United States Patent [19]

Helmers

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[54] **DENTAL CONSOLE**

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[52] **U.S. Cl.** **312/209,** 32/27, 312/234.1
[51] **Int. Cl.** **A47f 5/08**
[58] **Field of Search** 312/209, 234.1, 198, 278, 312/290; 32/27

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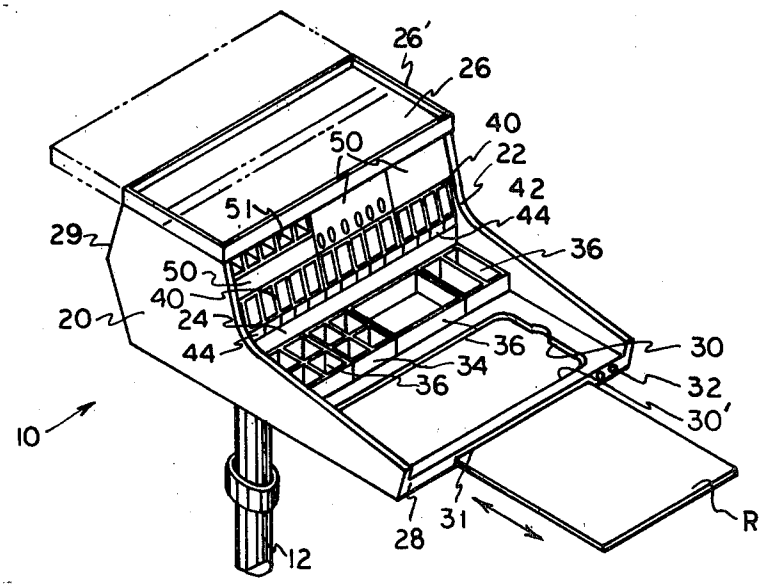
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[57] **ABSTRACT**

A console is described and claimed herein for use by a dentist and especially an orthodontist. A supportable housing is provided having a bottom, side walls and a top wall. The top wall is movable in a horizontal direction rearwardly of the console so as to expose a compartmentalized storage area underneath and so as to serve as a work surface for an orthodontic technician. A work surface for the orthodontist is provided at the front of the console and has a plurality of compartments in an outer end thereof so as to receive patient records, pencils, elongated instruments and the like. The front of the console is adapted to receive a plurality of modular units with each of the modular units having instrument or supply receiving compartments located therein. The compartments may be provided with identification indicia thereon that matches a like identifying indicia on a particular instrument so as to enable the technician to refer to the instruments by the indicia as opposed to a technical name. Such indicia may be colors, geometric designs, numbers, letters, and the like. The compartments may be adjustable insofar as depth is concerned by the availability of removable stops. Likewise, certain of the compartments may be provided with removable covers so as to provide storage for sterile instruments or supplies, and may be liquid tight to hold a sterilizing solution and gauze or the like therein.

23 Claims, 10 Drawing Figures



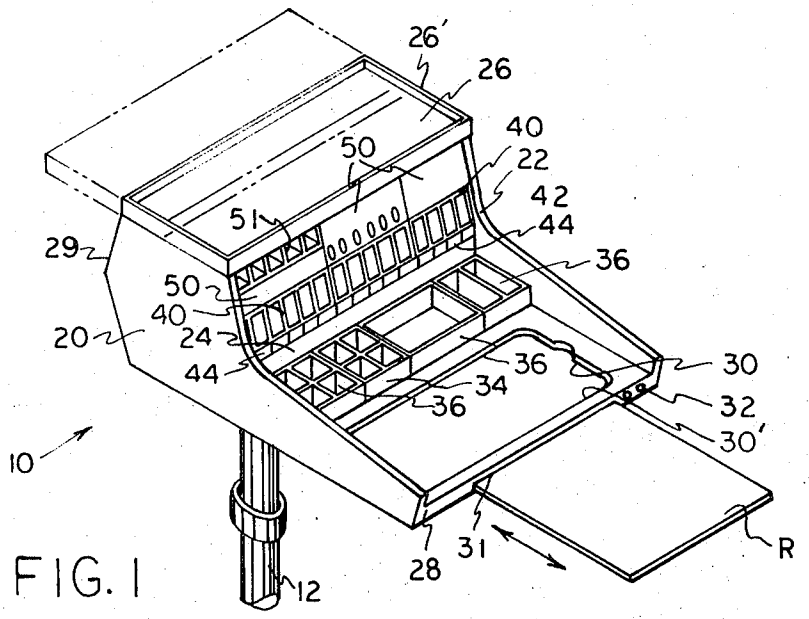


FIG. 1

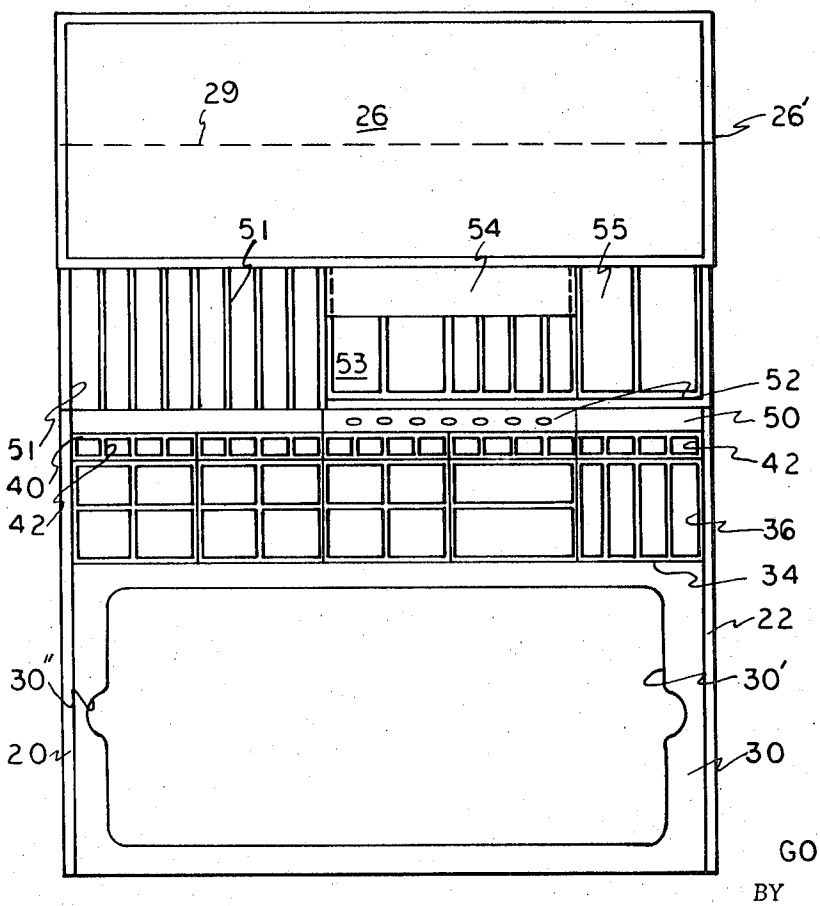


FIG. 2

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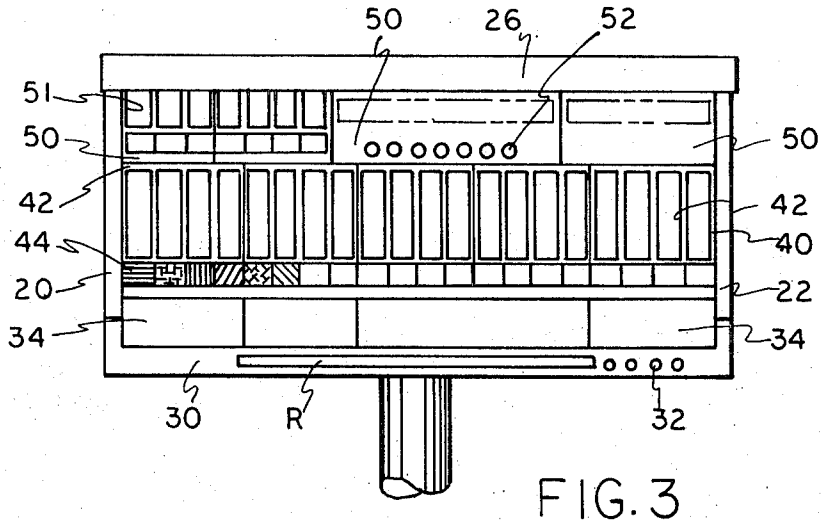


FIG. 3

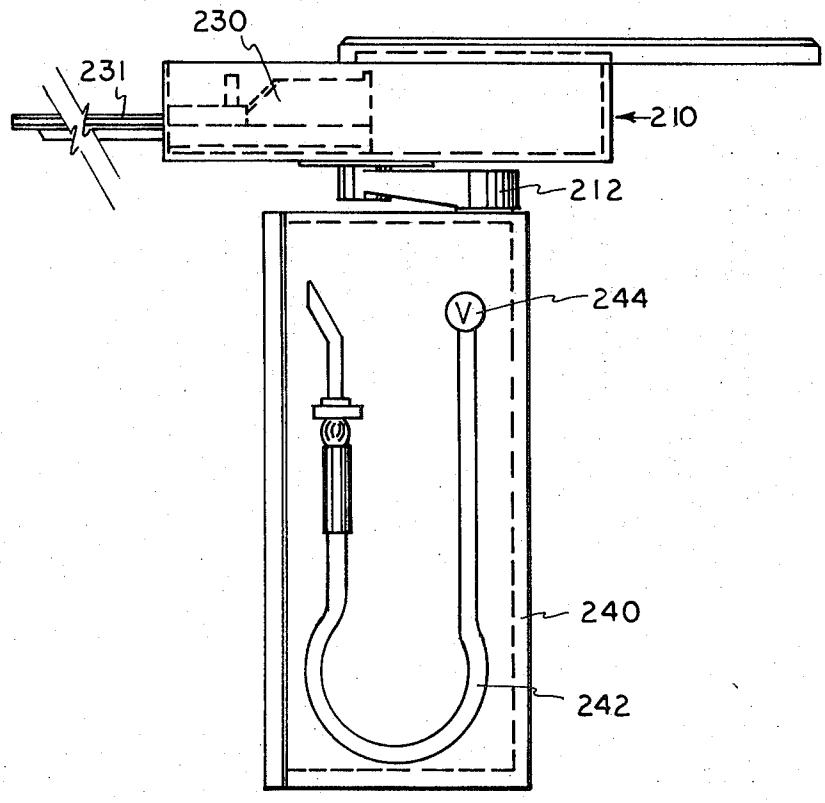


FIG. 10

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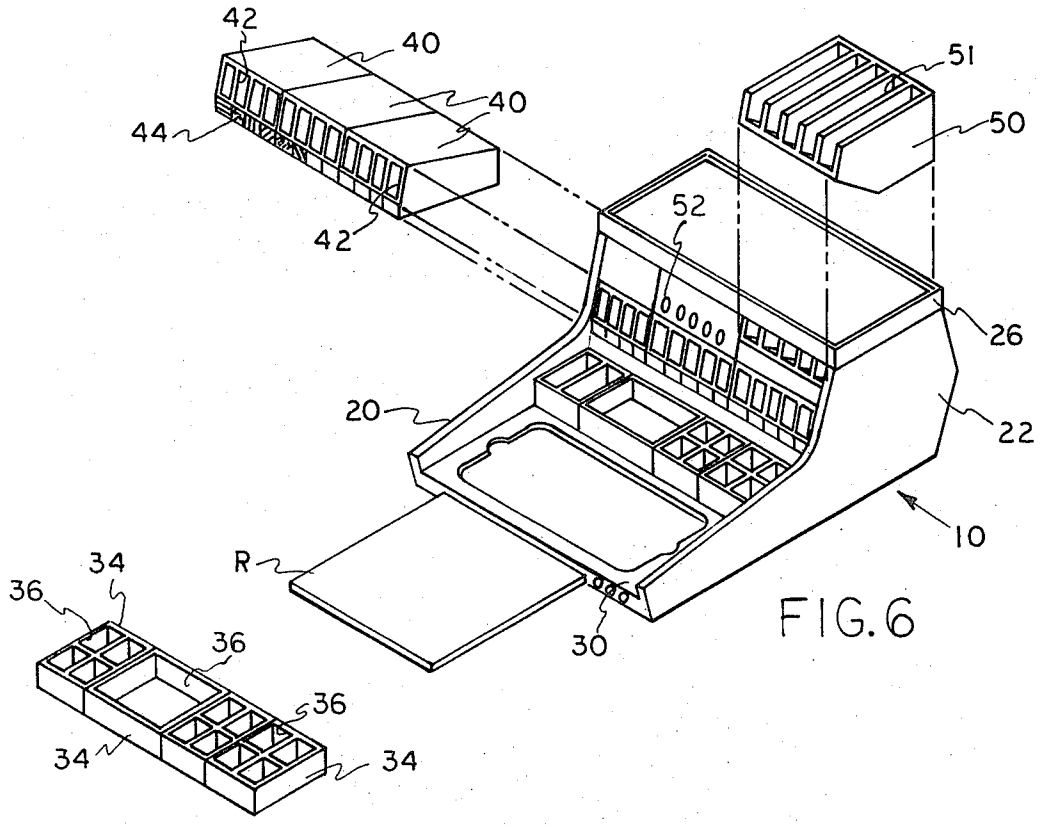


FIG. 6

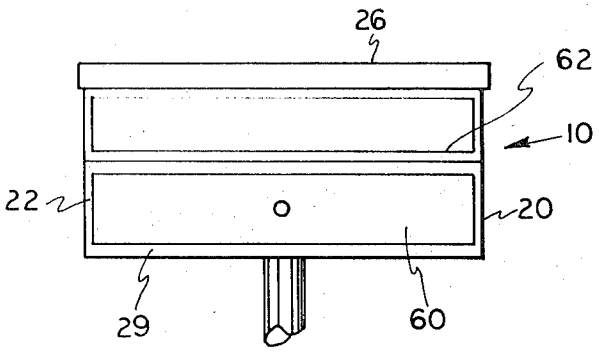


FIG. 4

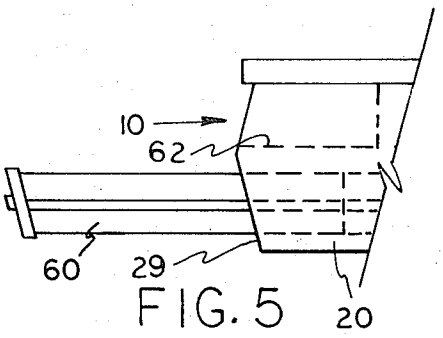


FIG. 5

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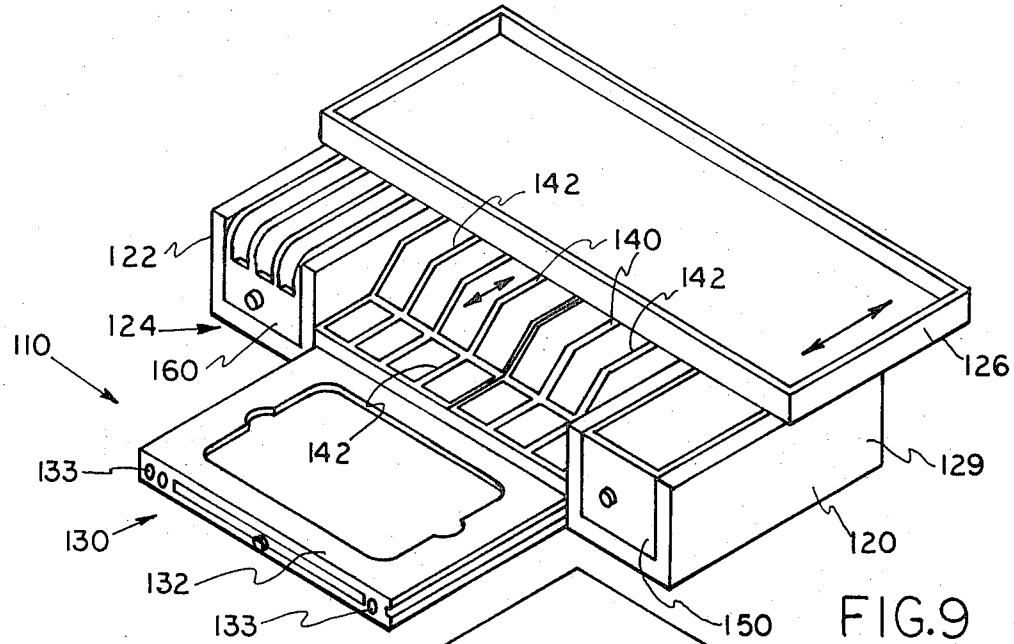


FIG.9

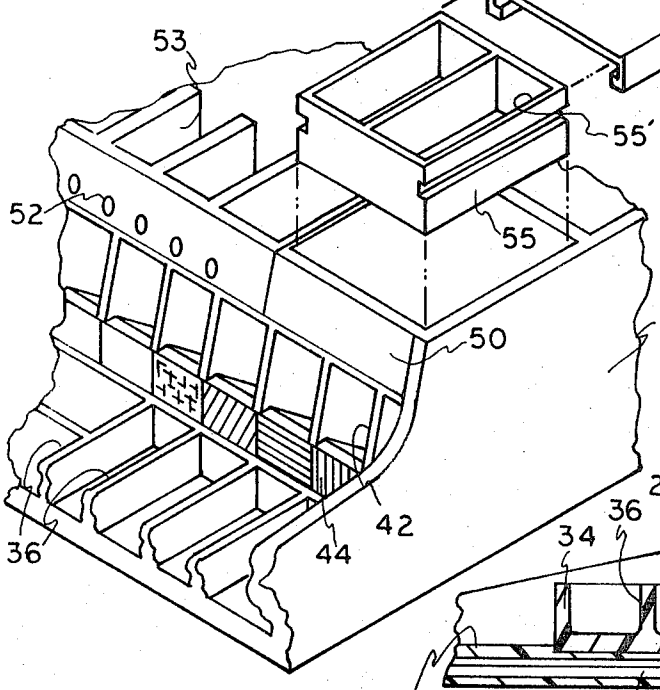


FIG.7

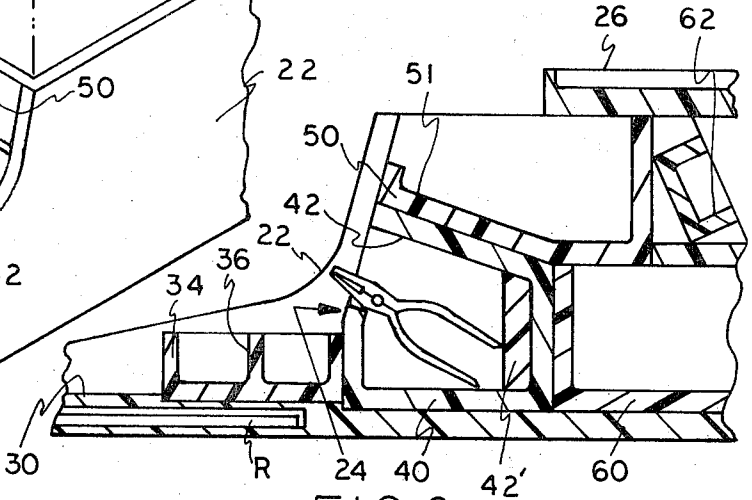


FIG.8

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DENTAL CONSOLE

BACKGROUND OF THE INVENTION

As is generally known, a dentist, and especially an orthodontist uses a large number of instruments and a wide variety of supplies in the day to day operation of his practice. Heretofore, unless the individual has been a well organized type, such that he has designed his office to provide efficient retrieval and dissemination of instruments and supplies, much time has been lost in patient preparation, instrument identification and retrieval, supply retrieval and the like. As such, the dentist is burdened with the need for additional treatment rooms, technicians, nurses and the like and most importantly, billable time is lost due to inefficient operation.

Some effort has been expended to provide console units which consolidate storage for most instruments and supplies. These consoles are normally designed for the general practitioner and are very large and bulky, thus requiring excessive floor space and capital while only providing a partial solution to the problem. The dental technician must still search throughout the large console for each particular instrument and/or item required. Further, especially in the practice of orthodontics, the orthodontist has in general merely collected the various instruments and supplies most needed and stored these items in a container adjacent the treatment unit. Such an arrangement is not only inefficient, but is unsightly and also may not be completely sanitary.

The present invention now provides a very compact, very efficient and very useful unit in which all of the necessary instruments and/or supplies are stored in an orderly manner. Moreover, the instruments and supplies may be readily retrieved and replaced as required. The console of the present invention thus alleviates the necessity of having a technician prepare a separate instrument tray for each individual patient. These features thus permit the orthodontist and his technician to properly position themselves with respect to the console and patient and efficiently function as a team to shorten the treatment time, alleviate the necessity for excess space, and in general improve the overall operation of the procedure.

The prior art is devoid of any teaching or suggestion of the console of the present invention. As mentioned above, numerous consoles have been devised wherein a bulky piece of equipment is provided for the general storage of instruments and/or supplies including service lines for air, water, vacuum or the like. There is no teaching, however, of the compact and efficient dental console of the present invention as may be seen in the following exemplary art: U.S. Pat. Nos. 3,280,462 to Deeley, Jr.; 3,455,620 to Coburn; 3,489,476 to Weickgenannt et al.; 3,489,480 to Slouka; and 3,524,256 to Barker.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a novel dental console that receives necessary instruments and/or supplies and maintains some at the ready disposal of the dentist in close proximity to the patient.

Another object of the present invention is to provide an improved dental console for use by an orthodontist which is capable of custom design by the orthodontist.

Still further, another object of the present invention is to provide an improved dental console according to

the teachings of the present invention that is modular in concept.

Another object of the present invention is to provide an improved dental console having work surfaces for an orthodontist and a technician along with instrument and/or supply compartments in a compact manner.

Generally speaking, the dental console of the present invention comprises a housing, said housing comprising said walls, a top and a bottom, said top being movable in a horizontal direction with respect to said side walls, said bottom being adapted for association with a support stand, said housing defining at least one modular receiving area therein; a work surface associated with said housing, said work surface being in a horizontal plane parallel to said top; and at least one module receivable in said at least one modular receiving area, said module having a plurality of instrument receiving compartments therein.

More specifically, the console of the present invention is preferably adapted for mounting on a swivel bracket adjacent a dental chair so as to present all of the necessary instruments and/or supplies at the ready disposition of the orthodontist and/or his technician. Each orthodontist has a particular scheme of conducting his practice. The console according to the teachings of the present invention is thus preferably modular in construction in such a manner that each individual may design his unit according to his personal needs.

The basic console unit, of course, includes a housing that receives a plurality of modules having certain compartments therein. The housing has associated therewith or affixed thereto a planar surface that extends outwardly therefrom and serves as a work surface for the orthodontist. A particular orthodontist may thus prefer to have a plurality of horizontally disposed rectangular compartments along a portion of the work surface. Such compartments could, for example, contain elastics of various sizes as well as other incidental supplies. Likewise, certain of the modules may contain angularly disposed instrument compartments. These particular compartments may be presented along a front side of the console adjacent the work surface so that the orthodontist may simply reach to a particular compartment for a particular instrument or have the technician retrieve same. Depending upon the number of instruments normally used by the particular orthodontist, the compartment area of the console can be vastly modified by the particular modules utilized. Moreover, certain modifications to the housing also permit a great diversity in design of the console.

A further feature that should be common to all orthodontists insofar as necessity, but differing insofar as placement, would be the modules having compartments for general storage of sterile instruments and also compartments for holding certain of the sterile instruments for immediate retrieval for each patient. Heretofore, it has been a custom for a technician to prepare a number of trays each morning, each of which has positioned thereon the sterile instruments necessary for use with each patient. Each new patient would thus be provided with a separate tray.

The present console provides, by way of a modular concept, a general compartmentalized storage facility for sterile instruments along with compartments for the holding of single units of the individual sterile instruments. In other words, instead of prepreparing a number of trays for the expected number of patients for a

particular day, it is now only necessary to store a sufficient supply of instruments in the general sterile storage area for the expected number of patients. Sterile instruments are removed from general storage to individual storage areas prior to each appointment. After usage by the orthodontist the instruments are placed on the work area for the remainder of the appointment, after which they are removed to miscellaneous storage to await resterilization. In this fashion, the individual instrument sterile storage compartments are not contaminated by used instruments and are available to receive sterile instruments for the next patient.

Modular units may also be provided with liquid tight containers therein, whereby alcohol or the like may be placed in the containers and gauze stored therein in such a manner that a wet sterile gauze is always available for use by the orthodontist and/or his technician.

The more complete the console, the more efficiently the orthodontist can function. In this regard, the console of the present invention may likewise be provided with storage space in the rear thereof in which dental models or molds may be placed, and where other incidental, less needed instruments and/or supplies may be stored. Furthermore, other storage facilities may be provided for the holding of non-sterile instruments after use and prior to resterilization.

The housing design may likewise be varied according to the dictates of the individual. In this regard, the housing as shown in the FIGS., may be double decked so as to provide a double tier of instrument and supply compartments or may be a single layer as also shown in a more wide spread fashion so as to enlarge the work surface area and to provide all instruments and/or supplies in a single line. Furthermore, as shown in the Figures, the console of the present invention may be very compactly designed in such a manner that the portion thereof to be equipped with compartment containing modules and work surface, etc. may, in fact, be a drawer within a framework. As such, the drawer may be withdrawn from within the framework to expose the compartments and the work surface only when needed.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view of a console according to the teachings of the present invention.

FIG. 2 is a top plan view of the console as illustrated in FIG. 1.

FIG. 3 is a front elevation of the console as illustrated in FIG. 1.

FIG. 4 is a rear elevation of the console as illustrated in FIG. 1.

FIG. 5 is a partial side elevation of the rear of the console as illustrated in FIG. 1.

FIG. 6 is a partial exploded isometric view of the console of FIG. 1 showing modules as may be associated therewith.

FIG. 7 is a partial isometric view of the console of FIG. 1 showing in more detail certain of the compartments and features thereof.

FIG. 8 is a partial vertical cross sectional view of the console of FIG. 1 showing deployment of an instrument and certain preferred features of the compartments.

FIG. 9 is an isometric view of a further embodiment of a console according to the teachings of the present invention.

FIG. 10 is a side elevational view of a console as shown in FIG. 9 showing a further possible embodiment thereof.

DESCRIPTION OF THE SPECIFIC EMBODIMENTS

Referring to the Figures, specific embodiments of the present invention will now be described in detail. In FIGS. 1, 2 and 3, a dental console generally indicated as 10 is shown mounted on a support 12 and comprising a housing that is made up of side walls 20 and 22, a front wall 24, a top 26, a bottom 28 and a back wall 29. As shown in FIG. 1, bottom 28, side wall 20 and side wall 22 cooperate at the forward end of the housing to define a work surface 30. Work surface 30 has a slot 31 in the forward end thereof to receive a record rack R on which a patient's record may be placed. The forward end of work surface 30 further has a plurality of openings 32 therein which receive pencils or elongated instruments.

The console of the present invention, as mentioned hereinbefore is designed so as to receive a plurality of modular units in such a fashion that an orthodontist may design a unit for his particular personal desires. In FIG. 1, a plurality of modules 34 are positioned to rest on work surface 30 between side walls 20 and 22. Modules 34 are shown to have a plurality of horizontal compartments 36 therein. Depending upon the likes of the particular individual the sizes, shapes or inclination of these compartments as well as those hereinafter discussed may be designed to achieve the particular desired result.

A plurality of modules 40 are shown received in front wall 24 of the housing and having a plurality of angularly disposed compartments 42 therein. Each of the compartments 42 may be provided with indicia 44 for identifying the particular instrument to be placed therein. Such indicia 44 are generally located on the front of the module 40 beneath compartments 42 and are shown in the Figures as colors. Such indicia may, however, take the form of numbers, colors, geometric shapes or the like. Whatever particular type indicia is used should be duplicated on the particular instrument. For example, if a particular plier is to be identified by a certain shade of red, then the indicia 44 should be colored the particular shade of red as should the inside of the plier handle or some other part thereof. A technician can then merely match up the colors for retrieval or replacement of the instrument as requested by the orthodontist. The technician can thus identify any particular instrument by the particular indicia as opposed to the technical name for the instrument. Efficiency of the office is thus fostered.

A further group of modules 50 are provided in a second level above the modules 40 in the front side 24 of the housing. Modules 50 as shown in FIGS. 1 and 2, contain different types of compartments. Referring to FIGS. 1 and 2, a plurality of angularly disposed compartments 51 are shown which are open at the top in such a fashion that when top 26 is moved rearwardly, the open tops of the compartments 51 are exposed. A plurality of oval shaped compartments 52 are also provided so as to receive sterile instruments for the use with each patient. Again, referring to the movement of top 26, once top 26 is moved rearwardly, a series of sterile instrument compartments 53 are exposed in one module 50 wherein a plurality of sterile instruments

may be stored under a movable lid **54** awaiting transfer to oval individual sterile compartments **52.**

Liquid containers **55** are also provided in a module **50** having a lid **56** slidably received thereover (See FIG. 7) and compartments **55'** therein. Compartments **55'** are liquid tight and may contain alcohol or some other antiseptic or sterilizing solution along with gauze, cotton or the like. The saturated gauze, cotton, etc. is thus continually available for use by the orthodontist.

As mentioned above, top **26** serves as a work surface for the dental technician. Likewise, a work surface **30** is provided for the orthodontist. It is preferable that top **26** be provided iwith a lip **26'** extending upwardly therefrom around the periphery thereof. Lip **26'** serves as a barrier against the accidental movement of instruments, supplies or the like off the work surface. Surface **30** is also preferably provided with a depression **30'** therein. Depression **30'** serves a double purpose, in that, it likewise provides a barrier against the inadvertent removal of instruments and/or supplies from the orthodontist's work area, and secondly, a supply of paper covers may be received therein with only the top of said covers being exposed to use by the orthodontist. As such, a new cover may be exposed for each patient treated. To facilitate the removal of a used cover with a change of patients, a notch **30''** is provided at the edge of depression **30'** to permit passage of a finger downwardly into the depression around the paper covers or mats whereby they can be removed individually as desired.

As shown in FIGS. **4** and **5,** the rear side **29** of the console **10** may be provided with a storage space in the form of a drawer **60** that is telescopingly received between side walls **20** and **22.** Furthermore, a shelf **62** may be provided that is a depression in rear wall **29** above drawer **60.** Shelf **62** may, for example, be used to receive dental models that the orthodontist can use to educate a patient regarding various stages of treatment, appliance design and the like.

FIGS. **6** and **7** are set forth to more clearly illustrate the modular concept to the present invention. For example, as shown in FIG. **6,** a plurality of modules **34, 40** and **50** are shown exploded from the housing **10.** Each of the modules in each group is shown to be identical in size, though having various types of compartments therein. As such, more or less of any particular type compartment could be provided by simple selection of the correct module.

FIG. **8** shows a cross section of a portion of the console **10** to illustrate one embodiment of the relationship between modules that may be utilized. Note, for example, that a module **34** is shown in the same plane and adjacent the work surface **30** having compartments **36** therein. A module **40** is shown received in the front side **24** of console **10** and having an angular disposed compartment **42** therein. A plier type instrument is shown angularly disposed in compartment **42** with a spacer **42'** provided to limit the depth of compartment **42** to the appropriate depth for the particular tool. Each tool may thus be properly maintained for ready removal from the compartment. Positioned above module **40** and in contact therewith is a further module **50** having a compartment **51** that is also provided with a slight angular disposition and opens both to the front of console **10** and to the top of console **10** when top **26** is in a rearward position as shown in FIG. **8.** Normally speaking, once the dentist decides which particular arrangement is best suited for his operation, there should be no further change in the arrangement or choice of modules. As such, the modules may be adhesively secured to each other and to housing **10** to provide a unitary structure, may be friction fitted to each other as shown, may be provided with a plurality of fastening members, or the like. These particular types of connection will generally enable design changes in the console after initial assembly while providing a unitary structure during use.

FIG. **9** shows a further embodiment of the console of the present invention. In FIG. **9,** a console **110** is shown having a frame comprising side walls **120** and **122,** a front generally indicated as **124,** a top **126** and a rear wall **129.** A module containing housing generally indicated as **130** is shown being telescopingly received within the frame of console **110** and having a singe tier of modules having instrument and/or supply receiving compartments therein. Housing **130** is thus slidably received within the frame of console **110** and for use is withdrawn to an extended position forward of housing **110** as shown in FIG. **10** having an integral work surface **132** at a forward end thereof. A plurality of modules **140** are received in housing **130** having various types of compartments **142** received therein. The different types of compartments **142** will not be further discussed at this point. The design, size and configuration of the compartments **142** may be like those described with respect to FIGS. **1** through **8** or as desired to achieve the particular end result. In addition to the housing **130,** console **110** is also provided with drawer type storage units **150** and **160** adjacent and on opposite sides of housing **130.** Drawers **150** and **160** may simply provide further storage for instruments and/or supplies. Likewise, drawers **150** and **160** may be exposed upon the movement of top **126** and may contain modules therein for the storage and retrieval of instruments and/or supplies as depicted for drawer **160.** Housing **130** is further shown to have a plurality of openings **133** in the front, adjacent work surface **130.**

A further embodiment of the present invention is shown in FIG. **10.** A frame **210** is attached to a swivel support **212** and provides the basis for a compact dental console that might be quite suited for use in small offices, a mobile treatment unit or the like. A module receiving housing **230** is removably received within frame **210** and has a plurality of compartment containing modules therein. Housing **230** may thus be extended from within frame **210** to expose the modules and permit use of the console, and returned to a nesting position after use. Moreover, housing **230** has a work surface **231** telescopingly received therein for extension to a work position when desired. The modules utilized in housing **230** may be as described hereinbefore or otherwise. A service rack **240** is also shown in FIG. **10,** attached to support **212** or some other support means. Rack **240** may be secured to support **212** and hold service lines **242** for vacuum, air, water or the like. Such lines may be connected to the particular service source at a valve **244** or the like and may be readily removed for use as desired.

Materials of construction for the instant console and components thereof may take many different forms. Various metals, plastics, woods or the like may be used. The modules of the console are, however, quite suited for injection molding from a moldable plastic composition. The liquid tight compartments should, however,

be constructed of a material that will not be attacked by a liquid held therein. For example, certain plastic materials are affected by alcohol and solvents. These materials should thus be avoided for such use. Indicia may be provided on gum labels for both the areas below the compartments and for the instruments themselves. Likewise, indicia may be painted on the area and the instrument, embossed or engraved into both the area and the instrument, or the like. Moreover, while only one means for mounting the console has been shown, the console may be mounted on virtually any suitable support that presents the instruments and/or supplies at the ready use of the orthodontist or the technician.

Having described the particular embodiments of the present invention, it is obvious that one skilled in the art will be able to make variations and modifications thereto without departing from the scope of the invention. Accordingly, the scope of the present invention should be determined only by the claims appended hereto.

What is claimed is:

1. A dental console comprising:
   a. a housing, said housing comprising side walls, a top and a bottom, said bottom being adapted for association with a support, said housing further defining at least one module receiving area in a side wall thereof;
   b. a work surface associated with said housing adjacent said module receiving area and extending outwardly therefrom, said work surface being in a plane substantially parallel to said top; and
   c. at least one removable module received in said at least one module receiving area, said module having at least one instrument receiving compartment therein, said at least one module being interchangeable with other modules receivable in said module receiving area, whereby said console may be customized by module variation.

2. A dental console as defined in claim 1 wherein at least one module is received in a side wall adjacent said work surface, said at least one module having a plurality of said compartments therein.

3. A dental console as defined in claim 2 wherein at least one further module is received in said housing beneath said top, and said top being movable with respect to said side walls.

4. A dental console as defined in claim 2 wherein at least certain of said compartments are angularly disposed with respect to said housing.

5. A dental console as defined in claim 1 wherein at least one compartment bears indicia that matches indicia on an instrument to be stored therein.

6. A dental console as defined in claim 1 wherein further a plurality of supply containers are provided adjacent said work surface.

7. A dental console as defined in claim 1 wherein further storage means are associated with said housing away from said module.

8. A dental console as defined in claim 1 wherein said housing is mounted on a support strand.

9. A dental console as defined in claim 1 wherein said work surface is provided with a record receiving slot therein.

10. A dental console as defined in claim 2 wherein at least certain of said compartments in said module are equipped with movable covers therefor.

11. A dental console as defined in claim 10 wherein at least certain of said covered compartments are liquid tight.

12. A dental console comprising:
   a. a housing, said housing comprising side walls, a top and a bottom, said top being movable with respect to said side walls, said bottom being adapted for mounting on a support therefor;
   b. a planar member secured to said housing and extending outwardly therefrom, said member having a depression in the upper side thereof;
   c. a plurality of interchangeable modules removably received in said housing adjacent said planar member, said modules having a plurality of compartments being angularly presented with respect to said housing, at least certain of said compartments having movable covers associated therewith, and at least certain of said compartments having identifying indicia, said indicia matching indicia on instruments to be received therein; and
   d. further storage means associated with said housing.

13. A dental console as defined in claim 12 wherein said planar member telescopes with said housing.

14. A dental console as defined in claim 12 wherein certain of said modules are received beneath said movable top.

15. A dental console as defined in claim 12 wherein further a sub housing is telescopingly received in a side wall of said housing and wherein said modules are receivable in said sub housing.

16. A dental console as defined in claim 15 wherein said planar surface forms a part of said housing.

17. A dental console as defined in claim 12 wherein said housing is mounted on a stand therefor, said stand having supply lines associated therewith.

18. A dental console comprising:
   a. a housing, said housing comprising a front wall, two side walls, a rear wall, and a bottom, said front wall receiving a plurality of modules therein, said modules having a plurality of article receiving compartments therein, at least certain of said compartments having a slidable cover therefor, and at least certain of said compartments being angularly presented with respect to said front wall; and
   b. a planar surface being telescopingly received within a portion of said housing adjacent said modules, said surface being extendable from within said housing to provide a work area adjacent said modules; said planar surface having a depression across a major portion thereof, said surface also having a plurality of articles receiving compartments in an outer end thereof.

19. A dental console comprising:
   a. a housing, said housing comprising a front wall, two side walls, a rear wall, and a bottom, said front wall receiving a plurality of modules therein, said modules having a plurality of article receiving compartments therein, at least certain of said compartments having a slidable cover therefor, and at least certain of said compartments being angularly presented with respect to said front wall;
   b. a planar surface telescopingly received within a portion of said housing adjacent said modules, said surface being extendable from within said housing to provide a work area adjacent said modules; said planar surface having a depression across a major

portion thereof, said surface also having a plurality of article receiving compartments in an outer end thereof, and

c. a console frame that telescopingly receives said housing, said frame being adapted for swivel mounting on a support stand and comprising side walls, a bottom, and a top, said top being movable in a horizontal direction with respect to said side walls, said console frame further having a plurality of storage compartments therein, said storage compartments being telescopingly received within said console frame adjacent said housing.

20. A dental console as defined in claim **19** wherein said top on said console frame has a ridge around the periphery thereof.

21. A dental console comprising: a. a support, said support receiving at least one item receiving, removable module thereon, said module comprising a bottom wall, a top wall, a front wall, a back wall and side walls, said walls cooperating to define an area therebetween, said front wall being of a shorter height than said side walls and cooperating with said top wall and said side walls to define an access to said area thereat;

b. a plurality of vertically disposed members received in said area and secured therein, said member extending above said front wall and defining a plurality of item receiving compartments within said area; and

c. identification indicia for each item receiving compartment matching indicia on an item receiving compartment matching indicia on an item receiving therein, said indicia being attached to said front wall.

22. A dental console as defined in claim **21** comprising further a spacer received in at least certain of said item receiving compartments, said spacer decreasing the size of any said compartment.

23. A dental console as defined in claim **21** wherein said top wall is of a shorter length than said side walls, said top and said side walls cooperating to provide a further access to said area.

* * * * *