Aug. 11, 1959 V. E. MARK 2,899,250

CONCEALABLE PLATFORM

Filed March 11, 1957 3 Sheets-Sheet 1

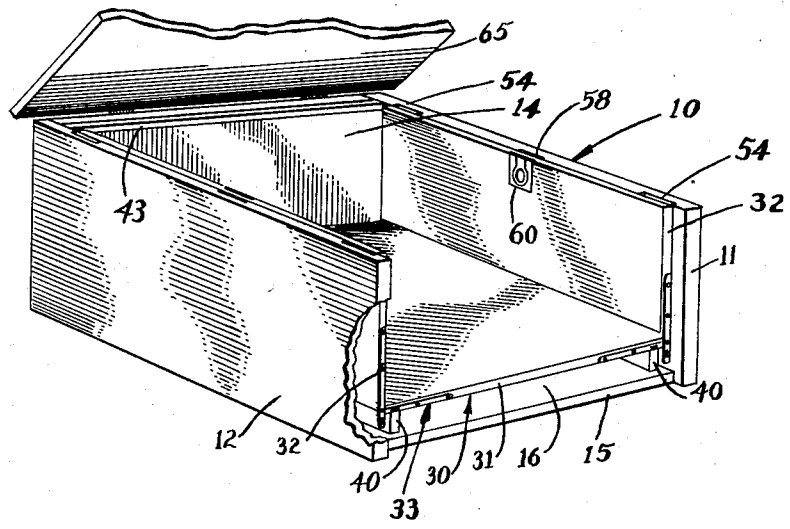


Fig. 1

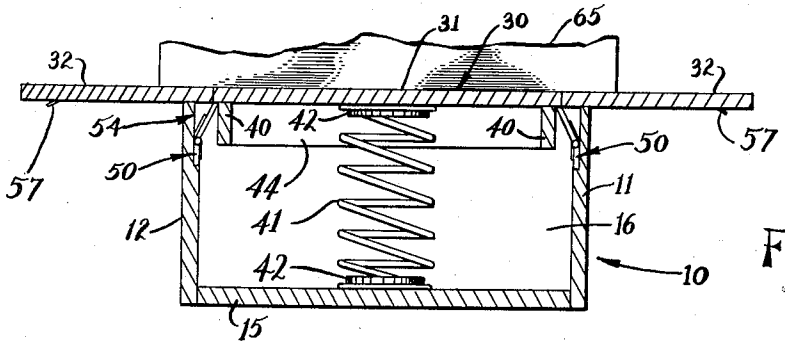


Fig. 2

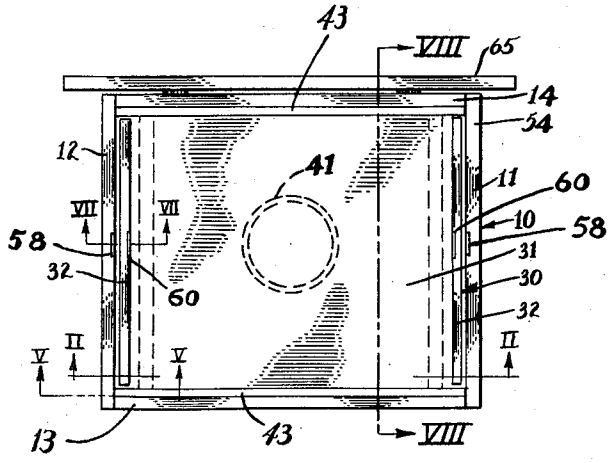


Fig. 3

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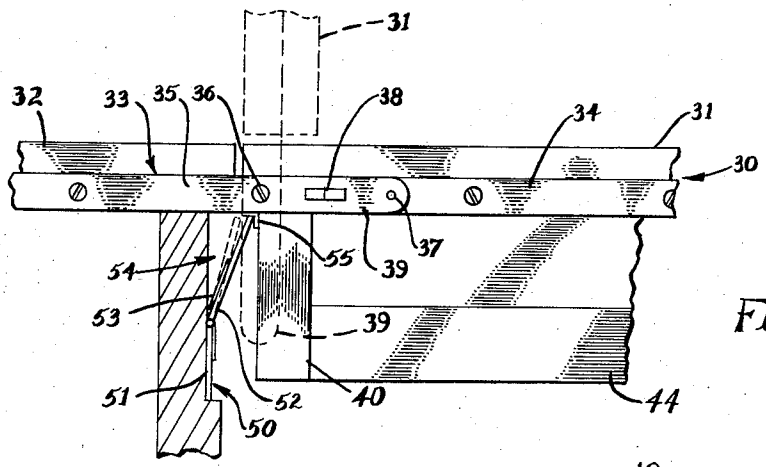


Fig. 5

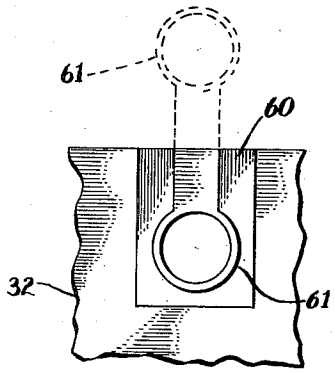


Fig. 6

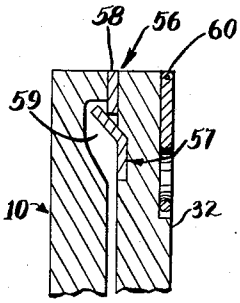


Fig. 7

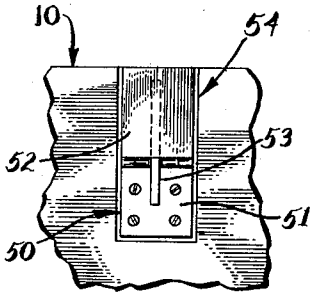


Fig. 4

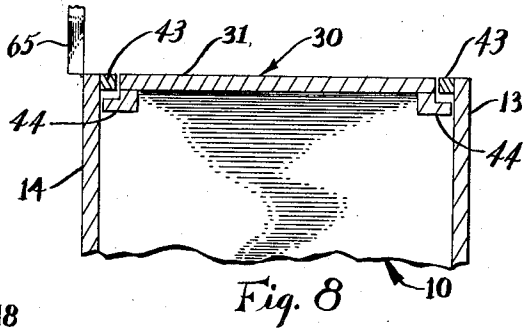


Fig. 8

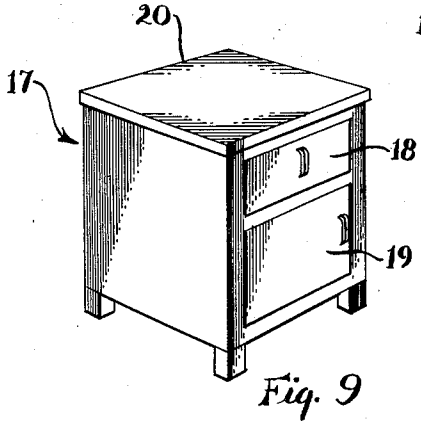


Fig. 9

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CONCEALABLE PLATFORM

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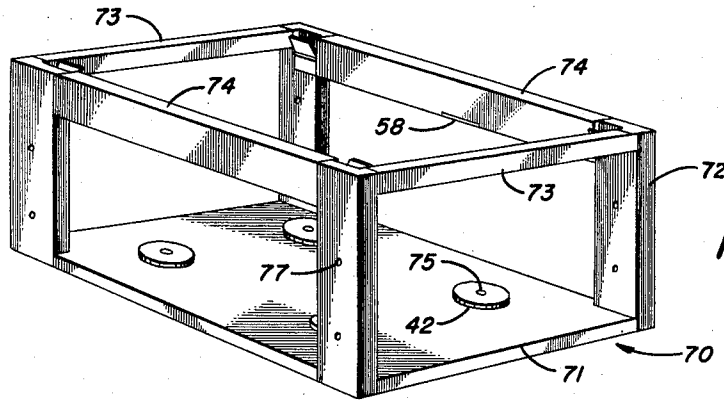


Fig. 10

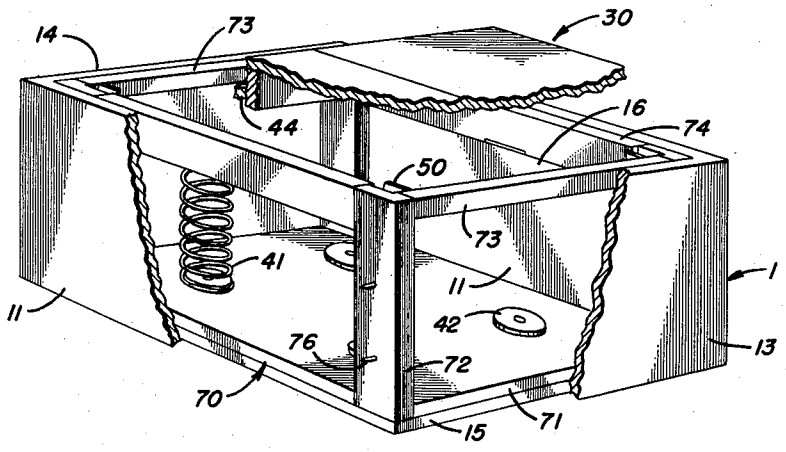


Fig. 11

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2,899,250

CONCEALABLE PLATFORM

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Application March 11, 1957, Serial No. 645,236

3 Claims. (Cl. 312—21)

This invention relates to furniture, and more particularly to a concealable support for a typewriter or other machine.

While this invention may be used in an office or other business establishment, it is specifically intended to provide a neat, convenient and compact typewriter support for home use. The invention provides, as a combination, a table to support the machine while in use and concealed storage for it when not in use. It has the additional advantage of providing both of these facilities without requiring the machine to be removed from the unit.

This invention permits various types of furniture to be used as a combination typewriter stand and storage facility. For example, it may be incorporated in a desk, night stand, end table, telephone stand or cabinet of any nature. The nature of the invention is such that the dual purpose of the furniture is entirely camouflaged.

This invention has the further advantages of simplicity and economy in manufacture. Its ease of operation adapts it to home use.

This invention solves the problem of using such equipment as typewriters in the home. Heretofore, the only facilities adapted for home use were stands which provided, at best, exposed storage. The only available storage facilities were either cupboards or drawers. These require the machine to be moved from its place of storage to its place of use at the beginning and end of each use. This invention solves these problems.

This invention provides a firm support for the machine which will withstand the vibration incident to the use of many types of equipment. Yet it requires minimum effort of the operator to raise and lower the equipment. Its simplicity assures freedom from mechanical difficulty and durability in operation.

These and other advantages of this invention will be recognized immediately by those skilled in the design and manufacture of furniture upon reading the following specification and the accompanying drawings.

In the drawings:

Fig. 1 is an oblique view of this invention with the front wall of the housing removed to expose the interior and illustrating the platform in storage position.

Fig. 2 is a sectional, elevational view taken along the plane II—II of Fig. 3, showing the platform in raised position.

Fig. 3 is a plan view of the invention showing the platform in storage.

Fig. 4 is an enlarged, fragmentary, elevation view of the supporting latch for the platform.

Fig. 5 is an enlarged, fragmentary, sectional, elevation view taken along the plane V—V of Fig. 3.

Fig. 6 is an enlarged, fragmentary view of the handle for manipulating the end leaves.

Fig. 7 is an enlarged, fragmentary, sectional elevation view of the hold-down latch for the platform taken along the plane VII—VII of Fig. 3.

Fig. 8 is a fragmentary, sectional, elevation view taken along the plane VIII—VIII of Fig. 3.

Fig. 9 is an oblique view of a unit of furniture incorporating this invention.

Fig. 10 is an oblique view of a framework for containing the platform.

Fig. 11 is an oblique view of the framework illustrated in Fig. 10 mounted in a housing and with the housing platform partially broken to expose the interior.

In the following description, the invention is described as one for a typewriter. This is only for convenience and is not to be considered as a limitation of the use of this invention to typewriters. It may be used with any type of machine of such compact structure that it may be concealed within the storage chamber. For example, it may be used for such equipment as a kitchen mixer or other small home appliances.

In executing the objects and purposes of this invention, there has been provided a storage well or chamber in combination with a foldable platform. The platform, when open, is flat and rests upon the top of the well and when closed is U-shaped and telescopes entirely into the storage well. In raised position, the platform is supported at each corner by a latch member. The latches engage the bottom of the platform and prevent it from moving down into the storage well. Each of the hinges securing the end leaves to the center portion of the platform has a free end which, as the end leaf is pivoted up to prepare the platform for storage, engages the latch and moves it outwardly. This disengages the latches from the platform and frees the platform for downward movement into the storage chamber. The entire platform is biased upwardly by a spring to facilitate the movement of the platform into and out of the storage chamber.

Referring specifically to the drawings, the numeral **10** designates a housing having end walls **11** and **12**, a front wall **13** and a back wall **14**. The lower end of the housing is closed by a bottom wall **15** (Fig. 2), creating a storage chamber **16** open only at the top.

The housing **10** may be a separate unit within itself or it may be an integral part of a larger piece of furniture such as a desk, an end table, a cabinet, a corner table or a night stand. This is illustrated by the night stand **17** (Fig. 9) in which the storage compartment is concealed behind the dummy drawer front **18** while the lower portion of the night stand, behind the door **19**, retains its traditional structure and function. Access to the compartment is obtained by raising the hinged top **20**. Integration of this invention into such furniture pieces does not change it, but rather serves the purpose of blending it into its surroundings or of concealing its actual purpose.

To facilitate and simplify the understanding and description of this invention, it is illustrated as a separate unit. It should, however, be considered that the housing described in the following specification and illustrated in the several figures may constitute an integral part of a larger piece of furniture.

Associated with the housing **10** is a platform **30** having a central portion **31** and a pair of end leaves or portions **32** (Figs. 1, 2 and 3). Each of the end portions **32** is secured to the central portion **31** by a pair of hinges **33** (Figs. 1 and 5). These hinges are located at the four corners of the platform. Each consists of a stationary arm **34** and a swinging arm **35**. The stationary arms **34** are firmly secured to the central portion **31** and at one end each is pivotally secured at **36** to a swinging arm **35**. Two of the swinging arms **35** are firmly secured to each of the end portions **32** and rotate with the end portions **32** about the pivot point **36** as the attitude of the end portions is changed with respect to the central portion **31** of the platform. When the stationary and swinging arms **34** and **35** are aligned, as when the platform is in its open

position, the hinges are restrained from pivotal movement by engagement of the detent 36 and the stop 38. These are on the free ends 39 of the swinging arms 35. As the end portions 32 are swung upwardly about the pivot 36, the free ends 39 of the arms 35 swing downwardly and outwardly. The importance of this will appear more fully hereinafter.

Depending from the bottom of the platform are a pair of legs 40. These engage the bottom 15 of the storage chamber and thereby prevent excessive compression of the spring 41 (Fig. 3). The spring 41 is mounted at the center of the platform. It has one end bearing against the under surface of the platform and the other end bearing against the bottom of the storage chamber. The spring 41 is designed to bias the platform upwardly with sufficient force to greatly facilitate the raising of the platform when the platform is loaded with an instrument such as a typewriter.

To prevent the ends of the spring 41 from moving laterally, they are preferably stabilized by a disc shaped block 42 at each end. The blocks 42 are secured to the adjacent structure. The spring seats closely about the blocks 42.

Stability of the platform, as it is being manipulated, can be increased by using a plurality of the springs 41 such as one at each corner of the platform. In this case, each spring will be weaker and their combined strengths will approximate that of the single spring 42.

To prevent the platform from being accidentally raised entirely free of the storage chamber 16, particularly when it is not loaded, suitable stops are provided. While these stops may have various constructions, it is sufficient to illustrate them as consisting of a stop bar 43 firmly mounted to the upper end of the front and back panels 13 and 14, respectively, of the housing 10 (Fig. 8). These are engaged by L-shaped stop shoes 44 secured to the bottom surface of the platform's central portion 31.

Preferably, a slight gap is left between the stop bars 43 and stop strips 44 when the platform is in normal, open operating position. This is desirable to permit the platform to be raised slightly above this position to assure complete outward movement of the pivoted latches 50 hereinafter described.

At each of the four corners of the housing 10 is a supporting latch 50. The supporting latches are so mounted that the upper ends of the latches are substantially flush with the top of the housing 10. Each latch consists of a pair of leaves, the lower leaf 51 of which is firmly secured to the housing 10 (Figs. 4 and 5). The upper leaf 52 is pivoted to the lower leaf and is biased inwardly of the chamber 16 by a spring 53. Each supporting latch 50 is seated in a recess 54 of such depth that the inner surface of the latch is flush with the inner surface of the housing 10.

A strike plate 55 is secured to the bottom surface of the central portion 31 of the platform 30 for engaging the latch when the platform is raised. The strike plate 55 serves the dual purpose of preventing the latch from embedding itself in the platform when the latter is of a relatively soft material such as wood and of compensating for the lowering of the upper end of the latch when pivoted to its inward position. The latches 50 are so located that the upper or pivoted leaf 52 is contacted by the free end of the swinging arm 35 of each of the hinges 33 as the platform is folded. The purpose of this will be explained under "Operation."

To prevent the platform from being raised by the spring 41, when in storage, as shown in Fig. 3, it is necessary to provide a pair of hold-down latches 56 (Fig. 7) consisting of a latch plate 57 secured to the under surface of each of the end portions 32 and a keeper plate 58 secured to the top of the inside surface of each of the side walls 11 and 12 of the housing 10. The keeper plates 58 are flush with the inside surfaces of the walls 11 and 12. Behind each keeper plate 58 is a recess 59. The recesses permit the latch plates 57 to engage behind the keeper plates. Once the latch plates 57 and keeper plates 58 are engaged, the bias of the spring 41 will maintain their engagement.

To facilitate manipulation of the platform into and out of the storage chamber 16, handles 60 may be provided (Figs. 1, 6 and 7). While these handles may be of any suitable design, they are preferably of a type which, when folded, are flush with the surface of the end leaves 32 and have a handle 61 pivotable into operating position.

Figs. 10 and 11 illustrate a modification of this invention. This provides an arrangement by which the platform and its necessary operating structure may be fabricated as a self-contained unit ready for installation in a piece of furniture. In this case the platform 30 is mounted in a chassis or framework 70 having a base 71 and four corner posts 72 rigidly secured to the base. The tops of the posts 72 along the front and back are connected by bars 73 and along the sides by rails 74. The keeper plates 58 of the hold-down latches are secured to the side rails 74. The discs 42 for the platform biasing springs 41 are secured to the base 71 by screws 75.

The framework 70 is designed to be seated entirely within the storage chamber 16 with the base 71 resting up on the floor 15 (Fig. 11). The framework 70 is secured to the housing by screws 76 (Fig. 11) installed through the holes 77 (Fig. 10). It will be recognized that these fasteners may be relocated at any other point in the framework 70 such as through the base 71 or rails 74. When the framework 70 is installed in the housing 1, its top is flush with the top of the housing.

The construction of the platform 30 remains the same as that illustrated in Figs. 1, 2 and 5 except to adapt its dimensions to fit within the framework. The stop shoes 44 cooperate with the bars 73 (Fig. 11). The platform supporting latches 50 are mounted to the frame at each of its four corners. Suitable recesses 78 are made in the posts 72 to seat the latches 50. The operation of the latches 50 and their cooperation with the platform 30 is identical to that illustrated in Figs. 2 and 5.

The construction illustrated in Figs. 10 and 11 makes it possible to fabricate the platform and its associated operating structure as an integrated unit of various standardized sizes. These units may then be incorporated in a piece of furniture, a kitchen cabinet or a cupboard by constructing them with a storage chamber of the correct dimensions.

Operation

To obtain access to the platform 30, the cover 65 is first lifted. This exposes the top of the storage chamber 16.

To release the platform 30, the handles 61 are moved into operating position and the platform is depressed further into the storage chamber 16 until the legs 40 touch the floor 15. This is sufficient to disengage the latch plates 57 from the keeper plates 58 (Fig. 7). The end portions 32 are then pivoted inwardly enough to permit the latch plates 57 to move upwardly past the keeper plates 58.

With the aid of the spring 41, the platform may then be raised until it is out of the storage chamber 16. As it moves past the supporting latches 50, the movable leaves 52 of these latches are held in the recesses 54 but press inwardly against the free ends of the movable arms 35 of the hinges 33. The platform is then opened by folding the end portions 32 downwardly.

As the end portions 32 are opened, the free ends of the arms 35 of the hinges 33 move inwardly and upwardly, permitting the pivoted leaves 52 of the supporting latches 50 to follow them until they engage under the strike plates 55 (Fig. 5). Once engagement has occurred, the

platform is solidly supported by the supporting latches **50**. The pivoted leaves **52** of the latches **50** are moved positively into engagement with the platform by the inward biasing of springs **53**.

It is thus seen that the platform, in open position, is positively supported and has no tendency to move downwardly into the storage chamber **16** even though it is subjected to vibration or heavy loads. Stability of the platform is highly desirable because a weak and unstable support for a kitchen appliance or a machine such as a typewriter interferes severely with the machine's proper use.

While the strength of the spring **41** biasing the platform **30** upwardly may be selected to fit the circumstances of each particular application, it is preferably such that it will not, when the platform is loaded with an instrument, raise the platform entirely out of the storage chamber **16** without some assistance. The object of the spring is to materially reduce rather than entirely replace the manual effort required of the operator.

To return the platform to the storage chamber **16**, the platform's end portions **32** are folded upwardly until they are substantially normal to the central portion **31**. As the end portions **32** pivot upwardly, the free ends of the arms **35** rotate downwardly and outwardly. In so doing, they push the pivoted leaves **52** of the latches **50** outwardly into or partially into their respective recesses **54**. This disengages the supporting latches **50**, permitting the platform **30** to telescope past them into the storage chamber **16**.

The platform is depressed into the storage chamber until the legs **40** bottom on the floor **15**. The end portions **32** are then moved outwardly and the platform permitted to rise until the holding latch plates **57** engage the keeper plates **58**, thus locking the platform in storage position. The depth of the storage chamber is such that the machine resting on the platform is completely received within the storage chamber, permitting the cover **65** to be closed without interference. It is, thus, unnecessary to remove the machine from the platform either for storage or for use. This invention provides both an efficient and stable working platform and completely concealed storage where the machine will be protected from dust and possible injury.

The simplicity of the various components used in this invention adapts it to inexpensive manufacture. Despite this, the invention simultaneously provides both complete storage and positive support for the machine when in operation. It provides a solution to the problems of storage and use of numerous types of compact machines in the home. It also provides a unit which may be adapted to various types of furniture or cabinets either specifically designed therefor or camouflaged as being adapted to entirely different purposes.

While I have described a preferred embodiment of my invention and a modification thereof, it will be recognized that other modifications may be made. Such of these modifications as incorporate the principle of this invention are to be considered as included in the hereinafter appended claims unless these claims, by their language, expressly state otherwise.

I claim:

1. A combination work and storage unit, comprising: a hollow housing open at the top for defining a storage chamber; a platform having a center portion and a pair of end leaves hingedly connected thereto whereby said leaves may pivot upwardly with respect to said center portion; said platform when said leaves are folded upwardly being of a size to vertically telescope into said storage chamber; a plurality of latches each having a keeper portion and a pocket portion, one of said portions of each of said latches being on said housing and the other on said platform; each of said keeper portions being resiliently biased to engage said pocket portions when said platform is raised to the top of said housing; said platform in said raised position being adapted to rest upon said latches and the sides of said housing and in lowered position to be entirely received within said housing; arms on said leaves disposed to engage said keeper portions and retract them to platform releasing position as said leaves are folded upwardly.

2. A combination work and storage unit, comprising: a hollow housing open at the top for defining a storage chamber; a platform having a center portion and a pair of end leaves hingedly connected thereto whereby said leaves may pivot upwardly with respect to said center portion; said platform when said leaves are folded upwardly being of a size to vertically telescope into said storage chamber; a plurality of latches each having a keeper portion and a pocket portion; said keeper portions being mounted on said housing and said pocket portions being on said platform; each of said keeper portions being resiliently biased to engage said pocket portions when said platform is raised to the top of said housing; said platform in said raised position being adapted to rest upon said latches and the sides of said housing and in lowered position to be entirely received within said housing; arms on said leaves disposed to engage said keeper portions and retract them to platform releasing position as said leaves are folded upwardly.

3. A piece of furniture having walls defining a storage chamber open at the top; a chassis having upstanding side members; said entire chassis seated in said storage chamber; a platform having a center portion and a pair of hinged end portions adapted to pivot upwardly with respect to said center portion into a U-shaped member of a size to be telescopically received entirely within said chassis; a plurality of latching elements mounted on said walls of said storage chamber, each having a pivoted leaf adapted to engage the under side of said center portion of said platform when said platform is seated on the top of said chassis; resilient means biasing said leaves into engagement with the underside of said platform for supporting said platform in raised position; arms on said hinged end portions disposed to make sliding engagement with said leaves and retract said leaves to platform releasing position as said hinged end portions are folded upwardly.

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