United States Patent [19]

Lukeman

[11] **3,913,964**

[45] **Oct. 21, 1975**

[54] **APPARATUS AND SYSTEM FOR GAINING ACCESS TO CONFLAGRATIONS**

[76] Inventor: **John R. Lukeman,** 3017 Hemingford Lane, Oklahoma City, Okla. 73120

[22] Filed: **Aug. 26, 1974**

[21] Appl. No.: **500,288**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 322,953, Jan. 12, 1973, Pat. No. 3,831,991.

[52] **U.S. Cl.** ..... **294/64 R;** 169/70; 211/89; 248/313

[51] **Int. Cl.²** **A47F 7/00**

[58] **Field of Search** ..... 294/64 R, 65; 169/54, 70; 211/89; 248/313

[56] **References Cited**

UNITED STATES PATENTS

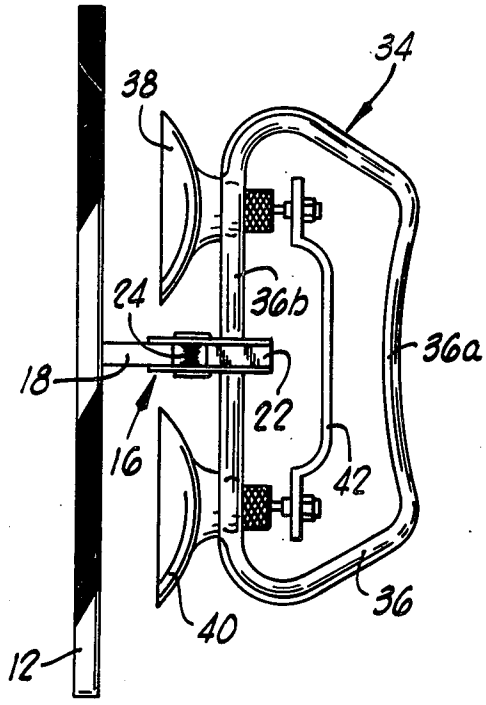
2,212,755	8/1940	Solomon	294/64 R
2,303,393	12/1942	Schmidt	294/64 R
2,483,188	9/1949	Elger	248/316 B X
3,061,351	10/1962	Johnson	294/64 R
3,343,684	9/1967	Galier	211/89
3,603,550	9/1971	Byrd	248/313

Primary Examiner—Lloyd L. King
Assistant Examiner—Michael Mar
Attorney, Agent, or Firm—William R. Laney

[57] **ABSTRACT**

An apparatus for maintaining ready availability of a lifter tool adapted to lift flat floor panels to expose a fire therebeneath, the apparatus consisting of a flat mounting plate adapted for securement to a wall or other vertically extending surface, a clip bracket centrally secured on said plate, and a lifter tool having a pair of spaced lifter elements occupying substantially the same plane, and interconnected by a bridging handle member. The tool is engaged by the bracket in a position to face the lifter elements toward the plate. The invention further includes the described apparatus in combination with a room including a vertical wall upon which said apparatus is mounted by securement of the mounting plate thereto, a fire extinguisher exposed on said wall adjacent said apparatus, and a floor in the room comprising a plurality of flat panels supported above a sub-floor to define therewith a space containing electrical cables connected to a computer disposed in the room.

7 Claims, 9 Drawing Figures



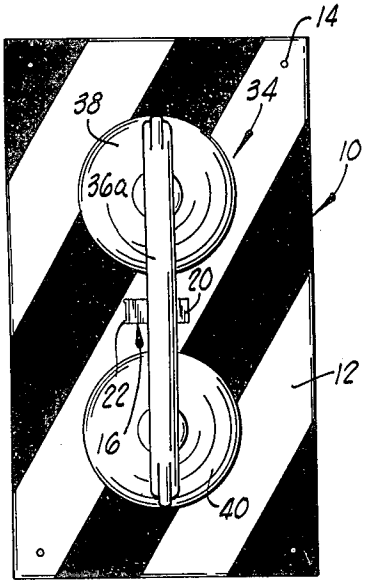


FIG. 1

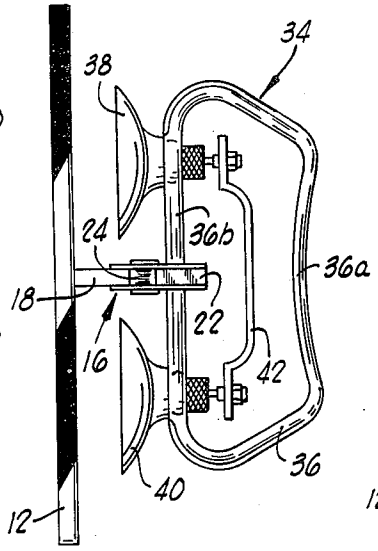


FIG. 2

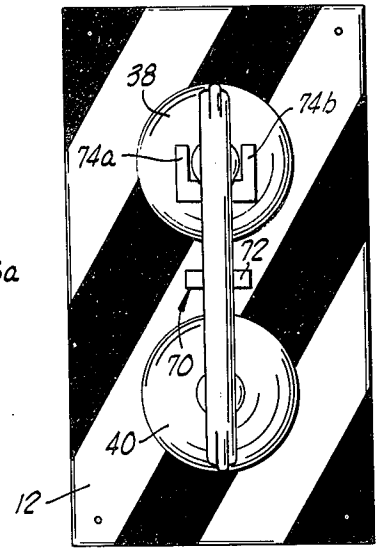


FIG. 3

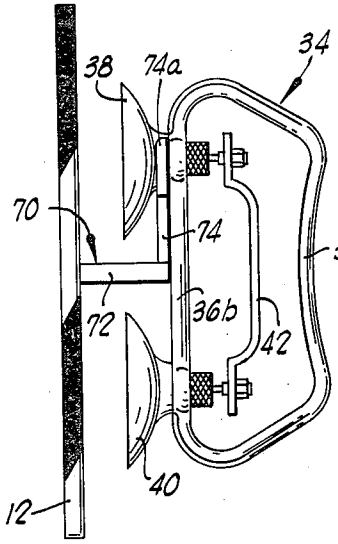


FIG. 4

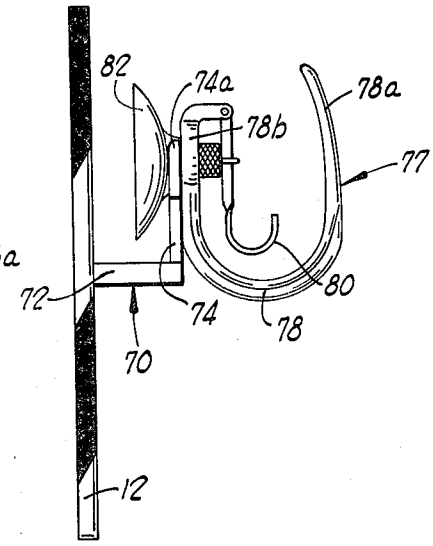


FIG. 5

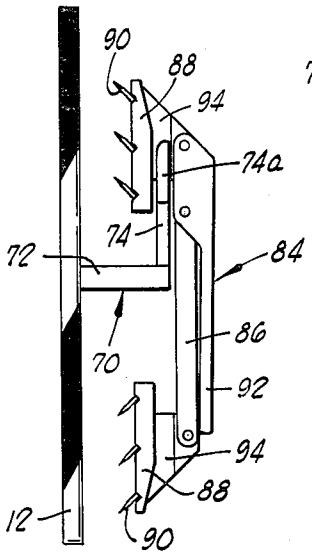


FIG. 6

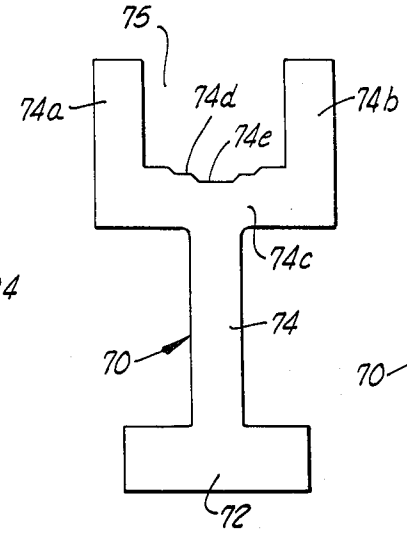


FIG. 7

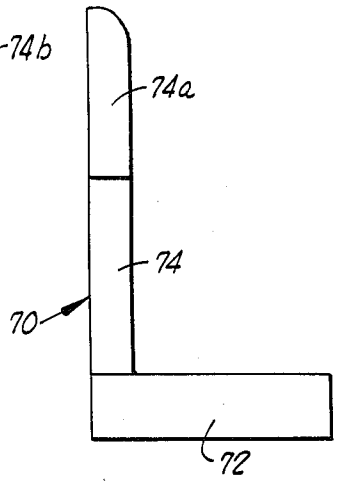


FIG. 8

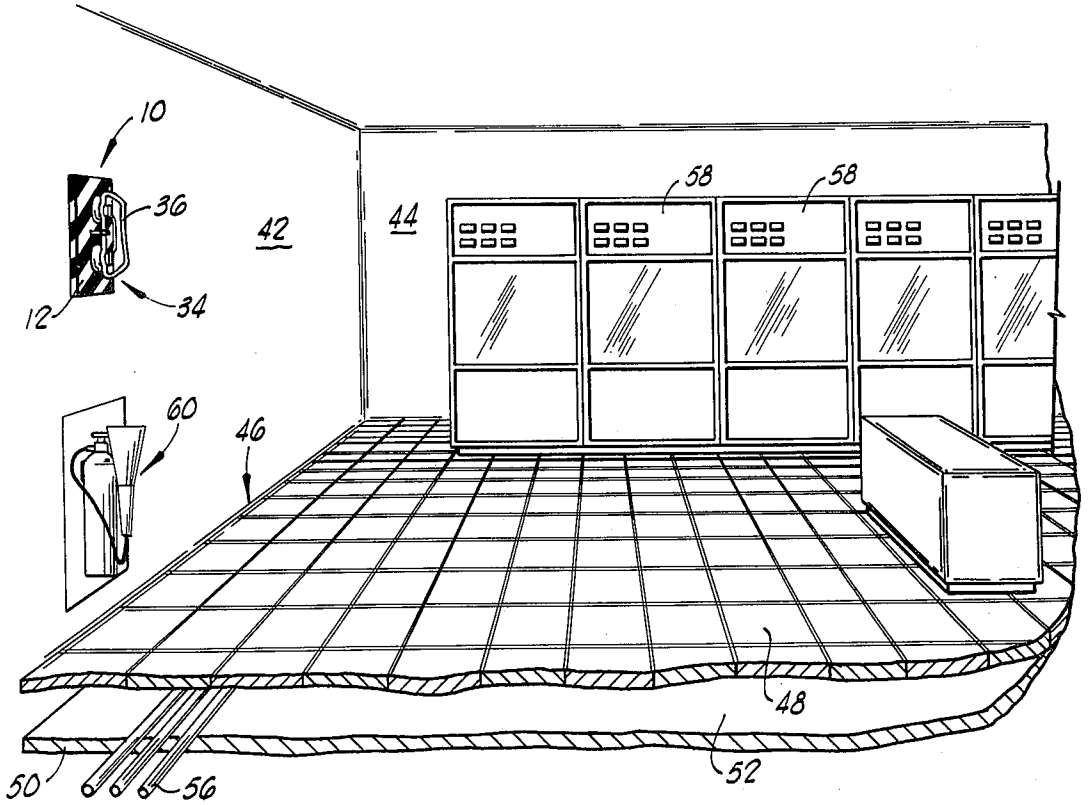


FIG. 9

APPARATUS AND SYSTEM FOR GAINING ACCESS TO CONFLAGRATIONS

RELATED APPLICATIONS

This application is a continuation-in-part of my U.S. Pat. application Ser. No. 322,953 filed Jan. 12, 1973 now U.S. Pat. No. 3,831,991 and entitled "Apparatus and System for Gaining Access to Conflagrations."

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to safety apparatus and devices, and more particularly, to apparatus for gaining rapid access to a fire or conflagration beneath the floor in rooms having a floor with sub-flooring disposed therebelow, and defining therebetween a space for the accommodation of electrical power cables and signal cables.

2. Brief Description of the Prior Art

It has, in recent years, become the practice to construct chambers or rooms containing massive and extensive computer equipment so that the heavy electrical cables providing electric power and signals for the computer equipment are disposed beneath the floor and above a sub-floor. The floor is constructed, in many instances, of a plurality of large, heavy flooring panels which are supported upon thin channels or pedestals forming a network. The electrical cables provided for supplying power to the computer in this manner often become heated and generate a substantial amount of heat, and consequently it is sometimes a practice to provide air conditioning in the void or space between the floor and sub-floor where the electrical cables are accommodated. It has also been the practice to provide, within or near the computer room, a vacuum type lifter device having one or a plurality of flexible suction cups which can be used to engage the flat upper surface of the flooring panels, and lift them upwardly in the event a fire develops in the space between the floor and sub-floor as a result of over heating of the electrical cables. The vacuum type lifter tool, of course, is generally provided with a handle, and is the only rapid means of removing the flooring panels to gain access to the space therebelow.

In some instances, the flooring panels are carpeted and the lifter tool provided has a pair of lifter heads having a plurality of sharp carpet-engaging tines projecting therefrom instead of the suction cups.

A problem which has been encountered in systems of the type described is the theft, loss or misplacement of the vacuum type lifter tool. Thus, frustrating delays are sometimes encountered when it is desired to inspect or repair the electrical components beneath the floor. More importantly, an extremely dangerous situation is, of course, confronted at any time that a fire breaks out in the space between the floor and the sub-floor if the lifter tool cannot be readily located and placed in use at such times. Frequently, these tools are stored in a drawer, and their precise location is known to only a few personnel. At other times, since such tools have other usages than that for which they are provided in the computer rooms, they are the subject of theft, thus rendering them totally inaccessible in time of need. Also, at times, the lifter tool, when not in use, is left resting on its side so that its full weight is borne by the thin edges of the suction cups, thus damaging the cups to the extent that they will not operate properly.

BRIEF DESCRIPTION OF THE PRESENT INVENTION

The present invention alleviates the problem of lost or missing lifter tools. Moreover, the invention suggests or implies, for novice personnel, the use for which the tool is intended, and locates the tool in close proximity to other equipment commonly used in fighting and extinguishing fires after access to the situs of the blaze or heat has been gained. Moreover, the present invention does not merely assure ready availability of the lifter tools described, but protects them from commonly occurring damage which results from improper storage in which they are rested upon one or all of the lifter elements forming a part of such tools.

Broadly described, the present invention comprises a mounting plate adapted for securement to a vertically extending surface; a horizontally projecting bracket secured to the mounting plate, and including a bifurcated clip or hanger having divergent ends forming an opening to a throat; and a lifter tool detachably secured to the bracket. The vacuum type lifter tool constituting one embodiment of the invention includes a pair of flexible suction cups positioned for concurrently engaging and gripping a substantially monoplanar surface, and having concave suction surfaces facing toward the mounting plate; and a rigid handle extending between and interconnecting the suction cups, and having a central portion frictionally engaged by the throat of the bifurcated clip. The suction cups of the vacuum type lifter tool are oriented to be protected by the shielding position of the plate located on one side of the cups, and are protected by the rigid handle of the lifter tool disposed on the other side of the cups.

In another aspect, the present invention is an improved computer room system comprising a floor having a plurality of substantially flat floor panels collectively forming a major portion of the floor; means movably supporting the floor panels in a horizontal, coplanar relation to each other for vertical movement upon lifting; a subfloor spaced vertically downwardly from the floor and defining an intervening space therewith; and a vertically extending structural surface projecting upwardly from the floor. A fire extinguisher is detachably supported on the vertically extending structural surface, as is a flat mounting plate which is secured to the vertically extending structural surface at a location adjacent the fire extinguisher. Means is provided on the mounting plate for detachably engaging the handle of a lifter tool for the panels. A lifter tool is provided, and includes a handle detachably engaged by the engaging means on the mounting plate, and further includes at least one lifter element, such as a suction cup, mounted on this handle. At least one computer is supported on a portion of the floor of the room, and electrical cables extend through the described space to the computer for supplying electrical power to the computer. The system as thus described affords greater protection against the development of a conflagration in the space between the floor and the sub-floor in the event of over heating of the electrical cables which are located there. The arrangement further assures that all equipment necessary for gaining access to, and fighting a fire in such space, will be readily available and in plain sight, and can be easily and quickly obtained.

It is an object of the invention to provide an apparatus for making accessible, and storing, a lifter tool of

the sort used to lift large, heavy flat panels forming portions of a floor in a computer room.

The further object of the invention is to provide an apparatus, by means of which a vacuum type lifter tool can be stored in such a way that it is constantly protected against damage to the suction cups thereof, yet is readily available and easily located in time of need.

A further object of the invention is to provide a computer room system in which fire extinguishing apparatus is located in close proximity to apparatus employed to gain access to the most likely point of development of a fire, and both the extinguishing equipment and access gaining equipment can be quickly obtained and put into use.

Other objects and advantages of the invention will become apparent from the following detailed description of preferred embodiments of the invention when such description is considered in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a plan view of one embodiment of apparatus constructed in accordance with the present invention.

FIG. **2** is a side elevation view of the apparatus depicted in FIG. **1.**

FIG. **3** is a plan view of an alternate embodiment of apparatus constructed in accordance with the present invention.

FIG. **4** is a side elevation view of the apparatus depicted in FIG. **3.**

FIG. **5** is a side elevation view of an alternate embodiment of apparatus constructed in accordance with the present invention.

FIG. **6** is a side elevation view of another embodiment of the invention.

FIG. **7** is a front elevation view of the bracket forming a part of the apparatus shown in FIG. **6.**

FIG. **8** is a side elevation view of the bracket shown in FIG. **7.**

FIG. **9** is an isometric view of a system of the present invention, including as a portion of the overall system combination, the apparatus depicted in FIG. **1.**

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

Referring initially to FIGS. **1** and **2** of the drawings, shown therein is one embodiment of an apparatus **10** constructed in accordance with the present invention. The apparatus **10** includes a flat mounting plate **12** having a plurality of holes or apertures **14** formed therethrough to permit the mounting plate to be secured by screws or bolts to a wall or vertical surface.

Centrally located on the exposed major surface of the mounting plate **12** is a clip bracket, designated generally by reference numeral **16.** The clip bracket **16** is of the type described in detail in my co-pending patent application Ser. No. 322,953, and includes, as best illustrated in FIG. **2,** a base pedestal **18** which is rigidly secured by any suitable means to the mounting plate **12,** and which projects substantially normal to the mounting plate. The illustrated embodiment of the clip bracket **16** further includes a pair of spring metal clip arms **20** and **22** pivotally mounted on the base pedestal **18** and urged together by a spring **24.** At their outer ends, the clip arms **20** and **22** are bent so that the end portions diverge from each other. The clip arms are further angled so as to form an open throat just inside the divergent ends.

The apparatus of the invention further includes a vacuum type lifter tool designated generally by reference numeral **34.** Tools of this type are commercially available, and are generally constructed with one or more vacuum cups which may be forced against a flat or monoplanar surface by pressing down a handle attached to the suction cups. The handle is then used to lift a panel or plate carrying the flat surface engaged by the suction cups. Many of such vacuum type lifter tools have a trigger or release element which, when pulled, breaks the vacuum beneath the suction cups, and releases the plate or panel after it is lifted.

In FIGS. **1** and **2,** one commercially available vacuum type lifter tool is shown, and this particular tool includes a handle **36** which is shaped to have a gripping portion **36***a* and a cup carrying portion **36***b*. A pair of suction cups **38** and **40** are mounted on the cup carrying portion **36***b* of the handle **36,** and it will be perceived in referring to FIG. **2** that the handle **36** projects to locations such that the handle completely overlies the suction cups **38** and **40** on one side thereof. Stated differently, the handle **36** affords protection to the suction cups **38** and **40** from a blow or damaging impact being imparted to the cups from one side thereof. The cup carrying portion **36***b* of the handle **36** has a medial portion which extends between and spaces the cups **38** and **40.** For the purpose of releasing the vacuum which is created within the hollow or concave interior of the suction cups **38** and **40** when they are pressed down against a flat surface, a vacuum breaking trigger **42** is provided on the vacuum type lifter tool **34,** and functions in a manner well understood in the art to release the engagement of the suction cups **38** and **40** with a plate or panel after the plate or panel has been lifted by the use of the tool.

Referring further to FIG. **2** of the drawings, it will be perceived that the lifter tool **34** is shown engaged by the clip bracket **16.** This engagement results from the grip on the cup carrying portion **36***b* of the handle **36** by the spring arms **20** and **22** of the clip bracket **16.** It will be noted that the cup carrying portion **36***b* of the handle **36** has been pressed down between these arms into the throat **26** just inside the divergent ends of the arms **20** and **22.** The cup carrying portion **36***b* of the handle **36** is configured to have a relatively narrow, tapered lower edge portion which faces toward the suction cups **38** and **40,** and it is this portion of the handle which is pressed against the contacting end portions of the spring arms **20** and **22** in order to force the cup carrying portion **36***b* between these spring arms, and into the throat defined therebetween. Moreover, the particular cross-sectional configuration of the cup carrying portion **36***b* of the handle **36** is such that the relatively narrow side edges of the oval shaped central section of this portion of the handle fits into the throat defining angulations formed in the spring arms **20** and **22,** and the result is that the lifter tool is engaged so that it does not rotate or shift about a horizontal axis extending coaxially through the cup carrying portion **36***b* of the handle **36.**

The effect of the described engagement of the lifter tool **34** by the clip bracket **16** is to maintain the lifter tool in a particular and specific position with respect to the mounting plate **12** as illustrated in FIGS. **1** and **2.** It will be seen that the mounting plate **12** has a consid-

erably larger major surface area than the total projected area of the lifter tool **34** (projected into the plane of this major surface), with the result that the suction cups **38** and **40** are completely protected from any type of contact by moving objects moving directly toward the suction cups **38** and **40** from the side thereof upon which the mounting plate **12** is located. Thus, the relatively thin edges of the suction cups **38** and **40** are protected from damage, as well as the concave interior of the cups. A problem which has previously existed in the storage or non-operating disposition of lifter tools of the type described is that the tools will often be inadvertently rested upon a supporting surface in such a way that the elastomeric material of which the suction cups **38** and **40** are conventionally fabricated will be distorted or split so that the cups will not function properly when it is later attempted to use the tool for lifting purposes. The mounting arrangement afforded by the present invention avoids this problem.

In summary, the apparatus depicted in FIGS. **1** and **2** facilitates the semi-permanent location of the vacuum type lifter tool in an exposed, constantly visible location. Very importantly, when stored and located on a vertical surface through the use of the mounting plate **12** and clip bracket **16,** the lifter tool **34** is protected, and the operability of the elastomeric suction cups **38** and **40** is maintained at all times, for the cups are well protected from distortion or damage resulting from contact with inadvertently thrown or moved objects. Moreover, the construction of the clip bracket **16** assures that the vacuum tool will not be pivoted or swung to a position such that the suction cups are exposed, or the tool inadvertently dropped on the floor and damaged.

One of the important advantages of the present invention is the provision of apparatus which assures continuing availability of the vacuum type lifter tool **34** for use in gaining rapid access to the location of a fire which has broken out beneath the flooring of a computer room. It is a widespread current practice to construct the floors of such rooms from a plurality of heavy panels which are fitted together to form the floor in such a way that the upper surfaces of the panels are in flush, coplanar alignment. There is no projection or protuberance from any of the panels which facilitates the lifting of the panels by grasping such projection or protuberance and pulling upwardly. It is further a common practice in the current construction of rooms containing computer equipment to locate all of the electrical cables supplying electrical power and signals to the computer in a space provided beneath the floor and above a sub-floor of the room.

The present invention provides a new system of construction of interior spaces for the location and operation of computer equipment which is characterized in enhanced safety in usage, and which is better outfitted and arranged for the quick extinguishment of any fire which may start in the space beneath the flooring in such room. Moreover, for the purpose of maintenance and repair of the electrical supply system, ready access may be had to the space beneath the floor using the system of the present invention, and the invention further assures that the vacuum type lifter tool employed for gaining access to the space beneath the floor will be operative at any time when it is needed, and will not malfunction due to splitting or other damage to the suction cups as a result of the tool being laid upon its side on top of a desk or in a drawer for purposes of storage. Finally, the possibilities of theft of the vacuum type lifter tool are greatly reduced, since the tool is located in a clearly visible, always accessible location where personnel working in the computer room will be instantly apprised of the fact that the tool is missing from its customary location, and will generally be able to observe the removal of the tool by any person for either authorized or unauthorized usage.

The system of the present invention is depicted in FIG. **9** of the drawings. Here a computer room is illustrated and includes vertical walls **42** and **44** which extend upwardly from the floor, designated generally by reference numeral **46.** The floor **46** is constructed of a plurality of large, heavy panels **48** which are supported on channels (not shown), or any other suitable structure, to provide, collectively, a substantially monoplanar upper floor surface having no protuberances or other upwardly extending structures formed thereon. Beneath the floor **46** is located a sub-floor **50** and a space **52** is defined between the floor **46** and the sub-floor. In the space **52** are located the electrical cables **56** which carry the electrical power to a computer **58** disposed within the room. The computer **58,** of course, rests upon the floor **46.** As is conventional construction at the present time, each of the panels **48** can be lifted upwardly from the position shown in FIG. **4** to provide access to the space **52** between the floor **46** and the sub-floor **50.**

Affixed to the wall **42** at a location thereon which is approximately equal in height to the level of the eye of persons standing while working in the computer room is the apparatus **10** depicted in FIGS. **1–2** of the drawings. The mounting plate **12** has been secured flatly against the wall **42** by means of screws or bolts. Thus, the handle **36** of the vacuum type lifter tool **34** projects outwardly from the wall in a direction substantially normal thereto, and can be quickly and easily grasped by personnel within the room.

Spaced downwardly from the apparatus **10** on the wall **42** is a fire extinguisher **60.** The brackets provided for hanging or suspending a fire extinguisher of the type shown on a wall or other vertical surface are well known in the art, and do not form a part of the present invention. It will be noted, however, in referring to FIG. **9,** that the apparatus **10** of the present invention is disposed immediately over the fire extinguisher **60,** and that one person can easily grasp the lifter tool **34** in one hand to remove it from the clip bracket **16,** while concurrently grasping the heavy fire extinguisher **60** in the other hand and removing it from its mounting upon the wall **42.** Thus, extremely valuable seconds are saved in getting the necessary equipment to a location over the floor **46** where access is needed to the space **52** to combat a fire which has broken out in this space as a result of overheating of the electrical cables supplying the computer **58.** The relatively small and light character of the lifter tool **34** might allow personnel to lay this tool down after its use is completed, and forget to return it to its storage location, were nothing more than such return involved. The fact that the heavy fire extinguisher **60** will usually always be returned to its location on the wall **42,** however, will assure that visual perception of the absence of the lifter tool **34** will occur at the time of return of the fire extinguisher, and that the lifter tool will ultimately be returned to its proper

storage location immediately above the fire extinguisher.

Although certain preferred embodiments of the invention have been herein described in order to illustrate the invention and the manner of its usage, it will be understood that various changes and innovations in the described structures can be effected without departure from the basic principles which underlie the invention. For example, other forms of lifter tools for lifting heavy panels or metal plates are currently available on the market, and some of these involve different configurations of handles, and from one to four suction cups or other lifter elements. The principles which have been described in the preceding specification are applicable to the location and storage of such lifter tools, however, with minor modifications being necessary, in such instances, to the size of the mounting plate which is employed, and in the details of construction of the clip bracket used to mount or support the lifter tool.

In like manner, although the apparatus **10** and fire extinguisher **60** have been disclosed in the foregoing description as being mounted upon the exposed interior surface of a wall, it will be apparent that these subassemblies of the described system could also be mounted upon a vertical column within the computer room, provided only that their orientation in relation to each other and in relation to the paneled floor is retained.

A different embodiment of the invention is illustrated in FIGS. **3** and **4.** In this embodiment, a flat mounting plate **12** of the sort shown in FIGS. **1** and **2** is provided and has projecting therefrom, a clip bracket designated generally by reference numeral **70.** The clip bracket **70** includes a base pedestal **72** which projects substantially normal to the mounting plate **12.** The clip bracket **70** further includes a bifurcated receiving yoke **74** which extends substantially normal to the pedestal **72** and includes a pair of spaced, substantially parallel arms **74***a* and **74***b* which define between them a throat **75.** The bracket **70** is illustrated in detail in FIGS. **7** and **8** of the drawings, and in perusing these illustrations of the bracket, it will be preceived that the spaced arms **74***a* and **74***b* are joined by a web portion **74***c* having a relieved upper surface which provides a plurality of incremental steps **74***d* which adjoin a recess or depression **74***e* formed in the upper edge of the web portion **74***c*. It will further be noted in referring to FIG. **8** of the drawings that the inner sides of the upper ends of each of the arms **74***a* and **74***b* are radiused or tapered so that sharp points or edges on the inner sides of these arms which face the mounting plate **12** are avoided.

The embodiment of the bracket **70** illustrated in FIGS. **3–8** can be employed for supporting various types of lifter tools of the general character hereinbefore described, including the type depicted in FIGS. **1** and **2.** Thus, the lifter tool shown in FIGS. **1** and **2** is illustrated as it is supported by the bracket **70** in FIGS. **3** and **4.** Here it will be noted that the bifurcated yoke **74** extends vertically, and that the arms **74***a* and **74***b* extend on opposite sides of the neck or base portion of one of the suction cups **38** of the lifter tool **34.** It will further be noted that the neck or base portion of the suction cup **38** rests in and upon the web portion **74***c* of the clip bracket **70,** and that the cup carrying portion **36***b* of the handle **36** bears against the yoke **74** of the clip bracket **70.** In this position, it will be noted that the suction cups **38** and **40** are protected by the mounting plate **12** and handle **36** as previously described herein. Thus, the lifter tool **34** is supported so that the handle **36** extends over and protects the suction cups from one side, while the exposed interior surface of each suction cup is protected by facing toward the mounting plate **12.**

A different form of the lifter tool depicted in FIGS. **1–4** is shown mounted on, and supported by, the clip bracket **70** in FIG. **5** of the drawings. The lifter tool **77** here illustrated includes a generally U-shaped handle **78** which includes a gripping portion **78***a* and a cup mounting portion **78***b*. A vacuum releasing trigger **80** is also provided as a portion of the lifter tool. It will be noted that in this embodiment of the invention, the single suction cup **82** provided on the lifter tool again faces toward the mounting plate **12** so that the interior surfaces and gripping edges of the suction cup are protected. The suction cup **82** is also protected on the opposite side thereof by the overlying position of the gripping handle **78***a*. It will further be noted in referring to FIG. **5,** that a portion of the handle **78** which extends downwardly from the junction of the neck or base of the suction cup **82** with the handle is in contact with the yoke **74** so that, through this contact and the engagement of the arms **74***a* and **74***b* with the neck or base portion of the suction cup **82,** the lifter tool is retained in the illustrated position in which the suction cup is protected.

In FIG. **6** of the drawings, the bracket **70** mounted on the mounting plate **12** is used for supporting, in the heretofore described arrangement and orientation, a lifter tool **84.** The lifter tool **84** includes a main handle portion **86** which interconnects a pair of rigid lifter heads **88** which project from one side of the main handle portion **86,** and substantially normal thereto. Each of the lifter heads **88** carries a plurality of inclined tines **90** which are adapted to penetrate and engage a carpet when an actuating handle **92** is pivoted in a manner well understood in the art. The lifter tool **84** shown in FIG. **6** can thus be employed in those instances where the panels to be lifted by the tool to gain access to a conflagration are covered with carpet.

It will be noted in referring to FIG. **6** that each of the lifter heads **88** is joined or connected to the handle portion **86** by means of a neck or base portion **94.** The neck or base portion **94** of one of the lifter heads is positioned in the throat between the arms **74***a* and **74***b* of the yoke **74** of the bracket **70,** and it will be noted that the handle portion **86** of the lifter tool **84** extends for a distance from the uppermost lifter head **88** toward the other lifter head in contact with the yoke **74** of the bracket **70.** Thus, as in the case of the other lifter tools, the tool is retained in the position in which the lifting member carried by the handle is protected by facing toward the adjacent mounting plate, and on the rear side, by portions of the handle structure.

Innovations or structural modifications of the type described, in remaining dependent upon the basic principles of the present invention, are considered to be circumscribed by the spirit and scope of the invention. The invention is thus considered to comprehend and include such other embodiments and modifications, except as such variant structures may necessarily be excluded from the scope of the invention by the language of the appended claims, or reasonable equivalents thereof.

What is claimed is:

1. Apparatus for gaining access to conflagrations comprising:

a mounting plate having a monoplanar surface and adapted for securement to a vertically extending surface with the mounting plate positioned on the vertically extending surface with the monoplanar surface of the mounting plate extending substantially parallel to the vertically extending surface;

a bracket secured to the monoplanar surface of the mounting plate and projecting outwardly therefrom in a direction substantially normal to the monoplanar surface of the mounting plate, said bracket including a pair of arms defining a throat therebetween;

a panel lifting tool including:

a handle having a portion extending substantially parallel to said monoplanar surface;

panel engaging means carried by said handle adjacent one end thereof and having:

a panel engaging portion; and

a base portion disposed at the junction of the panel engaging means with said handle, and positioned in said throat with said arms on opposite sides thereof, said tool being supported on said bracket with said panel engaging portion positioned between said mounting plate and said handle.

2. Apparatus as defined in claim 1 wherein said panel engaging means comprises an elastomeric suction cup having a neck connected to said handle, and constituting said portion disposed at the junction of the panel engaging means with said handle.

3. Apparatus as defined in claim 1 wherein said panel engaging means comprises a pair of spaced heads each having a plurality of tines projecting therefrom.

4. Apparatus as defined in claim 1 wherein said bracket is further characterized in including a web joining said arms and having a stepped edge facing and defining one side of said throat.

5. Apparatus as defined in claim 1 wherein said arms extend substantially parallel to each other and substantially parallel to the monoplanar surface of said mounting plate, each of said arms terminating in an end having a radiused edge on the side thereof facing said mounting plate.

6. Apparatus as defined in claim 5 and further characterized in including a web joining said arms and having a relieved, stepped edge facing and defining one side of said throat.

7. Apparatus as defined in claim 6 wherein said panel engaging means comprises an elastomeric suction cup having a base connected to said handle, with said base constituting said portion disposed at the junction of the panel engaging means with said handle, said base resting upon said stepped edge defining the throat between the arms of the bracket.

* * * * *