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E2A AARR A115 A412

(56) Documents Cited
US 5169114 A **US 5076079 A** **US 4613109 A**

(58) Field of Search
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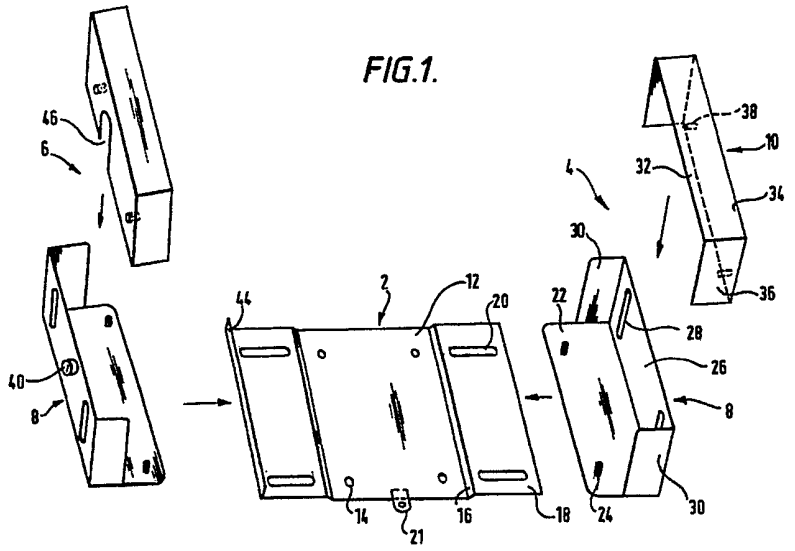
INT CL^6 **E05B 73/00**
ONLINE: WPI; EDOC

(54) Anti-theft apparatus

(57) Apparatus for preventing theft of e.g. a computer unit from a fixture, eg a worktop, comprises a base plate 2, and lower and upper wall parts 8, 10. The lower wall parts 8 slide relative to base plate 2, via slots 20 and threaded shanks 24, and the upper wall parts 8 slide relative to the lower wall part 10 by means of vertical slots 28 and threaded shanks 38. The upper and lower wall parts 8, 10 are adjusted to suit the height of the unit and one of the assemblies 4 is fixed to the base 2, eg by nuts on shanks 24, the other assembly 6 is slid towards the fixed assembly 4 and then locked in place by a tongue 42 of lock 40 engaging lip 44 so that the apparatus acts as a cage around the unit. The apparatus may be adapted to suit only one type of unit, ie fixed lower and upper parts 8, 10. Plate 21 may receive a security tether for ancillary equipment and a security plate (70, fig 4) may be provided. A computer "tower" unit may also be accommodated, ie by orientating the parts vertically.

FIG.1.



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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

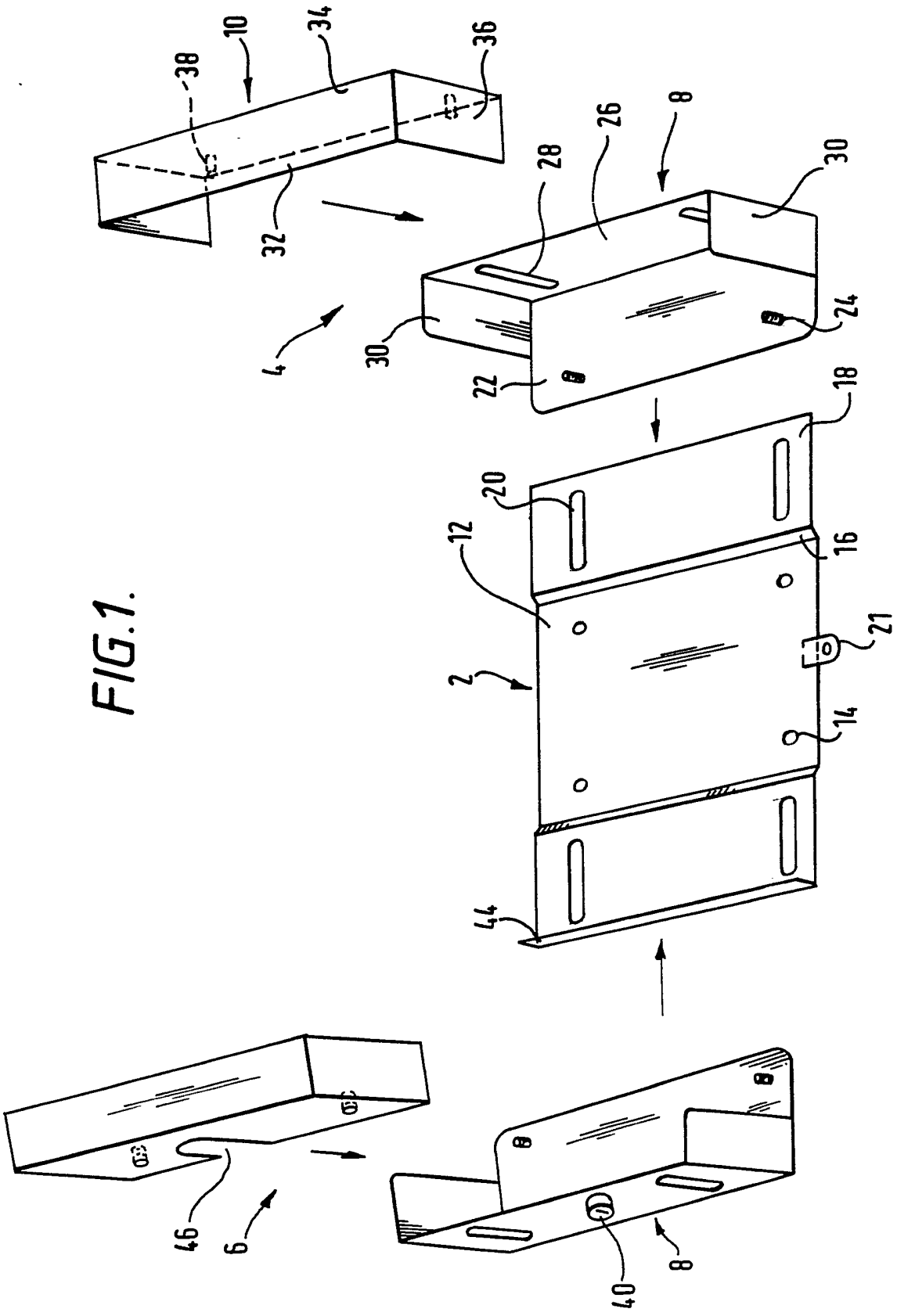

FIG.1.

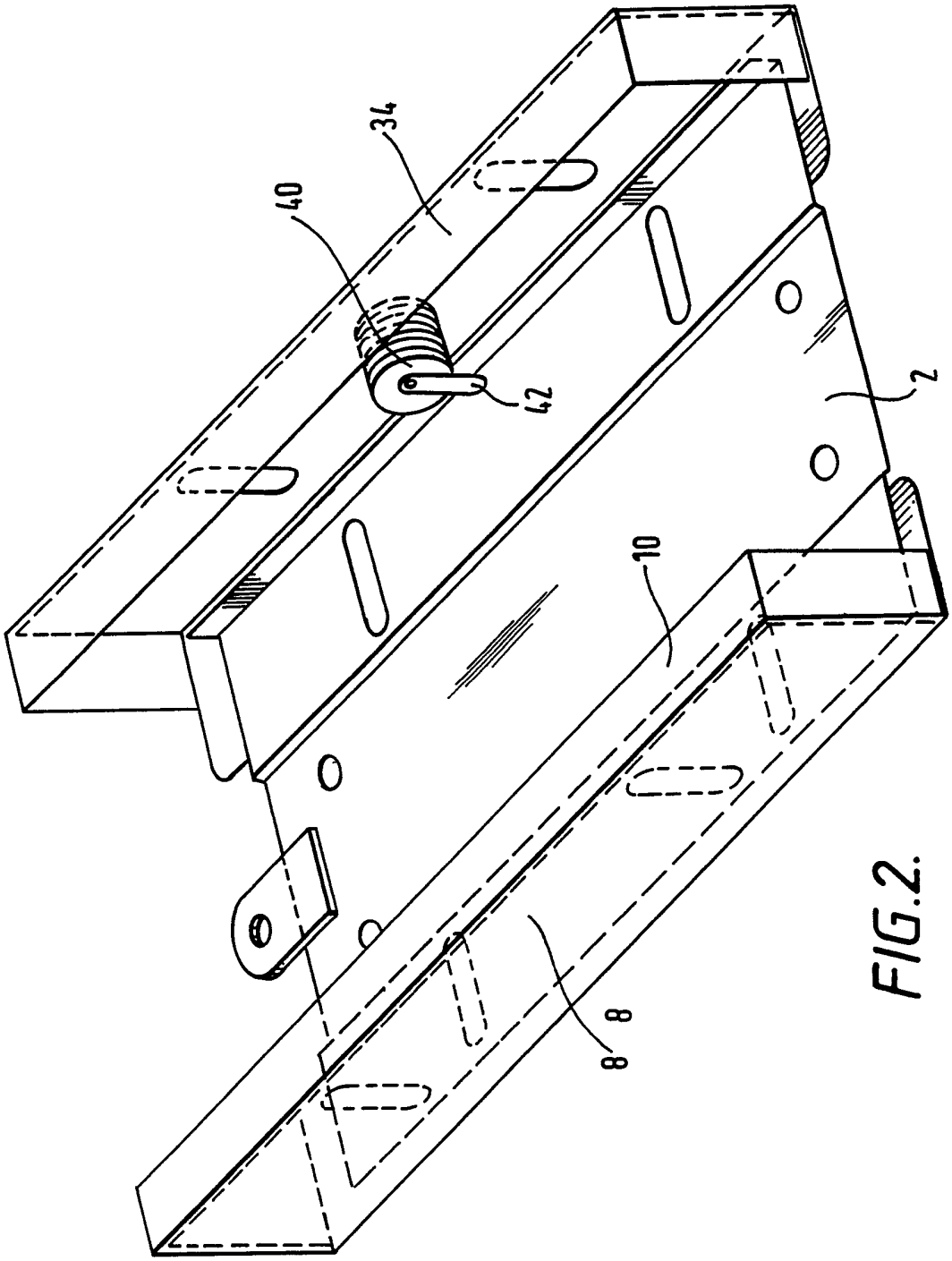

FIG.2.

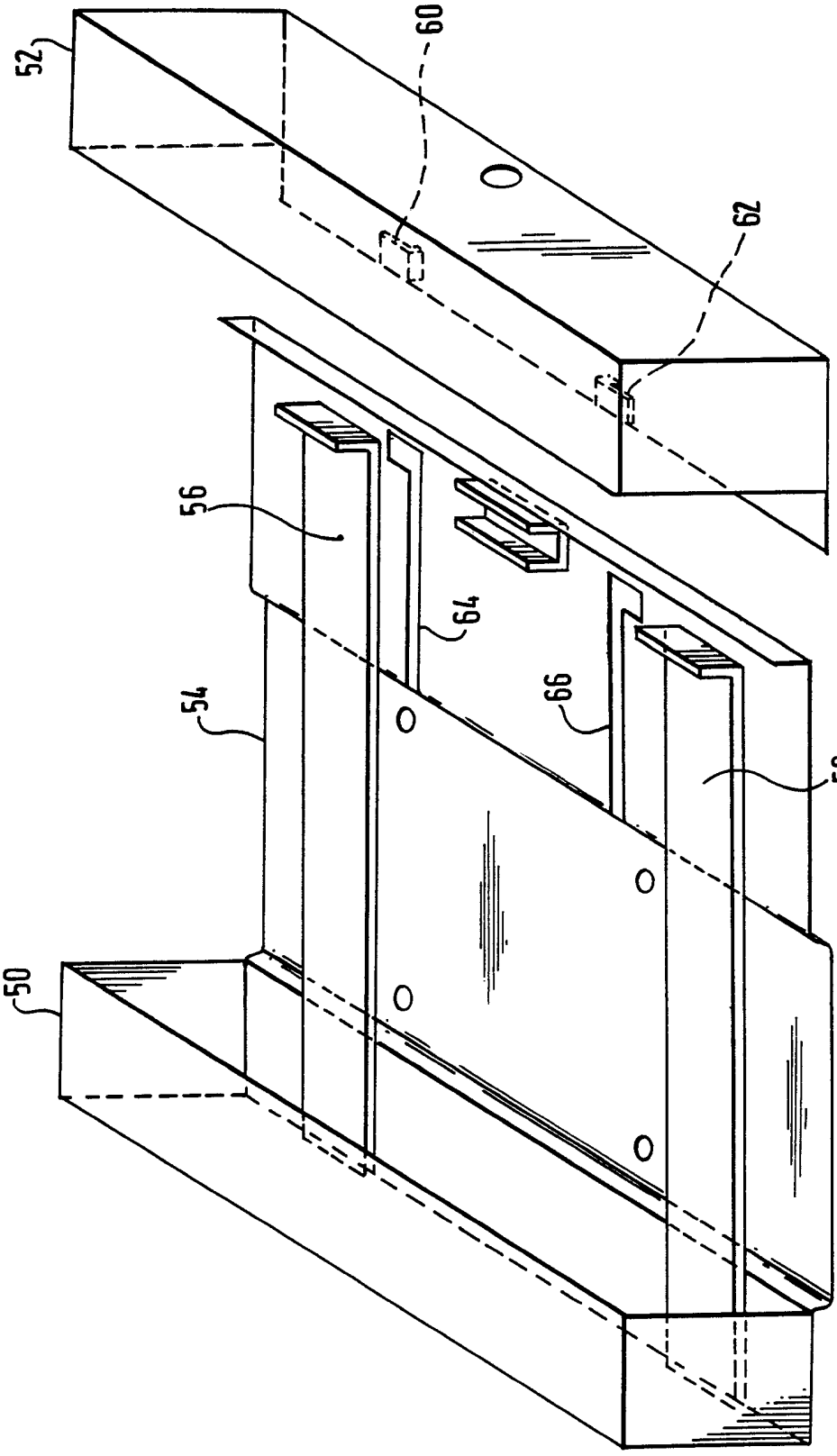

FIG.3.

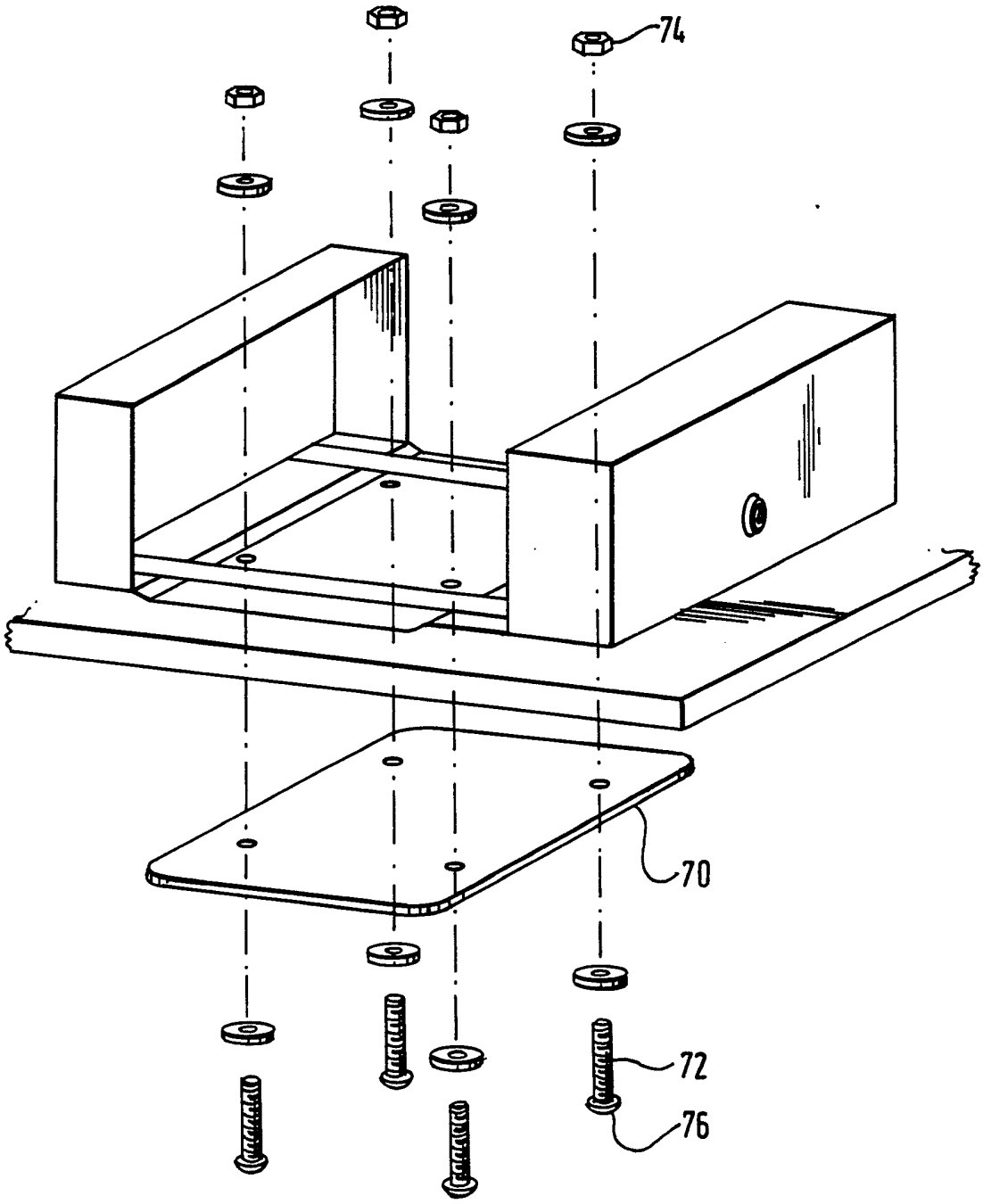

FIG. 4.

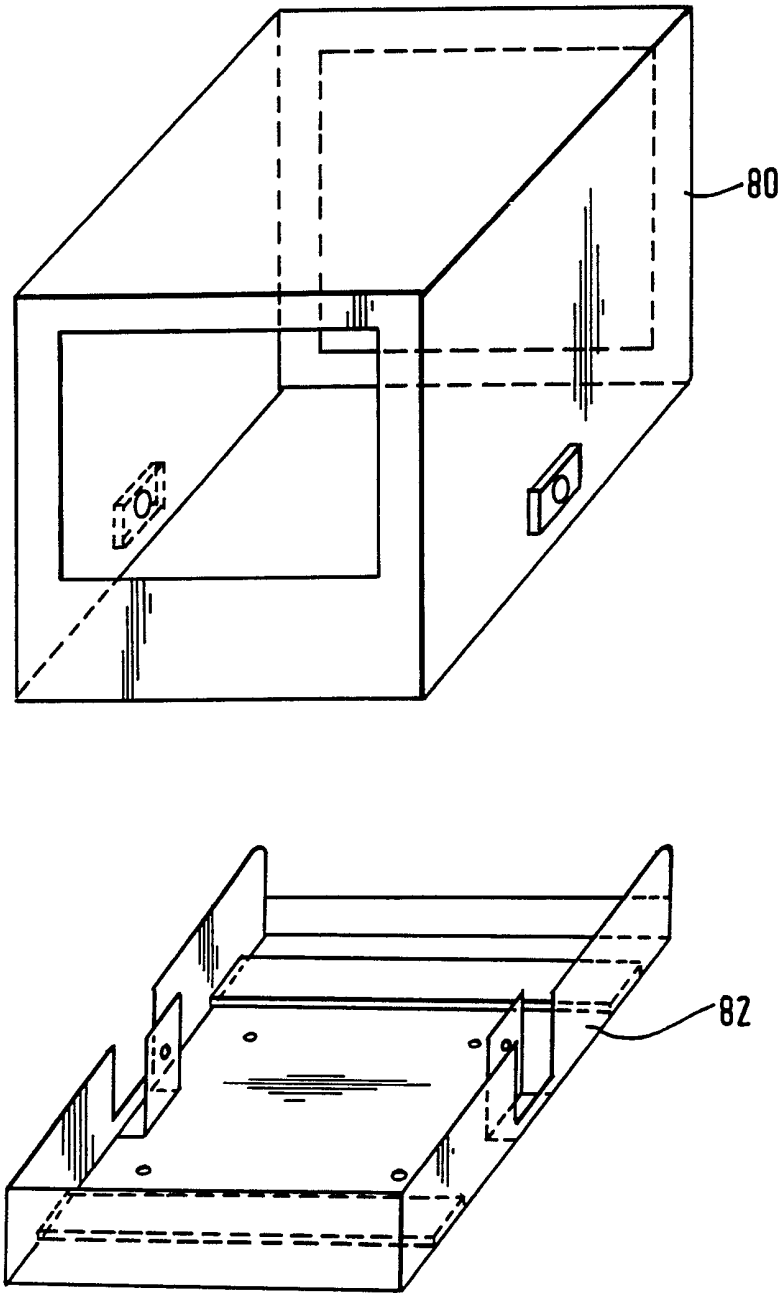

FIG. 5.

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SECURITY APPARATUS

This invention relates to security apparatus. The invention relates in particular to apparatus for preventing the unauthorised removal of electronic equipment, especially computer base units.

The theft of computer equipment is a growing problem, and there have been earlier proposals to prevent such theft. One proposal, described in US 5197706, employs a tethering cable. Whilst this might deter a casual thief, it is very easy for a thief carrying cable cutting equipment to defeat the securement apparatus. Other securement devices require the permanent or semi-permanent attachment of parts to the equipment to be protected. In some cases this attachment is by means of high strength adhesive, which may make re-location of the equipment difficult, as well as rendering it unsalable, in some cases.

We aim to devise apparatus which offers good security, but which is simple to fit and use, and which does not require adaptation of the equipment to be protected in any way.

In accordance with the present invention there is provided security apparatus for securing an item, the apparatus comprising first and second parts each providing a "socket" to receive at least a portion of a generally cuboid item, the sockets being opposed to each other, wherein the first and second parts are movable relative to each other, between an outward position in which the item may be placed between the first and second parts, and an inward position in which an item may be retained, embraced by the first and second parts, so as to prevent unauthorised removal of the item; the security apparatus comprising locking means for locking the parts in the

inward position; and means for securing the apparatus to a further part.

In effect, therefore, the security apparatus may define a "cage" in which the item may be retained.

The first and second parts are preferably entirely detachable from each other.

In some embodiments the first and second parts are in the form of short "sockets" each of which is adapted to embrace only lateral regions of the item, the first and second parts being linked to each other by an intermediate member, which may be a separate part to which each of the said first and second parts is securable, or a part which is integral with one of the first and second parts.

In other embodiments at least one of the first and second parts is in the form of a long "socket" which embraces a major part, or substantially all, of the item. One part may overlap the other part. A part may be apertured to allow the required access to the item.

Each of the first and second parts suitable comprises a panel which overlies a wall of the item in use, and a flange (in the case of parts providing a short "socket") or longer wall (in the case of parts providing a long "socket") extending transversely from each edge of the panel, thereby to define the "socket".

Said further part to which the security apparatus may be secured may, for example, be a wall, floor, desk or worktop. It will conveniently be a worktop, when the item is being secured is a normal "flat" computer base unit, or a floor, or side panel of a desk, when the item being

secured is a computer "tower" unit. Securement may be by means of threaded shanks, the heads of which are only accessible when the item is removed, after release of the locking means and separation of the first and second parts. The apparatus may further comprise a strong metal plate securable to the accessible side of the further part to which the security apparatus is secured in use. This is to prevent removal of the entire security apparatus and the item inside, by trepanning the threaded shanks from the accessible side.

In accordance with a second aspect of the present invention there is provided apparatus for securing electronic equipment which is encased within a housing (for example a computer base unit), the apparatus comprising:

a base member to be overlain in use by the housing, the base member being securable to a worktop;

first side wall means carried by said base member on one side thereof;

second side wall means carried by said base member on the opposite side thereof to the first side wall means;

the first and second side wall means being adapted to embrace respective side regions of the housing so as to prevent unauthorised removal of the equipment;

wherein the second side wall means is movable relative to the base member, towards and away from the first side wall means, between an outward position in which the equipment may be placed into or removed from the security apparatus, and an inward position in which the

side regions of the housing are embraced by the respective side wall means so as to prevent unauthorised removal of the equipment;

the apparatus further comprising locking means for locking the second side wall means in its inward position.

Each of the first and second parts may be an assembly of two parts which are movable relative to each other, to permit the apparatus to conform to a dimension of the housing. Each assembly suitably comprises a part with a panel portion, a top flange extending inwardly from the panel portion, and end flanges extending inwardly from the panel portion and downwardly from the top flanges, the part being slidable over a further part which has a panel portion, a side wall extending upwardly from the panel portion, and end flanges extending upwardly from the panel portion and inwardly from the side wall. The parts are preferably securable together in a selected position by means of shanks to which nuts may be secured, slidable in respective slots. Preferably one part has two inwardly directed threaded shanks and the other part has corresponding slots. The bolts which secure the part together are therefore only accessible from the interior of the apparatus, and so only when the equipment to be protected is removed.

Suitably the intermediate member or base member is a plate having a central portion and raised side portions beneath which respective base walls of the respective side wall means may slide. Suitably each base wall has two upwardly directed shanks and each raised side portion of the base member has corresponding slots. Unlike the shanks of the first side wall means, the shanks of the second side wall means need not be threaded because they

are not used for securement. On that side, the locking means is used, to effect the final securement of the apparatus about the equipment.

Suitably the apparatus is such as to define a generally cuboid space, to securely receive electronic apparatus which has a generally cuboid housing, such as a computer base unit, or video recorder, or an audio amplifier.

The invention will now be further described, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is an exploded perspective view of apparatus in accordance with the invention;

Fig. 2 is a schematic view of the apparatus of Fig. 1, in its assembled configuration (for clarity Fig. 2 omits the threaded shanks shown in Fig. 1, and washers and nuts);

Fig. 3 is a perspective view of a second embodiment;

Fig. 4 is a perspective view of a third embodiment; and

Fig. 5 is a perspective view of a fourth embodiment, for securing a computer "tower" unit.

The apparatus shown in Figs. 1 and 2 is for securing a computer base unit to a worktop. The apparatus comprises a base plate 2 on which the computer base unit is to stand, and first and second side wall assemblies 4, 6, located on respective sides of the base plate 2.

Each side wall assembly 4, 6 comprises a lower wall part 8 which co-operates with the base plate, and an upper wall part 10, securable to the lower wall part 8.

The base plate has a central portion 12 which contacts the worktop. The central portion 12 has four holes 14, located towards respective corners of the central portion, by means of which the base plate may be secured to the worktop, for example by screws. At each side of the central portion 12 (but not at the front and rear of it) there is a small step 16 up to a respective side portion 18. Each side portion has two parallel slots 20 extending across it, located towards the front and rear edges of the side portion. Projecting rearwardly from the centre of rear edge of the central portion, and welded to the base plate, is an apertured security plate 21, which can provide additional security.

The first side wall assembly 4 will now be further described.

The lower wall part 8 of the first side wall assembly 4 comprises a lower plate 22 which contacts the worktop and is located in use beneath the appropriate side portion of the base plate 2. The lower plate has two threaded shanks 24 welded into place, and located so as to cooperate with the appropriate slots 20 of the base plate.

Extending perpendicularly upwards from an edge of the lower plate 22 is a side wall 26. The side wall 26 has two vertical slots 28 located towards its front and rear ends respectively. The lower wall part also comprises end flanges 30 perpendicular to the side wall 26 and lower plate 22. These flanges run to the full height of the

side wall 26 but only to about half the width of the lower plate 22.

The lower wall part 8 is dimensioned such that the base plate 2, and in particular the side portion 18, can freely slide between the flanges 30.

The upper wall part comprises a vertical side wall 32, a horizonal top flange 34, and vertical end flanges 36, arranged perpendicularly to the side wall 32 and top flange 34. On the inner side of the side wall 32 there are welded two threaded shanks so located as to cooperate with the slots 20 of the lower wall part 8.

The end flanges 36 of the upper wall part 10 are slightly more widely spaced apart than the end flanges 28 of the lower wall part 10, so that the upper wall part 10 may slide up and down over the lower wall part 8, thereby adjusting the spacing between the lower plate 22 of the lower wall part 8, and the top flange 34 of the upper wall part 10.

To the other side of the base plate, side wall assembly 6 is identical to the side wall assembly 4 just described, except that the lower wall part 8 is mounted with a lock 40, operated by a key (not shown). The lock body is carried internally of the side wall, as shown in Fig. 2, and terminates with a locking tongue 42. The adjoining edge of the base plate is formed with an upturned lip 44, with which the locking tongue 42 cooperates. Externally of the side wall, the lock body protrudes slightly and to permit the adjustment between the upper and lower wall parts, the upper wall part is formed with a downwardly-facing U-shaped cutout 46, within which the externally protruding part of the lock 40 is

located when the upper wall part is slid down, over the lower wall part.

It will be seen that each side wall assembly constitutes an adjustable "socket" for receiving a lateral region of a desktop computer base unit.

The apparatus is used as follows.

The lower wall parts 8 of both side wall assemblies are loosely coupled to the base plate 2, with the threaded shanks 24 located within the slots 20. The base plate 2 is then screwed to the worktop in the desired location. The computer base unit to be secured may then be placed on the base plate and used to assess where the lower side wall plate 8 of the first side wall assembly should be secured to the base plate 2, and where the upper side wall parts 10 should be secured to the lower side wall parts 8. The parts are then firmly secured together by means of nuts screwed onto the threaded shanks 24, 38.

The side wall assembly 6 which has the locking mechanism is not bolted to the base plate, and is slid outwards to its limit position. The computer base unit is then placed on the base plate 2 and pushed up against the side wall assembly 4. Its side region is thereby housed within the side wall assembly 4. The side wall assembly 6 is then pushed up against and around the opposite side region of the computer base unit, and the lock is then turned, so that the tongue 42 engages over the lip 44.

It will be appreciated that the computer base unit can only be removed from the apparatus by releasing the lock 40, using the key. The apparatus in effect provides a cage around the computer base unit.

The arrangement is very secure. The base plate 2 is firmly screwed to the worktop. The screws may be selected so that it is virtually impossible for the whole apparatus including the computer base unit to be torn out of the worktop. It will be observed that the apparatus has no parts by which it could be firmly grasped and pulled upwards. The respective side wall assemblies 4, 6 effectively embrace or shroud respective side regions of the computer base unit, these side regions being surrounded by end flanges 30, 36, top flanges 34 and side walls 26, 32. Access to internal components of computer base units is generally through side walls. The unauthorised removal of internal components from the computer base unit is therefore prevented, because the side walls of the computer base unit are overlain by the side walls of the securement apparatus. The apparatus itself is strong and rigid, being made, in this embodiment, from 1.5 mm gauge mild steel plate.

Should additional security be required, for the computer base unit, and/or for ancillary equipment such as a monitor (which however will in general be of lesser value to a thief than a computer base unit) use can be made of the apertured plate 21, to secure a tethering cable, for example as described in US patent 46555429 or 5197706.

The embodiment of Fig. 3 is similar to that of Figs. 1 and 2 and is also for securing a desktop computer base unit. The lock is not shown for clarity. The main differences are:

- the side wall parts 50, 52 are not adjustable. They are not constructed as assemblies of two parts which

slide together. Instead the security apparatus is sized for a particular manufacturer's computer base unit.

- the base plate 54 is integral with one of the side wall parts 50

- two stiffening bars 56, 58 extend in parallel relation across the base plate, welded to its upper side

- the detachable side wall part 52 is slidable with respect to the base plate, towards and away from the fixed side wall part 50, by virtue of two L-shaped tangs 60, 62 raised from the plane of the lowermost flange of that side wall part 52, co-operating with cut-outs 64, 66 in the base plate. Adjacent to the edge of the base plate the cut-outs are wide enough to receive the tangs. Extending therefrom, towards the fixed side wall part 50, the cut-outs are narrower, so as to prevent the tangs from leaving the cut-outs.

Fig. 4 shows an embodiment similar to that of Fig. 3, but assembled, and having an additional security measure, a steel security plate 70 secured to the bottom of the worktop, to guard against the entire security apparatus, containing the computer base unit, being removed in one piece, following trepanning of the regions around the bolts secured into the worktop.

The security plate 70 is secured to the security apparatus, the shanks of the bolts 72 passing successively through the security plate, the worktop and the base plate. It will be seen from the Fig. 4 drawing that the securing nuts 74 are located inside the security apparatus, hidden beneath the computer base unit in use. The heads 76 of the bolts are of plain round form.

The embodiment of Fig. 5 is for securing a computer "tower" unit. The main differences from the earlier embodiments are that the two parts engage together by relative vertical movement, and that the upper part 80 fits over substantially the entire extent of the "tower" unit. The lower part 82, secured to the floor in use, embraces only the lower region of the "tower" unit. The upper part 80 has front and back rectangular apertures to allow the necessary access to the computer tower unit. The upper part 80 fits snugly inside the upwardly directed flanges of the lower part 82, but outside internally displaced positions 84 thereof. These portions 84 are apertured, to align with apertures in the upper part, to receive the pins of a pair of push locks (not shown).

In relation to computer "tower" units, apparatus could be constructed, to be secured to a vertical panel of a desk, or to a wall. The "sockets" could be horizontally opposed, as in the Fig. 1-4 embodiments, instead of vertically opposed.

Although the apparatus has been described in relation to the securement of computer units, it could also be used for securing other equipment, in particular equipment which is of generally cuboid shape, such as video recorders and audio equipment.

The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

CLAIMS

1. Security apparatus for securing an item, the apparatus comprising first and second parts each providing a "socket" to receive at least a portion of a generally cuboid item, the sockets being opposed to each other, wherein the first and second parts are movable relative to each other, between an outward position in which the item may be placed between the first and second parts, and an inward position in which an item may be retained, embraced by the first and second parts, so as to prevent unauthorised removal of the item; the security apparatus comprising locking means for locking the parts in the inward position; and means for securing the apparatus to a further part.

2. A security apparatus as claimed in Claim 1, wherein the security apparatus defines a cuboid "cage" in which the item may be retained.

3. Security apparatus as claimed in Claim 1 or 2, wherein the first and second parts are in the form of short "sockets" each of which is adapted to embrace only lateral regions of the item, the first and second parts being linked to each other by an intermediate member.

4. Security apparatus as claimed in Claim 1 or 2, wherein at least one of the first and second parts is in the form of a long "socket" which embraces a major part, or substantially all, of the item.

5. Security apparatus as claimed in any preceding claim, further comprising a plate securable to the

accessible side of the further part to which the security apparatus is secured in use.

6. Security apparatus for securing electronic equipment which is encased within a housing (for example a computer base unit), the apparatus comprising:

a base member to be overlain in use by the housing, the base member being securable to a worktop;

first side wall means carried by said base member on one side thereof;

second side wall means carried by said base member on the opposite side thereof to the first side wall means;

the first and second side wall means being adapted to embrace respective side regions of the housing so as to prevent unauthorised removal of the equipment;

wherein the second side wall means is movable relative to the base member, towards and away from the first side wall means, between an outward position in which the equipment may be placed into or removed from the security apparatus, and an inward position in which the side regions of the housing are embraced by the respective side wall means so as to prevent unauthorised removal of the equipment;

the apparatus further comprising locking means for locking the second side wall means in its inward position.

7. Security apparatus as claimed in any preceding claim, adapted to secure worktop computer base units.

8. Security apparatus as claimed in of Claims 1 to 6, adapted to secure computer "tower" computer units.

9. Security apparatus substantially as hereinbefore described, with reference to the accompanying drawings.

Examiner's report to the Comptroller under Section 17
(The Search report)

GB 9503180.3

Relevant Technical Fields

(i) UK Cl (Ed.N) E2A (AARR)

(ii) Int Cl (Ed.6) E05B 73/00

Search Examiner
MIKE McKINNEY

Date of completion of Search
15 MAY 1995

Databases (see below)
(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE: WPI; EDOC

Documents considered relevant following a search in respect of Claims :-
1 TO 9

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
X,Y	US 5169114	(O'NEILL) see Figures	X: 1, 5 & 6 Y: 2 & 3
X,Y	US 5076079	(MONOSON) see Figures	X: 1, 5 & 6 Y: 2 & 3
Y	US 4613109	(BOSCACCI) see Figures	2 & 3

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).