Oct. 19, 1965 J. C. MORRIS 3,212,739

HOLD-DOWN

Filed Dec. 31, 1962

FIG. 1.

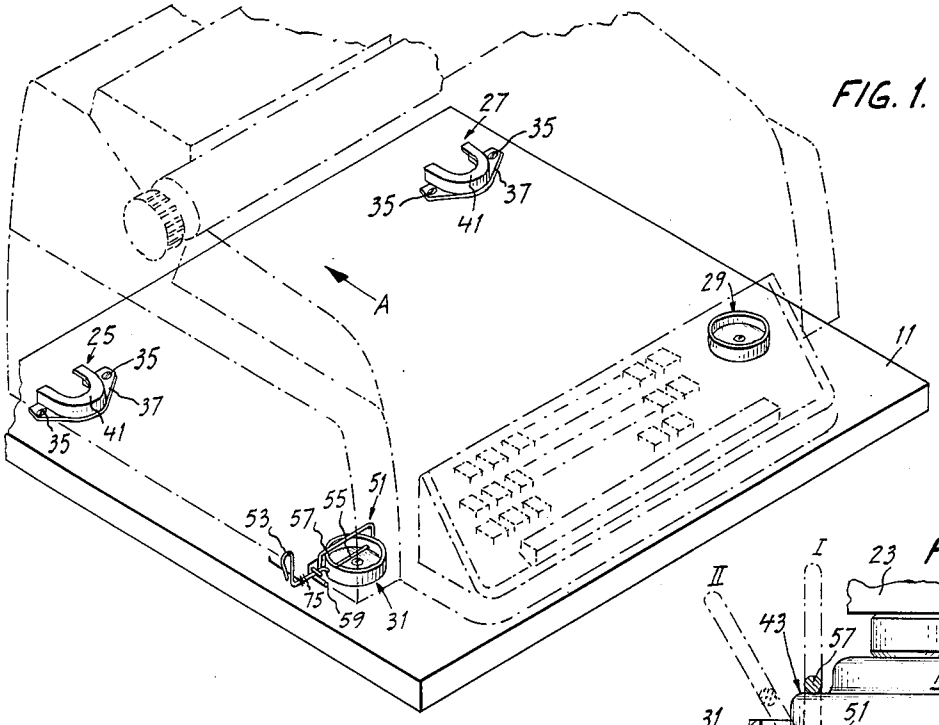


FIG. 4

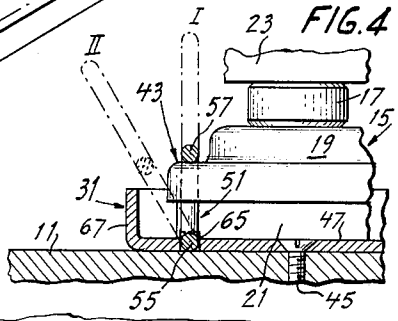
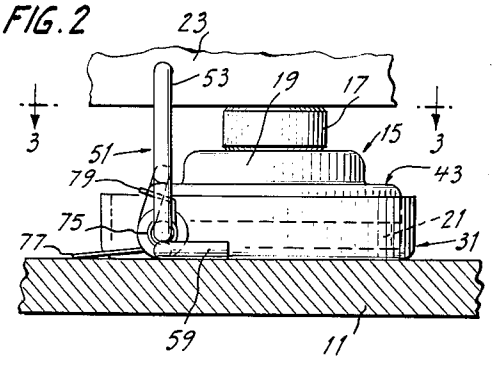


FIG. 2



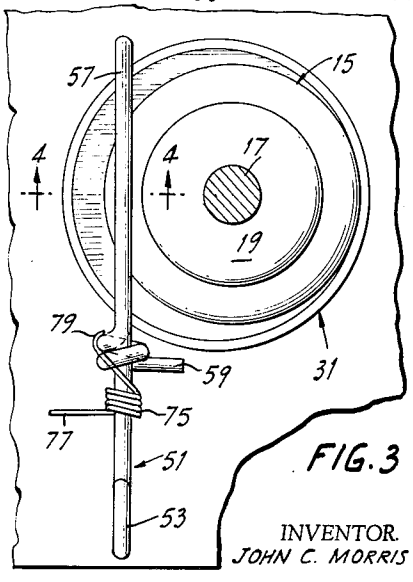
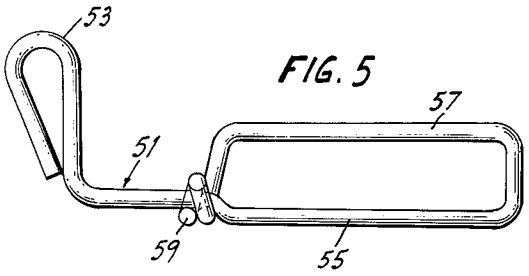


FIG. 3

FIG. 5



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HOLD-DOWN

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5 Claims. (Cl. 248—25)

This invention relates to securing and positioning mechanisms and more particularly to a securing and positioning mechanism for releasably maintaining a device in position on a movable platform.

The present invention finds ready application to a hold-down for releasably securing a business machine, or the like, in position on a shelf of a desk, which shelf is movable between a position exterior to the desk, wherein the business machine is accessible for use, and a position interior of the desk, wherein the business machine is stored when not in use.

Such storage especially in other than a horizontal position dictates that hold-down structure be provided for properly locating the business machine on said shelf and for securing said business machine to said shelf in such a manner as to prevent relative movement therebetween. Furthermore, irrespective of the position in which the business machine is stored, the movement thereof between the use and storage positions necessitates the provision of some type of locating and securing structure to prevent inadvertent displacement. Many business machines are attached to their support shelf by either screws or bolts, but this type of locating and securing makes servicing difficult and interferes with the clearing of the shelf and the flexibility in relocating the business machine. Other business machines are attached to their support shelf by releasable locating and securing mechanisms which are complex and expensive devices requiring attaching of some of the elements thereof to the shelf and some of the elements thereof to the business machine. Some such releasable locating and securing mechanisms are simplified in that they coact with the feet which are provided on and depend from the business machine. However, even these require modification of said feet and the provision of complex releasable latching structure on the shelf.

It is an object of this invention to provide a novel locating and securing mechanism.

Another object is to provide a novel, releasable locating and securing mechanism.

Another object is to provide a novel, releasable locating and securing mechanism which is simple in construction and efficient in operation.

Still another object is to provide a novel, releasable locating and securing mechanism for attaching a business machine, or the like, to a shelf or platform.

Still another object is to provide a novel, releasable locating and securing mechanism for attaching a business machine, or the like to a shelf or platform which is adapted for movement, with the business machine thereon, between a use position and a storage position.

A still further object is to provide a novel, releasable locating and securing mechanism which coacts with the feet provided on and depending from a business machine or the like.

A still further object is to provide, a novel, releasable locating and securing mechanism which coacts with the feet on and depending from a business machine or the like and which requires neither the modification of said feet or the attachment of any extra elements to said business machine.

The present invention contemplates the attachment of a plurality of members to a support shelf for a business machine in positions to receive the feet depending from said business machine. Some of said members are constructed with flange like portions for releasably holdling said feet from inadvertent movement except in a predetermined direction. Other of said members are constructed with a dished or cup-shaped portion, which would allow limited movement in said predetermined direction, and unrestricted vertical movement of the business machine, except that neither one or more of said other members are provided with a latch which releasably grips the business machine foot and thereby prevents movement of the foot and business machine.

Other objects and advantages of the invention in its details of construction and arrangement of parts will be apparent from a consideration of the following specification and accompanying drawing wherein:

FIG. 1 is a perspective view of a support shelf with business machine locating and securing mechanism in the form of a hold-down or clamp which embodies the present invention mounted thereon and showing in phantom, a typewriter as it would appear when properly positioned;

FIG. 2 is a partial sectional view of the support shelf of FIG. 1 showing in elevation thereon a foot of a typewriter as it would appear when secured thereto;

FIG. 3 is a sectional plan view taken along the line 3—3 of FIG. 2;

FIG. 4 is an approximate vertical sectional view taken along line 4—4 of FIG. 3; and

FIG. 5 is an elevational view showing only the clamping element.

It should be understood, however, that the hereinafter descriped application of the invention to a business machine is for purposes of illustration only inasmuch as the subject invention finds ready application to any device or mechanism which must be releasably secured to a shelf, baseboard or other type of platform.

Shelf **11** represents that portion of a typist's desk which is constructed to support a typewriter (shown in phantom in FIG. 1) during use of the typewriter in a horizontal position and during storage of the typewriter within the desk in either: a horizontal position such as that shown in U.S. Patent 2,660,502, a vertical position such as that shown in U.S. Patent 2,066,608, or a slanted position such as that shown in U.S. Patent 2,118,085. Mechanism (not shown) is provided to facilitate movement of the shelf and typewriter between the use and storage positions thereof.

A plurality of spaced supports, or feet **15** (FIG. 2) including a stud **17**, a housing **19** and a pad **21** of a resilient material such as felt or rubber, depend from the underside of a frame **23** of the typewriter. A plurality of locating and securing members **25**, **27**, **29** and **31** (FIG. 1) are disposed on shelf **11** in spaced positions corresponding substantially to the spacing of supports **15** of the typewriter.

Locating and securing members **25** and **27** are disposed to receive supports **15** which are located to the rear of the typewriter. A plurality of attaching members **35** (FIG. 1) such as screws or bolts, are passed through a lower flange **37**, formed on locating and securing members **25** and **27**, to attach same to shelf **11**. An upper flange **41** (FIG. 1), also formed on locating and securing members **25** and **27** engages a shoulder **43** of housing **19** (FIG. 2) facing away from the shelf to firmly and yet releasably mount the rear of the typewriter to shelf **11**.

Locating and securing members **29** and **31** are disposed to receive supports **15** which are located to the front of the typewriter. As can be clearly seen in FIG. 3 locating and securing member **31** is a dished element constructed with a larger diameter than housing **19** of support **15** to provide for variation in tolerances and facilitate rapid placement of supports **15** therein. This size relationship also exists for locating and securing

member 29 and its corresponding support 15. An attaching member 45 (FIG. 4) such as a screw or the like is passed through a bottom wall 47 of locating and securing members 29 and 31 to attach same to shelf 11.

A clamp 51 (FIGS. 2 and 3) is provided to releasably secure the typewriter in position on shelf 11 when supports 15 thereof are properly located in locating and securing members 25, 27, 29 and 31. Clamps 51 may be provided on all locating and securing members 25, 27, 29 and 31 or on any number of same. It has been determined, however that only one clamp 51 is required to firmly secure the typewriter to shelf 11 and this one clamp is most advantageously placed in association with locating and securing member 31.

Clamp 51 is formed as a single element, preferably of music wire stock and includes a handle portion 53 (FIG. 5), a rectangular frame-like section having fixedly spaced opposite sides including a journal portion 55 (FIGS. 4 and 5) and affixed thereto a clamping portion 57, both portions spanning member 31 to receive it, and a stop portion 59. A channel 65 (FIG. 4) formed in locating and securing member 31, receives journal portion 55 of clamp 51. An upright flange 67 (FIG. 4) formed on opposed sides of locating and securing member 31, and its channelled wall 47 adjacent shelf 11, constitutes a bearing in member 31 for journal portion 55 when clamp 51 is retained journalled in attached member 31 by shelf 11 with portion 55 disposed in channel 65 and when locating and securing member 31 is secured to shelf 11 by attaching means such as the central fastener member 45.

A spring 75 (FIGS. 2 and 3) is disposed on clamp 51 with a first end 77 (FIG. 3) of spring 75 resting on shelf 11 and with a second end 79 (FIGS. 2 and 3) of spring 75 engaging clamp 51 to urge same in the clockwise direction (FIG. 2). Stop portion 59 of clamp 51 limits the clockwise rotation thereof to the obstructing position indicated by the roman numeral I in FIG. 4. When support 15 is properly positioned in locating and securing member 31 as shown in FIG. 3 clamp portion 57 of clamp 51 will engage shoulder 43 of housing 19 substantially vertically opposite channel 55 to secure support 15 in locating and securing member 31.

If it is desired to remove the typewriter from its position on shelf 11 handle 53 of clamp 51 is pivoted counterclockwise (FIG. 4) rotating clamp 51 counterclockwise (FIG. 4) about an axis passing through journal portion 55, against the bias of spring 75 and into the release position indicated by the roman numeral II in FIG. 4. Supports 15 disposed to the front of the typewriter, are then lifted out of locating members 29 and 31 and the typewriter moved in the direction of arrow A (FIG. 1) moving supports 15, disposed to the rear of the typewriter, out from under flanges 41 of members 25 and 27. To again secure the typewriter to shelf 11, with the front of the typewriter raised slightly, supports 15 disposed to the rear of the typewriter are moved into engagement with locating and securing members 25 and 27 until shoulder 43 of supports 15 are seated under flanges 41. The front of the typewriter is then lowered so as to seat supports 15, disposed to the front of the typewriter, in locating and securing members 29 and 31. Prior to support 15 moving into the open end defined by the side portion 67 of locating and securing member 31 handle 53 of clamp 51 is pivoted counterclockwise (FIG. 4) to the position indicated by the roman numeral II. When supports 15 are properly positioned in locating and securing members 29 and 31 handle 53 is released and spring 75 moves clamping portion 57 of clamp 51 onto shoulder 43 of support 15 to latch support 15 and thereby the typewriter in position on shelf 11.

It is understood that although I have shown the preferred form of my invention, that various modification may be made in the details thereof without departing from its spirit as comprehended by the following claims:

What is claimed is:

1. In a hold-down mechanism for releasably mounting upon a baseboard a device having at least one depending foot including a shoulder disposed for facing away from said baseboard, the combination comprising

(a) locating and securing means formed for being attached to said baseboard and with an open end to receive said foot in one direction and position said device on said baseboard, said locating and securing means having a bottom with a channel opposite said end formed therein; and

(b) clamp means for being journalled in said locating and securing means and retained in said channel by said baseboard when said locating and securing means is attached with said bottom adjacent said baseboard, said clamp means including a frame-like section for movement between an obstructing position, whereat said clamp means is in shoulder engagement substantially opposite said channel in said direction to prevent said received foot moving out of said end and forcing movement from said obstructing position, and a release position, whereat said clamp means disengages said shoulder and permits separation of said foot from said locating and securing means.

2. The combination of claim 1 wherein

(a) the locating and securing means is a dished element having a side defining with said bottom a bearing,

(b) the clamp means having spaced portions, one a journal portion and the other a clamping portion of the frame-like section,

(1) said journal portion being pivotally received in said channel and bearing;

(2) said section being formed for receiving said element between said portions; and

(3) said clamping portion being movable into and out of said shoulder engagement; and

(c) spring means mounted on said clamp means for urging said clamp means to said obstructing position.

3. A hold-down mechanism for releasably securing upon a baseboard a business machine such as a typewriter having a supporting foot, said mechanism comprising

(a) a dished element formed with a bottom for attachment to said baseboard and with an upright side, said bottom and side receiving said foot of the machine in said element;

(b) a clamp journalled in said element and retained by said baseboard in said attached element for movement between an obstructing position preventing removal of said foot from said element and a release position permitting removal of said foot from said element, said clamp including a single piece of wire stock having

(1) a rectangular frame-like section having spaced sides, one of said sides constituting a journal portion for said clamp, the other constituting a clamping portion movable to engage said received foot;

(2) said stock having one end extending from said section and terminating in a handle for manually rotating said clamp between said positions;

(3) the other end of said stock extending from said section and terminating in a stop adapted in said obstructing position to engage with said baseboard when said element is attached thereto; and

(c) a spring for urging said stop against said baseboard and said clamp into said obstructing position.

4. In a hold-down installation releasably mounting upon a baseboard a device having at least one depending foot including a shoulder facing away from said baseboard, the combination comprising

(a) a baseboard;

(b) a substantially dished locating and securing element formed for attachment to said baseboard and for receiving said depending foot, said element having a bottom and an upright side, said bottom portion having a channel formed therein;

(c) a clamp member journalled in said element and having a portion in said channel and retained therein by said bottom, said baseboard and said side for movement of said member between an obstructing position where said member is maintained engaging said shoulder opposite said channel to prevent removal of said foot from said element and a release position to permit removal of said foot from said element; and

(d) attaching means for fastening said element to said baseboard and maintaining said portion in said channel when said element is moved out of shoulder engagement.

5. In a hold-down installation for releasably mounting upon a baseboard a business machine device having at least one depending supporting foot including a shoulder facing away from said baseboard, the combination comprising

(a) a baseboard;

(b) a locating and securing element for attachment to said baseboard and having a bottom and an upright side defining an open end to receive said foot and position said device on said baseboard, said bottom having a channel and being adapted to engage said baseboard and foot;

(c) a clamp member journalled in said element and having a frame-like section with a portion pivotally received in said channel adjacent said baseboard for movement of said member between an obstructing position whereat said member is maintained in shoulder engagement opposite said channel and prevents separation of said received foot from said element and a release position permitting said separation;

(d) mounted on said member, a spring for urging said member to said obstructing position; and

(e) a fastener for attaching said element to said baseboard, and maintaining said portion in said channel between said baseboard and said element when said member is not in said shoulder engagement.

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