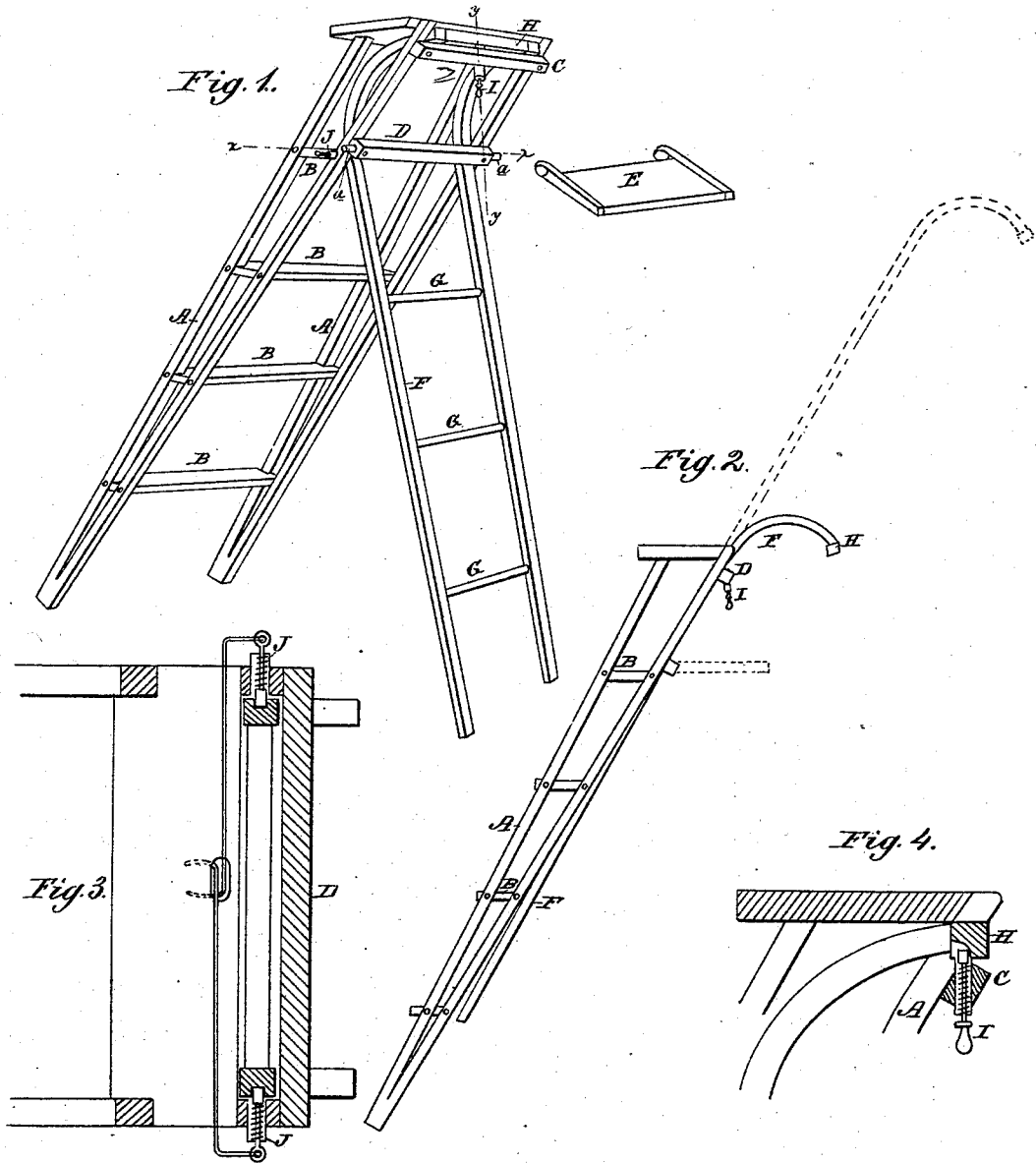


(No Model.)

F. S. SEAGRAVE.
EXTENSION STEP LADDER.

No. 278,052.

Patented May 22, 1883.



Witness:
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UNITED STATES PATENT OFFICE.

FREDERIC S. SEAGRAVE, OF ROCHESTER, MICHIGAN.

EXTENSION STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 278,052, dated May 22, 1883.

Application filed November 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC S. SEAGRAVE, of Rochester, in the county of Oakland and State of Michigan, have invented new and useful Improvements in Extension Step-Ladders; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of this invention relates to certain new and useful improvements in the construction of extension step-ladders, or ladders of that class which may be used as ordinary step-ladders are used, and in which the brace which supports the ladder when in use as a step-ladder is extended to enable the ladder to be used in reaching high objects.

The invention consists in the peculiar construction of parts and their peculiar combinations, by means of which the above-named objects are attained, as more fully hereinafter described.

Figure 1 is a perspective showing the ladder as in ordinary use as a step-ladder. Fig. 2 is a side elevation, showing the ladder folded and in dotted lines its extension feature. Fig. 3 is a horizontal cross-section on line *xx* in Fig. 1, and Fig. 4 is a vertical central section on line *yy* in Fig. 1.

In the accompanying drawings, which form a part of this specification, A represents the legs of the ladder proper, which are preferably formed of two pieces of timber converging to the foot and spreading to the top. These two legs A are set up parallel to each other, or nearly so, from the top ends thereof toward the center, and thence spread apart to form a broader base. This parallelism in the top portion of the legs is essential to the proper working of the brace-legs. To these legs are secured all of the steps B of the ladder, except the top one, by tenons, which enter suitable holes or mortises in the legs, as shown in Fig. 1, and this method of securing the steps secures the gradual spreading apart of the two pieces which form the legs and holds them rigidly in position. The top step is secured upon the top of the front half of the leg and to the front side of the rear half of the leg by a suitable bolt, nail, or rivet, although, if desired, this stop may be secured as those below it.

Just below the upper step a bar, C, is rigidly secured to the rear side of the rear half of the legs, and a similar bar, D, is similarly secured at some little distance below. The ends of this latter-named bar D are provided with journals *a*, upon which swings the shelf E, or, when not in use, may be folded up between the two bars C and D, and when in use for holding a pail of water—as, for instance, when the ladder is employed in washing windows—is lowered to a horizontal position and held in that position by a stop, or in any other convenient way.

FF are the two legs of the brace and extension portion of the ladder, used as a brace to convert the ladder into an extension-ladder, as shown in Fig. 1, and as an extension of the ladder itself, as shown in Fig. 2. These legs are supported parallel to each other by the rounds G and the bar H, and the legs are curved as shown, the bar H being employed at the top thereof, and the parts are so arranged that when the upper portion of the bend comes in contact with the under side of the top step the bar H rests upon the top of the bar C, and the lower part of the bend rests against the rear edge of the step next below the top one, and upon the opposite side of the legs against the rear lower corner of the bar D, these various points of contact forming points of resistance to support the parts in their relative positions when used as a step-ladder, the spring-bolt I, passing through the bar C into the bar H, locking the parts together. To close the brace-legs upon the ladder, this spring-bolt should be disengaged from the bar H and the foot of the brace-ladder carried inward until the parts are folded together, when the spring-stops J will enter suitable holes in the sides of the brace-legs and lock the parts together in this position. These stops, or others of similar nature, may be connected together, as shown in Fig. 3, so that one hand will simultaneously operate both the stops, leaving the other to manipulate the ladder. Now, should it be desired to use the ladder for reaching a higher point than can be reached from the upper step thereof, the stops J may be disengaged, and that portion which has been described as the brace of the ladder may be extended upward between the parts which we have described, as shown in Fig. 2, thereby forming an extension

of the ladder, which now is no longer in use as a step-ladder. Of course the reverse of this last-described motion returns the extension to its original position to be used as a brace for the step-ladder.

5 What I claim as my invention is—

1. A step-ladder provided with a brace extensible to the rear, and adapted also to slide longitudinally to form the extension of the ladder, said brace having the upper part curved forward, forming a rest for this end of the ladder, as set forth.

2. In a step-ladder, the combination of a hinged shelf, E, and the rearward brace of the ladder, the latter having its upper end bent forward, forming a rest and allowing the shelf to be turned to a horizontal position, as and for the purpose set forth.

3. In a step-ladder, legs A, formed of two

integral diverging parts connected at the lower end, steps B, and a rearward brace, having its upper end bent forward, arranged between the two legs, substantially as described, adapting it to be folded in by a vertical movement projecting the bent end thereof between the top step and bar C, as set forth.

4. The combination, of the legs A, steps B, rearward brace consisting of legs F F and rounds G, bars C and D, and spring-bolts I and J, all constructed and arranged substantially as shown and described.

In witness that I claim the foregoing as my invention I hereunto affix my signature this 6th day of November, 1882.

FREDERIC S. SEAGRAVE.

In presence of—

E. SCULLY,

C. J. HUNT.