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3,117,535

MODULAR LANGUAGE LABORATORY STUDENT STATION

Filed Feb. 12, 1963

2 Sheets-Sheet 1

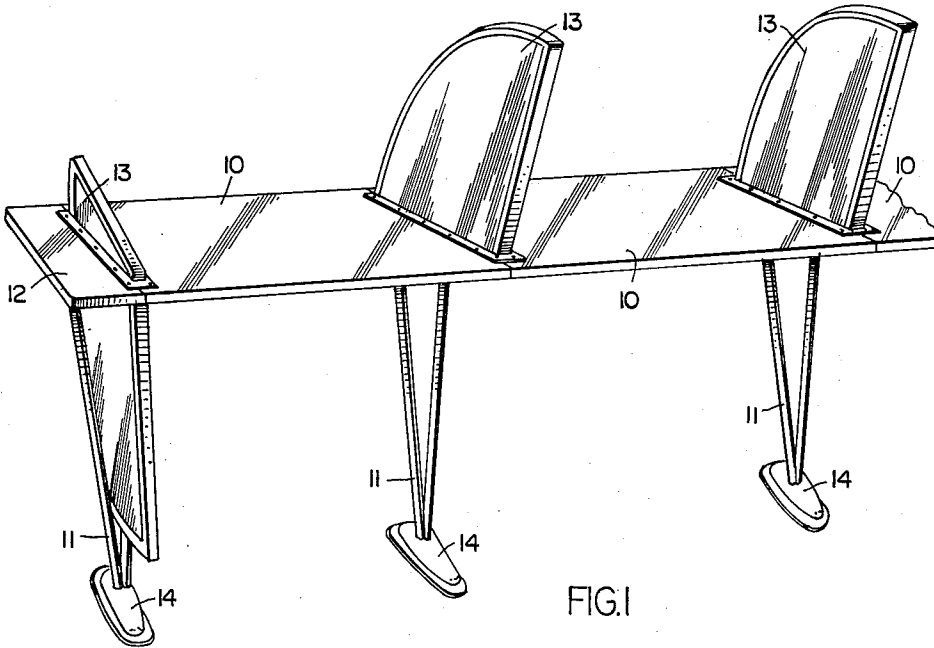


FIG. 1

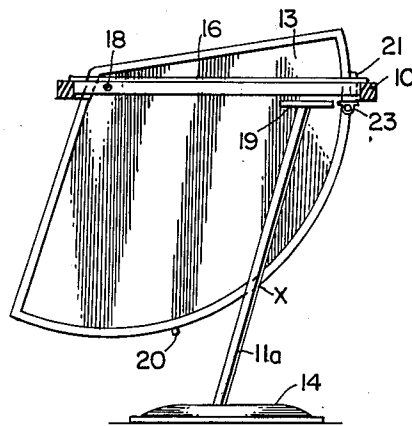


FIG. 2

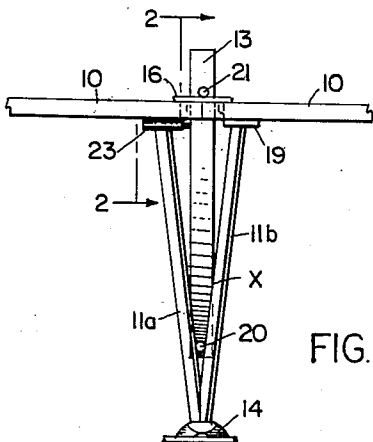


FIG. 3

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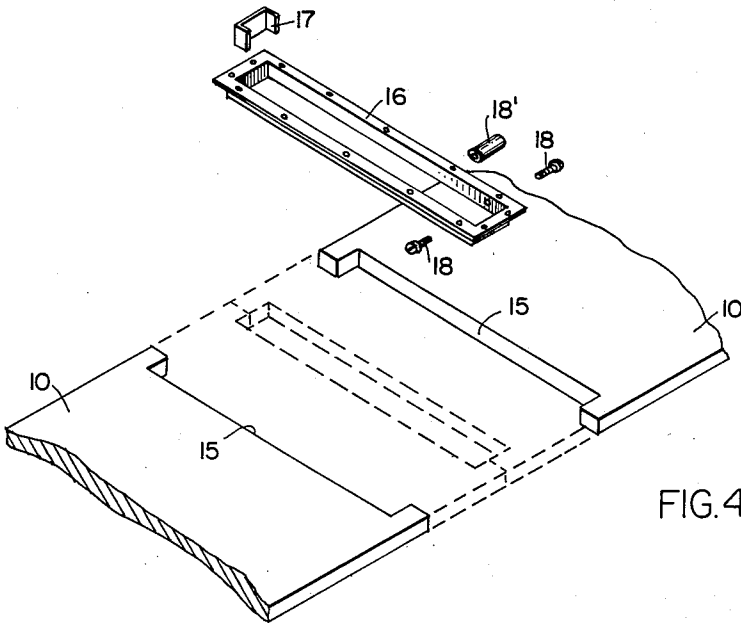


FIG. 4

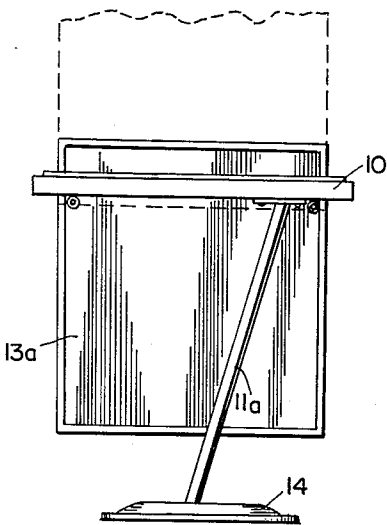


FIG. 5

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**MODULAR LANGUAGE LABORATORY
STUDENT STATION**

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9 Claims. (Cl. 108—60)

This invention is a modular desk unit for assembling
a laboratory bench providing visual and acoustical iso-
lation for a number of students such as is required in
a modern language laboratory using electronic equipment
for instruction.

More particularly, this invention is concerned with a
modular language laboratory student station adapted to
be conveniently assembled into a series of stations with
each unit being capable of conversion from a position
providing isolation to a position where vision and hear-
ing are unobstructed.

Language training classrooms have been developed
wherein long tables divided into individual stations or
booths by vertical acoustical panels are used to accom-
modate a number of students. Each booth is equipped
with the necessary earphones and a microphone for re-
ceiving instructions and communicating with the teacher.
Recent designs have provided for the acoustical panels
to be dropped or lowered so that the table can be con-
verted to provide a work surface suitable for other types
of classroom work. This invention deals with this type
of convertible student station arrangement and is con-
cerned with certain specific design features that go to
improving appearance and functionality, particularly from
the standpoints of ease of assembly and ability to with-
stand abuse.

Besides its clean ascetic appearance, the modular desk
unit of this invention is particularly characterized by the
modular design of the work surface which permits ready
assembly of units into a rugged series that will accept
considerable student abuse, and by the design of the
supporting legs which protect the acoustical panels in
their lowered position against twisting and bending when
struck by the legs and feet of students. The design of
the supporting legs is such as to protect the acoustical
panels while still giving a neat open look and providing
adequate foot and leg room.

Other features and objects of this invention will be-
come clear from the following description made with
reference to the drawings attached to and forming a part
of this specification, wherein:

FIGURE 1 illustrates a view of one end of an as-
sembly of the modular units of this invention;

FIGURE 2 is a side view in section taken along line
2—2 of FIGURE 3;

FIGURE 3 is a front view of a portion of the assem-
bled units at a point of joinder, i.e., looking towards the
side where the student sits;

FIGURE 4 is an exploded view showing in more de-
tail the means of assembling the modular units; and

FIGURE 5 is a side sectional elevation view similar
to FIGURE 2 showing the use of a different shape of an
acoustical panel.

Referring to FIGURE 1, the laboratory table consists
of a series of assembled work surfaces 10 supported by
supporting legs 11 and having a terminating end piece
12. Each surface unit 10 defines a student work station
and at the sides thereof are slots holding acoustical panels
13 which may be raised and lowered as desired. The
particular acoustical panel shown is preferred although
the shape 13a shown in FIGURE 5 can be used as de-
sired. Acoustical panels 13 comprise a segment of a
circle encompassing an arc of 90° to 130° e.g., 120°.

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Both sides of the panel are suitably clad with a sound
deadening material such as perforated Celotex.

With particular reference to FIGURE 4, the modular
arrangement of this invention consists in having each
transverse end of every modular unit recessed at 15 pre-
ferably to equal depths to receive the acoustical panels.
Within each recess fits an integral metal rim 16 that is
bolted or screwed to the adjacent units. The rim 16
carries means for mounting the acoustical panels. In
the case of acoustical panels 13 they are pivotally
mounted on the student side of the rim by means of
machine screws 18 that are threaded into cylindrical
housing 18' to form the pivot. At the opposite side of
the rim in this arrangement a nylon glide or washer 17
is inserted that gently presses against the rim of the cir-
cular section, which is preferably made of metal, to pro-
vide a smooth dropping or lowering action. The nylon
glide is in the form of an open ended channel section.

It can be seen that by the design of the work surface
in this manner any number of units can be rapidly as-
sembled together with rim 16 being used to carry the
acoustical in place and also to provide the holding to-
gether and strengthening of the continuous units. At the
end of a series of units a terminating end segment 12 is
placed. It too has one of its transverse edges recessed
to accommodate a rim 16.

The supporting structure of the modular units of this
invention is illustrated in FIGURES 2 and 3. About
each point of joinder of the modular units is a support-
ing means consisting of a pair of elongated legs 11a and
11b running down to and rigidly attached to a floor
mounting base 14 which can be screwed or bolted to the
floor. The upper ends of each pair of legs terminate in
suitable mounting brackets 19 on the underside of the
work surfaces. This arrangement co-operates with the
metal rim to securely hold each modular unit adjacent
to its neighbors and provides adequate support for each
unit.

The acoustical panels in their lowered position are
subject to sideways bending by being struck by the legs
and feet of the students. The support 11 used in this
invention prevents any damage from occurring in this
manner by having legs 11a and 11b when viewed from
the front taper from the underside of the table to an
apex at base 14. The space between legs 11a and 11b
is just slightly wider than the thickness of the edge, in-
dicated at "x," of the acoustical panel in its lowered po-
sition so that the legs firmly restrain the panel from being
bent sideways and damaged. When viewed from the
side it is desirable to incline the legs so that the point
of restraint "x" on the acoustical panel is at about the
mid point thereof. This inclination of the legs in this
manner to the extent of 20 to 30 degrees from the vertical,
is also desirable from the standpoint of appearance and
to provide adequate leg room in the sitting position and
adequate walking room between adjacent benches. Legs
11a and 11b are preferably tubular to provide maximum
strength, although in some cases they may be ovalid to
better resist forces exerted against either the front or
back of the table.

For the design illustrated in FIGURES 2 and 3, the
circular edge of acoustical panel 13 is provided with pro-
jecting stops 20 and 21 to limit the upward and down-
ward motion of the panel. In addition to the smooth
action provided by washer 17 the movement of the panel
can be controlled by means of a friction break 23 which
can consist for example of a spring loaded nylon plunger
pressing against the metal rim on the side of the acousti-
cal panel 13.

In summary, this invention is a modular language
laboratory student station. The work surface of each
modular unit has a transverse elongated opening at each

end which accommodates a vertical acoustical panel that can be raised and lowered. The ends of two abutting modular units when assembled are supported by a support consisting of two elongated legs attached to the underside of the work surface on either side of the opening. The legs define a slot between them which is slightly larger than the edge of the panel in its lowered position so that bending of the panel is prevented.

In the preferred design, the supporting legs are tubular and have an upwardly open V-shape when viewed from the front and are forwardly inclined when viewed from the side. The apex of the V-shape is rigidly attached to a suitable floor mounting.

The slot formed by the recesses between abutting work surfaces is encompassed by a unitary rigid metal rim that carries the acoustical panel for that slot. The rim is detachably mounted to the work surface such that it holds together and strengthens the assembly of the work surfaces. This metal rim, in co-operation with the support given by the legs on either side of the slot, assure that a sturdy construction is obtained while still having a rather light-appearing, pleasing open arrangement.

Having described this invention, what is sought to be protected by Letters Patent is succinctly set forth in the following claims.

1. A modular language laboratory student station comprising a work surface with a transverse elongated opening at either end, a vertical acoustical panel in said opening, said panel having a raised position providing isolation and a lowered position wherein it protects below said work surface, and a support at each end of said work surface, each support comprising two elongated legs attached to the underside of said work surface on either side of said opening, said elongated legs defining a slot therebetween at the edge of said panel in its lowered position slightly larger than the thickness of said panel whereby bending of said panel is prevented.

2. The modular language laboratory student station of claim 1 wherein said elongated legs are tubular and each support has an upwardly opening V-shape when viewed from the front, and is inclined when viewed from the side, the apex of said V-shape terminating in a floor mounting base.

3. The modular language laboratory student station of claim 1 wherein said work surface is split transversely at either end at the centerline of said opening thereby forming a removable end portion whereby by removing

one end portion of a single module that module can attach to the end of a similar module to form a continuous unit having one less support than the number of modules.

4. The modular language laboratory student station of claim 3 wherein each of said openings is encompassed by a continuous unitary metal rim detachably mounted to said work surface and carrying mounting means for said panel.

5. A laboratory bench providing isolation for a number of students comprising a plurality of abutted modular work surfaces, the two transverse ends of a unit each having an elongated recess to receive a vertical acoustical panel, vertical acoustical panels in the slot formed by the elongated recess between the abutting modular work surfaces, said panels having a raised position providing isolation and a lowered position projecting below said work surface, and a demountable rim around each of said slots, said demountable rims carrying mounting means for said acoustical panel and serving to hold abutting units together.

6. The laboratory bench of claim 5 including terminal end pieces at each end thereof, each of which is recessed on one transverse edge to receive a vertical acoustical panel.

7. The laboratory bench of claim 5 wherein all of said recesses are of equal depth.

8. The laboratory bench of claim 5 when said acoustical panels consists of a segment of a circle with the apex of each being carried by said mounting means at the student side of said demountable rims.

9. The laboratory bench of claim 5 when said plurality of abutting modular work surfaces are supported by supports located at each of said slots, each support comprising two tubular legs attached to the under side of the work surface on either side of said slots and defining a space slightly larger than the edge of the acoustical panel therebetween in its lowered position.

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