

Valeska

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3,250,583 5/1966 Phillips 32/22

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[57] **ABSTRACT**[57] **ABSTRACT**

Disclosed is a dental apparatus including a dental unit, which is carried on one end of an articulated arm, the other end of the arm being movable along a horizontal track mounted to the wall of the dental operator, whereby the unit is supported outwardly from the wall on the arm.

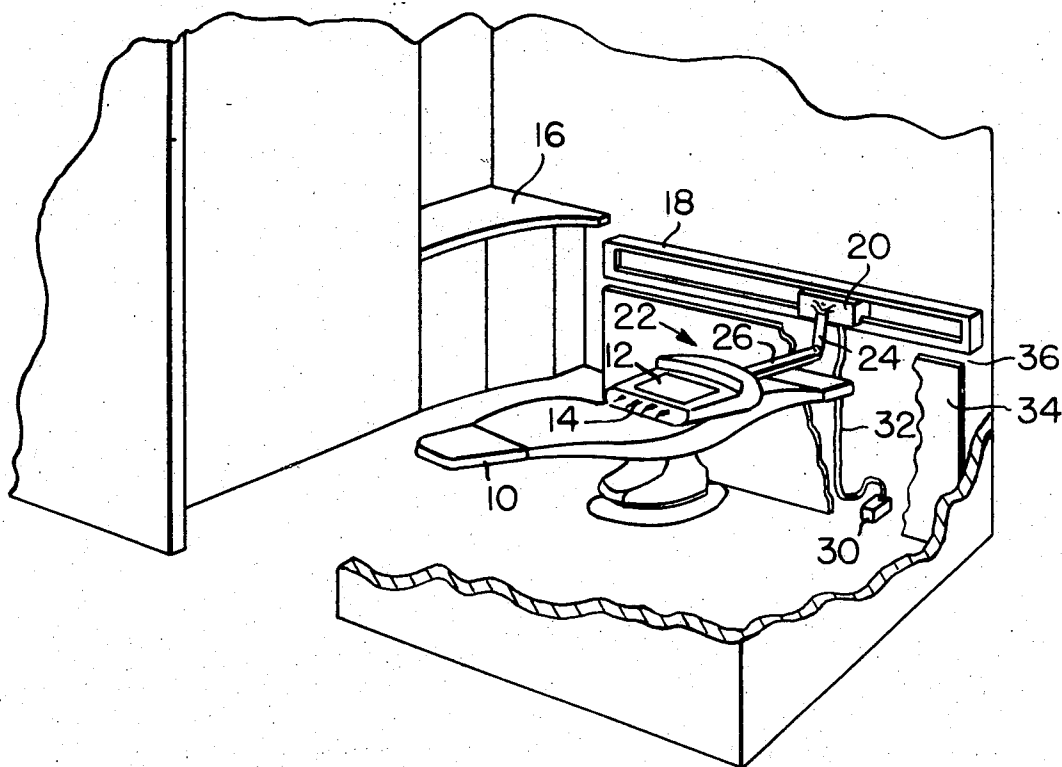
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2 Claims, 3 Drawing Figures



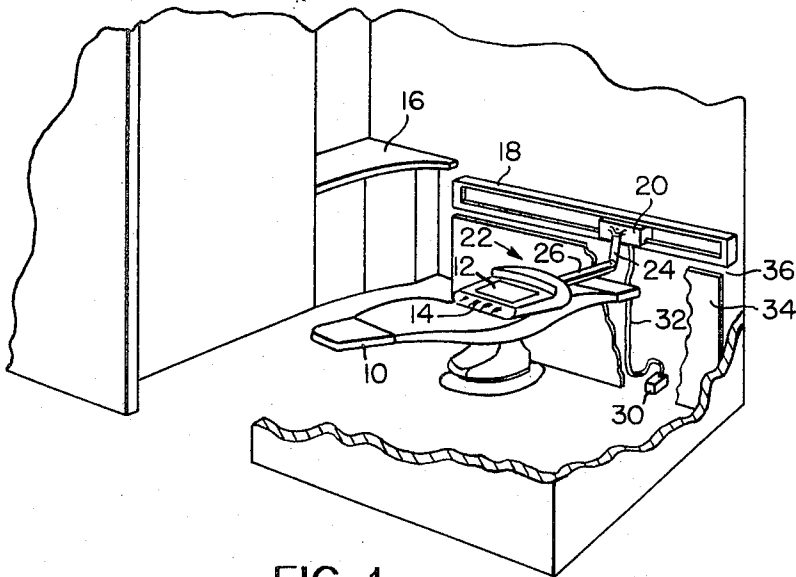


FIG. 1

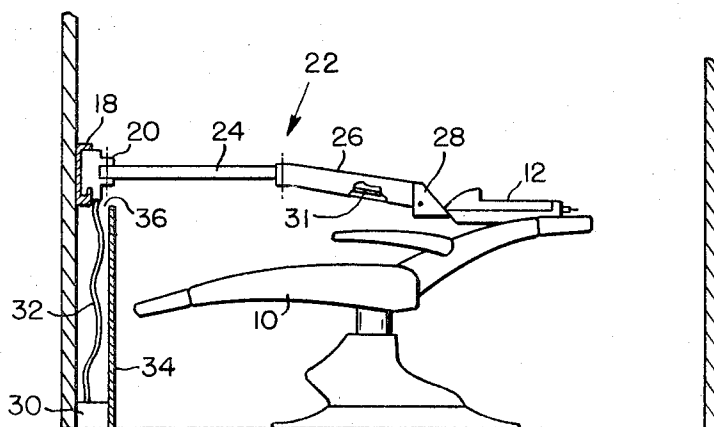


FIG. 2

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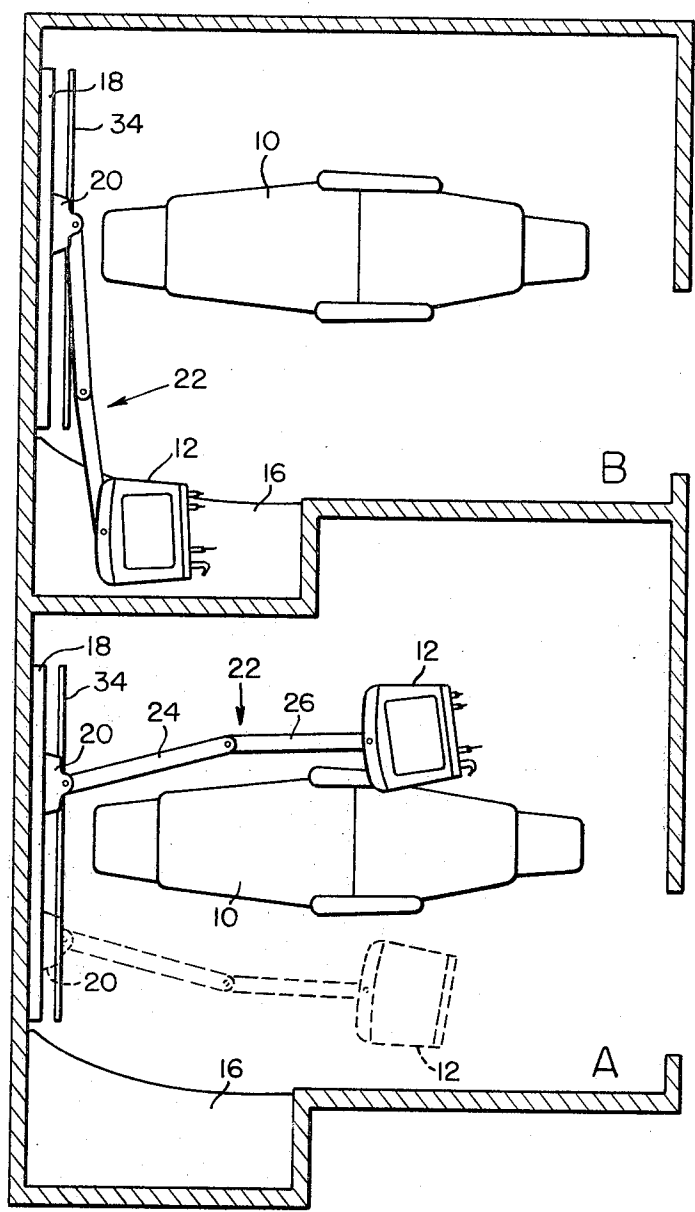


FIG. 3

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DENTAL APPARATUS**BACKGROUND OF THE INVENTION**

The present invention relates to a dental unit as may be used by Universities, Dental Schools and the like in the teaching of dentistry, and more particularly to such a unit which is readily adapted to either the right or the left hand student or dentist.

Schools for the teaching of dentistry usually have a number of relatively small cubicles, or operatories, where the dental student gains practical experience under the supervision of a qualified dental practitioner. The typical operatory contains a dental chair, lights, dental units and other essential accessories.

The dental unit is that piece of equipment which releasably houses the dental instruments requiring a supply of utility service, such as the electrically or air driven handpieces and the water and/or air syringes. This dental unit is usually located alongside the dental chair in a position convenient to the dentist. In some cases, the unit is in a tray, which can be swung over the patient. Typically, a unit for school purposes is either mounted on a tray having the tray arm pivotally attached to the wall, or the unit is floor mounted on rollers, so that the unit can be moved from one side of the chair to the other. There are various drawbacks to both arrangements. For example, where the dental unit is on an arm pivoted to the wall there is some restriction in the degree of lateral motion of the unit; were the unit is mounted on rollers, there is excessive wear to the floor covering and the unit requires an umbilical running along the floor which not only must be moved from side to side with the unit, but which also presents somewhat of a hazard in that someone may trip over it.

A further disadvantage of both types of units is that they cannot be conveniently moved out of the way in order to allow a number of students or observers to stand alongside the chair during a lecture or when the dental procedure of any particular student is being reviewed and commented on by the instructor. In this respect, the floor mounted unit, even if moved into a corner of the room, still occupies valuable floor space and the unit which is simply pivoted against the wall does not free the floor space below the unit.

These drawbacks are overcome in the present invention by having the dental unit carried on one end of an articulated arm, the other end of the arm being movable horizontally along a wall mounted track. With such an arrangement, the unit has a wide range of motion and can be quickly and easily positioned for either the left hand or right hand student, and can be moved to one corner of the room and over a counter when not in use.

SUMMARY OF THE PRESENT INVENTION

The present invention can be characterized in one aspect thereof, by an elongated support and guide track horizontally mounted to a wall surface and extending substantially the full length of the wall; a carriage on the track; an articulated arm having one end attached to the carriage and a second end supporting a dental unit; the carriage being movable along the track to position the unit on either side of the dental chair and the arm being articulated to permit the unit to be positioned against the wall surface or extended outwardly from the wall to permit location of the unit in a position

most convenient to the dentist, either alongside or over the dental chair

OBJECTS OF THE INVENTION

One object of the present invention is to provide a dental unit particularly for school use, which occupies a minimum of floor space and which can be quickly and easily positioned for either the left or right hand student or dentist.

Another object of the present invention is to provide a dental unit of the type described which can be moved to a storage position where the unit will not interfere with the traffic around the dental chair.

A further object of the present invention is to provide a dental unit of the type described which is carried by a wall mounted track, extending substantially the full length of the wall.

A still further object of the present invention is to provide a movable wall mounted dental unit of the type described which eliminates the need for an umbilical running along the floor surface.

These and other objects, advantages and characterizing features of the present invention will become more apparent upon consideration of the following detailed description thereof, when taken in connection with the accompanying drawings depicting the same.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing the wall mounted unit and a dental chair;

FIG. 2 is a side elevation view of the same; and

FIG. 3 is a plan view of two operatories, one showing the dental unit in use and the other showing the dental unit in a stored position.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings, FIG. 1 shows a perspective view of a small cubicle or operatory as may be found, for example, in a school or university teaching dentistry. The equipment in the room includes a dental chair 10 and a dental unit 12 which houses the essential drills, syringes and the like, 14. The dental lights and cuspidor are not shown, as they form no part of the present invention. It is sufficient to say that these items may be mounted in known conventional manners to the dental chair itself, or the light, for example, may be suspended from the ceiling. The usual laboratory also contains a counter space area 16, where, for example, the dentist can prepare his amalgams.

In the present invention, a guide and support track 18 is horizontally mounted to one wall of the operatory and extends for substantially the full length of the wall. It is preferred for purposes set out hereinbelow, that this track and dental chair be arranged so that the foot of the chair is adjacent the wall on which track 18 is mounted. However, if desired, the chair can be turned 180 degrees so that the head of the chair is adjacent this wall.

Slidably mounted on track 18 is a carriage member 20. Pivotally connected to the carriage is an articulated arm member generally indicated at 22. This arm includes a first section 24 which extends horizontally from carriage 20 and a second section 26 which can be pivoted both vertically and horizontally with respect to the first section, the second section pivotally mounting

on its outwardly extending end 28 (FIG. 2), the dental unit 12.

The supply of utility service to the various dental instruments is conducted to the instruments from carriage 20 through a conduit 31 (FIG. 2) which extends through articulated arm 22. Any convenient means can be used to supply the utility service to the carriage; as shown in FIGS. 1 and 2, for example, the utility service comes from an outlet box 30 adjacent the wall of the operatory. A conduit 32 extends from the outlet box up along the wall of the operatory to the carriage. The length of conduit 32 should, of course, be sufficient to permit movement of the carriage over the entire length of track 18. To keep both outlet 30 and conduit 32 out of sight, a false wall 34 extending outward slightly from the operatory wall may be provided. Space 36 at the top of the false wall between it and the operatory wall allows the conduit 32 to move the length of the track.

FIG. 3 shows two side-by-side operatories, A and B. The unit 12 in solid line represents the position of the unit for a right handed dentist. The unit in dotted line shows its position for a left handed dentist. It should be appreciated that the unit can be quickly and easily moved from one side of the chair to the other simply by sliding carriage 20 along track 18 from the position shown in solid line to the position shown in the dotted line. One advantage of being able to move carriage 20 in this fashion is that the unit 12 can be positioned adjacent either side of the chair without any part of the support apparatus, such as articulated arm 22, extending over the patient. This reduces the possibility of injury to the patient if the chair is inadvertently lifted and reduces the patient's feeling of being confined by equipment which extends over his body.

The arrangement of the dental chair as shown in the Figures, wherein the foot of the chair is toward track 18, provides direct access from the door of the operatory to either side of the chair. While, as stated hereinabove, it is possible to turn the chair 180° from the position shown in the Figures, such an arrangement would require bending the articulated arm 22 so as to face the unit 12 back towards the operatory wall and track 18. Such an arrangement would hinder somewhat the movement of the dentist, in that he would have to move the unit out of the way in order to walk completely around the head end of the dental chair, and for this reason such an arrangement is not preferred.

Operatory B shown in FIG. 3 illustrates how unit 12 can be moved to a position occupying a minimum available space by simply moving the carriage 20 to one end of the track and then pivoting the articulated arm to locate unit 12 over the available counter space 16. With

this arrangement the unit in the stored position will occupy only a minimum of the available floor space and free substantially the whole laboratory for observers to stand along either side of the dental chair.

Thus it should be appreciated that the present invention accomplishes its intended objects in providing a dental unit which is of particular use to dental schools and the like, wherein the unit can be quickly and easily positioned to accomodate either the left-handed or right-handed student. Having the dental unit carried at one end of an articulated arm which has its other end slidable along a track on the wall of the operatory permits location of the unit to the position most convenient for the dentist and permits the unit to be moved to an out of the way position which occupies a minimum of available floor space.

Having thus described the invention in detail, what is claimed as new is:

1. Dental apparatus comprising:

- a. a elongated support and guide track adapted to be mounted to the wall of a dental operatory, said track running substantially the full length of the operatory wall;
- b. a carriage supported on said track for movement therealong;
- c. a first elongated arm extending horizontally from said carriage, one end of said arm being pivoted to said carriage for movement thereabout in a horizontal plane;
- d. a second elongated arm having one end pivotally attached to outwardly extending end of said first arm for movement thereabout in both vertical and horizontal planes;
- e. a dental unit pivotally attached to the other end of said second arm, said dental unit releasably supporting a plurality of dental instruments of the type requiring a supply of utility service; and
- f. a utility line for delivering utility service to said instruments, said line have a first portion extending from said carriage through said first and second arm members to said dental unit and instruments, and a second portion extending from said carriage to a utility service outlet box, said second portion being of a length sufficient to permit travel of said carriage from one end of said track to the other.

2. A dental unit as set forth in claim 1 including a false wall portion disposed below said track and spaced outwardly from the operatory wall on which the track is mounted, the utility service outlet box and the second portion of said utility line being in the space between said false wall and the adjacent operatory wall.

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