June 24, 1969 J. W. HOBSON 3,451,738

SCIENCE FURNITURE

Filed Aug. 17, 1967 Sheet 1 of 2

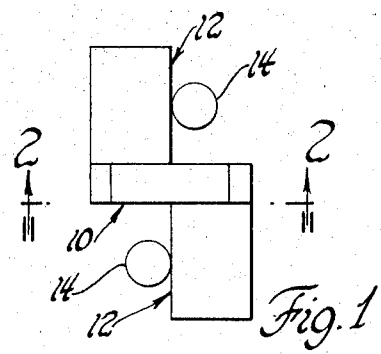



Fig. 1

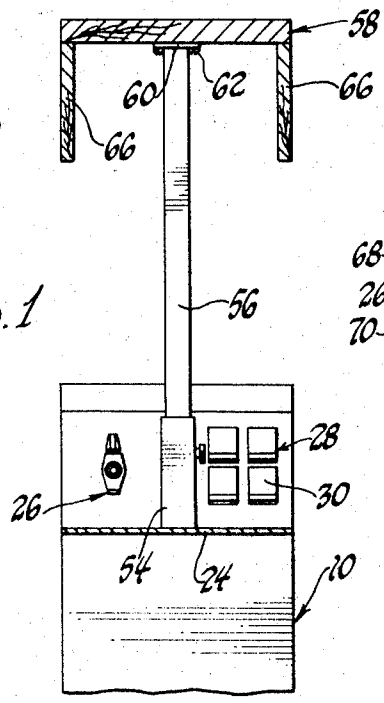



Fig. 6

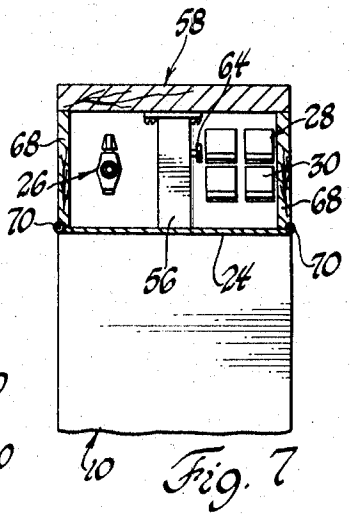



Fig. 7

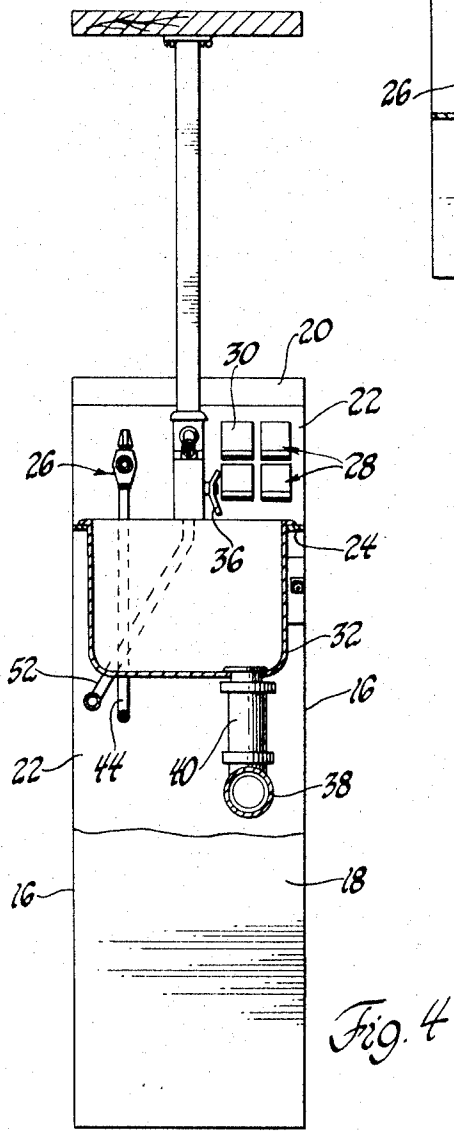



Fig. 4

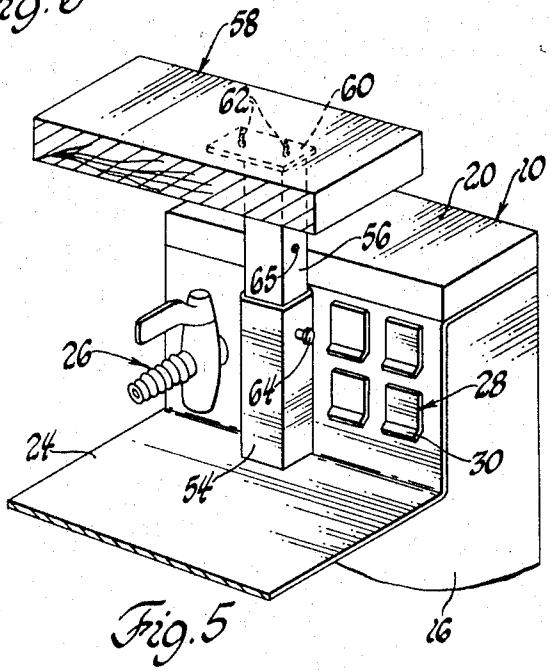



Fig. 5

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SCIENCE FURNITURE

Filed Aug. 17, 1967 Sheet 2 of 2

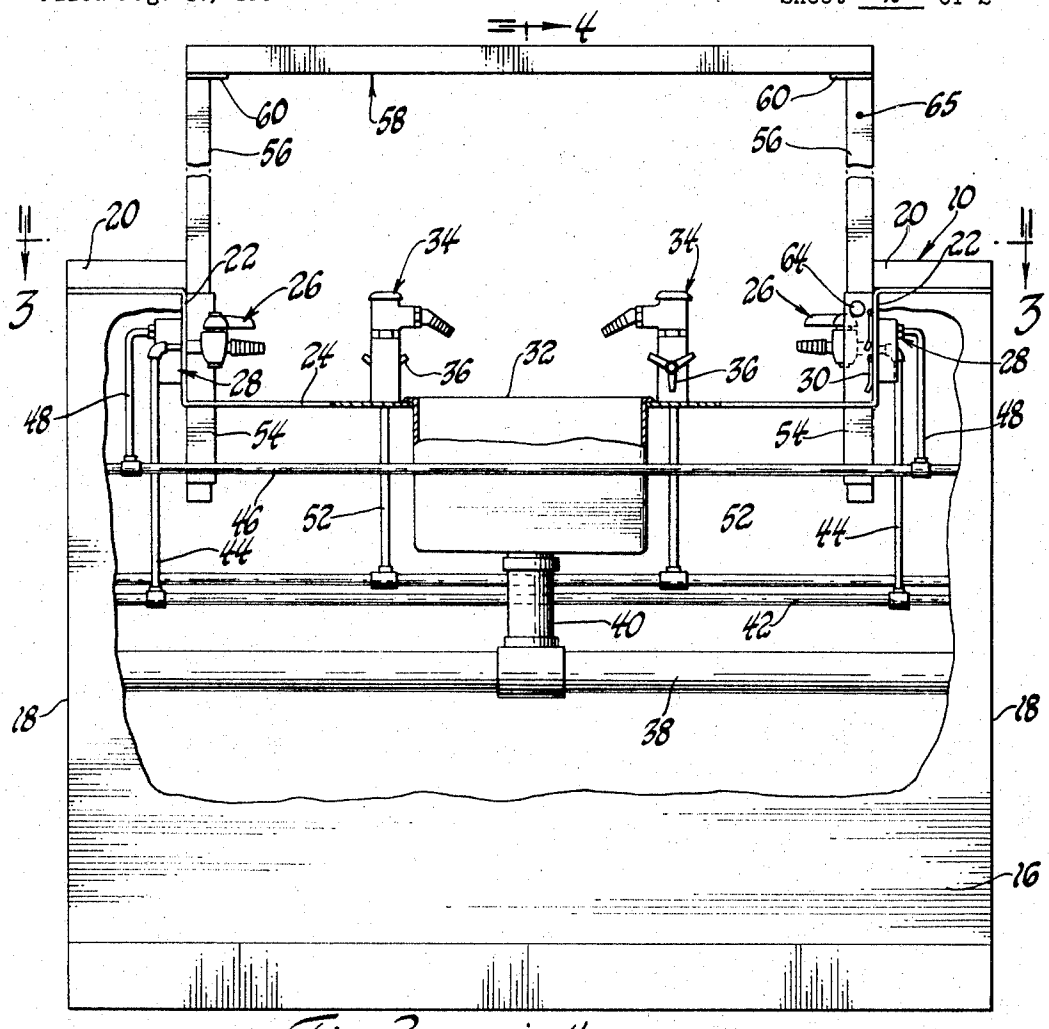



Fig. 2

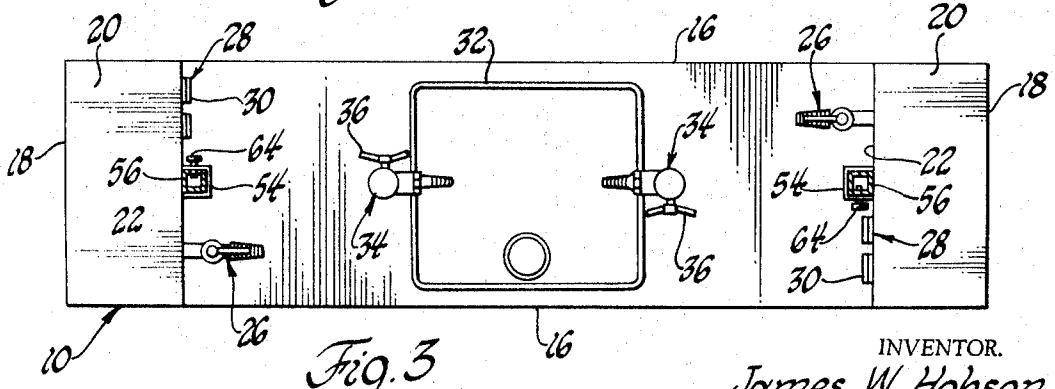



Fig. 3

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3,451,738

# SCIENCE FURNITURE

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U.S. Cl. 312—209 13 Claims

## ABSTRACT OF THE DISCLOSURE

A laboratory service core of modular construction in which a generally rectangular cabinet is provided with a recess in the upper surface thereof. Disposed within the recess are like sets of utility supply facilities symmetrically located so that access may be had thereto from opposite sides of the cabinet. A vertically movable shelf has a first position covering the recess and a second position upwardly spaced therefrom to permit access.

This invention relates to science furniture, and more particularly to a laboratory service core of modular construction containing utility service facilities arranged for access from opposite sides of the construction.

In the design and layout of laboratory facilities it is often necessary to provide accessibility to utility services, such as water, electricity and gas, with sufficient working space thereabout to carry on whatever work is to be done in using such facilities. A typical example is in a classroom laboratory where numerous people find it necessary to have access to such utility supply means and such access must be supplied under efficient and economical conditions.

In designing laboratories in the past, it has been common to provide large and cumbersome service core facilities with large counter areas immediately adjacent the utility service means, such constructions normally being arranged to permit only limited access to the facilities by large groups of people. Consequently, and particularly in classroom usage, the number of students who can use the facilities is small, or else the laboratory must be of tramendous size in order to provide sufficient service facilities for a reasonable number of people. The usual plan in laboratory design is rigid, since the service facilities are fixed in permanent places throughout the room, thus making it impossible to redesign or relocate the facilities without complete reconstruction of the laboratory. In addition, the usual laboratory service facility is open at all times; that is, the utility service means are always accessible for unauthorized usage thereof.

The construction in which this invention is embodied comprises, generally, a laboratory service core which is accessible from either side and which is provided with like sets of utility facilities symmetrically disposed in a recess in the cabinet so that access may be had from either side of the cabinet. A shelf member is movably supported in the cabinet and in one position covers the utility supply recess and in another position extends upwardly therefrom and forms a convenient shelf surface thereabove for temporary storage. All utility supply conduit and piping means extend within and through the cabinet so that the cabinet may be easily connected to base supply means or may be connected to other like laboratory service cores in end-to-end relation.

With such a construction, the design and layout of laboratory facilities is greatly enhanced, leading to great versatility in arangement of furniture and use thereof by large numbers of people. The modular nature of the service core permits a wide variety of groupings and arrangements around which people will have ready access to the



utility facilities. Since there are like sets of facilities at opposite ends of the core recess, the same service core can be used by two or more people, operating from opposite sides of the cabinet in which the facilities are mounted, thus a greater amount of flexibility and accessibility is available in a service core of extremely simple and economical construction easily assembled and movable from place to place for redesign of the furniture grouping.

These and other advantages will become more apparent from the following description and drawing in which:

FIGURE 1 is a schematic view of a typical classroom layout, utilizing a laboratory service core embodying the invention.

FIGURE 2 is an enlarged elevational view of the laboratory service core illustrated in FIGURE 1, with parts broken away and in section to illustrate the position of the various parts.

FIGURE 3 is a top plan view of the laboratory service core illustrated in FIGURES 1 and 2, with parts broken away and in section to illustrate the position and location of the various parts.

FIGURE 4 is a cross sectional view of the laboratory core facility illustrated in FIGURES 2 and 3, taken substantially along the line 4—4 of FIGURE 2 and looking in the direction of the arrows.

FIGURE 5 is a perspective view of a portion of the laboratory service core illustrated in FIGURES 1 through 4.

FIGURE 6 is a cross sectional view similar to FIGURE 4, illustrating a modification of the laboratory service core.

FIGURE 7 is another cross sectional view similar to FIGURE 4, illustrating another modification of the laboratory service core.

Referring more particularly to the drawings, FIGURE 1 best illustrates the ease with which classroom furniture may be designed and located using a laboratory service core embodying the invention. It is to be understood at the outset that the invention is not restricted to classroom use but may be used in any laboratory facility. For ease in description and understanding, the furniture is described with respect to classroom use.

A laboratory service core, illustrated generally by the numeral **10** in FIGURE 1, may form the basis for a unit of usage wherein desks or other work surfaces, as illustrated generally by the numeral **12**, are symmetrically disposed on opposite sides of the service core **10**. Stools, chairs or the like **14** indicate the location of the people utilizing the service core **10** and indicate that the service core is available from opposite sides and from opposite ends, thus permitting each person to do his own work without interference from the other. It will be apparent that the grouping illustrated in FIGURE 1 may be repeated along a horizontal line, as viewed in the drawing, or may be easily located in other designs depending upon the space available in the laboratory and the number of students using such facilities. As will become hereinafter more particularly apparent, the ease with which the regrouping may be done without extensive modification to the utility supply means provides great versatility in the arrangement possibilities.

Referring next to FIGURES 2–4, the laboratory service core **10** is a generally rectangular cabinet having side walls **16**, end walls **18** and top surface portions **20** joining the side walls **16** and end walls **18**. Inwardly spaced from the end walls **18** and extending downwardly for a portion of the length thereof are intermediate walls **22**, joined at a point below the top surface portions **20** by a support member **24**. Intermediate walls **22** and support member **24** extend between the side walls **16** and thus form

a recess in the upper portion of the cabinet **10**. Intermediate walls **22** and support member **24** may be of any suitable configuration and are shown for convenience to be a one piece affair formed of sheet metal or the like, suitably anchored beneath the upper surface portions **20**.

Disposed in the intermediate walls **22** are like symmetrical sets of utility service supply means. A gas connection, indicated generally by the numeral **26**, is disposed in each intermediate wall **22** and on opposite sides of the longitudinal center line of the cabinet **10**. Electrical supply boxes, indicated generally by the numeral **28**, are of conventional construction and are mounted in the intermediate walls **22**. Pivoted covers **30** may be provided for safety and protection.

Disposed centrally in the support member **24** is a sink **32** having water supply faucets, indicated generally by the numeral **34**, on opposite sides thereof. The faucet handles **36** are accessible from opposite side walls **16**.

The supply means for the utility service devices, such as gas jets **26**, water faucets **34** and electrical supply means **28**, are all contained within the cabinet **10** and below the support member **24**. The main drain pipe for the sink **32** is illustrated at **38**, connected to the sink **32** by a shorter drain pipe **40**. A gas supply pipe **42** is connected to the opposite gas jets **26** by suitable conduits **44**, the connections being made in any suitable manner well known in the art. Similarly, an electrical conduit **46** provides connecting means for the outlet boxes **28** by means of upwardly extending conduits **48**, connected in the manner well known in the art. Likewise, water supply is provided through a main conduit **50**, connected to the two water faucets **34** by piping **52**. It will be apparent that with the utility service supply being simply arranged beneath the support member **24** and extending longitudinally of the cabinet **10**, that the cabinet **10** may easily be located adjacent a second, like cabinet with the supply facilities, such as piping **38**, **42**, **46** and **50**, conveniently connected between the end walls or within the end walls **18**. Should the laboratory service core **10** be used alone, it is a relatively simple matter to connect the supply piping to the base supply within the building system.

Secured in each of the intermediate walls **22** is a tubular member **54**, conveniently located on the longitudinal center line of the cabinet **10**. Received within the tubular members **54** are support legs **56** which extend upwardly to a shelf member, indicated generally by the numeral **58**. Support legs **56** are secured to the undersurface of the shelf member **58** in any suitable manner, as by flanges **60** and screws **62**. The support legs **56** are of sufficient length to extend through the supporting tubes **54** and to permit the shelf member **58** to be raised above the upper surface portions **20** of the cabinet **10**, thus allowing unrestricted access to the utility service facilities within the recess formed in the upper surface of the cabinet. When it is desired to restrict access to the utility facilities, the shelf member **58** may be lowered to a position in alignment with the upper surface portions **20**, thus closing off access to the facility recess from above. Suitable latch means, such as thumb screws **64**, are received through side walls of the tubular members **54** and in selected apertures **65** in the support legs **56**. Such apertures **65** may be provided at spaced points along the support legs **56** to provide a number of adjustments for the position of the shelf member **58**. By turning the thumb screw **64** into one of the apertures **65**, the support legs **56** and the shelf member **58** will be properly secured above the cabinet **10**.

Referring next to FIGURE 6, a modification of the cabinet assembly is illustrated and wherein like reference numerals refer to like parts. Where it may be desirable to restrict access to the utility facilities from the sides of the cabinet **10**, the shelf member **58** may be provided with downwardly depending side panels **66** of sufficient length to extend between the intermediate walls **22** and of sufficient width to extend between the undersurface of the shelf member **58** and the support member **24**. In this manner, when the shelf member **58** is in its downward position aligned with the upper portions **20** of the cabinet **10**, the side panels **66** will completely close the side walls **16** and the utility supply recess.

Yet another modification is illustrated in FIGURE 7 wherein like reference numerals indicate like parts and wherein the utility supply recess in the cabinet **10** may be completely closed by side panels **68** pivotally mounted by hinges **70** to the support member **24** or to the side panels **16**. It will be apparent that when access to the utility supply recess is desired, the side panels **68** may be pivoted outwardly and downwardly, and upon raising the shelf member **58** to an upward position, complete access will be available.

With the like sets of utility supply means, such as gas jets **26**, electrical outlets **28** and water supply faucets **34**, symmetrically arranged at opposite sides of the supply recess in the cabinet **10**, it will be apparent that people on opposite sides of the laboratory service core will have access to the supply facilities from opposite sides of the cabinet **10**. At the same time, each person so engaged may carry out his experiments or work without interference from the other and without requiring a wait for utility supply until the other person is finished with his work. The symmetrical arrangement of the utility supply means assures constancy of operation, regardless of which side the experimenter is working on and whether or not he is working with another like service core.

Thus, is will be apparent that an extremely simple laboratory service core of modular design, having utility supply means mounted therein, may be easily used by people from opposite sides of the core. At the same time, such construction provides an extremely versatile piece of furniture for laboratory arrangement. The flexibility of location and usage makes the funiture readily adaptable to classroom usage and allows furniture layout to be readily adapted to the number of students expected to use the equipment.

While numerous changes and modifications to the structure will occur to those having skill in the art after having had reference to the foregoing description and drawings, it is not intended to limit the scope of the invention by the foregoing description and drawing but by the scope of the appended claims in which the embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows.

I claim:

**1**. A laboratory service core comprising:

a cabinet having a recess in the upper portion thereof;

like sets of utility supply means mounted in said cabinet and extending into said recess, said sets being accessible from opposite sides of said cabinet,

and a shelf member movably mounted on said cabinet and having a first position aligned with the top surface of said cabinet to cover the top of said recess and a second position upwardly spaced from said cabinet to permit access to said recess.

**2**. The laboratory service core set forth in claim **1** and further including panel members mounted on each side of said shelf member and extending downwardly therefrom, said panel members covering the sides of said recess when said shelf member is in position to cover the top of said recess.

**3**. The laboratory service core set forth in claim **1** and further including panel members pivotally mounted on the sides of said cabinet, said panel members being movable from an upward position covering the sides of said recess to a downward position permitting access to said recess.

**4**. The laboratory service core set forth in claim **1** wherein said support means for said shelf member includes tubular members secured to said cabinet at the ends of said recess, support legs slidably received in said tubular members and secured to said shelf member, and latch means in said tubular members and engaging said

support members to latch said shelf member in a selected position.

5. A laboratory service core comprising:
a cabinet structure having a recess therein;
utility connection means at opposite ends of said recess and being symmetrically mounted in said cabinet structure;
a sink mounted in said cabinet structure and centrally disposed in said recess;
spaced water supply means in said cabinet structure and at opposite ends of said sink;
a shelf member;
and support means in said cabinet structure and engaging said shelf member for permitting said shelf member to be mounted in one position covering said recess and in a raised second position to allow access to said recess from either side thereof.

6. A laboratory service core comprising:
a rectangular cabinet having side walls and end walls;
a pair of intermediate walls extending between said side walls and inwardly spaced from said end walls;
a support member joining said intermediate walls and spaced below the upper surface of said cabinet;
duplicate utility supply means symmetrically disposed in said intermediate walls and said support member for access thereto from either side of said cabinet;
and a shelf member movably mounted on said cabinet and having a first position upwardly spaced therefrom to permit access to said utility supply means and a second position aligned with the upper surface of said cabinet and covering said utility supply means.

7. A laboratory service core comprising:
a rectangular cabinet having intermediate walls inwardly spaced from the end walls thereof and a support member joining said intermediate walls and spaced below the upper surface of said cabinet, said intermediate wall and said support member defining a recess;
utility supply means symmetrically disposed in each of said intermediate walls;
a sink centrally mounted in said support member;
water supply means mounted in said support member at opposite ends of said sink;
and a vertically movable shelf member mounted in said cabinet, said shelf member having a first position aligned with the top surface of said cabinet and covering said recess, and said shelf member having a second position upwardly spaced from said cabinet to allow access to said recess from the sides of said cabinet.

8. A laboratory service core comprising:
a rectangular cabinet having side walls and end walls;
intermediate walls in said cabinet inwardly spaced from said end walls and extending between said side walls;



a support member extending between said intermediate walls;
like sets of utility supply means mounted in said intermediate walls, each of said sets being accesible from one side of said cabinet;
a sink centrally mounted in said support member;
like water supply means on opposite ends of said sink and accessible from opposite sides of said cabinet;
a shelf member extending between said intermediate walls and upwardly spaced from said support member;
and means mounting said shelf member on said cabinet for moving said shelf member between a first position aligned with the top of said cabinet and a second position upwardly spaced from the top of said cabinet to permit access to said utility supply means and said sink and said water supply means.

9. The laboratory service core set forth in claim 8 wherein said means mounting said shelf member includes tubular members mounted on said intermediate walls, and support legs slidably received in said tubular members and secured to said shelf member, said support legs being of sufficient length to support said shelf member in said first position or said second position.

10. The laboratory service core set forth in claim 9 and further including latch means mounted in said tubular members and engaging said support legs for latching said support legs and said shelf member in said second position.

11. The laboratory service core set forth in claim 10 and further including side panel members on said cabinet and extending between said intermediate walls, said side panel members extending between said support member and said shelf member when said shelf member is in said first position to restrict access to said utility supply means and said sink and said water supply means.

12. The laboratory service core set forth in claim 11 wherein said side panel members are pivotally mounted on said side walls.

13. The laboratory service core set forth in claim 11 wherein said side panel members are secured to said shelf member and extend downwardly therefrom.

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U.S. Cl. X.R.

108—147; 312—228, 282, 312