



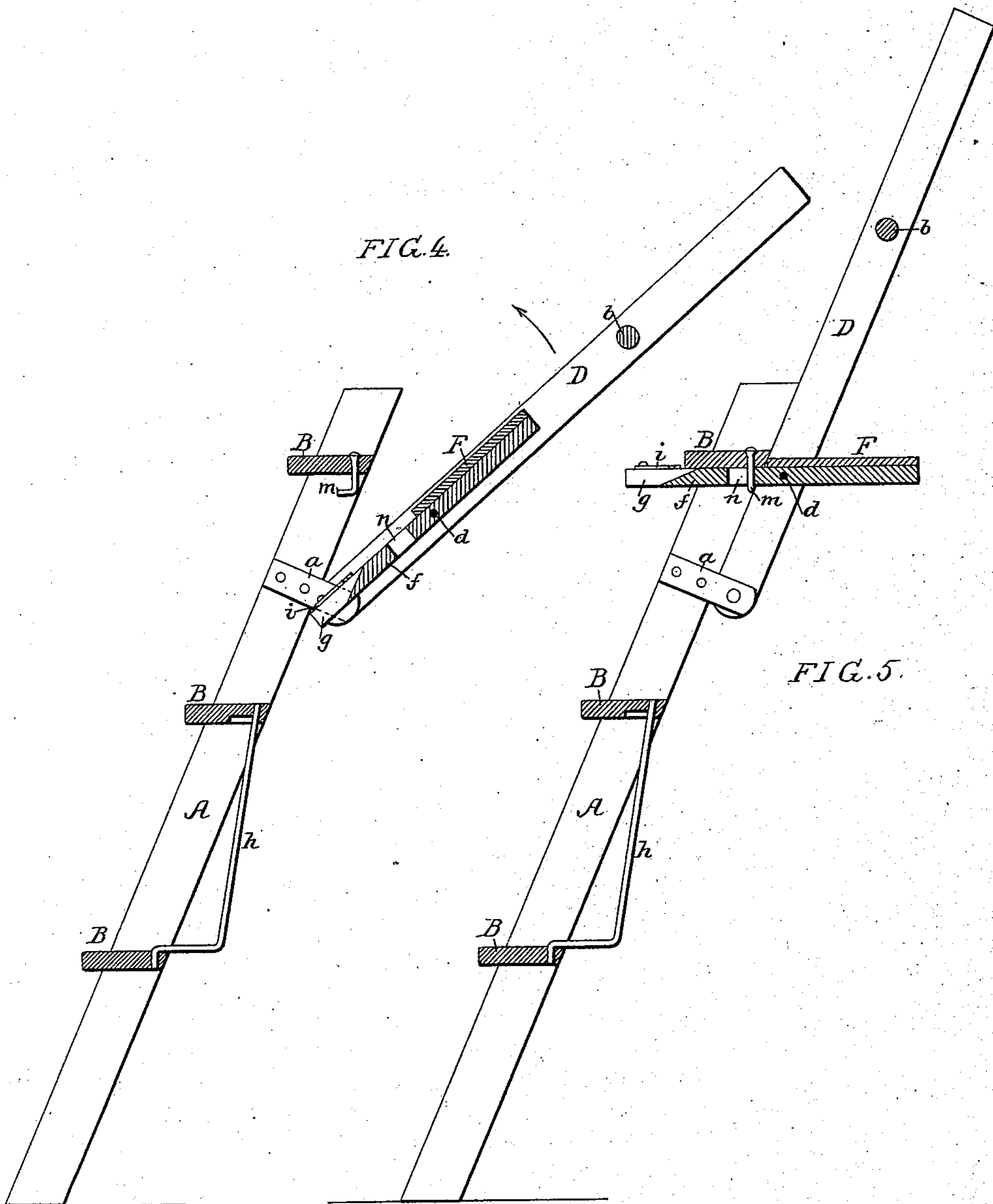
(No Model.)

2 Sheets—Sheet 2.

J. HILL.  
STEP LADDER.

No. 377,616.

Patented Feb. 7, 1888.



Witnesses:  
David S. Williams  
Harry Drury

Inventor:  
James Hill  
by his Attorneys  
Hawson & Son



# UNITED STATES PATENT OFFICE.

JAMES HILL, OF WILKES-BARRÉ, PENNSYLVANIA, ASSIGNOR TO THE I-X L  
PUMP COMPANY, OF GOSHEN, INDIANA.

## STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 377,616, dated February 7, 1888.

Application filed June 20, 1887. Serial No. 241,852. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES HILL, a citizen of the United States, and a resident of Wilkes-Barré, Luzerne county, Pennsylvania, have  
5 invented certain Improvements in Step-Ladders, of which the following is a specification.

One of the objects of my invention is to so combine a supporting-shelf with a confining rod or brace on the ladder that said shelf will  
10 be folded up or down automatically as the ladder is closed or opened, will serve as an effective brace for the ladder when it is opened, and will not interfere with the use of the ladder when the latter is closed.

15 A further object is to so construct the shelf that it can be used with the parts adjusted to form a step-ladder, or when the rear frame is turned up so as to form an extension-ladder.

In the accompanying drawings, Figure 1,  
20 Sheet 1, is a vertical section of my improved step-ladder, showing the same opened; Fig. 2, a like section showing the ladder closed; Fig. 3, a sectional plan on the line 1 2, Fig. 1, the portion above this line being shown in dotted  
25 lines; Fig. 4, Sheet 2, a sectional view showing the method of turning up the rear frame so as to form an extension-ladder; and Fig. 5, a view illustrating the position of the shelf when the ladder is extended.

30 A A are the side bars of the ladder having the usual steps, B, and D is the rear frame composed of opposite bars hung to strips *a* on the bars A, and connected together some distance from the bottom by a transverse rod, *b*.  
35 To a transverse pin, *d*, carried by the side bars of the frame D, is hung the shelf F, the projecting bar *f* of which has in the front end a slot, *g*, for the reception of a rod, *h*, which extends between two of the steps B, and is secured at its opposite ends to said steps. This  
40 rod *h* so controls the front end of the bar *f* that as the rear frame, D, of the latter is swung in or out the shelf will be caused to turn on its pivot-rod *d*, and will be turned up, as shown  
45 in Fig. 2, or down, as shown in Fig. 1.

When turned up, the shelf is within the limits of the rear frame, D, and does not interfere with the use of the ladder against a wall, on a stairway, or in like positions, and when  
50 turned down the bar *f*, by contact with the rod *h*, serves to brace the rear frame and prevent the collapse of the ladder, the shelf also in this position presenting a convenient means for supporting a bucket or other utensil.

The rod *h* is confined to the slot *g* by means 55 of a pivoted turn-buckle, *i*, at the end of the arm *f*, and when it is desired to release said arm from the control of the rod *h*, in order to permit the turning up of the frame D to form an extension-ladder, this turn-buckle is thrown 60 around so as to uncover the slot, as shown by dotted lines in Fig. 3, whereupon the shelf can be turned to the position shown in Fig. 4, so as not to interfere with the turning up of the frame D, as indicated by the arrow in said figure. 65 When the frame D is extended, the rod *b* forms one of the rungs of the ladder, and the shelf can be turned down so that its arm *f* will rest against the under side of the top step, as shown in Fig. 5, a hooked catch, *m*, on said step passing through a slot, *n*, in the arm *f*, and being 70 then turned part way around so as to lock the arm to the step.

A spring-catch will, it is evident, answer the same purpose as the hooked catch *m*, and 75 a detachable sleeve or clasp may, if desired, be substituted for the turn-buckle *i*, to serve the purpose of a retainer for the rod *h*.

I claim as my invention—

1. The combination of the ladder-frame A 80 and the rear bracing-frame, D, the shelf F, pivoted to said bracing-frame and having a bar, *f*, and the rod *h*, secured to the ladder and adapted to a slot in the bar *f*, as set forth.

2. The combination of the frame A, the rear 85 frame, D, pivoted so as to form when turned up an extension of the frame A, the shelf F, pivoted to said frame D, and having an arm, *f*, with slot *g* and removable retainer *i*, and the rod *h*, secured to the ladder and adapted 90 to the slot *g*, as set forth.

3. The combination of the frame A, the rear frame, D, pivoted so that when turned up it will form an extension of the frame A, the shelf F, pivoted to said frame D, and having 95 an arm, *f*, with slot *n*, and the catch *m*, adapted to said slot when the shelf is turned down, as specified.

In testimony whereof I have signed my name to this specification in the presence of two sub- 100 scribing witnesses.

JAMES HILL.

Witnesses:

PHILIP O'NEILL,  
WM. A. O'NEILL,