United States Patent [19]

Gassaway

[11] **3,850,392**

[45] **Nov. 26, 1974**

[54] **EQUIPMENT SECURITY DEVICE**

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[22] Filed: **Jan. 2, 1973**

[21] Appl. No.: **320,553**

[52] **U.S. Cl.** **248/19,** 70/232, 248/25, 248/203

[51] **Int. Cl.** **F16b 41/00,** E05b 73/00

[58] **Field of Search** 248/203, 19, 25, 23; 70/58, 181, 232, 371

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Primary Examiner—J. Franklin Foss
Attorney, Agent, or Firm—Donald D. Mon; D. Gordon Angus

[57] **ABSTRACT**

A security device for protecting equipment such as typewriters, calculators and the like comprises a flexible pad bondable by adhesive to a mounting surface such as a table or desk, and a cover having depending lugs having holes adapted to register with corresponding loop devices protruding upward from the pad so that lock pins may be passed through the lugs and loops, from openings through the cover, to attach the cover to the pad. Locks are provided to be inserted into the openings after the lock pins have thus been introduced so that the pins cannot be retracted until the locks are unlocked by a key. Means is provided for bolting the equipment to the top of the cover from inside the cover before the cover is attached to the pad. Thus there is no access to the bolts holding the equipment until the locks are removed. The bonding adhesive is so strong in tension that a person cannot lift it off the mounting base. The pad can be removed from the mounting base however after the cover is unlocked and removed, by peeling the pad off the the base.

10 Claims, 10 Drawing Figures

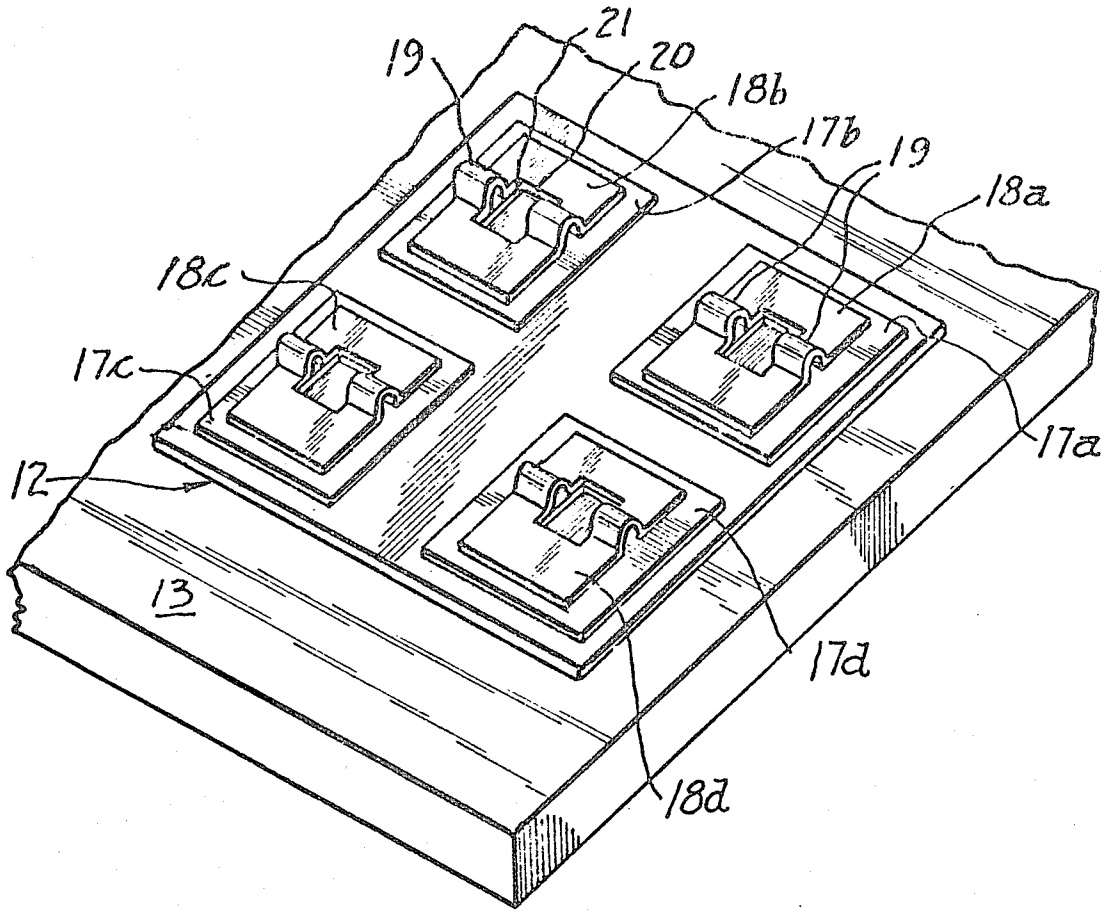


FIG. 5

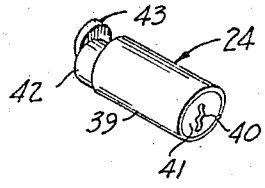


FIG. 1

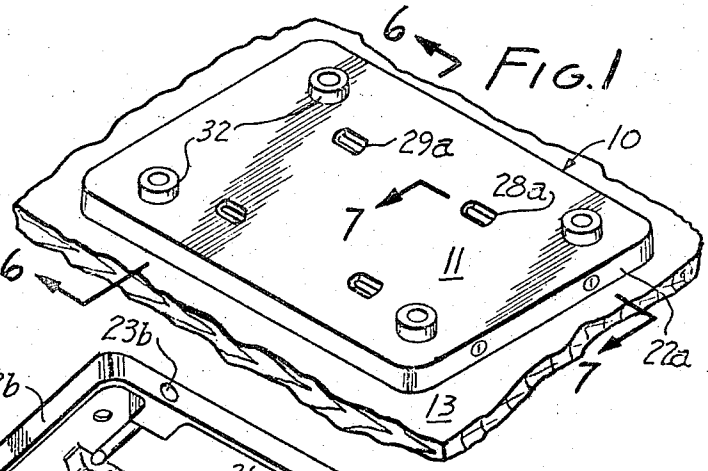


FIG. 3

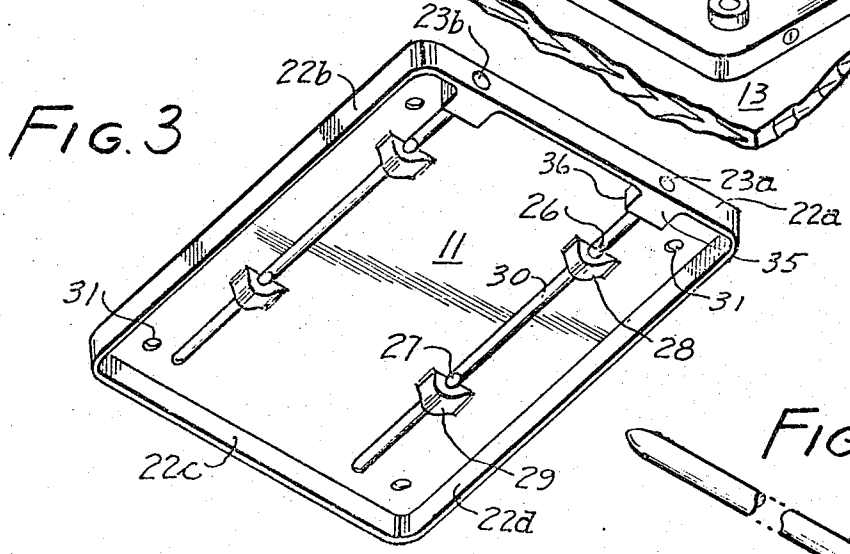


FIG. 4

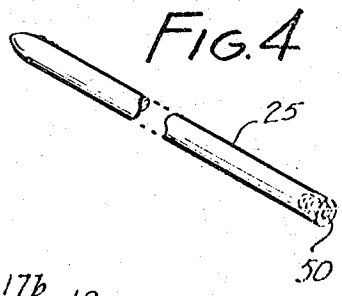


FIG. 2

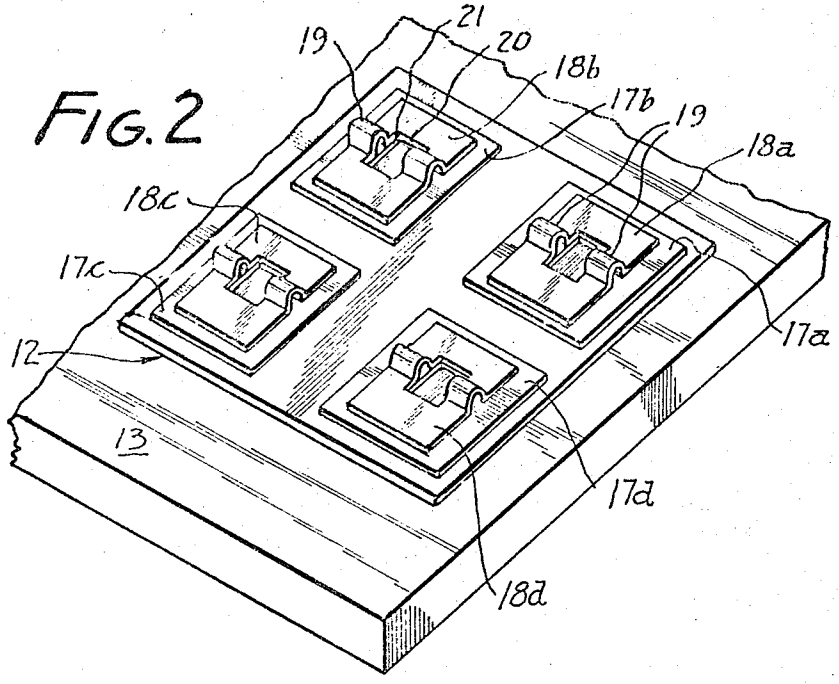


FIG. 6

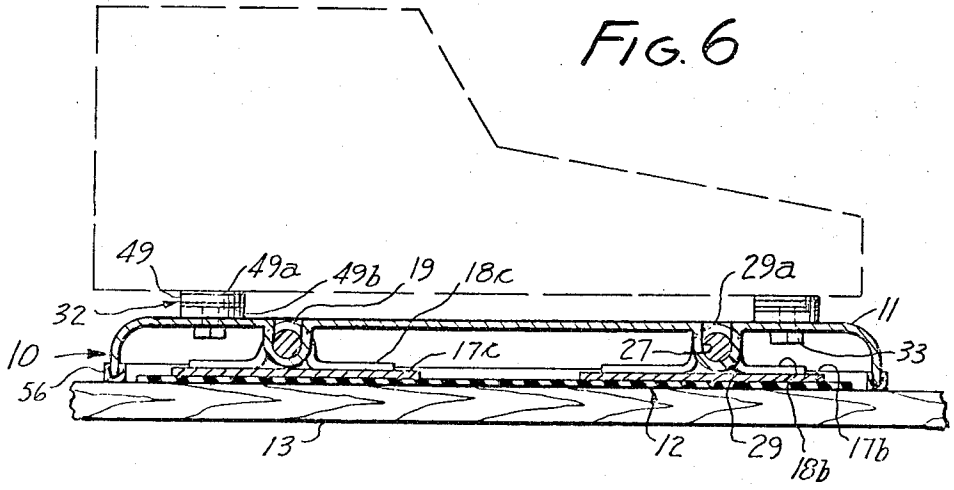


FIG. 7

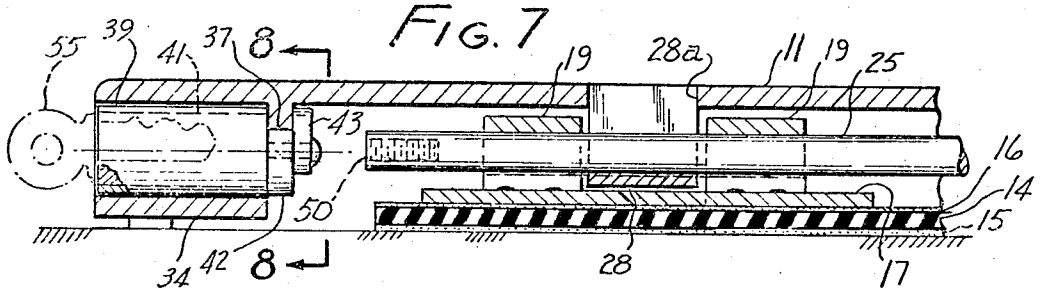


FIG. 10

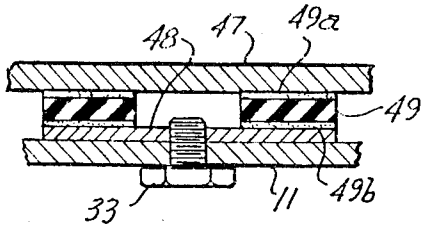


FIG. 9

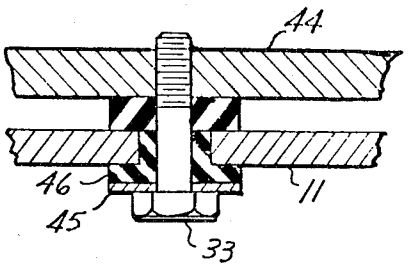
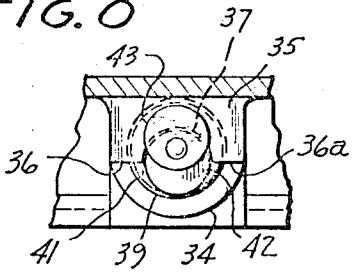


FIG. 8



EQUIPMENT SECURITY DEVICE

SPECIFICATION

This invention relates to security devices for fastening equipment such as office equipment, for example typewriters, adding machines and computers and other more or less similar equipment such as microscopes, televisions, projectors, safes and the like, to their mounting surfaces; and more particularly to such security devices which are lockably attached to the mounting surface.

It has long been a problem within business and other organizations and buildings to avoid loss or misplacement of relatively small costly items of equipment such as typewriters and other business machines and the like due to unauthorized moving of such equipmnet from place to place, and to thievery and burglaries. Various expedients have been used to reduce such unauthorized movement or loss of such equipment. One such expedient has been that of bolting and bolt-locking or cable or chain locking of the equipment to the surface to which it is mounted. A common method of doing this has been to drill holes through the mounting surface and bolt through the surface into the equipment to be secured thereto. One of the more sophisticated bolting methods has been to place a locked cover over the bolt or stud and nut so that they cannot be easily removed. But bolting typewriters and desk calculators and the like to desk tops has frequently made the drawers and writing leaves directly beneath the piece of equipment thus bolted, unuseable due to interference of the bolting device and the drawer or sliding writing leaf. Furthermore, damage to clothes and persons have sometimes resulted from such a bolting device on a typewriter or the like snagging stockings and causing abrasions and cuts on the person. Cabling and chaining also requires bolting the chain or cable to a mounting surface and to the equipment.

Other disadvantages of the use of bolts, chains and cables are obvious. Furniture, tables, desks or counters which have had holes drilled in them for use with one model or type of equipment must have additional holes in different locations drilled to accommodate a new or different model or type of equipment. Furthermore, when bolted-down equipment is permanently removed there remain holes in the desk, counter, table or bench, all of which has been a deterrent to the use of bolts for security purposes.

It is also apparent that to achieve successful bolting down of equipment to a piece of furniture, the frame or case of the equipment must be thick and strong enough to be threaded so that a bolt or stud may be threaded into it, and the frame or plastic of the equipment must be capable of taking a concentration load at the bolt-down positions so that the equipment and bolts can successfully resist attempts to move the equipment. Most plastic cased equipment does not have plastic covers or frames thick enough to distribute the concentrated loads presented by a bolting device during an unauthorized attempt to move the equipment, as for example during a burglary.

Bolting devices also have other drawbacks. One of these is that they frequently make installation difficult and time consuming under such circumstances as when the underside of the mounting surface is not easily accessible because of drawers or frame members in a

desk, cabinet, bench or table or the like. Also, inaccessible bolts and nuts make removal of the equipment for periodic maintenance and repair, a time consuming job, frequently interrupting the normal work of persons who would use the equipment.

It is accordingly an object of the present invention to overcome or avoid the foregoing disadvantages of prior known expedients for securing equipment to their mountings.

A related object is to provide a security device which does not mark or deface commonly used surfaces upon which such equipment is mounted, for example, formica, hardwoods, metal and other hard surfaces.

Another object is to provide such a security device which can be installed and removed by working at only one side of the mounting surface.

Another object is to provide a device which does not require the making of holes in the mounting surface.

Another object is to provide such a security device having a portion which is temporarily but securely adhered to the mounting surface and which need not be removed from the mounting surface when the equipment is unlocked and removed for service or replacement.

Another object is to provide such a security device having a portion temporarily but securely adhered to the mounting surface which can be removed without damage to most mounting surfaces.

A further object is to provide such a device having means preventing access to the member adhered to the mounting surface.

A further object is to provide for fastening the equipment by bolts or the like in such a manner that when the security device is locked the bolts fastening the equipment are not accessible.

Another object is to provide such a security device which can be unlocked from the mounting surface for service or for transfer elsewhere without requiring the removal of mounting bolts to the mounting surface.

A further object is to provide such a security device which is capable of securing relatively weak framed or cased equipment and the like.

The foregoing objects are carried out according to the present invention by use of an adhesive pad bondably adherable to a mounting surface and lockably attached to a cover assembly which covers the adhesive pad so that the pad is essentially exposed only to the mounting surface and the inside of the cover, and is inaccessible from outside the cover. Provision is made for fastening the cover to the pad, inside the cover and locking means is provided for preventing access to the fastening means until the locking means is unlocked.

A feature of the invention resides in the use of an adhesive pad which is relatively easily peelable from the mounting surface when access is had to the pad by removal of the cover. A further feature resides in the use of an adhesive which though permitting relatively easy peeling requires much more force to separate the pad from the mounting surface by applying tension or shear than the force required for peeling.

A preferred type of adhesive is one which is pressure or both pressure and heat sensitive, that is, the application of pressure even though fairly moderate, causes a bonding to the mounting surface which requires very great force in tension or shear to cause a separation from the mounting surface, but which when heated after adherence to the mounting surface, permits peel-

ing off the mounting surface with relative ease. When the cover is locked in position over the pad however, access is not had to the pad to permit either heating or peeling of the pad.

The foregoing and other features of the invention will be better understood from the following detailed description and the accompanying drawings, describing and illustrating a specific embodiment of the invention. In the drawings:

FIG. 1 is an isometric view, from the top, of a cover of a security device according to this invention, shown mounted on a mounting surface;

FIG. 2 is an isometric view of a pad assembly mounted on the mounting base and attached beneath the cover of FIG. 1 according to this invention, and therefore concealed from view in FIG. 1;

FIG. 3 is an isometric view looking upward at the bottom of the cover shown in FIG. 1;

FIG. 4 illustrates one of two lock pins shown in FIGS. 6 and 7 which hold the cover to the pad assembly;

FIG. 5 illustrates one of two locks shown in FIG. 1, which prevent removal of the lock pins shown in FIG. 3;

FIG. 6 is a cross-section view taken at line 6—6 of FIG. 1 showing in phantom the outline of an equipment such as a typewriter fastened to the cover shown in FIG. 1;

FIG. 7 is a cross-section view at line 7—7 of FIG. 1 illustrating the relationship of a lock according to FIG. 5 to a lock pin according to FIG. 4 and showing the lock key in phantom;

FIG. 8 is a cross-section view taken at line 8—8 of FIG. 7;

FIG. 9 is a detail view in cross-section showing an arrangement by which an equipment like that shown in phantom in FIG. 6 can be attached to the cover; and

FIG. 10 is a detail view in cross-section of an alternate form of attachment of an equipment which may be used instead of that in FIG. 9.

Referring to the drawings there is shown a security device **10** (shown in FIGS. **1, 6** and **7**) according to this invention, comprising a rectangular shaped cover **11** placed over a retangular shaped pad **12** (best shown in FIG. **2**) mounted on a mounting support **13** which may be, for example, the top of a table or desk or the like. The pad **12** contains a suitable material **14**, preferably one which is pliable, a foam material for example a plastic foam. Where foam material is used an open cell foam is preferred to a closed cell foam. The top and bottom surfaces of material **14** are coated with layers **15** and **16** of permanent adhesive material.

There are adhered to the upper surface of pad **12** by means of the adhesive layer **16**, four plates **17***a*, **17***b*, **17***c* and **17***d*, herein referred to collectively as plates **17**. The plates **17** are preferably of a rigid material such as metal. Over the respective four plates **17** there are attached plates collectively referred to as **18** and numbered **18***a*, **18***b*, **18***c* and **18***d* respectively which are attached to their respective plates **17** by suitable means such as spot welding. Each of the four plates **18** is formed with a pair of spaced collinear loops **19** and the loops of plate **18***b* are collinear with the loops of plate **18***a*. Likewise the loops of plates **18***c* and **18***d* are all aligned in a collinear arrangement parallel with, but spaced from, the loops of loop plates **18***a* and **18***b*. Each pair of plates **17** and **18** is provided with aligned central openings **20** and **21** which expose the surface of pad **12**. These openings are for the purpose of permitting the application of the cover to the pad as will appear hereinafter.

After completing this assembly of the plates on pad **12** the entire upper surface of pad **12** is preferably covered with a coating of paint or the like which will cover the adhesive layer **16** so that it will not be sticky or tacky, and this paint coating is preferably made to cover the exposed portions of plates **17** and **18**. Until the device **10** is put to use the bottom of adhesive layer **15** of pad **12** will be covered with a non-sticky protective layer of a fabric or material (not shown) of a type commonly used to keep an adhesive layer covered until used. When the device is ready to be used this protective layer will be peeled off from the adhesive layer **15** so that the pad may be made to adhere to its mounting base **13** by laying the pad on the base and applying pressure.

The cover **11** (best seen in FIGS. **1, 3** and **6**) has four sides **22***a*, **22***b*, **22***c* and **22***d* which closely fit down over the periphery of pad **12** and substantially meet the mounting base **13**. One of the end walls **22***a* is provided with a pair of holes or openings **23***a* and **23***b*. The dimensions of the holes are such as to accommodate a cylindrical type lock **24** (FIG. **5**) as well as to permit the passage of a lock pin **25** (FIGS. **4** and **7**). The holes or opening **23***a* is aligned with holes **26** and **27** through respective ones of a pair of lugs **28** and **29** attached to and depending from the bottom surface of cover **11**, as shown in FIG. **3**. The holes **26** and **27** are of a diameter which accommodates one of the lock pins **25**. The lugs **28** and **29** are conveniently formed by depressing portions of the cover **11** as shown at **28***a* and **29***a* in FIG. **1** so that part of each hole **26** and **27** is formed from the depressed portion while the remaining part of the hole is formed by a groove **30** formed at the bottom surface of cover **11** and aligned with holes **26** and **27** and with opening **23***a*. A similar arrangement of depressed lugs and a groove are related to the notch or opening **23***b* so that another lock rod **25** may be inserted through opening **23***b* and through the holes of the lugs. Since the two grooves are parallel, the two rods to be inserted will likewise be parallel.

Before fitting the cover over the pad the equipment to be protected by the device will be attached at the top of the cover. For this purpose the cover is provided with four holes **31**, preferably near the corners through which attaching screws or bolts may pass. The screw or bolt heads **33** will be placed at the under surface of the cover and the threaded portions of such screws or bolts will pass upwardly to thread into suitable tapped holes at a bottom surface of the equipment, usually through suitable resilient washers or the like **32** which may be of neoprene or the like.

With the equipment thus attached to the cover, the cover is brought down over the pad as shown in FIGS. **1** and **6** with the four depressed lugs **28** protruding into respective holes **20, 21** at the pad, such that holes **26** at the cover are aligned with the openings through respective loops **19** at the pad, and also with respective notches **23***a* or **23***b* of the cover. The pins **25** are then inserted through the respective holes **23***a* or **23***b* and through the related openings **19, 26** and **27** so that the cover is now fastened to the pad by the two pins **25**. The length of the pins **25** are such that when their forward ends meet the wall **22***c* of the cover the rear of

each pin is at a sufficient distance inside wall 22*a* of the cover to accommodate lock 24.

For the purpose of accommodating locks 24 there are provided cylindrical lock housings 34 which form the respective openings 23*a* and 23*b*. The housings 34 (FIGS. 7 and 8) are part of the casting integral with wall 22*a* of the cover 11 and are at the under surface of the cover. Also integral with the under surface of the cover is a depending lug 35 having two horizontal bottom edges 36 and 36*a* separated by a partially cylindrical surface 37 immediately inside of the inner end of lock housing 34, which is concave as seen from below. The partial cylindrical surface 37 is eccentric and of smaller radius of curvature as compared with cylindrical housing 34.

The purpose of the cylindrical housing 34 and the lug 37 is to accommodate the lock 24 and enable it to become locked and unlocked, so that the corresponding lock pin 25 can be locked within the cover or unlocked to permit extraction of the pin. To lock the pin 25 in its lock-in position it is inserted through the respective opening 23*a* or 23*b* and through the holes 26 and 27 and loop 19 until the forward end of the pin substantially meets the far side of the cover 22*c*. The lock 24 is then inserted through the respective opening 23*a* or 23*b* formed by the cylindrical housing 34 which is dimensioned to fit the outer cylindrical barrel 39 of the lock, with the key hole 40 of the lock toward the outside of the cover. The lock is of the type having a rotary spindle 41 which is cylindrical and concentric with the outer barrel 39 so that it can rotate within the outer barrel. The spindle 41 is of substantially the same length as the barrel 39 and its inner end terminates where the inner end of the outer barrel terminates. At the inner end of the spindle there is attached a cam 42 which is also cylindrical but eccentric with the respect to the spindle 41. The diameter of the cam cylinder 42 is such that it fits within the part-cylinder 37 of the lock housing. Thus when the lock 39 is fully inserted within the housing the eccentric cylinder 42 engages part-cylinder 37, while the rear of the lock is flush with the outside of the cover side 22*a*. Under this condition the lock barrel 39 cannot rotate due to the eccentricity of member 42 so that the lock key 55 may rotate the lock spindle 41 without rotating the lock barrel 39. There is attached at the inner side of eccentric cylinder 42 another cylinder 43 which is eccentric with respect to cylinder 42. When the lock 24 is in its locked position as shown in FIGS. 7 and 8, the locking cylinder or disc 43 takes its position in which it is partly in front of lug 37 so that the lock cannot be withdrawn from its housing. When however the key is turned 180° from its position shown in FIG. 7 the part of the locking disc 43 which is in front of lug 37 in FIG. 7 is now positioned downward so that its lower portion is substantially even with the lower part of lock spindle 41, in which position the lock may now be withdrawn from its housing. This is the same position in which the lock must be inserted into the housing. Upon removal of the lock, lock rods 25 may be removed from their position beneath the cover.

FIG. 9 shows an alternative manner of fastening an equipment to the cover plate 11. This is useful where the equipment to be protected has a strong or thick section 44. Here, the screw having screw head 33 passes through a rigid washer 45 and a resilient grommet 46 such as neoprene attached to the cover 11 as shown, and then threads into the thick section 44 of the equipment.

Where the equipment to be protected has a thin or weak section 47 for attachment, the arrangement of FIG. 10 may be used instead. In this case, the screw having head 33 is passed through the cover 11 and threaded into a rigid plate 48 thereby holding the plate to the cover. A resilient or rubbery ring 49 such as neoprene is adhered as by layers 49*a*, 49*b* of cement or adhesive to the upper side of the plate and the upper side of the ring 49 is similarly adhered by adhesive to the section 47 of the equipment. The sandwich of ring 49 and its layers 49*a* and 49*b* of adhesive shown, have a tensile strength at least as great as that of the attaching means 33 so it is not the weakest link in the system. Hence, if there is a failure in tension it is likely to be due to the stripping of threads of fastener 33 in the member 11.

The adhesive used for layers 15 and 16 should be one that has a long life and is slow to deteriorate and does not lose its ability to bond tightly in pure tension or shear, but nevertheless always remains peelable with the aid of heat and mild solvents and oil combinations. Latex base adhesives are satifactory, and they may be applied by spraying. Such adhesives are available from the Fasson Division of Avery Adhesives, San Marino, Cal. under the trademark "Fasmount" 2100; and from Minnesota Mining and Manufacturing Company of Minneapolis, Minn. under the trademarks Scotch Brand Tapes K4408YEC4CDM3 as well as other companies under various trademarks. All such adhesives are classified in the category of pressure or thermal sensitive or both pressure and thermal sensitive. Pressure sensitive as used herein means that by use of a relatively small pressure it develops a bond which requires a great deal more force in tension to break. Thermal sensitive means that the application of heat loosens the bond. The adhesive 16 which joins the loop 17 to the pad 12 may be the same as the adhesive 15 or alternatively it may be a permanent bonding adhesive so long as its strength is of the same order or magnitude as adhesive 15, although it need not necessarily be peelable.

The use and operation of the security device should be apparent from the foregoing description. The pad 12 with the plate combinations 17, 18 mounted on it as heretofore described, is pressed down on the mounting surface 13 causing adhesive layer 15 to bond to the mounting surface. The equipment such as a typewriter, calculator or the like, to be protected, is bolted to the top of the cover 11 as described, and the cover is then set down over the pad 12 and the locking pins 25 set in their respective positions lying within grooves 30 of the cover, thereby fastening the cover down so that its lower rim covers and surrounds the pad and is in substantial contact with the mounting surface 13. The locks 24 are then set in their respective positions within openings 23*a* and 23*b* and locked so that the locking pins 25 cannot be removed. Under this condition the equipment, such as the typewriter or the like cannot be lifted by a person within a short time, for it would require a lifting force of about 4,000 to 6,000 pounds to separate the bonds due to adhesive layers 15 and 16, at least for a considerable period of time. While it may be true that a long continued tensional lift might finally result in a separation with less than 4,000 pounds tension the time required for this to happen could easily lead

to the apprehension of the miscreant attempting the unauthorized transfer or taking of the equipment.

When it is desired to remove the equipment for authorized transfer or servicing the locks **24** are unlocked and withdrawn which uncovers the rear ends of locking pins **25** permitting their withdrawal. To facilitate the withdrawal of the locking pins the rear end of each is provided with a tapped hole **50.** Assuming the tapped hold has has an unusual left hand thread it can be used for the withdrawal by use of a pencil-like tool only having its forward end threaded with an unusual left hand thread to enter hole **50** and thread to its threads. Standard right handed threaded tools will not work in this case. The term "unusual" as used herein means that a left hand and a non-standard pitch is now difficult to find on the open market. Such a non-standard pitch may be a left hand 10–18 or 10–26 thread. The pencil-like tool is long enough to extend out through openings **23***a* or **23***b* while threaded to the lock pin. The locking pin is then readily pulled out by pulling on the tool. The cover **11** can then be readily lifted and the bolts or screws fastening the equipment can be removed to permit transfer or servicing of the equipment.

If it be desired to transfer the entire security device as well as the equipment this can readily be done after the cover is removed, by peeling off the pad **12** from the mounting base **13.** To perform this peeling operation the plates **17***a* through **17***d* are first removed from the top of the pad. To facilitate this removal, heat is applied over the plates **17** and **18** by suitable heat lamps or the like such as infra red heaters, thereby heating the material to a temperature of about 150° Fahrenheit at which temperature the bonding force of the adhesive is greatly reduced so that these plates can be removed from the pad. After removal of these plates the heating unit is again applied over the pad to heat up the pad material to 150° Fahrenheit at which termperature the pad can readily be peeled off the mounting base. The peeling is most easily accomplished by starting the peeling operation at a corner of the pad.

The use of rubbery or a foam-like material for the pad and in the mountings, as described, promotes quietness of operation of machines such as typewriters and calculators and the like which may be mounted on the cover plate. It is furthermore desirable to fit a rubber-like strip **56** to the lower rim of sides **22***a*, **22***b*, **22***c* and **22***d* of the cover **11.** Although such strip is not illustrated in FIG. **3,** it is shown in FIG. **6** as a strip containing a groove into which the rim of the cover is fitted so that sides of the strip extend upward for a short distance at the inside and outside of the rim leaving a thickness of the rubbery material between the rim and the mounting base **13.** There are discontinuities in this strip at the locations of the lock housings **34,** the lower parts of which are positioned slightly above the mounting base **13** when the cover with the strip **56** is brought down against the mounting base.

Although only one specific embodiment of the invention has been described and illustrated in the drawings it will be understood that variations within the scope of the invention may readily suggest themselves to those skilled in the art. For example, the security device may be made in any of a number of different sizes and shapes to suit particular items of equipment with which it is to be used. Furthermore, modifications within the scope of the invention may be made even in the embodiment which is herein illustrated without departing from the scope of the invention which is limited only by the scope of the appended claims.

What is claimed is:

1. An equipment mounting security device comprising an adhesive pad adapted to be adhered to a mounting surface, a cover assembly adapted to cover the adhesive pad so that said pad is essentially exposed only to said mounting surface and the underside of said cover, means within the cover lockably attaching the cover assembly to the pad, means for attaching an equipment to the outside of said cover from a position within the cover between the cover and the pad and accessible only when said cover assembly is unlocked and separated from the pad, said adhesive pad when adhered to a mounting surface requiring many times the amount of force in tension or shear to separate the pad from the surface than the amount of force required to separate the pad from the surface by peeling the pad from the surface.

2. An equipment security device comprising: a pad having a top surface and a bottom surface; an adhesive layer attached to said bottom surface for adhering said pad to a mounting base; first fastening means secured to said top surface; a cover plate having an upper surface and a lower surface, adapted to cover said pad; equipment attaching means for attaching to said upper surface an equipment to be protected, said equipment attaching means being detachable from the equipment only from said lower surface; second fastening means secured to said lower surface; engaging means holding said first fastening means and said second fastening means together so that the cover cannot be removed from the pad; and lock means positioned at the cover plate to prevent disengagement of the engaging means when the lock means is locked, said adhesive layer being characterized by requiring, when adhered to such mounting base, many times the amount of force in tension and in shear to separate the pad from the base than the amount of force required to separate the pad from the base by peeling the pad from the base.

3. A device according to claim **2** in which the first fastening means comprises a loop means and the attaching means comprises a passage means which registers with the loop means when the cover plate covers said pad and the engaging means is a device which engages said loop means and said passage means.

4. A device according to claim **3** in which the engaging means comprises a pin means and the loop means comprises a first passageway means and the passage means comprises a second passageway means which registers with the first passageway means when the cover plate covers the pad, the pin being dimensioned to fit through said first and second passageway means.

5. A device according to claim **4** in which each passageway means comprises a plurality of passageways spaced apart and the pin means comprises as many pins as the number of passageways of the pad.

6. A device according to claim **2** in which the adhesive is heat sensitive.

7. A device according to claim **2** in which the adhesive is heat sensitive and pressure sensitive.

8. A device according to claim **2** in which said first fastening means comprises a plate secured to said top surface by adhesive having characteristics similar to the adhesive layer attached at said bottom surface of the

pad and the loop means comprises loops rising from said plate means.

9. An equipment security device comprising a pad having a top surface and a bottom surface; a layer of adhesive material attached to said bottom surface for adhering said pad to a mounting base; a second layer of adhesive material attached to said top surface; plate means adhered to said second adhesive layer, said plate means being provided with a plurality of members raised above the surface of the plate means, providing a plurality of aligned openings; a cover plate having an upper surface and a lower surface adapted to cover said pad and plate means; equipment-attaching means for attaching to said upper surface an equipment to be protected, said equipment-attaching means being detachable from the equipment only from said lower surface; lug means depending from said lower surface, said lug means containing a plurality of aligned holes adapted to align with said openings of the plate means; pin means adapted to pass through said aligned openings and aligned holes to prevent removal of said cover from the pad; and lock means positioned at a part of the cover plate to prevent disengagement of the pin means from the openings and holes when the lock means is locked; said adhesive layers being characterized by requiring, when adhered to said mounting base and to said plate means, many times the amount of force in tension and in shear to separate the pad from the base and the plate means from the pad, than the amount of force required to make the separation by peeling the pad from the base.

10. A device according to claim **9** in which the plate means comprises a first pair of plates spaced from each other with openings in alignment and a second pair of plates spaced from each other with openings in alignment, the axes through the openings of said second pair being parallel to the axes of the openings through said first pair, and said lug means comprises a first pair of spaced lugs positioned to locate their holes adjacent the respective openings of the first pair of plates and a second pair of spaced lugs positioned to locate their holes adjacent the respective openings of said second pair of plates; and the pin means comprises a first pin adapted to pass through the openings and holes of the first pair of plates and first pair of lugs and a second pin adapted to pass through the openings and holes of the second pair of plates and second pair of lugs; and the lock means comprises an individual lock for each pin, whereby each lock can maintain its respective pin in position through the openings and holes of its respective plates and lugs.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,850,392 Dated November 26, 1974

Inventor(s) JAMES SCOTT GASSAWAY

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Address - "Glendow" should read --Glendon--

Abstract

Line 20 - cancel "the" second occurrence

Col. 6, line 30	"K4408YEC4CDM3" should read --K#4408YEC4CDM3--
Col. 7, line 9	"hold" should read --hole--
Col. 7, line 9	cancel "has" second occurrence
Col. 8, line 53	insert --means-- after "pin"

Signed and sealed this 4th day of March 1975.

(SEAL)
Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents
and Trademarks