No. 666,566. Patented Jan. 22, 1901.

W. C. SHERMAN.

COLLAPSIBLE LADDER FOR BERTHS.

(No Model.) (Application filed May 9, 1900.)

2 Sheets—Sheet 1.

Fig. 1.

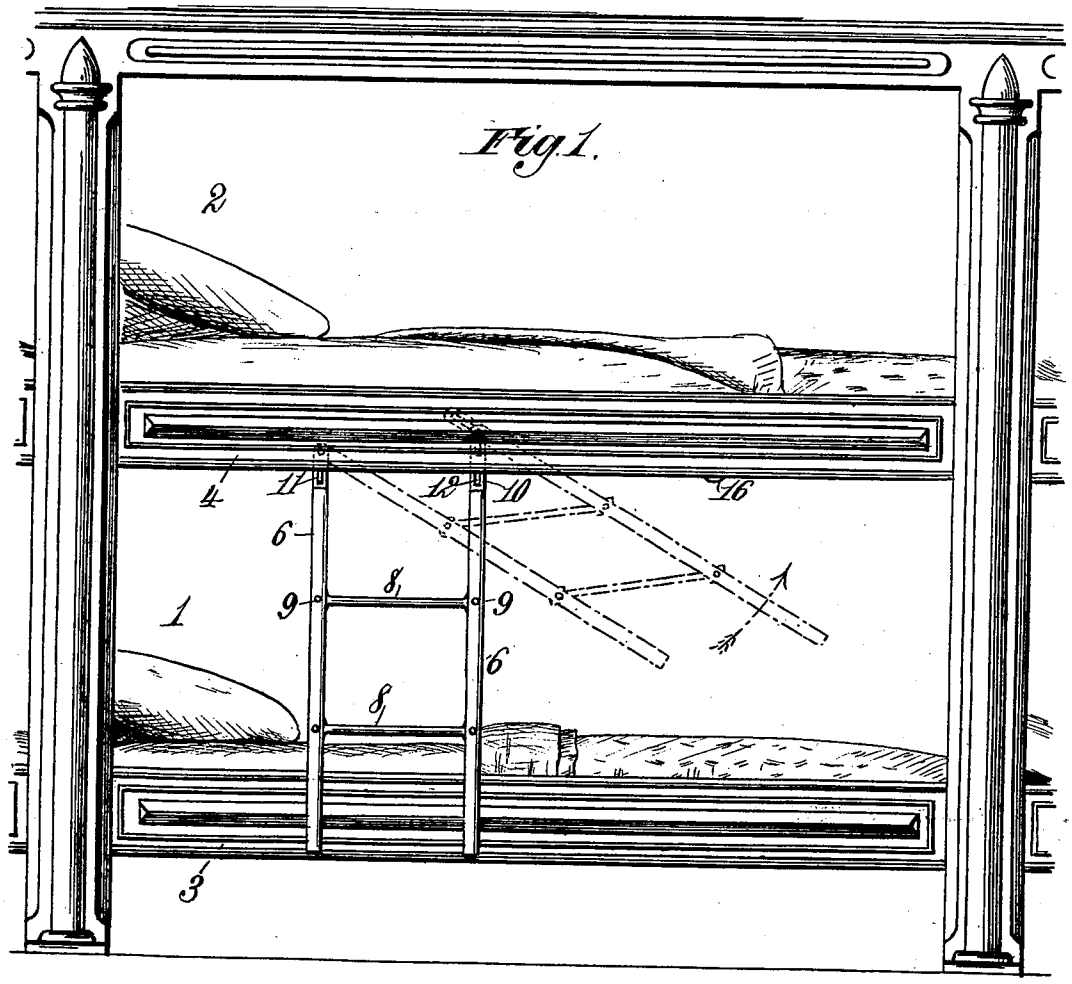
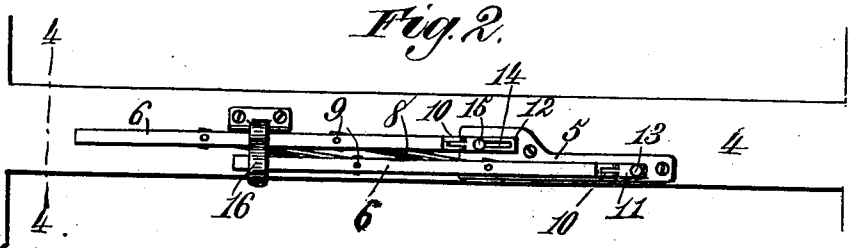


Fig. 2.



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Fig. 3.

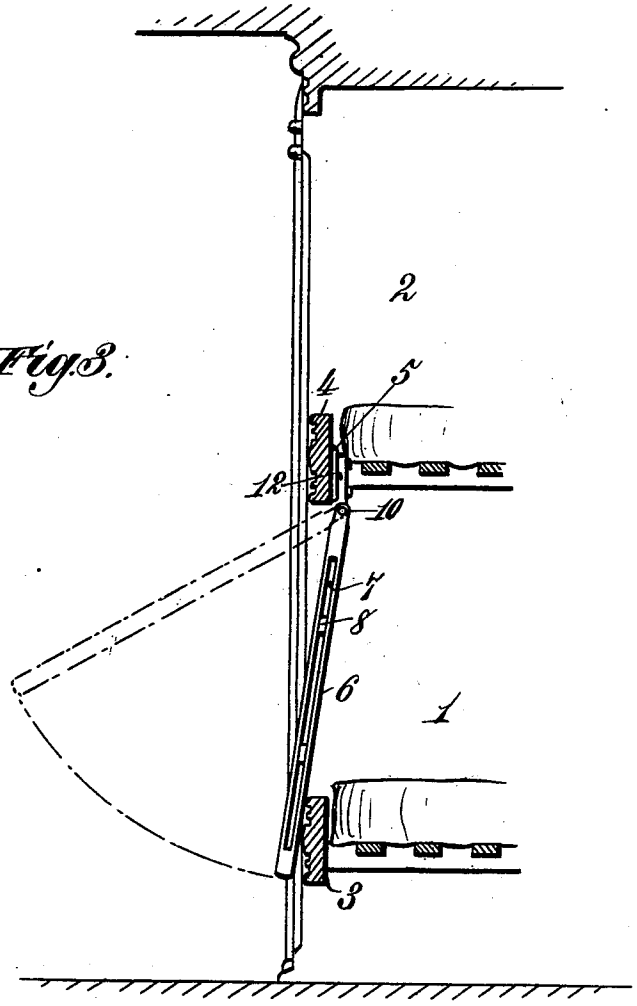
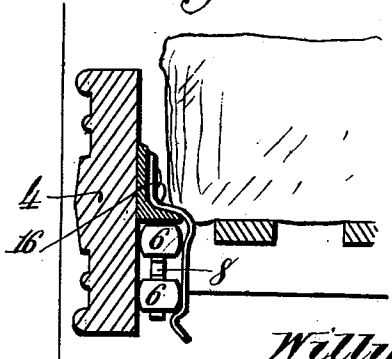


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM C. SHERMAN, OF ORLANDO, FLORIDA.

COLLAPSIBLE LADDER FOR BERTHS.

SPECIFICATION forming part of Letters Patent No. 666,566, dated January 22, 1901.

Application filed May 9, 1900. Serial No. 16,071. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. SHERMAN, a citizen of the United States, residing at Orlando, in the county of Orange and State of Florida, have invented new and useful Improvements in Collapsible Ladders for Berths, of which the following is a specification.

This invention relates to collapsible ladders for berths, and has for its object to provide a collapsible ladder attached to the upper berth of a sleeping-car or vessel in such manner that when not in use the ladder may be folded up within a compact space against the inner side of the outer rail of the berth and be held in place thereagainst and when needed may be readily released and unfolded in position to afford ready and convenient access to and from the berth.

To these ends my invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a view in front elevation of a berth-section, showing my improved ladder applied thereto. Fig. 2 is a detail view in elevation of the ladder folded up. Fig. 3 is a transverse sectional view illustrating the ladder folded down into operative position, and Fig. 4 is a transverse sectional view taken on the line 4 4 of Fig. 2.

Referring to the drawings, the numeral 1 indicates the lower berth of a section of a car or vessel, and 2 the upper berth thereof, the numerals 3 and 4 indicating, respectively, the usual outer rails of said berths. Screwed or otherwise suitably fastened to the inner side of the outer rail 4 of the upper berth is a plate 5, to which are pivotally attached the upper ends of the legs or side bars 6 of the ladder in the manner hereinafter particularly described. The legs or side bars 6 of the ladder each consists of a longitudinally-slotted strip or bar, the slot being indicated by the numeral 7, and in the slotted portions of said strips or side bars are pivoted the ends of the rungs or rounds 8 by pivot-pins or rivets 9. The two legs or side bars are adapted to be folded up into parallelism in manner similar to a parallel ruler, and in order to permit said legs or side bars to be folded into close juxtaposition, and consequently into a very compact space, I hinge or pivot the same to the plate 5 in the following manner: To the upper ends of said legs or side bars are connected, by rule-joints 10, links 11 and 12, the link 11 being pivoted to the plate 5 by a pin or rivet 13, and the link 12 being longitudinally slotted, as at 14, and movably secured to the plate 5 by a pin or rivet 15, which is fixed in the plate 5 at a point slightly higher than or above the horizontal plane of the pivot-pin 13 for the purpose hereinafter explained.

The lower end of the ladder when unfolded and in position for use rests against the rail 3 of the lower berth, or, if preferred, the lower end of the ladder may rest upon the floor. When not in use, the ladder is collapsed and folded up in the following manner: The attendant grasps the leg or side bar of the ladder, (shown on the right hand in Fig. 1 of the drawings,) to which the link 12 is jointed, and slightly raises it, the slotted link 12 permitting of such movement, and at the same time moves the ladder bodily to one side, as shown in Fig. 1, the links 11 and 12 turning about the pins or pivots 13 and 15. As the ladder is swung upward and to one side the legs or side bars 6 approach each other and when completely collapsed and folded up lie in parallelism, as shown in Fig. 2, the rungs or rounds 8 folding over upon one another, as shown. As the ladder is folded up against the inner side of the rail 4, as described, the legs are grasped by a spring-clasp 16, attached to the inner side of said rail, and the ladder is held up in its folded position, when it will be concealed from view and be stored out of the way. To place the ladder in operative position, it is merely necessary to disengage the legs 6 from the spring-clasp 16, when the ladder will drop by gravity into place, as shown. When in this position, the occupant of the lower berth may readily get in and out by merely pushing the ladder outward, as the same freely swings about the joints 10.

By movably connecting the link 12 to the plate 5 in the manner shown the ladder may be folded up into a very compact space and may be entirely concealed from view behind the rail 4 of the berth, and it will be obvious

that if such means were not provided, but instead both links were pivoted to the plate 5 in the manner the link 11 is pivoted thereto, it would not be possible to fold the legs 6 into parallelism behind the rail.

When constructed as shown, the ladder is extremely light, strong, and inexpensive, may readily be placed in operative position, and when not in use may be folded up into compact form and concealed from view without occupying space useful for any other purpose. The ladder may also be quickly applied to berths already constructed without the necessity of employing skilled labor and without altering the berth in any manner.

Having described my invention, what I claim is—

1. In a collapsible ladder for berths, the combination with a plate constructed to be rigidly attached to the inner side of the side rail of the berth, of legs pivotally attached at their upper ends to said plate and arranged to swing at a right angle to the plate toward and from the berth and to collapse and fold up behind the berth-rail parallel to said plate, and rungs or rounds pivoted at their opposite ends to said legs, substantially as described.

2. In a collapsible ladder for berths, the combination with the legs and the rungs or rounds pivoted at their opposite ends to the legs, of links hinged to the upper ends of the legs of the ladder, and means for pivotally attaching the ends of said links to the berth-rail, substantially as described.

3. In a collapsible ladder for berths, the combination with the legs and the rungs or rounds pivoted at their opposite ends to the legs, of links hinged to the upper ends of the legs of the ladder, one of said links being longitudinally slotted and the other provided with a perforation, and pivot-pins passing through said slot and perforation in the links and serving to pivotally attach said links to the berth-rail, substantially as described.

4. In a collapsible ladder for berths, the combination with the legs and the rungs or rounds pivoted at their opposite ends to the legs, of links hinged to the upper ends of the legs of the ladder, one of said links being longer than the other and longitudinally slotted, and the other link provided with a perforation, and pivot-pins passing through said slot and perforation in the links and serving to pivotally attach the links to the berth-rail, substantially as described and for the purpose specified.

5. In a collapsible ladder for berths, the combination with the legs and rungs or rounds pivoted at their opposite ends to the legs, of means for pivoting the upper ends of the legs to the berth-rail, said ladder being adapted to be collapsed and folded up against the side of the berth-rail, and a spring-clasp provided with means for attachment to the berth-rail and operating to automatically clasp the legs of the ladder when the latter is collapsed and folded up and hold the ladder in place against the berth-rail, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM C. SHERMAN.

Witnesses:
S. Y. WAY,
MAHLON GORE.