

C. MONSON.  
FOLDING STAIRCASE AND LADDER.

No. 34,314.

Patented Feb. 4, 1862.

Fig. 2.

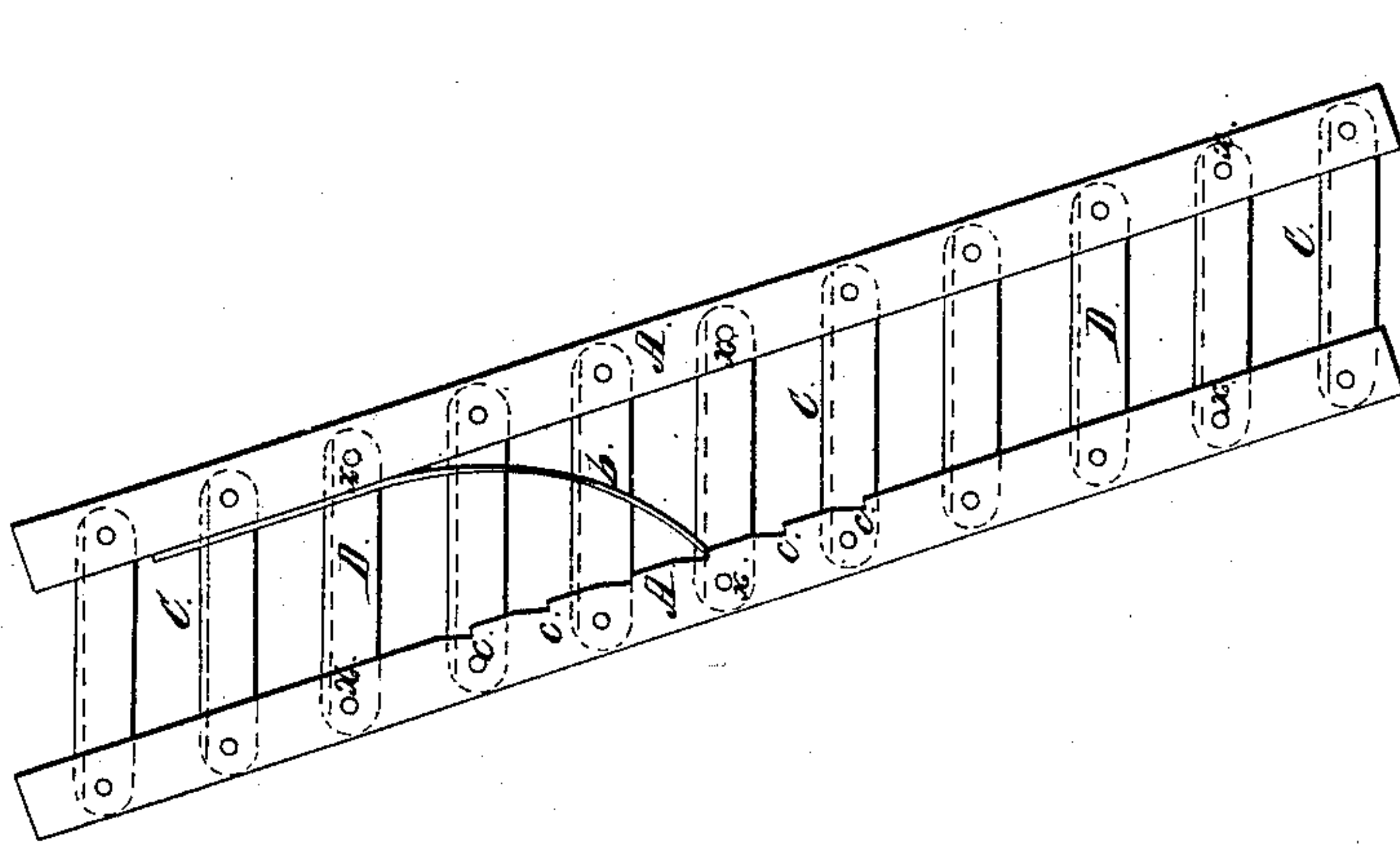


Fig. 3.

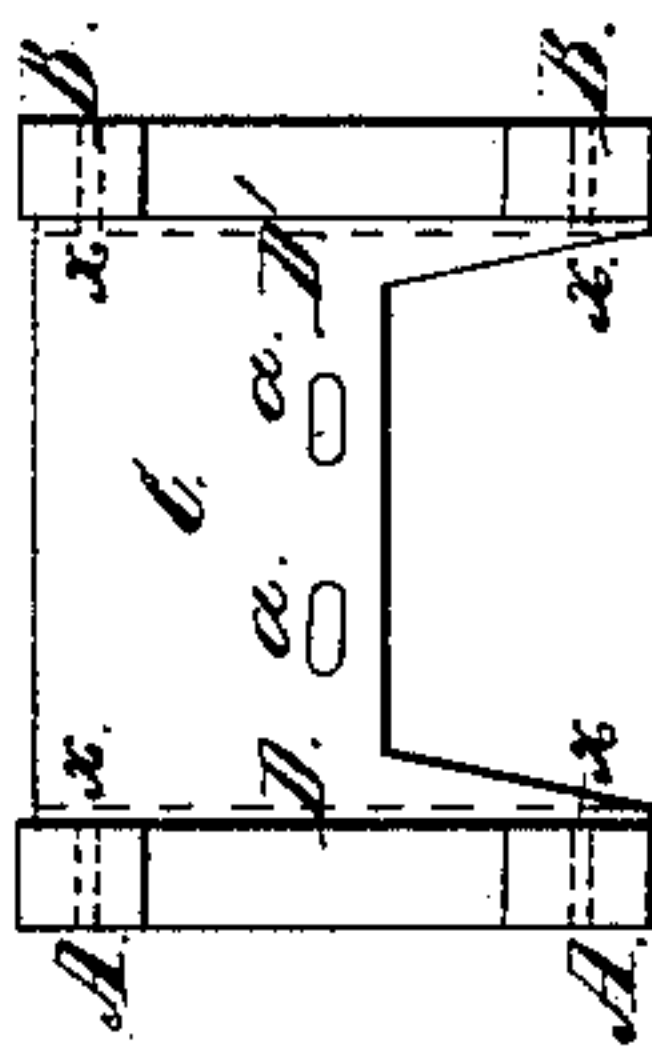
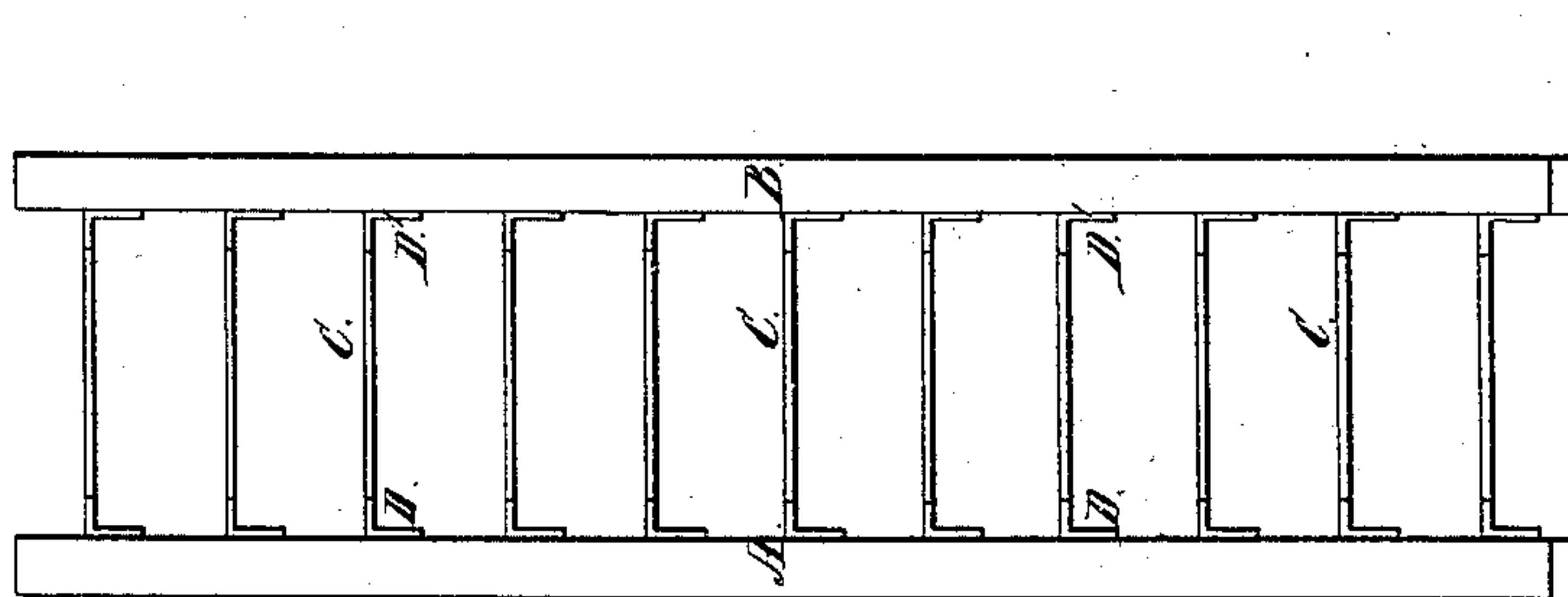


Fig. 1.



Witnesses:  
A. S. Monson  
W. M. Whitney

Inventor:  
Charles Monson

# UNITED STATES PATENT OFFICE.

CHARLES MONSON, OF NEW HAVEN, CONNECTICUT.

## IMPROVED FOLDING STAIRCASE AND LADDER.

Specification forming part of Letters Patent No. 34,314, dated February 4, 1862.

*To all whom it may concern:*

Be it known that I, CHARLES MONSON, a citizen of the United States of America, and a resident of the city and county of New Haven, of the State of Connecticut, have invented an Improved Ship-Ladder or Folding Staircase; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, Fig. 2 a side elevation, and Fig. 3 a transverse section, of it.

The nature of my invention consists in a combination of parallel rails or bars and a series of stair-plates arranged and connected substantially in manner and so as to operate as described; and my said invention further consists in a combination of a series of hand-holes with the said stair-plates and their rails or connecting-bars, and under an arrangement and for a purpose substantially as hereinafter described.

My invention further consists in the combination of one or more spring-catches and a series of notches or mechanical equivalents therefor, with the system or combination of parallel bars and stair-plates, and in a manner so as to operate substantially as and for a purpose, as hereinafter explained.

The said portable staircase or ladder may be used at the side of a ship or vessel either while at a wharf or pier or while having a boat alongside. It will also answer a good purpose when laid on a pitched or sloping roof of a building, in which case it may be used to enable a person to ascend such roof. There are also various other uses to which it may be devoted advantageously.

In the drawings, A A and B B are two sets of bars or rails arranged parallel to one another, and so that each two rails of either set shall at the same time be parallel.

Between the four rails, arranged as exhibited in the drawings, is a series of stair-plates C C C, each of which at its two ends is connected with or joined to two bars or arms D D'. There are two series of the said arms or bars, those of each set being arranged parallel to each other and jointed to two of the bars (by joint-pins  $x x x$ ) in the same manner

as are the joint-bars of a draftsman's parallel ruler composed of two rulers and two connection-bars.

Each stair at or near its front edge I provide with two or any other suitable number of hand-openings  $a a$ , which I arrange in the stair, as shown in Fig. 3. Their purpose is to enable a person to seize a firm hold on one or more of the stair-plates while he may be in the act of ascending the stairway, and particularly when the latter may be elevated into or nearly into a vertical position.

If desirable, a spring-catch  $b$  may be fastened to the inner edge of one of the bars A A or B B of each set, and so as to extend over to the other or adjacent edge of the other bar and operate in connection with a series of notches  $c c c$  made therein, as shown in Figs. 1 and 2. These catches will serve to maintain the two bars of their respective sets at any suitable distance asunder (within their range of motion) from each other, and particularly while the staircase may be supported in position by the lower ends of the two front bars only being made to rest on a floor or object, the lower ends of the rear bars being supposed to be raised off such floor or object.

When the stairway is used to extend from the side or bulwark of a ship to the upper surface of a wharf or pier, the two outer bars A A B B may serve as hand-rails or guards, as well to protect a person in as to facilitate his ascent or descent of the stairway.

By means of a folding ladder or staircase made as above described, the several stair-plates of the series may be brought into horizontal positions while the bars A A B B may be at any inclination to the horizon. This renders the staircase very useful as a ship-ladder or as a means of ascending a pitched roof, or from one surface to a higher level.

Another advantage of the staircase is its being able to be contracted or folded into a small compass and thus be rendered very portable, as well as easy to be packed in a small space.

I claim—

1. The above-described ship-ladder or folding staircase or combination of stair-plates (or mechanical equivalents) and parallel bars ar-



ranged and connected, substantially in manner and so as to operate as described.

2. The combination and arrangement of a series of hand-holes with the said stair-plates, (or their equivalents,) and their parallel bars when arranged and connected, substantially in manner and so as to operate as specified.

3. The combination, of a spring-catch and series of notches or mechanical equivalents

therefor, with the stairway constructed of stair-plates, and parallel bars, arranged in manner and so as to operate substantially as set forth.

CHARLES MONSON.

Witnesses:

A. S. MONSON,

W. M. WHITNEY.