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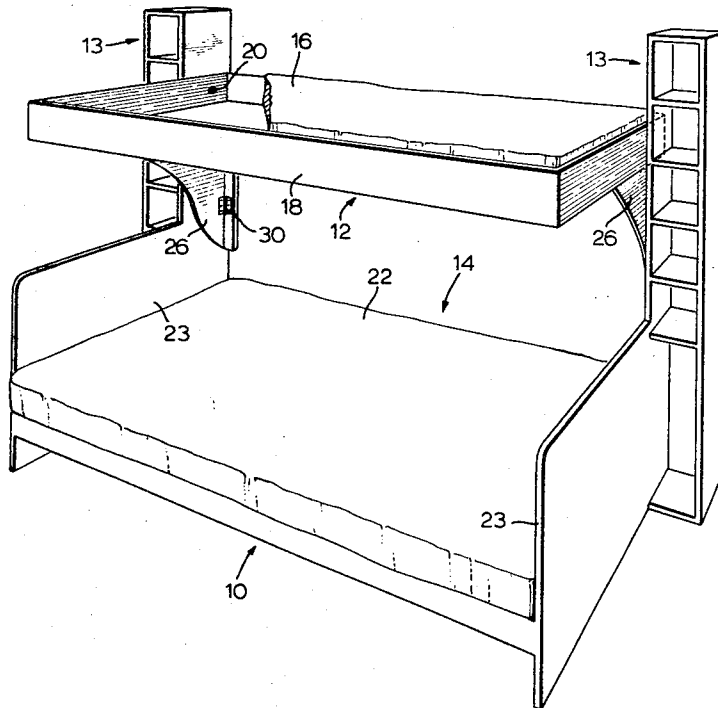
[54] **CONVERTIBLE BUNK/CHESTERFIELD**
 4 Claims, 5 Drawing Figs.

[52] U.S. Cl. 5/9
 [51] Int. Cl. A47c 17/40
 [50] Field of Search 312/231,
 233, 237, 240, 241, 245; 5/9, 59

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ABSTRACT: A Convertible Bunk/chesterfield, i.e. a furniture piece which is readily and easily convertible from chesterfield to bunk and vice versa, in which spring loaded holding means are provided to support the outer edge of the upper of the bunk portions, together with drawing means to overcome the spring force of the holding means. The upper bunk portion is swingable near its back edge upon release of the holding means to assume a near vertical position which is the back of the chesterfield. The upper bunk portion is replaced to its upper position manually and the springloaded holding means automatically take their holding position when the upper bunk is in its upper position.



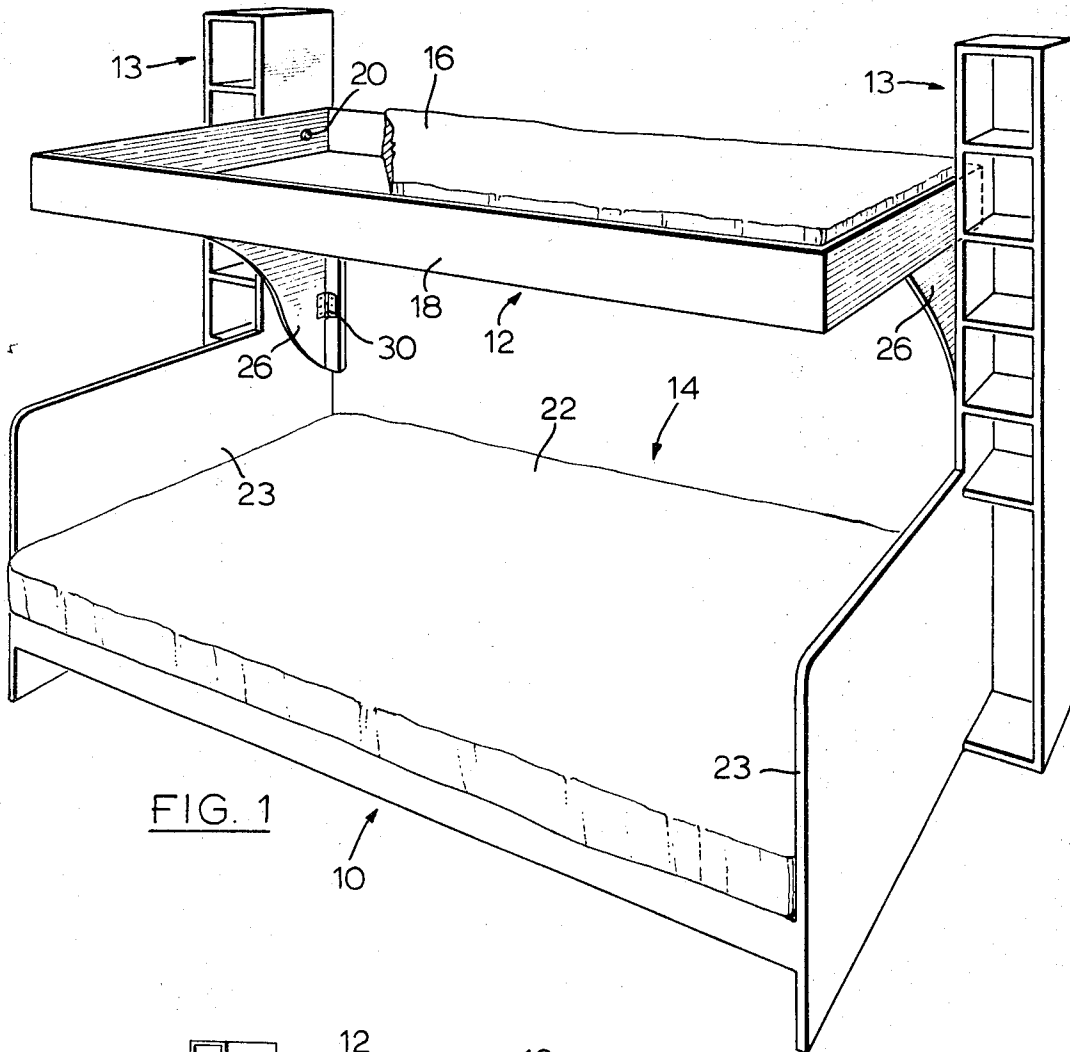


FIG. 1

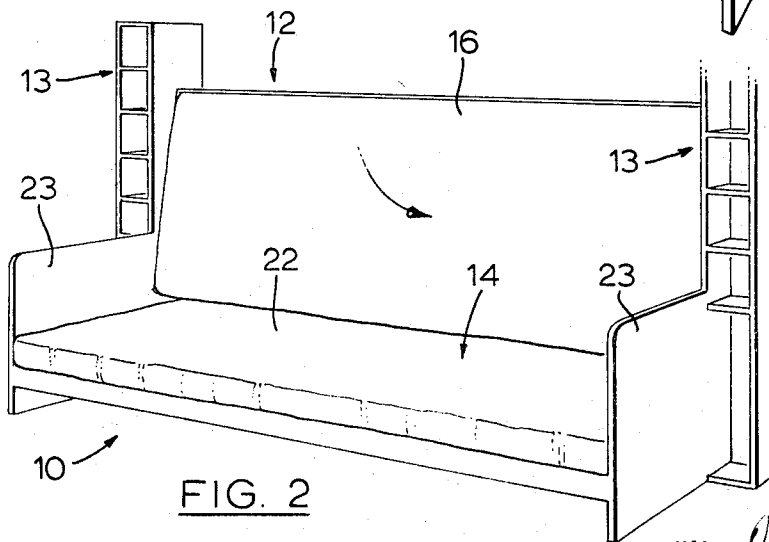
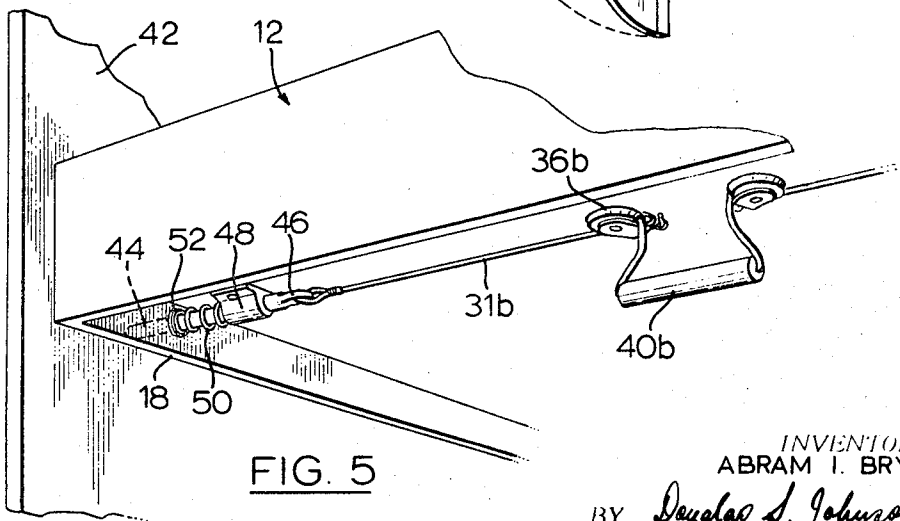
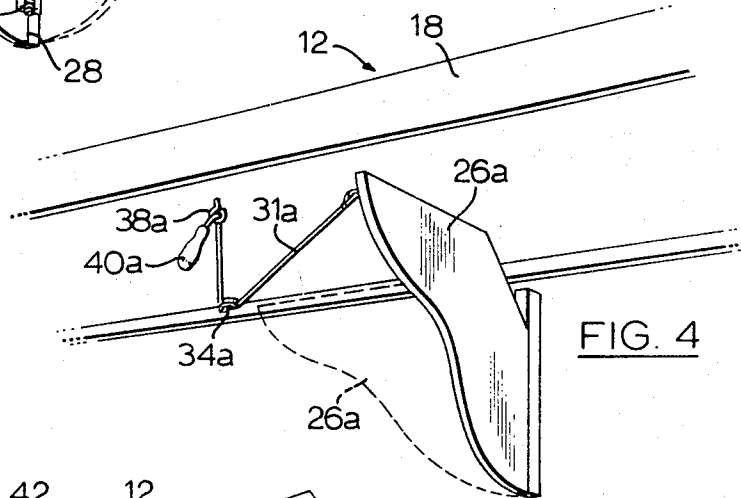
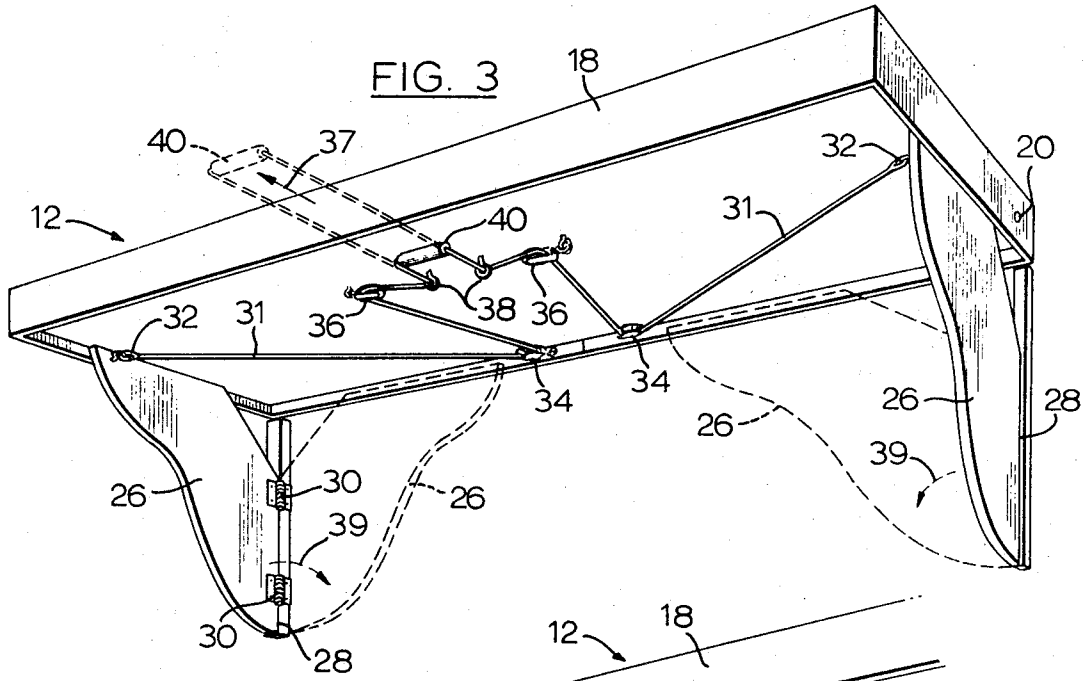


FIG. 2

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CONVERTIBLE BUNK/CHESTERFIELD

FIELD OF THE INVENTION

This invention relates to an article of furniture which is adapted to convert from a bunk-bed to a chesterfield, and vice versa. Most particularly, the invention teaches a bunk/chesterfield which is easily convertible, and which is useful in homes, cottages, dormitories, motels, trains, and the like.

It is very often desirable to provide an article of sitting furniture, such as a chesterfield, in a room which may be used during certain hours for such purposes as a chesterfield may be required, but it may also be desirable to provide sleeping accommodation for at least two persons in the same room and with no greater demands on floor space. At the same time, it is always desirable to provide such accommodation as economically as possible. It is therefore important to provide an article of furniture having the features aforesaid, i.e. convertibility from bunk to chesterfield and vice versa, and which is simple to operate and uncomplicated to manufacture and assemble. It has also been found that is best to provide such furniture wherein the manipulation of whatever means is provided to accommodate the convertibility is such as to convert the furniture from bunk to chesterfield.

BRIEF DISCUSSION OF THE PRIOR ART

Most often, in the past, convertible bunk/chesterfield furniture has been made with means primarily intended to convert the furniture from chesterfield to bunk. This has necessitated the provision of complicated lifting and/or extending machinery; or has required more floor space than may be immediately available. Some recent examples of convertible bunk/chesterfields which are quite complicated in their structure are: U.S. Pat. No. 3,027,571 issued Apr. 3, 1962 to Benedixon et al., U.S. Pat. No. 3,047,885 issued Aug. 7, 1962 to Bolinger; U.S. Pat. No. 3,310,815 issued Mar. 28, 1967 to Griffin; and U.S. Pat. No. 3,311,932 issued Apr. 4, 1967.

SUMMARY OF THE INVENTION

It is an object of this invention to provide a convertible bunk/chesterfield which is economically built and easily operated.

It is another object of this invention to provide a convertible bunk/chesterfield with simple means to convert from bunk to chesterfield, said means permitting the reconversion from chesterfield to bunk by merely lifting the upper bunk portion of the furniture into place with automatic locking means therefor.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects and features of the invention are discussed in greater detail hereafter, in association with the drawings, in which:

FIG. 1 is a perspective view of the bunk/chesterfield with the upper bunk portion thereof in its raised position;

FIG. 2 is a view similar to FIG. 1 showing the upper bunk portion in its lowered position;

FIG. 3 is a partial perspective view looking up at the underside of the upper bunk portion, and showing a preferred embodiment of the operating mechanism therefor;

FIG. 4 is another partial perspective view showing an alternative embodiment for the operating mechanism; and

FIG. 5 is yet another partial perspective view showing another alternative embodiment for the operating mechanism.

Like reference numerals are used throughout the discussion of the various Figures of the drawings to denote the same integer variously illustrated therein.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The basic principle of the bunk/chesterfield of this invention is that the mechanism which holds the upper bunk portion in its raised position is spring-urged to do so; and that the

spring force must be overcome, and the holding mechanism moved thereagainst, in order to lower the upper bunk portion; and that when the upper bunk portion is lifted to its raised position, the holding mechanism is again spring-urged into operative position without further manipulation by the operator.

The bunk/chesterfield 10 basically comprises an upper bunk portion 12 and a lower bunk portion 14. The embodiment illustrated in FIGS. 1 and 2 is a simple one which may be particularly useful at such as a cottage, and has shelves or other storage space 13 at each end. The sizes of the upper and lower bunk portions may be identical or not, as required; for example, the upper portion may be narrower than the lower so that the bunk may provide sleeping accommodation for three persons, with two in the lower bunk.

In any event, it will be seen that the upper bunk portion has a mattress 16 which may have a spring arrangement with it, and a supporting frame 18. The frame 18 is held from beneath in one of several manners discussed hereafter, but it is adapted to swing about a pivot point 20 near the rear end of each of its sides. The mattress 16 is conveniently held to the frame 18 so that, when the upper portion 12 is in its lowered position, the mattress 16 provides an upholstered back for the chesterfield.

The height of pivot points 20 above the mattress 22 of lower portion 14 is usually chosen so that the frame 18, when swung downwardly, comes to rest by interference with mattress 22 in a position having an angle greater than perpendicular to the mattress 22. Of course, stop means other than the interference of the frame 18 with the lower portion 14 may be provided to hold the frame 18, and therefore upper portion 12, in any particular orientation when in its lowered position.

It will also be noted that the pivot points 20 are conveniently fixed with respect to the lower portion 12 by their incorporation into the side of the shelving 13 which, in this case, is integral with head and/or foot boards 23 of the lower portion 14. However, in any installation it is necessary only that the pivot points 20 are fixed relative to the lower portion 14 regardless of the specific structure employed. The pivots themselves may conveniently be bolts that are journaled into the supporting structure and having sleeve bearings through frame 18, or any other suitable pivot means may be used.

Turning now to FIG. 3, there is illustrated the detail of a preferred embodiment of the supporting mechanism for the upper portion 12, which structure is also shown in FIG. 1. In this embodiment, there are two wings 26, each of which is hinged at its rear edge 28 with hinges 30. The hinges 30 are chosen and mounted such that they are spring-urged into the open position so that the wings 26 are in the forward position shown in solid lines in FIG. 3, and in FIG. 1. The forward position to which the wings 26 are urged by spring-hinges 30 is, of course, the supporting position for the upper bunk portion 12. The dimensions of the wings 26 are chosen so that, when in the forward position, they provide ample support for the frame 18 of the upper bunk portion 12.

To lower the upper bunk portion 12, it is necessary to force the wings 26 into the back position shown in dotted lines in FIG. 3, where they are no longer in supporting relationship to the underside of the upper bunk portion. To accomplish this, there is provided a rope and pulley system which also provides a simple means of lowering the upper bunk portion 12.

One end of each of a pair of ropes 31 or other such flexible means such as wire or cable of sufficient tensile strength, is fixedly attached near the outer edge of the wings 26 at 32. A pair of pulleys 34 is placed at the rear of the underside of the upper bunk portion 12 in positions to be clear of the outer ends of the wings 26 when in their back position; and a further pair of pulleys 36 is placed near the front edge of the underside of the upper bunk portion 12. In the embodiment illustrated, there is also shown a pair of eyes 38 through which the ropes 31 extend before terminating at handle 40. The eyes 38 could be omitted, or replaced by another pair of pulleys.

In any event, it becomes clear that to lower the upper bunk portion 12 it is necessary to grasp the handle 40 and pull out-

wards, away from the bunk portion, as indicated by arrow 37. Obviously, the wings 26 will be pulled to their back position, as shown in dotted lines in FIG. 3, and as indicated by the arrows 39, against the spring force of the hinges 30. When the wings have been swung back far enough that they no longer fully support the weight of the upper bunk portion 12, it will begin to swing downwards, pivoting about the pivot points 20 at each side. As the upper bunk portion 12 begins to swing downwards, its weight may be taken by the operator by keeping grasp of the handle 40 in its extended position as shown in FIG. 3, and the upper portion may be gently lowered.

Thus, it is seen that means have been provided to lower the upper bunk portion 12 of the bunk/chesterfield 10, which means overcomes spring means urging support means for the upper portion to its operative (i.e. supporting) position, and which means permits the gentle lowering of the upper bunk portion without the necessity for complicated and expensive machinery.

To place the upper bunk portion 12 in its raised position, it is merely necessary to grasp the underside of the front of frame 18, or the edges near the front thereof, and to lift the bunk portion so that it pivots up around pivot points 20. When the upper bunk portion is raised high enough, the wings 26 will swing forward to their supporting position due to the urging forward of the spring-hinges 30. As the wings swing forward, the ropes 31 will resume their operative positions, and the upper bunk portion 12 will be ready to again be lowered when required while meantime functioning as a bunk for sleeping accommodation.

FIG. 4 shows another embodiment for the supporting means for the upper bunk portion 12. In this embodiment, there is provided only a single wing 26a which is urged forwards in the same manner as the wings 26 shown in FIG. 3. A rope 31a is fed around pulley 34a and through eye 38a to handle 40a. A pull on handle 40a will urge the wing 26a backwards in the same manner as discussed above. The embodiment illustrated in FIG. 4 is not as satisfactory as the others shown, because the support for the upper bunk portion 12 is only in one place rather than at both ends. However, the principle of operation remains the same.

In FIG. 5, there is illustrated a further alternative for the support means for upper bunk portion 12. For this embodiment, it is necessary that wall means 42, or other suitable means, be provided near the front edge of each side of the upper bunk portion 12 so as to accommodate pin means protruding thereinto as discussed hereafter. Such means as will 42 can be, for instance, a vertical extension of the foot and head boards 23 of the lower bunk portion 14 of the bunk/chesterfield.

In any event, a pin 44 extends through each side of frame 18 into suitable receiving means in wall support means 42; and the pins 44 are attached at their inner ends 46 to ropes 31b

which feed past pulleys 36b to handle 40b. The pins are supported beneath the upper bunk portion 12 by such means as sleeve bearings 48, and the pins 44 are urged outwardly through the sides of frame 18 into the support means 42 by springs 50 which may conveniently be compressed between the outer edges of bearings 48 and retaining means such as washers 52 which are fixed to the pins 44. A pull outwards, away from the upper bunk portion 12, on handle 40b will withdraw the pins 44 from their receiving means in support 42 against the outward urging of springs 50, and the upper bunk portion 12 may be lowered by pivoting about pivot points 20 as discussed above. The upper bunk portion 12 is also raised as discussed above until the pins 44 move, due to the urging of springs 50, into their receiving means in supports 42, whereby the upper bunk portion is again securely in its raised position.

There has been disclosed a convertible bunk/chesterfield furniture piece which has simple means for supporting the upper bunk portion in its raised position, and for lowering the same, and in which there is no complicated machinery necessary to lift the upper bunk portion to its raised position and to hold the same securely in that position.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

I claim:

1. In a convertible bunk/chesterfield article of furniture having a lower bunk portion and an upper bunk portion, the improvement comprising:

moveable support means beneath said upper bunk portion, said support means being spring-urged into supporting relationship beneath said upper bunk portion;

pivot means at each side of said upper bunk portion in fixed spatial relationship to said lower bunk portion, said upper bunk portion being adapted to swing about said pivot means;

and rope means having handle means associated therewith, said rope means being adapted to overcome the spring force of said spring-urged support means and to move said support means away from supporting relationship beneath said upper bunk portion when a pull of sufficient force is made on said handle means.

2. The improved bunk/chesterfield of claim 1 when said moveable support means comprises at least one wing hingedly mounted beneath said upper bunk portion, and being urged forward by spring-hinges mounting the same.

3. The improved bunk/chesterfield of claim 2 when said moveable support means comprises two wings hingedly mounted beneath said upper bunk portion, one near each side thereof.

4. The improved bunk/chesterfield of claim 1 when said moveable support means comprises pin means spring urged to extend from beneath the upper bunk portion to beyond the sides thereof into fixed receiving means therefor.

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