

July 18, 1967

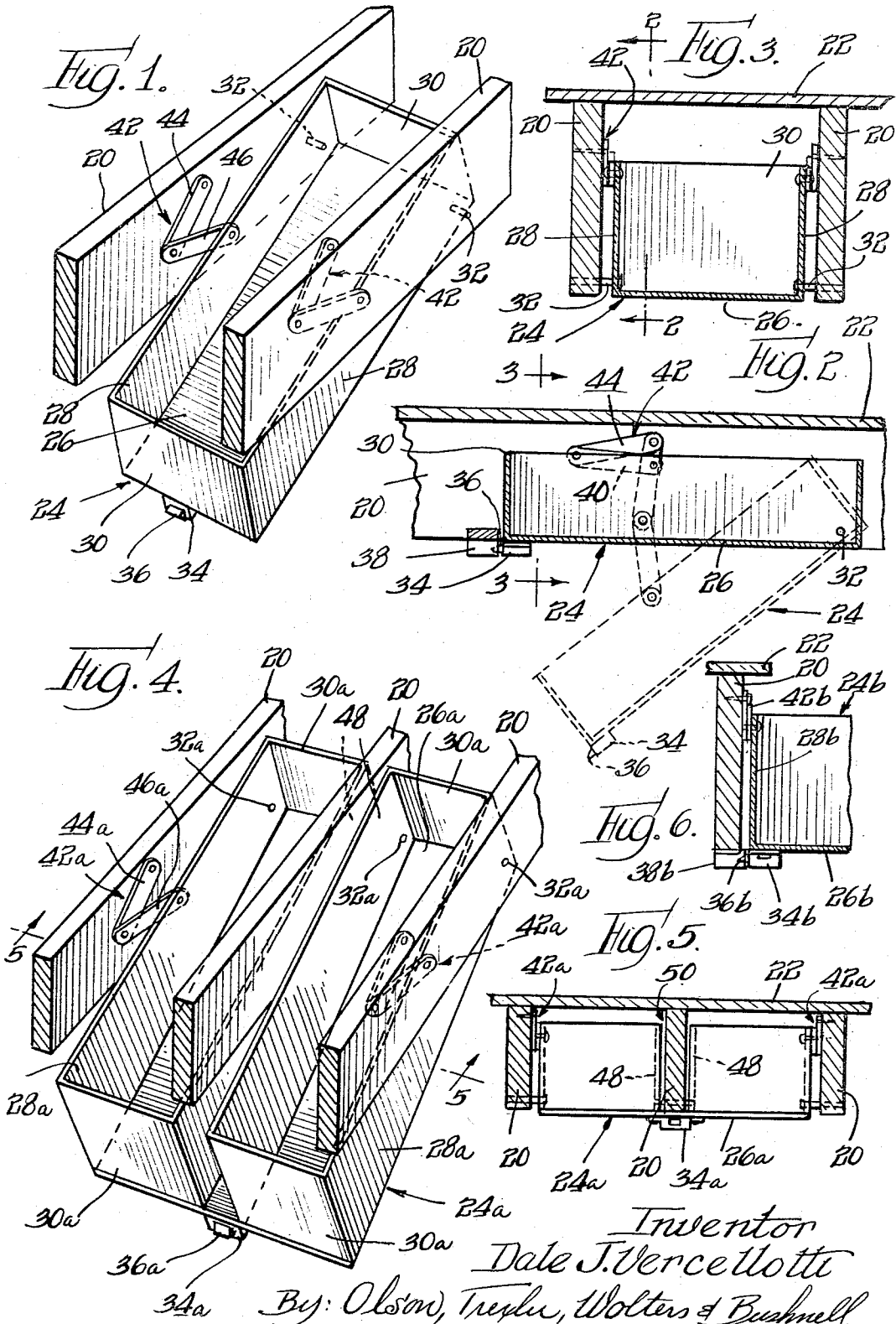
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3,331,645

STORAGE DEVICE

Filed Jan. 21, 1966

2 Sheets-Sheet 1



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3,331,645

STORAGE DEVICE

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 Filed Jan. 21, 1966, Ser. No. 522,160
 4 Claims. (Cl. 312-248)

ABSTRACT OF THE DISCLOSURE

An overhead storage device including a storage member pivoted between a pair of structural building elements, such as joists, and guided by foldable links between a latched, horizontal position interjacent the building elements and an inclined, lowered position.

This invention relates to a storage device, and particularly one for attachment to the joists immediately below the first floor of a house or the like.

Many years ago it was customary to build houses with substantial amounts of storage space. Not only were large numbers of more or less conventional closets provided, but it was common practice to provide pantries and storage closets in addition to those used for clothes. For reasons of economy, for reasons of quickness in building, for reasons of trends in architecture, etc., most new houses built within the last fifteen to twenty years have been deficient in storage space. Once a house has been built it is difficult or impossible to add storage space by way of extra closets and the like. Fortunately, there has been a trend away from the basement-less homes of some years ago. However, basements are not too well suited for many types of storage, both because the concrete floors and wall tend to be slightly damp, and because basements generally are not partitioned into rooms, and the poured concrete walls are extremely difficult for attaching anything thereto, such as shelves.

In view of the foregoing, it is an object of the present invention to provide a storage device for attachment to the open joists of a basement, thereby using waste space and staying away from damp areas.

A further object of the present invention is to provide a storage device for pivotal attachment to basement joists and positioned up out of the way for storage, but pivoting down to a lower position for easy access.

A corollary object of the present invention is to provide a storage device for attachment to basement joists, which does not obtrude on the useful headroom in the basement, and which is positioned up between the joists where it is out of the way and avoids dust which otherwise might collect.

Yet another object of the present invention is to provide a storage device for attachment to the joists in the basement which is shaped internally for receipt of particular articles.

Other and further objects and advantages of this invention will be apparent when taken in connection with the accompanying drawings wherein:

FIG. 1 is a perspective view of a storage device constructed in accordance with the present invention and shown in partly lowered position, the joists being shown only fragmentarily;

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FIG. 2 is a longitudinal sectional view of the device as taken substantially along the line 2-2 in FIG. 3;

FIG. 3 is a cross-sectional view as taken substantially along the line 3-3 in FIG. 2;

FIG. 4 is a perspective view similar to FIG. 1 of a modification of the device;

FIG. 5 is a cross-sectional view taken substantially along the line 5-5 in FIG. 4, but with the storage device in raised or storage position;

FIG. 6 is a fragmentary cross-sectional view similar to FIG. 3 and showing a further modification;

FIG. 7 is a longitudinal sectional view through a modified form of the device, with the storage device in lowered position;

FIG. 8 is a view partly in cross-section and partly in end elevation taken along the line 8-8 in FIG. 7;

FIG. 9 is a longitudinal sectional view similar to FIG. 7 showing a further modification of the invention;

FIG. 10 is a view similar to FIG. 8 again showing the parts partly in cross-section and partly in end elevation, as taken substantially along the line 10-10 in FIG. 9;

FIG. 11 is a cross-sectional view through the device of FIG. 9, but in raised position; and

FIG. 12 is a detailed view on an enlarged scale taken substantially along the line 12-12 in FIG. 11.

Turning now more particularly to the drawings, and first to FIGS. 1-3, there will be seen a pair of joists 20 at the top of a basement supporting the usual floorboards 22 thereabove. In modern construction, the joists 20 are on 16" centers, and thus the spacing between joists is an accurate, pre-determined distance.

A storage device 24 in accordance with the present invention, is pivotally supported between a pair of adjacent joists, and comprises a generally rectangular box having a rectangular bottom or floor 26, upstanding rectangular sidewalls 28, and rectangular end walls 30. The storage device is open at the top. The pivot pins 32 extend through the sidewalls 28 near the lower rear corners thereof, and are received in the joist near the bottom thereof, and preferably are supported so as to support the storage device with the bottom wall or floor 26 substantially on a level with the bottom edge of the joists.

A latch 34 is mounted on the bottom wall adjacent the front end, and preferably is of the type having a spring-pressed detent 36 for cooperation with a strike 38 supported on a cross-member 40 secured in any suitable fashion between the joists. The pivot pins 32 and latch 34 are capable of and are intended for supporting the storage device in the upright or raised position, shown in full lines in FIGS. 2 and 3.

Fall supports 42 are of a more or less conventional nature, comprising pairs of pivoted links 44 and 46, interconnect the storage device 24 and the joists on opposite sides of the storage device to limit the downward pivotal movement thereof, as shown in dashed lines in FIG. 2. The links are pivotally connected at opposite ends respectively to the joists and to the sidewalls 28 and the links of each pair are pivotally connected preferably with a frictional pivot, so that the storage device will stay at an intermediate position to which set, such as the position shown in FIG. 1.

It will now be seen that it is a simple matter to pull the storage device down to pivoted position shown in dashed lines in FIG. 2 for placing items in the device

for storage. The storage device then simply is pivoted up to the solid line position of FIGS. 2 and 3, where it is completely out of the way. This position is away from dampness in the basement, and the overlying floorboards are sufficiently close to the open top of the storage device as to form more or less a lid or cover therefor, thereby keeping dust out to a very large extent. Space is used for storage which would otherwise be completely wasted space, yet which is readily and quickly accessible.

A modification of the invention is shown in FIG. 4, the modification being adapted to occupy two adjacent joist spaces simultaneously. Most of the parts are similar to those heretofore shown and described, and similar numerals are therefore utilized to identify like parts, the suffix *a* being added for distinction. A repetition of description is thereby largely avoided, and it will be seen that the present embodiment differs from that heretofore described in that the bottom wall 26*a* is of sufficient width to pass under one joist 20, terminating adjacent the next two joists. (However, it will be understood that in accordance with this embodiment, the bottom wall could pass under several joists.) The sidewalls 28*a* thus are adjacent to spaced joists, and there is a center joist received in a space 50 between inner sidewalls 48 upstanding from the bottom wall 26*a*, the end walls 30*a* being interrupted. The latch 34*a* is again disposed centrally of the bottom wall 26*a*, and hence lies directly beneath the space 50 and beneath the central joist 20, whereby it is unnecessary to provide a cross-member to receive the strike for association with the matched detent.

The function of the device of FIGS. 4 and 5 is the same as previously described in connection with FIGS. 1-3, except that there are two boxes or storage compartments to this storage device which are simultaneously operable. There is a savings of materials in that only one latch is necessary, only two fall supports, and no strike cross-member.

A further modification of the invention is shown in FIG. 6, similar parts again being identified by like numbers, this time with the addition of the suffix *b*. The significant distinction in the present embodiment is that the latch 34*b* is disposed at a front corner so that the detent 36*b* may cooperate with the strike 38*b* secured directly beneath one of the joists 20. This obviates the necessity of providing a cross-member 40 as previously shown in FIG. 2.

A further embodiment of the invention is shown in FIGS. 7 and 8, this one being especially designed to store drinking glasses and the like. Parts are generally similar to those heretofore shown and described, and similar parts are identified by the use of like numerals with the addition of the suffix *c*. The significant difference in the present form of the invention is that the storage device 24*c* rather than being an open box-like container, is a solid block of material 52 such as of wood, plastic, papier mache, or conveniently foamed plastic material, having tapered holes or bores 54 extending thereinto, tapering from a maximum diameter at the upper surface to a minimum diameter toward the lower surface. The holes are of a proper shape to receive drinking glasses, or the like, and hence expensive glasses which are used only occasionally can be stored out of the way in the present form of my storage device.

A further form of the invention is shown in FIGS. 9 and 10, being generally similar to FIG. 1, and similar parts being identified with the use of like numerals with the addition of the suffix *d*. A point of essential distinction in the present form is that inclined separator panels 56 are secured transversely in the storage device 24*d* by means of channels 58 suitably secured in spaced pairs along the sidewalls 28*d*. This allows for the storage of, for example, file cards, or for any number of other things such as photographs or other items which should be stored in separate small compartments. A further departure in FIGS. 9 and 10 resides in the provision of counter-

balancing springs 60 stretched between the joints of the fall supports 42*d* and fixed anchors 62 secured to the joists 20. Although the counter-balancing springs are shown only in connection with FIGS. 9-10, it will be understood that such counter-balancing springs are contemplated in any of the embodiments of the invention as herein shown and described.

A further point of departure, but useful with any of the embodiments as herein shown and described, is also shown in FIGS. 9 and 10, and particularly in accompanying FIGS. 11 and 12. It will be understood that it is not always convenient to provide the pivots 32 in the sides of the joists and extending through the sidewalls 28 of the storage device. Hence, in accordance with the present departure, the pivots 32*d* are provided below the joists. Each such pivot comprises a fixed bracket 64 having base 66 secured to the underside of one of the joists 20 by fastening means such as screws 68 or nails. Each bracket 64 further includes a depending, right-angularly disposed ear 70. A pivot pin 72 passes through the ear 70 and through an adjacent ear 74 of a hinge member 76 having a base 78 secured to the bottom wall 26*d*. Mechanical fastening means may be used to secure the bases 78 to the wall 26*d*, but when the storage device is made of steel it is preferred to weld the base to the bottom wall, as by means of spot welds. It will be seen that the entire pivot structure 32*d* thus lies below the bottom edges of the joist 20 whereby the pivot structures are readily secured simply by nailing or screwing up through the bases 66 into the joist.

The various embodiments of the present invention are adapted for storage of specific articles or types of articles, and certain of the added-on features are useful with any or all of the embodiments. All of the embodiments meet the basic objects of providing storage in the driest possible location in a basement, and in space which would otherwise simply be wasted space. Nevertheless, stored items are readily accessible and are protected from dust and the like.

The specific examples of the invention as herein shown and described are for illustrative purposes. Various changes in structure will no doubt occur to those skilled in the art and will be understood as forming a part of the present invention insofar as they fall within the spirit and scope of the appended claims.

The invention is claimed as follows:

1. An overhead storage arrangement comprising: building structure means including spaced, parallel, overhead structural elements having respective upper and lower edges; a storage member shaped to fit pivotable between a pair of said structural elements, including a bottom element; pivot means connected to said storage member adjacent said bottom element and connected to said pair of structural elements adjacent the lower edges thereof to define a horizontal pivot axis; foldable link means fastened to said storage member and to said pair of structural elements away from said pivot axis to direct swinging of said storage member between a horizontal position substantially concealed interjacent said pair of structural elements and a lowered, access position inclined at a steep angle relative to the vertical; and latch means for releasably securing said storage member in said horizontal position, including a first latch member attached to said structural elements adjacent the lower edges thereof and a second, cooperating latch member attached to said storage member adjacent said bottom element away from said pivot axis.

2. An overhead storage arrangement according to claim 1 which further includes separator elements in said storage member dividing the enclosed space into individual storage compartments.

3. An overhead storage arrangement according to claim 2 wherein said separator elements are arranged to define recesses for receiving individual drinking glasses.

4. An overhead storage arrangement according to claim 2 wherein said separator elements are planar elements

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upstanding from the bottom element of said storage member at an angle inclined generally toward a position overlying said pivot axis whereby to assume a nearly horizontal position when said storage member is in said lowered position.

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