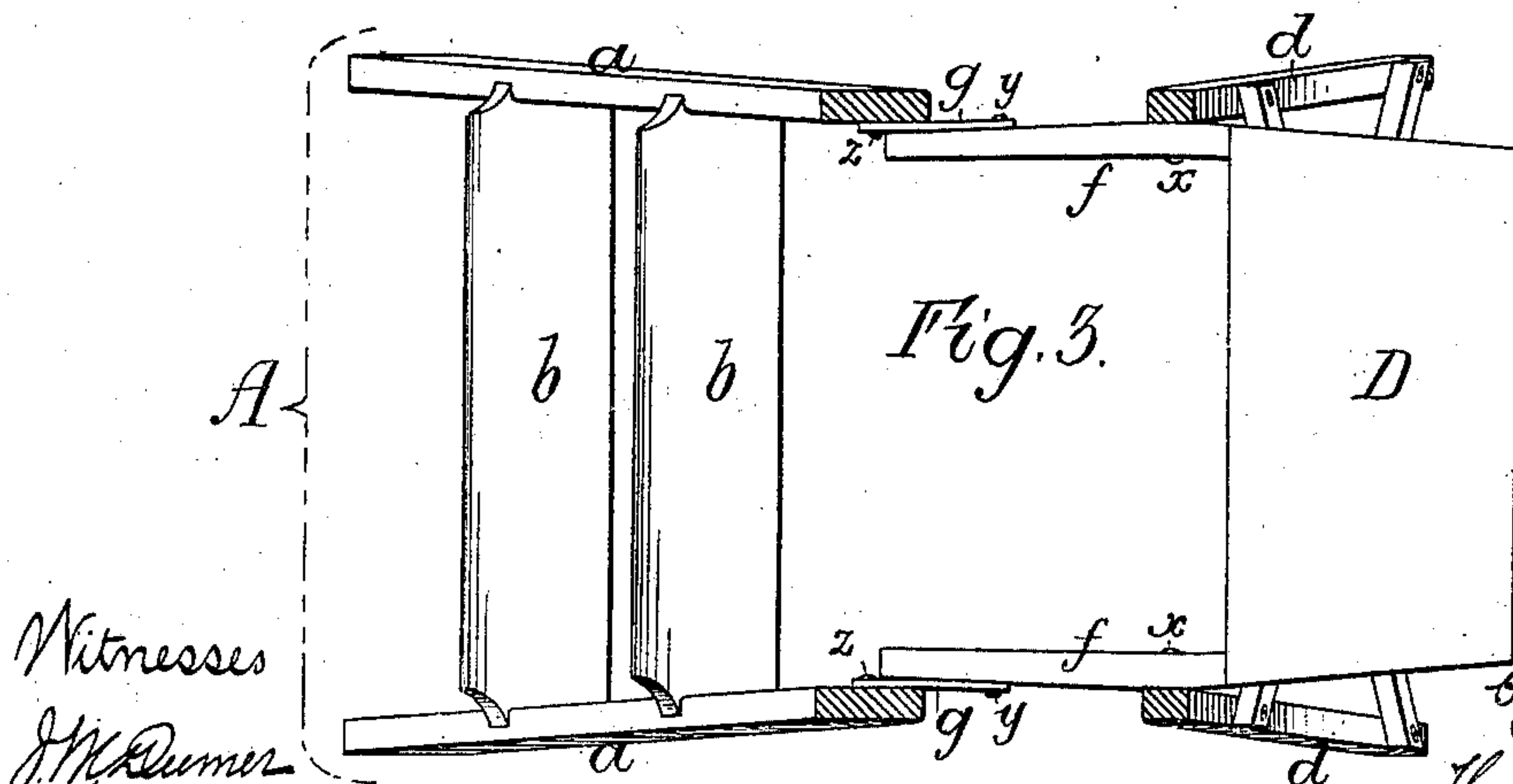
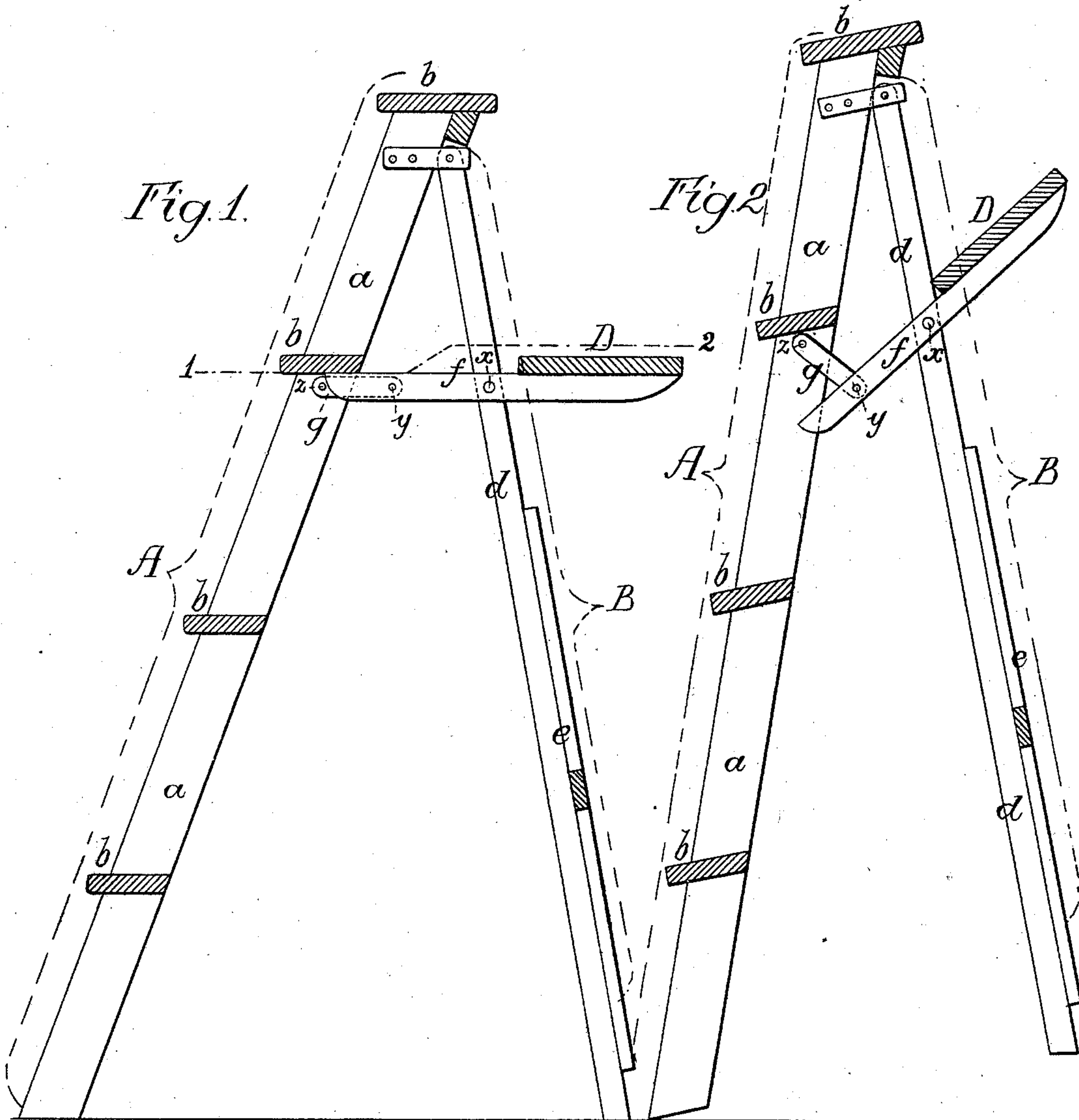


J. HILL.
Step-Ladder.

No. 225,831.

Patented Mar. 23, 1880.



Witnesses
J. M. Dumer
Harry Smith

Inventor
James Hill
by his Attorneys
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UNITED STATES PATENT OFFICE.

JAMES HILL, OF WILKESBARRE, PENNSYLVANIA.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 225,831, dated March 23, 1880.

Application filed January 22, 1880.

To all whom it may concern:

Be it known that I, JAMES HILL, a citizen of the United States, residing in Wilkesbarre, Luzerne county, Pennsylvania, have invented an Improvement in Step-Ladders, of which the following is a specification.

The object of my invention is to so combine a shelf with a step-ladder that the said shelf will be automatically turned into position for use when the ladder is opened, and will be folded up when the ladder is closed, the shelf-operating devices also acting as braces for the ladder when the latter is in use.

The invention consists of the combination of the ladder, the pivoted frame, the shelf, and certain arms, constructed, connected, and pivoted in respect to each other as hereinafter set forth, whereby the above results are attained.

In the accompanying drawings, Figure 1 is a vertical section of my improved ladder as it appears when in use; Fig. 2, a vertical section of the ladder as it is being closed up; and Fig. 3, a sectional plan on the line 1 2, Fig. 1.

A is the main ladder, and B the pivoted supporting-frame, the ladder A consisting, as usual, of the side bars, *a a*, and steps *b*, and the frame B comprising a pair of legs, *d*, and transverse connecting-bars *e*.

D is a shelf, carried by two arms, *f f*, which are pivoted at *x* to the legs *d* of the frame B, each arm being connected at the point *y* to the outer end of an arm, *g*, the opposite end of which is pivoted to the adjacent side bar, *a*, of the ladder at the point *z*.

When the frame B is extended, as shown in Fig. 1, the ends of the arms *f* bear against the under side of one of the steps *b* of the ladder, and the shelf D is in proper position for receiving a bucket or other receptacle, the points *x*, *y*, and *z* being in line with each other, so that the frame B is braced by the arms *f* and *g* and cannot move toward the ladder A.

When it is desired to close the ladder, however, the joint *y* is depressed until it is below a line drawn through the points *x* and *z*, when

the frame B is free to be folded against the ladder A, the same movement effecting the folding up of the shelf D, owing to the action of the arms *g* on the shelf-arms *f*. (See Fig. 2.) On opening the ladder the shelf is automatically turned down to the position for use, as shown in Fig. 1.

It is not necessary that the ends of the arms *f* should bear against the under side of one of the steps *b* when the ladder is open, as in Fig. 1. For instance, the ends of the arms might bear against a transverse rod independent of the steps, or lugs on the arms *g* might serve as stops for the arms *f*, and in some cases stops may be altogether dispensed with, the arms *g* being used simply for the purpose of effecting the automatic lowering and folding up of the shelf, independent devices in such case being provided for bracing the frame B.

The arrangement shown is preferred, as one device is thereby caused to perform double duty. The shelf-arms may, however, be pivoted to the side bars *a* of the ladder, and the arms *g* to the legs *d* of the frame B, if desired.

I claim as my invention—

1. The combination of the ladder A, the pivoted frame B, the shelf D, having arms *f*, and the arms *g*, said arms *f* and *g* being connected together, and the arms *f* being pivoted to the frame B and the arms *g* to the ladder A, or vice versa, whereby the movement of the frame B will effect a simultaneous movement of the shelf D, all substantially as set forth.

2. The combination of the ladder A, the pivoted frame B, the shelf D, having arms *f*, the arms *g*, connected to said arms *f*, and pivoted in respect thereto as set forth, and a stop for maintaining said arms *f* and *g* in line with each other, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES HILL.

Witnesses:

E. N. EASTERLINE,
W. S. PARSONS.