W. O. LATHROP.

FOLDABLE BUNK.

APPLICATION FILED JAN. 18, 1916.

1,235,336.

Patented July 31, 1917.



FIG. 6.



FIG. 7.

FIG. 1.

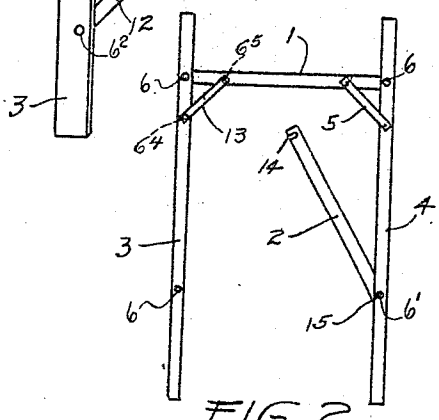


FIG. 2.

FIG. 9

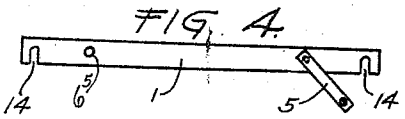


FIG. 4.

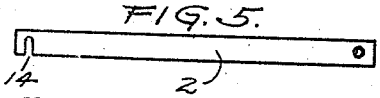


FIG. 5.

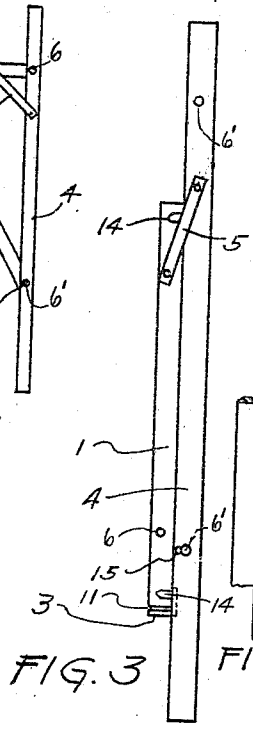


FIG. 3

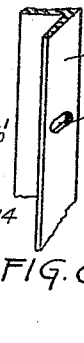


FIG. 8.

WITNESSES

Berl B. Rigdon

INVENTOR

Willard O. Lathrop,

By John Elias Jones,

ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLARD O. LATHROP, OF CINCINNATI, OHIO.

FOLDABLE BUNK.

1,235,336. Specification of Letters Patent. Patented July 31, 1917.

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To all whom it may concern:

Be it known that I, WILLARD O. LATHROP, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Foldable Bunks, of which the following is a specification.

This invention relates to folding or collapsible bunks especially adapted for use in cars or other limited quarters where economy of space is to be considered and to allow for more convenient passage to and fro when the bunks are not in use.

The object of the present invention is to provide a bunk of said character with upright legs or posts that are pivotally-connected together by means of longtiudinal and transverse bars in two or more vertical tiers and with angulated corner braces and hook or lock bars whereby the device, when in readily folded or collapsed condition, may be firmly and safely held and maintained so, and readily arranged in open position for use and, also, firmly supported.

The details of structure, which are simple, inexpensive and very efficient, will be fully hereinafter described and particularly pointed out in the claim.

In the accompanying sheet of drawings, Figure 1 is a perspective view showing the bunk in its open or using position, and with its four longitudinal-bars as well as its four vertical supporting-posts, broken away mid-length; Fig. 2, an end elevation, taken on a smaller scale than Fig. 1, and with its lower transverse bar or rail pivotally-raised from its normal horizontal-position; Fig. 3, a detail elevation of one of the rear corner-posts showing the manner in which the device is folded, the upper transverse bar or rail and the outer companion-post being shown folded in contact with the inner or wall post at one end of the device when not in use; Fig. 4, a longitudinal elevation of the upper transverse bar or rail, seen in Figs. 1, 2 and 3, together with the pivotal-brace that is used at its inner end for connection with the adjacent inner post; Fig. 5, an elevation of the lower transverse bar or rail, seen to the right in Fig. 1 and, also, in tilted-position in Fig. 2; Fig. 6, a detail perspective view of one of the shouldered rivets used in the structure for pivotal and hook connections; Fig. 7, a detail perspective view showing a plain form of rivet used in the structure in connecting the fixed braces; Fig. 8, a fragmentary perspective of the inner post, seen to the right in Fig. 1, but intended mostly to show the horizontal slot for the proper folding-play of the pivot that connects the inner end of the adjacent lower side-rail to the said inner post; and Fig. 9, a rear view of the open bunk shown in Fig. 1, but on a smaller scale.

1 indicates each one of a pair of parallel transverse-bars forming the upper side-rails of the bunk, and 2 each one of a pair of parallel transverse-bars forming the lower side-rails of the bunk, such bunk, as in Fig. 1, being of a double or two tier type.

3 indicates each one of a pair of outer posts detachably connected by means of shouldered rivets 6 to the outer ends of the said upper and lower side-rails 1 and 2, said side-rails 1 and 2 each having downwardly-open end-notches 14 therein, as shown in Figs. 4 and 5.

4 indicates each one of a pair of inner posts, each pivotally-connected by means of shouldered-rivets 6^1 to the inner ends of said side-rails 1 and 2. 5 indicates each one of a pair of bracing-links pivotally extended between the upper side-rails 1 and the inner or rear posts 4.

8 indicates each one of a pair of upper parallel longitudinal-rails firmly secured at its opposite ends to the opposite ends of the transverse side-rails 1 to form an upper, rectangular bed-frame or tier of the bunk; and 9 indicates each one of a pair of lower parallel longitudinal-rails corresponding to the upper rails 8 and firmly connected at their opposite ends by means of rivets 7 to the opposite ends of the lower transverse side-rails 2, to form a lower rectangular bed-frame or tier of the bunk.

It is preferred to make the said posts and said transverse and longitudinal rails of angle-iron or the like, for both lightness and strength, as well as rigidity, and flat obliquely-arranged horizontal bars 10 are used at each of the eight corner-connections of said transverse and longitudinal rails for the purpose of properly strengthening and bracing the corners and to make up a more composite structure.

11 indicates each one of the slanting, piv-

oted bracing-links used in the opposite corners formed by the outer longitudinal-bar 8 and the outer posts 3; and 12 indicates each one of a pair of pivotal-hooks mounted on the shouldered rivets 6^2 near the lower ends of the said outer posts 3 and adapted for detachable-engagement with the shouldered rivets or studs 6^3 at their upper notched ends. The hooks 12 also form slanting braces between the longitudinal-rail 9 and the outer posts 3 when the device is in open or using position, as best seen in Fig. 1, and they are adapted to be turned or folded back beneath the inner face of the angle-iron comprising the said posts 3 when the bunk is folded and not in use. 12^1 indicates each one of four hook-bars pivotally-connected to the rear posts 4 and adapted to detachably-engage studs 6^5 on the rear rails 8 and 9, as best seen in Fig. 9.

13 indicates each one of a pair of slanting brace and hook bars extending from rivets or studs 6^4 in the outer posts 3, located near the upper ends of the latter, and with their upper notched ends in engagement with studs 6^5 on the side-rails 1 when the bunk is in use. The hook-bars 13 are adapted to be folded or turned back beneath the inner face of the angle-iron of the outer posts 3 when the device is folded and not in use.

Suitable spring bed-bottoms and accompanying bedding is adapted to be supported on the rectangular-frames formed by the longitudinal-rails and the transverse side-rails when the device is extended in assembled or unfolded position for bunk or reclining use. The said spring-bed-bottoms and bedding are not shown, as it would only obscure the details of Fig. 1 if they were. It will be readily understood, however, that such bed-bottoms and bedding are to be applied.

It is obvious that more than two tiers can be utilized in my structure by simply extending the posts 3 and 4 upwardly and adding longitudinal-rails similar to those 8 and transverse side-rails similar to those 1, together with the corner-braces and hooks.

In Fig. 1 I have shown how the device is assembled and extended, as it appears in use but without the bed-bottoms and bedding and I will now proceed to state how the device is collapsed when it is desired to fold it up against the wall, or elsewhere when it is not to be used.

The upper end-hooks 13 are first disengaged from the upper side-rails 1 and folded back beneath the outer posts 3; the disengagement of the lower front-hooks 12 from the lower longitudinal-rails 9 then follows, such hooks 12 also folding back beneath the said outer posts 3; the outer notched-ends of the lower side-rails 2 are then released from engagement with said outer posts 3 (as shown in Fig. 2) so that the lower tier or bed-frame can be folded back against the wall out of endwise-sight, in the space between the opposite rear-posts 4; the opposite notched-ends of the upper side-rails 1 are then detached from hook-connection with the studs 6^1 at the upper ends of both sets of posts 3 and 4 respectively so that the outer posts 3 can then be swung toward each other along the upper, outer longitudinal-rail 8, the pivotally-connected braces 11 duly permitting same; then the upper tier or bed-frame can be swung or dropped on its pivotal end-braces 5 to the position seen in Fig. 3, and thus finally lying in perpendicular contact with the rear-posts 4, where the bunk is well out of the way when not in use.

The horizontal slots 15 in the lower ends of the inner or rear-posts 4 compensate for the pivotal forward-movement at the rear-corners of the lower bed-frame when the latter is raised or swung upwardly toward the wall for folding purposes or vice versa.

It is preferred to attach the rear-posts 4 to the wall by means of nails or screws whose shanks pass through holes 16, a series of the latter being shown in the rear-posts 4, to the left, in Fig. 1.

It is obvious that this device is not necessarily one that must be folded and attached to a wall or other support, for it can be used as a double or multiple deck bunk in places where it would not be necessary or advisable to fold it. The foldable feature is useful otherwise in the knockdown sense for storage and shipping purposes, and, also, adapts the structure to be attached to a wall or other support or not, for foldable position and permanently open, using position, respectively, as desired.

I claim:—

A foldable or collapsible bunk of a plurality of tiers, comprising vertical rear corner-posts having upper and lower studs, horizontal slots pierced in the lower ends of said posts for the compensating-engagement of said lower studs, a lower rectangular bed-frame having notches at its fore-corners and pivotal-connection with said lower studs and slots at its rear-corners, an upper rectangular bed-frame having notches at its rear-corners adapted to detachably-engage said upper studs in the said rear-posts, vertical outer-posts having studs near their opposite ends with which the notches in the fore-ends of the upper and lower side-rails are adapted to detachably-engage, pivotal bracing-links connecting the rear-corners of the upper bed-frame with the rear-posts, pivotal bracing-links connecting the fore-corners of said upper bed-frame with the outer-posts, hooks adapted to de-

tachably-secure the said fore-corners of the upper bed-frame to the outer-posts, and hooks adapted to detachably-secure the fore-corners of the lower bed-frame to the outer-posts, all parts of the structure being adapted to be assembled and held in open-position for use and disconnected and folded or collapsed when out of use, substantially as herein shown and described.

WILLARD O. LATHROP.

Witnesses:
E. M. ENDER,
H. W. WINNES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."