

No. 819,553.

PATENTED MAY 1, 1906.

H. D. KEITH.
FOLDING STAIR.
APPLICATION FILED NOV. 27, 1905.

FIG. 1

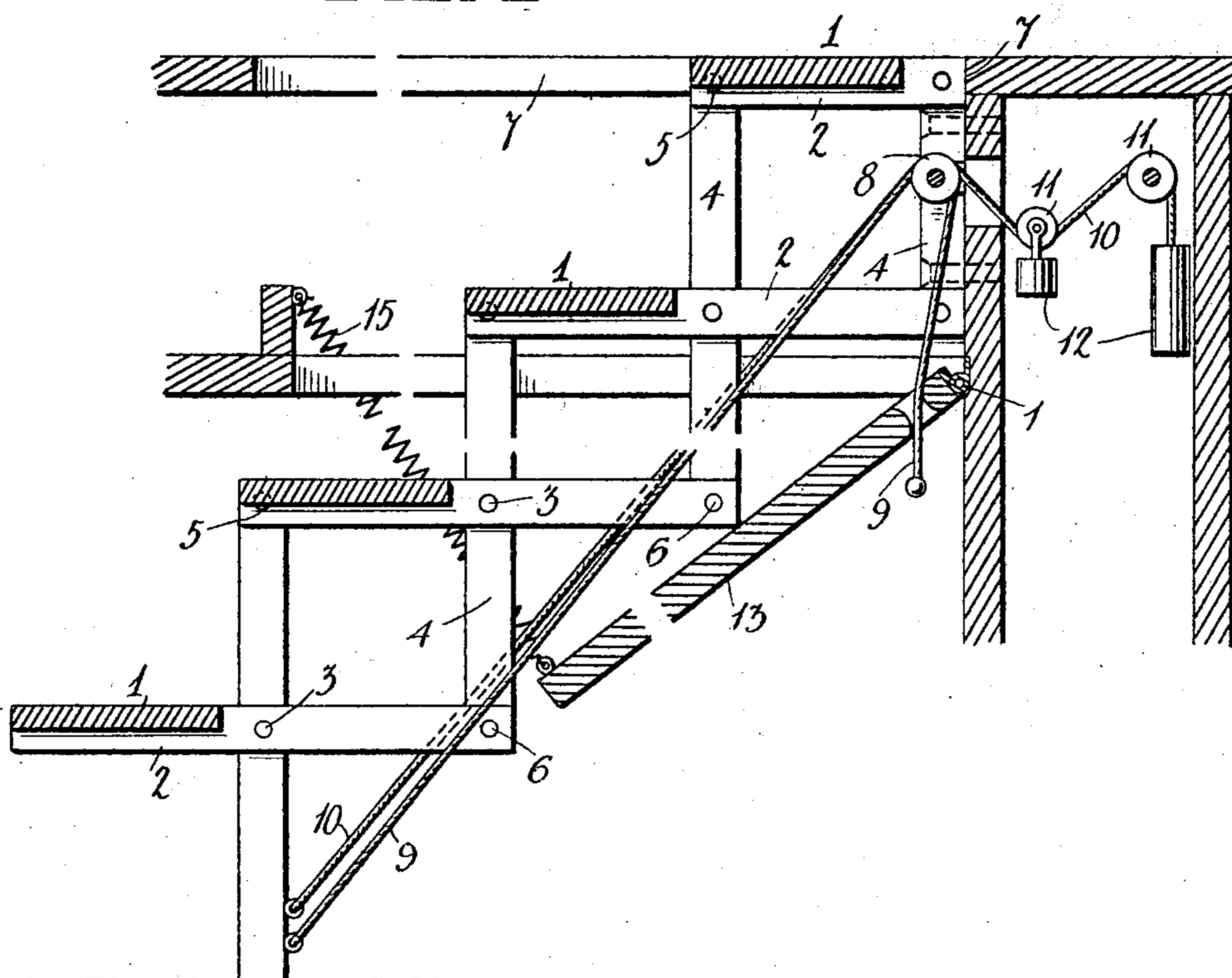
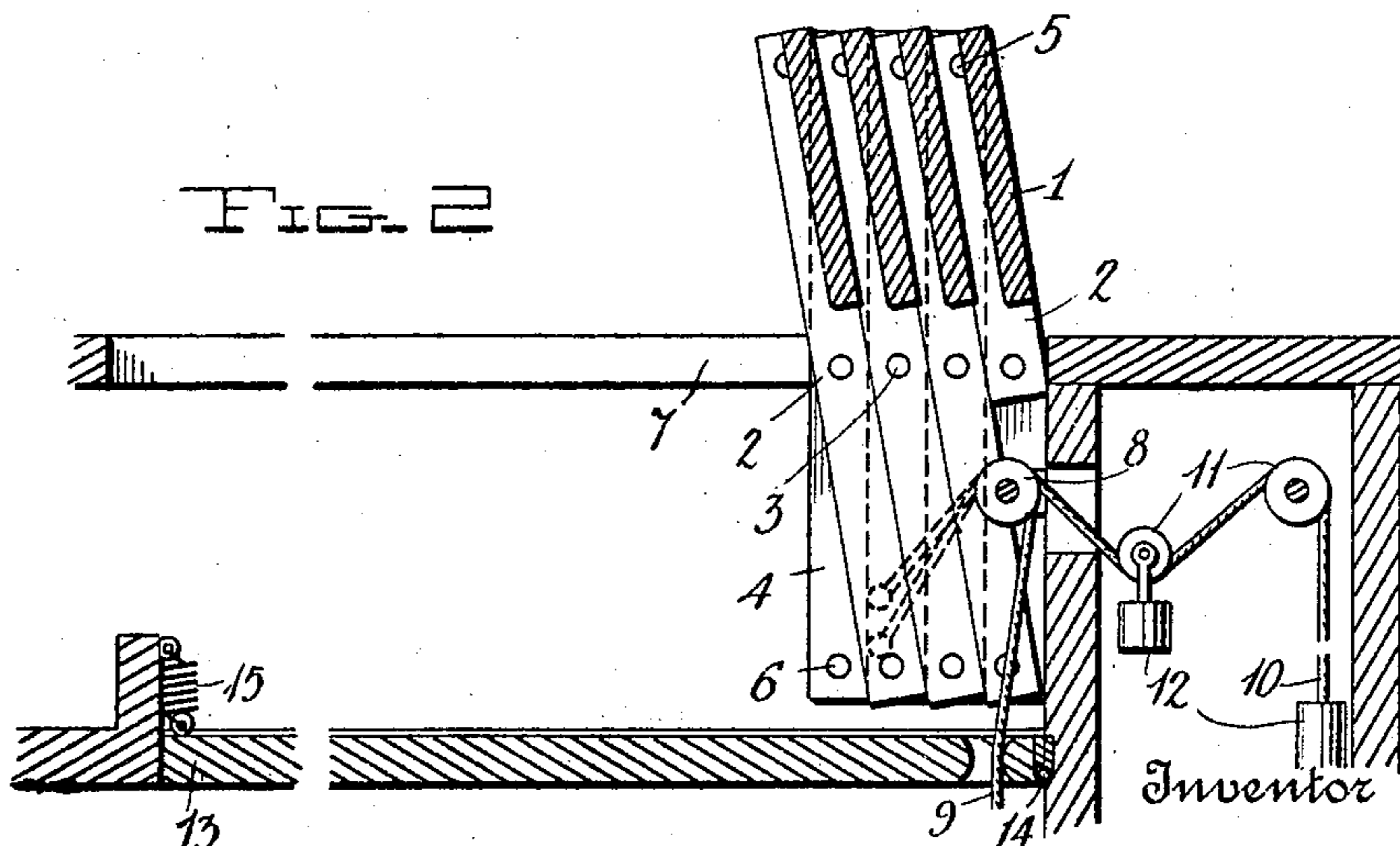


FIG. 2



Witnesses
J. H. Brown
C. H. Griesbauer.

Inventor
H. D. Keith
By *A. B. Wilson*
Attorney

UNITED STATES PATENT OFFICE.

HERBERT DANIEL KEITH, OF COUNCIL GROVE, KANSAS.

FOLDING STAIR.

No. 819,553.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed November 27, 1905. Serial No. 289,334.

To all whom it may concern:

Be it known that I, HERBERT DANIEL KEITH, a citizen of the United States, residing at Council Grove, in the county of Morris and State of Kansas, have invented certain new and useful Improvements in Folding Stairs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improved folding stair adapted to be drawn and folded up and disposed out of the way when not in use, and hence avoid obstructing the floor below; and it consists in the construction, combination, and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional view of a folding stair embodying my improvements, showing the same in lowered extended position; and Fig. 2 is a similar view showing the stair in raised folded position.

The stair-steps 1 are carried by and secured to the outer ends of bars 2, which bars are pivoted, as at 3, to bars 4, the upper ends of which are also pivotally connected to the outer ends of the bars 2, as at 5. The lower ends of the said bars are also pivotally connected to the inner ends of the bars 2, as at 6, so that said bars form lazy-tongs. The vertical bars 4 at the upper end of the stair are secured in one side of the scuttle-opening 7 in the upper floor. An elevating-pulley 8 is also secured thereto. A rope or cord 9 passes over the said pulley, and its lower end is attached to the lower stair-step, as shown. By drawing upon this cord the stair may be folded and raised so as to compactly dispose it in the scuttle-hole of the upper floor, where it is entirely out of the way. By loosening the said cord the weight of the stair will

cause the same to extend and become lowered to the floor below by its own weight, so as to be disposed in position for use. I also attach a cord 10 to the lower end of the stair and provide direction-pulleys 11 therefor in the upper floor. Weights 12 hang from the said cord 10 and coact with the pulleys 11 to partially counterbalance the stairs, so as to render it easy to raise and lower them by pulling upon the cord 9. Preferably the pulleys 11, together with the weight 12, will be disposed between the studs of an outer or partition wall, where they will be entirely out of the way and out of sight. I also provide a trap-door 13 for closing the scuttle-hole in the upper floor. This trap-door is hinged, as at 14, at one side of the scuttle-hole and is adapted to open downwardly and to close upwardly under the ceiling of the upper floor. I also employ a spring 15 to close the said trap-door automatically when the stair is raised, so as to entirely conceal the stair and the scuttle-hole.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A folding stair secured at its upper end and comprising lazy-tong bars and steps carried thereby, and a tackle to raise and lower said stair, in combination with a hinged, downwardly-opening trap-door disposed in the path of the lower portion of the stair and opened thereby when the stair is lowered, and a spring to close the said trap-door when the stair is raised and clears said trap-door, substantially as described.

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

HERBERT DANIEL KEITH.

Witnesses:

CHARLES M. LOY,
LUTHER C. KIDD.

