

F. M. Papin,

Ladder.

No. 83084.

Patented Oct. 13. 1868.

Fig. 1.

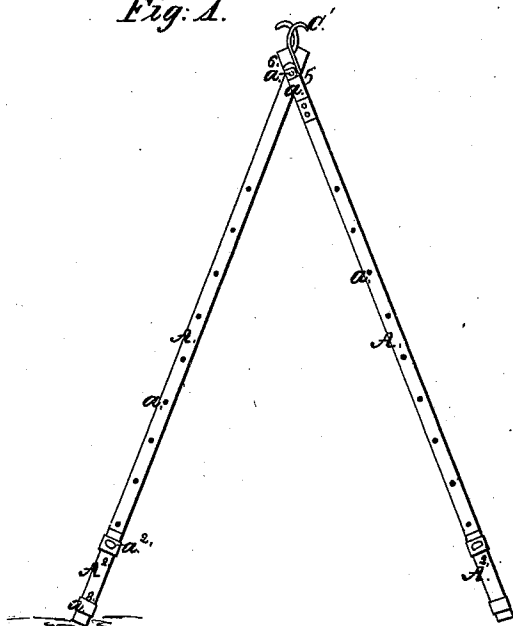


Fig. 2.

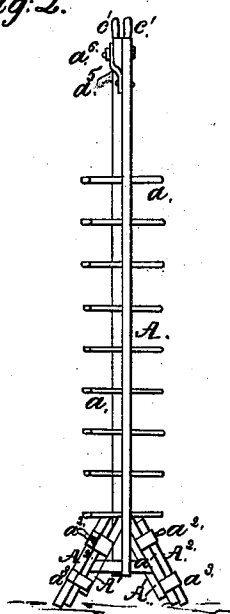


Fig. 3.

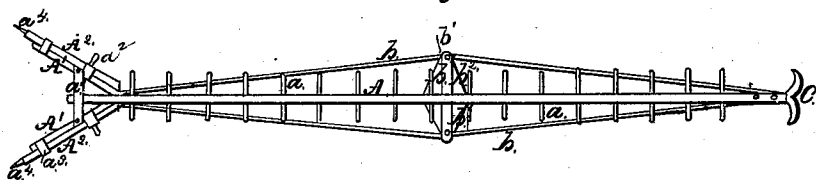


Fig. 4.



Witnesses:

Geo. A. Hortholpr.

George B. Brewster

Inventor:

F. M. Papin by his attys

M. Randolph & Co.

United States Patent Office.

P. M. PAPIN, OF ST. LOUIS, MISSOURI

Letters Patent No. 83,084, dated October 13, 1868.

IMPROVED LADDER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, P. M. PAPIN, of St. Louis, in the county of St. Louis, and State of Missouri, have made certain new and useful Improvements in Ladders; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of this invention is in the formation of a ladder, for general uses, and especially for purposes of plucking fruit from trees, by a combination of two single rail-ladders, either of which ladders being arranged to be used singly; and said general nature applies, furthermore, to a system of trussing the long single ladder-rail, to prevent said rail from deflection under weight, and from side oscillations.

To enable those skilled herein to make and use my improved invention, I will now describe the same fully, having reference to the accompanying drawings, of which—

Figure 1 is a side elevation of the double ladder, and Figure 2 is a front elevation thereof.

Figure 3 is a plan of a long ladder and its trussing.

Figure 4 is a central section of such long ladder.

I construct my said ladder of a single central rail or rod, A, through which the rounds *a* are passed, and wherein they are secured in the usual manner.

In order to steady the single rail, when placed in the nearly upright position in which it is used, I connect to the said rail A the spreading feet, A¹, connected at upper ends with A, and by the suitable cross-bar, *a*¹.

Furthermore, to accommodate any inequalities of height of ground, I arrange, on said feet A¹, the sliding feet A², held by the set-screw *a*², when secured and guided by the clamps *a*³.

In the lower surface of the sliding feet A², I arrange the spike-studs, *a*⁴, to impinge on the floor or ground, and thereby secure the base of the ladder in position.

When I arrange the rail A to connect with a second

single ladder, to form my double ladder, then I connect, on one side of the rail A, the bearing, *a*⁵, for a journal-pin, *a*⁶, arranging the second ladder to pass inside said bearing *a*⁵, and hinge on said journal-pin, as indicated in figs. 1 and 2. The two single ladders thus connected will form a double ladder, which may be used generally, as the common hinged step-ladder.

In case the rail A becomes unduly long, I truss the same with the metallic rods *b*, securing said rods at each end of the rail A, and spreading said rods *b* at the middle of the rail to meet the ends of a cross-bar, *b*¹, said cross-bar being secured to the under side of the rail A.

In order, moreover, to prevent side oscillations of the rail A, I brace the same laterally by the angle-blocks *b*², which are secured to said cross-bar *b*¹. Thus, owing to the depth of the truss-rods *b* below the rail A, they aid firmly to resist weights placed on the rounds, and owing to the spreading of said rods *b* at their connection with *b*¹, and owing to said angle-blocks *b*², the rail is prevented from lateral motion, and the whole forms a truss against weights applied vertically and laterally.

In long ladders, I use the double hooks C, at the upper end of the rail, to hold said end in its position. In shorter ladders, a single hook, C', as in figs. 1 and 2, will suffice.

Having thus fully described my invention,

What I claim, is—

The rail A, spreading feet A¹, sliding feet A², truss-rods *b*, cross-bar *b*¹, angle-blocks *b*², and hook C, the whole being combined and arranged in the manner described and for the purpose set forth.

In testimony of which invention, I hereunto set my hand, this 29th day of October, 1867, in presence of—

P. M. PAPIN.

Witnesses:

GEORGE P. HERTHEL, Jr.,

A. HERTHEL.