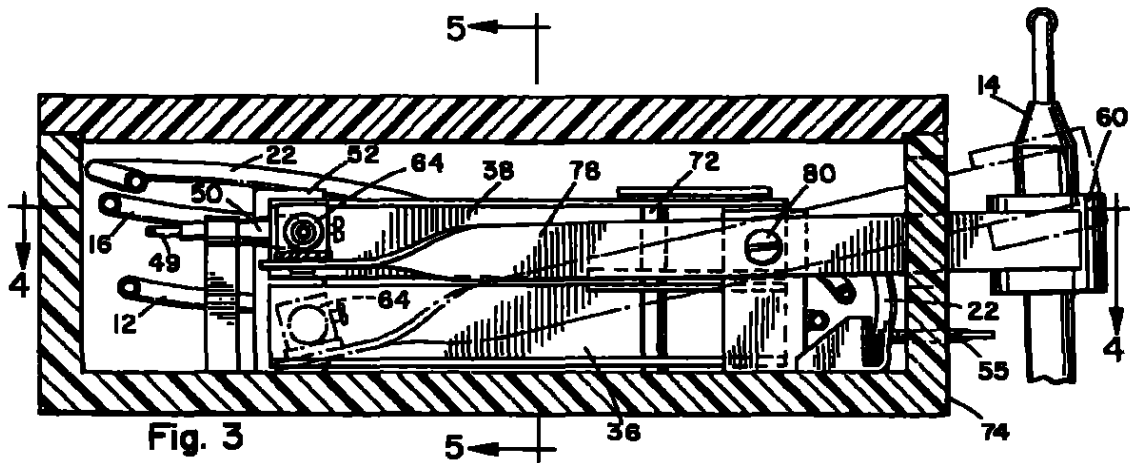


Fig. 2



DENTAL TREATMENT CONTROL UNIT

BACKGROUND OF THE INVENTION

This invention relates to dental treatment control units for programming and regulating the supply of air and water to selected dental instruments.

Dental treatment control units of the prior art include complicated and expensive control systems for supplying air, water and vacuum to dental treatment instruments. A large number of control and regulating valves are required. In a typical unit operated by a standard pneumatic foot-controlled mechanism, the flow of air and/or water through flexible supply lines is regulated by the dentist operating valves and/or regulators in the foot-controlled mechanism. In order to vary the flow of fluid through the supply lines, regulator valves such as needle valves and air pilot valves are required in the supply lines. Such a system is complicated and expensive, and requires continuous monitoring.

Moreover, control units of the prior art include complicated mechanical, pneumatic or electrical mechanisms for programming the supply of air and/or water to selected dental treatment instruments. Such units are not able to both program and vary the amount of air and water supply in one simple operation.

SUMMARY OF THE INVENTION

The dental treatment control unit of the present invention is characterized by a regulating device which includes apparatus that are normally biased for squeezing the flexible water and/or air supply lines to prevent the flow of air and/or water therethrough, and apparatus for unsqueezing those supply lines that are connected to a selected dental treatment instrument, and by a foot-controlled mechanism which includes a closed hydraulic system including a hydraulic actuator that controls the unsqueezing apparatus in response to operation of a foot pedal. Accordingly, flow of water through the supply lines may be regulated without the use of mechanical valves in the supply lines and without the use of valves and regulators in the foot-controlled mechanism.

Another important feature of the present invention is the capability of varying the flow of air and water to the dental instruments. In most prior art control units the air and water supply lines are only controllable to be either totally on or off. In the units of this invention, the hydraulic foot-controlled mechanism may be operated to move the hydraulic actuator at varying distances thereby providing a control of the amount of air and water supplied to the dental instruments as well as turning the supply completely on or off.

In a preferred embodiment, the regulating device includes a line squeezing lever arm corresponding to each dental treatment instrument, and a post adjacent such squeezing lever arm defining a path between the post and the lever arm. The air and/or water lines for the corresponding dental treatment instrument are positioned within this path. The squeezing lever arm is normally biased to squeeze the lines between the lever arm and the post to prevent the flow of air and/or water therethrough. A piston operated by the hydraulic actuator and positionable adjacent the squeezing lever arm corresponding to the selected dental instrument, moves the lever arm to unsqueeze the lines to allow the flow of air and/or water to the selected instrument in response to operation of the foot pedal.

The present invention may further include apparatus for automatically programming the regulating device in accordance with the selection of a dental treatment instrument to enable the unsqueezing of those supply lines that are connected to the selected dental treatment instrument.

The automatic programming apparatus includes a positioning lever arm having a receptacle for a dental treatment instrument attached to one end of the arm and the piston operated by the hydraulic actuator coupled to the other end of the arm. The positioning lever arm is movable in response to removal of a given selected dental instrument from the receptacle to position the piston adjacent the squeezing lever arm corresponding to the given selected instrument. The positioning lever arm is further movable in response to replacement of the given selected instrument in the receptacle to position the piston adjacent a squeezing lever arm corresponding to a different selected dental treatment instrument.

The present invention may additionally include apparatus for preventing dripping of water from a selected dental treatment instrument following the usage thereof and the squeezing shut of the water line thereto. Such apparatus includes a pinch bulb and an additional water line. One end of the additional water line is connected to the pinch bulb and the other end is connected to the water supply line at a point between the regulating device and the dental treatment instrument. The apparatus for preventing dripping also includes a device for squeezing the pinch bulb when water flows to the dental instrument and for releasing the pinch bulb when the water supply line is squeezed shut. When the pinch bulb is released a retracting pressure is thereby provided in the water supply line to prevent water from dripping from the attached dental instrument.

The closed hydraulic control system of the present invention also may be used for controlling accessory dental treatment instruments that do not depend upon the control of the flow of air and/or water for their operation, such as hypersonic prophylaxis devices, electric drills and electrical coagulating devices. Such use of the closed hydraulic system of the present invention avoids the use of external electrical cords and controls that are common to prior art devices for controlling such accessory devices.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a top plan view of the preferred embodiment of the dental treatment control unit of the present invention with the cover removed.

FIG. 2 is a front elevation view of the unit of FIG. 1 wherein broken lines are used to show attached dental treatment instruments.

FIG. 3 is an enlarged sectional view taken on line 3—3 of FIG. 2, wherein broken lines are used to show the positioning lever arm in the position to which it moves when a given selected dental instrument is moved from its receptacle.

FIG. 4 is a partial sectional view taken on line 4—4 of FIG. 3.

FIG. 5 is a partial sectional view taken on line 5—5 of FIG. 3.

FIG. 6 is a schematic diagram showing the water and air supply system in the unit of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to FIGS. 1, 2 and 6, air is supplied under pressure from a 45 p.s.i. air pressure regulator 10 through an air supply line 12 to a low speed dental hand piece 14, and through an air supply line 16 to a high speed dental hand piece 18. Water is supplied under pressure from a water supply reservoir 20 through a water supply line 22 to the high speed dental hand piece 18. The supply lines 12, 16 and 22 are flexible rubber or plastic.

The 45 p.s.i. air pressure regulator 10 is supplied from an air compressor 24 through a line 26.

The water supply 20 is pressurized by air provided from a 15 p.s.i. air pressure regulator 28 through an air supply line 29. The 15 p.s.i. air pressure regulator 28 is supplied with air from the air compressor 24 through the 45 p.s.i. air regulator 10.

An air and water syringe 31 is supplied with water under pressure from the water supply reservoir 20 through a water supply line 32 and with air under pressure from the 15 p.s.i. air pressure regulator 28 through the air supply line 33.

The air supply line 12 to low speed hand piece 14 is positioned between a post 35 and a lower squeezing lever arm 36. The air supply line 16 to the high speed hand piece is positioned between the post 35 and an upper squeezing lever arm 38 and between a vernier control clamp 40 and a post 41, and passes through a pressure gauge 42. The water supply line 22 to the high speed hand piece is positioned between the post 35 and the upper squeezing lever arm 38 and between a vernier control clamp 43 and a post 44. The air line 29 from the 15 p.s.i. air pressure regulator 28 to the water supply reservoir 20 is positioned between a vernier control clamp 46 and a post 47.

Vernier control clamps 40, 43, 46 are adjusted by turning corresponding knobs 54, 55, 56 to calibrate the air and/or water pressure in the corresponding lines 16, 22, 29 positioned adjacent thereto. An additional water line 49 connects a pinch bulb 50 to the water supply line 22. The pinch bulb 50 is positioned between the upper squeezing lever arm 38 and a bar 52.

Receptacles 58, 59 and 60 are provided for receiving respectively the air/water syringe 31, the high speed hand piece 18 and the low speed hand piece 14.

A closed hydraulic system includes a hydraulic ram 62, a hydraulic line 63 and a hydraulic actuator 64. The hydraulic system is operated by a foot pedal 66. Depression of the foot pedal 66 moves a drive piston 68 into the hydraulic ram 62, which in turn causes the hydraulic actuator 64 to move a follower piston 70.

Operation of the regulating device and the programming apparatus is explained with reference to FIGS. 1, 3, 4 and 5.

The squeezing lever arms 36, 38 are pivotally mounted on a pin 72 and also are mounted on the housing 74 by springs 75 and 76. The springs 75 and 76 normally bias the squeezing lever arms 36, 38 in a position wherein they clamp the lines 12, 16 and 22 against the post 35 to squeeze them shut.

When the follower piston 70 moves in response to depression of the foot pedal 66, it presses against whichever squeezing lever arm 36 or 38 that it 70 is then positioned adjacent thereto and causes the respective arm 36 or 38 to move to unsqueeze the respective lines 14 or 16 and 22 that are clamped against the post 35 by

that particular lever arm 36 or 38, thereby allowing air and/or water to flow through the lines 14 or 16 and 22 to the respective dental handpieces 14 or 18.

The programming apparatus includes a positioning lever arm 78, which is pivotally mounted on a pin 80. The hydraulic actuator 64 is attached to one end of the lever arm 78, and the receptacle 60 for the low speed hand piece 14 is attached in the other end. When the low speed hand piece 14 is removed from the receptacle 60, the positioning lever arm 78 moves to the position shown by the broken lines in FIG. 3, wherein the hydraulic actuator 64 and follower piston 70 are positioned adjacent the lower squeezing lever arm 36. Depression of the foot pedal 66 then will allow air to flow through line 12 to the low speed hand piece 14.

When the low speed hand piece 14 is returned to the receptacle 60 the positioning lever arm 78 returns to the position shown by the solid lines in FIG. 3 and as shown in FIGS. 4 and 5, wherein the hydraulic actuator 64 and follower piston 70 are positioned adjacent the upper squeezing lever arm 38 which clamps the supply lines 16 and 22 for the high speed hand piece 18. When the high speed hand piece 18 is removed from its receptacle 59, the positioning lever arm 78 remains in this last mentioned position, and depression of the foot pedal 66 allows air and water to flow through lines 16 and 22 to the high speed hand piece 18.

It is readily seen in FIGS. 4 and 5 that when the upper squeezing lever arm 38 is moved to unsqueeze the lines 16 and 22 in order to allow air and water to flow there-through that the pinch bulb 50 is squeezed by the lever arm 38 against the bar 52. When the lever arm is allowed to return to its normally biased position, as shown in FIG. 1, the pinch bulb 50 is released and thereby creates a retracting pressure in the water line 49 which in turn sucks water in from the line 22 from the hand piece 18 in order to prevent dripping of water therefrom after it 18 has been used and the dentist has removed pressure from the foot pedal 66. The pinch bulb 50 replaces expensive air piloted and electrical valve mechanisms in prior art devices.

While the invention has been illustrated by a specific embodiment, the invention is not limited to the specific arrangement of components in the housing 74 or the arrangement of the dental treatment instruments as shown. It would be well within the spirit of the invention to provide a different arrangement of dental instruments. As many instruments as desired could be operated by the simple control unit of the present invention. An additional number of supply lines and corresponding squeeze bars and pinch bulbs also could be utilized.

Having described my invention, I now claim:

1. A dental treatment control unit for controlling the flow of air and water to dental treatment instruments, comprising,

flexible lines for supplying air and/or water to said instruments,

means for regulating the flow of air and/or water in said lines to selected ones of said instruments, and foot-controlled means for controlling said regulating means

characterized by

said regulating means comprising

means that are normally biased for squeezing said flexible lines to prevent the flow of air and/or water therethrough, and means for unsqueezing those of said lines that are connected to a selected dental treatment instrument; and

said foot-controlled means comprising
a closed hydraulic system including a hydraulic actuator that controls said unsqueezing means in response to operation of a foot pedal.

2. A dental treatment control unit according to claim 1, wherein the regulating means comprise

a line squeezing lever arm corresponding to each dental treatment instrument,

a post adjacent said squeezing lever arm defining a path between the post and said lever arm within which path the air and/or water lines for said corresponding dental treatment instrument are positioned, wherein said lever arm is normally biased to squeeze the lines between said lever arm and the post to prevent the flow of air and/or water there-through, and

a piston operated by the hydraulic actuator and positionable adjacent said squeezing lever arm corresponding to said selected dental treatment instrument to move said lever arm to unsqueeze said lines to allow the flow of air and/or water to said selected instrument in response to operation of said foot pedal.

3. A dental treatment control unit according to claim 2, further comprising means for automatically programming the positioning of the piston adjacent the squeezing lever arm corresponding to said selected dental treatment instrument, comprising,

a positioning lever arm having a receptacle for a dental treatment instrument attached to one end of said arm and said piston coupled to the other end of said arm, wherein the positioning lever arm is movable in response to removal of a given selected dental treatment instrument from the receptacle to position the piston adjacent said squeezing lever arm corresponding to said given selected instrument.

4. A dental treatment control unit according to claim 3, wherein the positioning lever arm is further movable in response to replacement of said given selected instrument in said receptacle to position the piston adjacent a squeezing lever arm corresponding to different selected dental treatment instrument.

5. A dental treatment control unit according to claim 1, further comprising,

means for automatically programming the regulating means in accordance with the selection of a said dental treatment instrument to enable the unsqueezing of those lines that are connected to said selected dental treatment instrument.

6. A dental treatment control unit according to claim 5, wherein the regulating means comprise

a line squeezing lever arm corresponding to each treatment instrument,

a post adjacent said squeezing lever arm defining a path between the post and said lever arm within which path the air and/or water lines for said corresponding dental treatment instrument are positioned, wherein said lever arm is normally biased to squeeze the lines between said lever arm and the post to prevent the flow of air and/or water there-through, and

a piston operated by the hydraulic actuator and positionable adjacent said squeezing lever arm corresponding to said selected dental treatment instrument to move said lever arm to unsqueeze said lines to allow the flow of air and/or water to said selected instrument in response to operation of said foot pedal;

and the programming means comprise

a positioning lever arm having a receptacle for a dental treatment instrument attached to one end of said arm and said piston coupled to the other end of said arm, wherein the positioning lever arm is movable in response to removal of a given selected dental treatment instrument from the receptacle to position the piston adjacent said squeezing lever arm corresponding to said given selected instrument and is further movable in response to replacement of said given selected instrument in said receptacle to position the piston adjacent a squeezing lever arm corresponding to a different selected dental treatment instrument.

7. A dental treatment control unit according to claim 1, further comprising,

means for preventing dripping of water from a selected dental treatment instrument following the usage thereof and the squeezing shut of the water supply line thereto.

8. A dental treatment control unit according to claim 7, wherein the dripping preventing means comprise,

a pinch bulb corresponding to said selected dental instrument,

an additional water line having one end connected to the water supply line at a point between the regulating means and said dental instrument and having the other end connected to the pinch bulb; and

means for squeezing the pinch bulb when the regulating means are controlled to allow water to flow through the water supply line to said instrument, and for releasing the pinch bulb when the regulating means are controlled to squeeze shut the water supply line, thereby causing the pinch bulb to provide a retracting pressure in the water supply line when the water supply line is squeeze shut.

9. A dental treatment control unit according to claim 8, wherein the regulating means comprise

a line squeezing lever arm corresponding to each dental treatment instrument,

a post adjacent said squeezing lever arm defining a path between the post and said lever arm within which path the air and/or water lines for said corresponding dental treatment instrument are positioned, wherein said lever arm is normally biased to squeeze the lines between said lever arm and the post to prevent the flow of air and/or water there-through, and

a piston operated by the hydraulic actuator and positionable adjacent said squeezing lever arm corresponding to said selected dental treatment instrument to move said lever arm to unsqueeze said lines to allow the flow of air and/or water to said selected instrument in response to operation of said foot pedal; and

the means for squeezing the pinch bulb comprise

a bar adjacent each squeezing lever arm corresponding to a dental instrument having a water supply line thereto, said bar defining an opening between said lever arm and said bar within which opening said corresponding pinch bulb is positioned so as to be squeezed when said squeezing lever arm is moved to unsqueeze said water supply line, and so as to be released when said squeezing lever arm is moved to squeeze said water supply line shut.

10. A dental treatment control unit according to claim 1, for additionally controlling accessory dental treatment instruments that are not dependent upon control-

ling the flow of air and/or water thereto, further comprising,

means for controlling said accessory instruments in response to the operation of said hydraulic actuator.

11. A dental treatment control unit for controlling the flow of air and water to dental treatment instruments, comprising,

flexible lines for supplying air and/or water to said instruments,

means for regulating the flow of air and/or water in said lines to selected ones of said instruments, and foot-controlled means for controlling said regulating means

characterized by

said regulating means comprising

means that are normally biased for squeezing said flexible lines to prevent the flow of air and/or water therethrough, and means for unsqueezing those of said lines that are connected to a selected dental treatment instrument; and

said foot-controlled means comprising

a closed system including an actuator that controls said unsqueezing means in response to operation of a foot pedal.

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