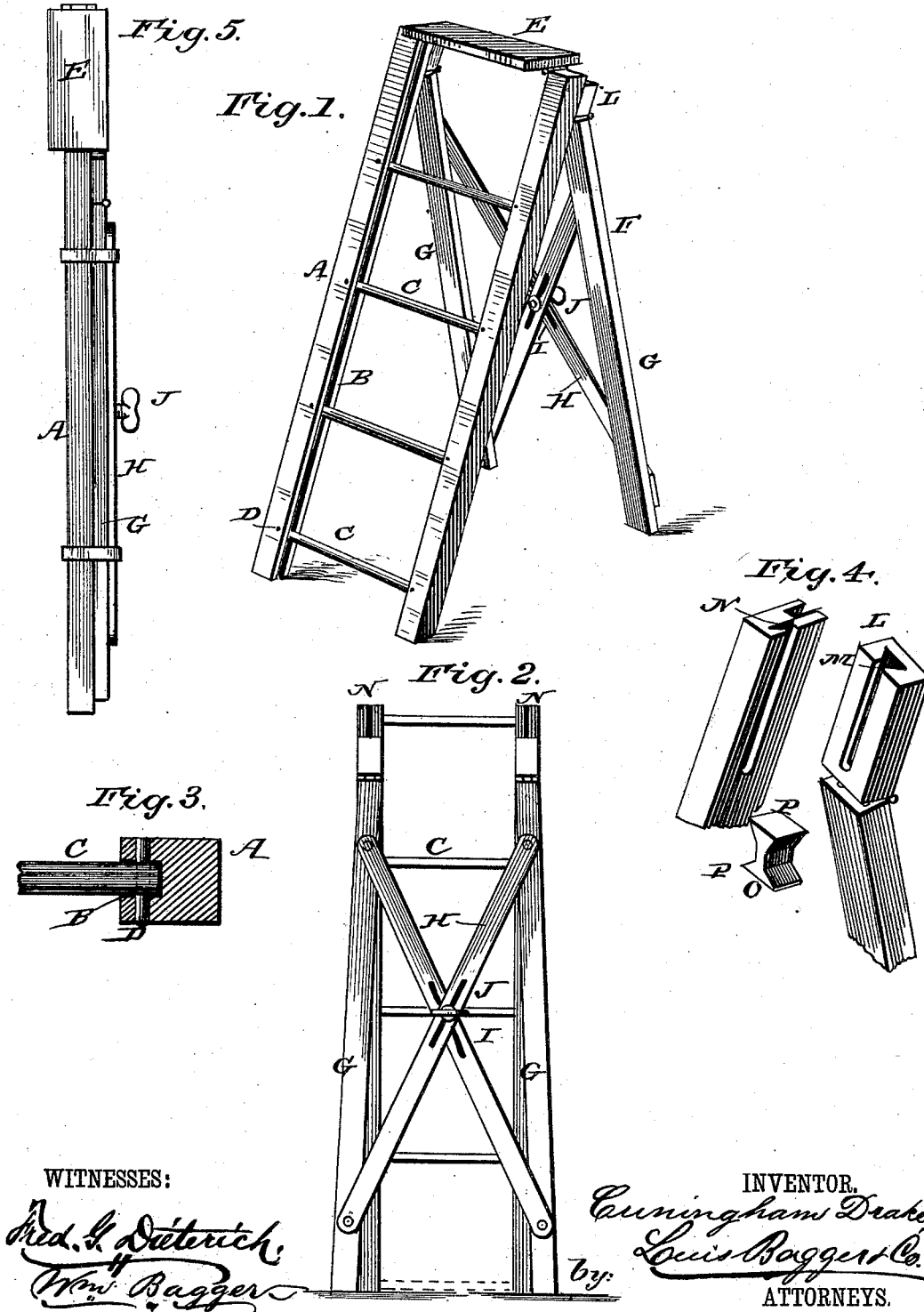


(No Model.)

C. DRAKE.
FOLDING LADDER.

No. 302,829.

Patented July 29, 1884.



UNITED STATES PATENT OFFICE.

CUNNINGHAM DRAKE, OF PHILADELPHIA, PENNSYLVANIA.

FOLDING LADDER.

SPECIFICATION forming part of Letters Patent No. 302,829, dated July 29, 1884.

Application filed May 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, CUNNINGHAM DRAKE, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Folding Ladders; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved folding ladder, showing the same extended and ready for use. Fig. 2 is a rear elevation of the same. Fig. 3 is a horizontal sectional view taken through the end of one of the rungs and showing the connection of the same to the side rail of the ladder. Fig. 4 is a detail perspective view illustrating the method of connecting the hinged supports to the side rails, and Fig. 5 is a side view showing my improved ladder folded.

The same letters refer to the same parts in all the figures.

This invention relates to step-ladders; and it has for its object to so construct the same that they may be folded into the smallest possible space.

To this end the invention consists in the improved construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, A A designate the side rails of my improved ladder, the inner sides of which are provided with grooves B extending through their entire length.

C C are the rungs, the ends of which are inserted into the grooves B and secured by means of pivoting-pins D. The upper ends of the rails A A are connected by means of a top step, E, which is hinged to the inner sides of the said side rails.

F designates the rear supporting-frame, which is composed of side pieces, G G, which are connected to the upper ends of the side rails, A, in a manner which will be presently more fully described. The said side pieces

are connected by diagonal braces H H, which latter are connected by means of a central pivot composed of a set-screw which is adapted to slide freely in a slot, I, formed in one of the braces. By means of the set-screw, which is designated by letter J, the said braces may be rigidly connected with each other. I would also state that slots I may be formed in both of the braces instead of only in one of them.

The upper ends of the side pieces, G, of the supporting-frame are hinged to the blocks L, which are provided with dovetailed grooves M, as clearly shown in Fig. 4 of the drawings. The upper ends of the side rails of the ladder are also provided with corresponding dovetailed grooves, N, and O is a key or double wedge, the heads of which, P P, are adapted to enter the dovetailed grooves M N, and thus connect the side rails of the ladder with the side pieces of the supporting-frame.

It will be seen that by this construction the step-ladder may be folded in the ordinary manner—that is, by bringing the supporting-frame against the side rails of the ladder. When it is desired to fold the ladder into the smallest possible compass it is only necessary to release the set-screw J. The side rails of the ladder may then be folded together by simply raising or lifting one of them. The rungs C will then be accommodated in the grooves B of the side rails; the top step, E, will fold upon one of the side rails, as shown in Fig. 5; one of the side pieces of the supporting-frame will slide in an upward direction, so as to bring the side pieces of the said frame together, and the diagonal braces H will fold upon each other. By tightening the set-screw J the ladder will then be securely locked in this position, as shown in Fig. 5 of the drawings.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with a folding ladder-frame, the side rails of which are provided with dovetailed grooves at their upper ends, of a supporting-frame, the side pieces of which are provided at their upper ends with hinged locks having dovetailed grooves, and a key or

double wedge connecting the said blocks with the side rails of the ladder, substantially as set forth.

2. In a folding ladder, the combination, with
5 a folding ladder-frame, of a folding supporting-frame connected adjustably to the upper ends of the side rails of the ladder, the said supporting-frame being constructed of the two side pieces connected by diagonal braces, one
10 or both of which are provided with slots, and

a set-screw connecting the same, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

CUNINGHAM DRAKE.

Witnesses:

LOUIS BAGGER,

AUGUST PETERSON.