No. 886,737. PATENTED MAY 5, 1908.

A. C. TAYLOR.

EXTENSION STEP LADDER.

APPLICATION FILED JUNE 11, 1906.

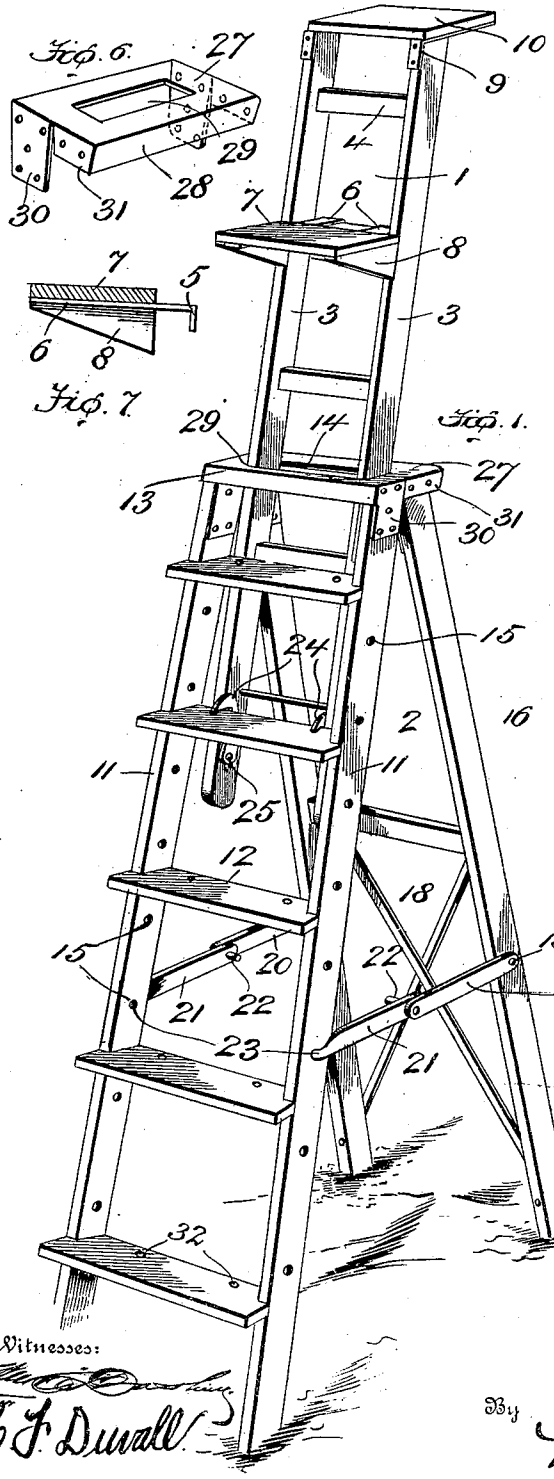


Fig. 6.



Fig. 7.



Fig. 1.



Fig. 2.

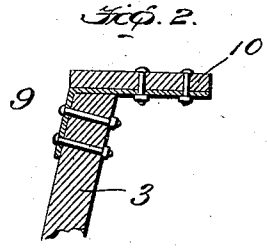


Fig. 3.

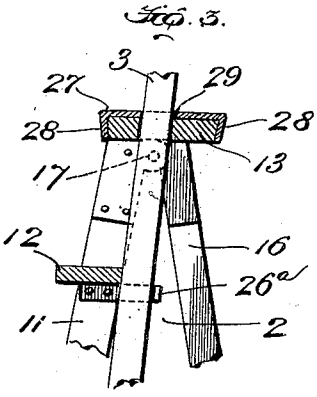


Fig. 4.

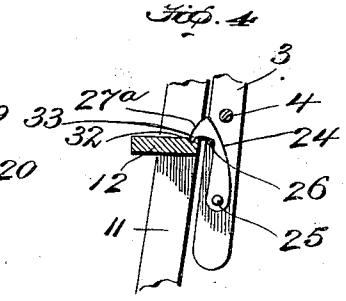
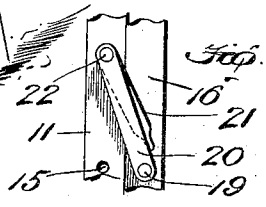


Fig. 5.



Witnesses:

E. F. Duvall.

Inventor:

Aiken C. Taylor,

By W. J. Duvall, Attorney.

THE NORRIS PETERS CO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

AIKEN C. TAYLOR, OF CHARLESTON, SOUTH CAROLINA.

## EXTENSION STEP-LADDER.

No. 886,737. Specification of Letters Patent. Patented May 5, 1908.

Application filed June 11, 1906. Serial No. 321,158.

*To all whom it may concern:*

Be it known that I, AIKEN C. TAYLOR, a citizen of the United States, residing at Charleston, in the county of Charleston and State of South Carolina, have invented a new and useful Extension Step-Ladder, of which following is a specification.

This invention relates to improvements in step-ladders, and more particularly to that class thereof embodying an extension.

The objects and advantages of the invention, together with the novel features thereof will hereinafter appear and be particularly pointed out in the claims.

Referring to the drawing—Figure 1 is a perspective view of an extension step-ladder constructed in accordance with my invention, the extension being shown in its extended position; Fig. 2 is a transverse section through the upper end of the extension; Fig. 3 is a similar view through the upper end of the step-ladder section, the extension being shown in position therein; Fig. 4 is a similar view through the lower end of the extension and the adjacent part of the step-ladder; Fig. 5 is a side elevation of a portion of the two step-ladder sections showing the ladder closed and secured in position by the brace; Fig. 6 is a perspective view of the metallic reinforcing plate employed at the upper end of the step-ladder section; and, Fig. 7 is a transverse section of the movable shelf that may be employed in connection with the extension section.

Similar numerals of reference indicate similar parts in all the figures of the drawing.

In carrying out my invention, I employ an extension-ladder 1 and a step-ladder 2, the former slidably mounted within the latter. The extension ladder section 1, comprises the two sides 3, 3, which are connected at intervals with the usual rungs 4. The rungs 4 are preferably rectangular in cross-section, and any one of said rungs may be removably engaged by the hook-shaped ends 5, of metal strips 6, secured to the underside of a shelf 7. At each end of the shelf 7 I may secure angular blocks 8, the rear ends of which terminate substantially flush with the edge of the shelf and a sufficient distance from the hooks 6 as will cause said blocks to rest against the front faces of the sides 3 of the extension section. I may also secure to the upper ends of the sides 3 of the extension section angular brackets 9, and upon the same mount a permanent shelf 10. The shelves will be found extremely useful to the artisan in supporting tools, materials, &c., with which he is working while on the ladder. I would also state that while these attachments will be found extremely useful, yet their presence is not absolutely necessary to my invention, and they may be dispensed with if desired.

The step-ladder section 2, comprises the two side pieces 11, 11, connected at intervals with the usual stiles or steps 12, and at their upper ends said side-pieces are connected by the usual crown-piece 13, the latter being provided with a longitudinal slot 14, and having its rear end extending beyond the rear edges of the side-pieces. At intervals the side-pieces 11 are provided with holes or perforations 15, the function of which will hereinafter appear.

16 designates the two hinged props, the same being connected by hinges 17, to the upper ends of the two side pieces 11 (see dotted lines, Fig. 3.) These props are suitably braced, as is usual, and as indicated at 18; and each has pivoted thereto, as at 19, the rear end of a brace. The braces each consist of two sections 20 and 21, pivoted together at their overlapping ends by a stud 22, which corresponds in diameter to the perforations 15. The free end of the forward section 21 is provided with a similar stud 23. When the ladder is in use the braces serve their usual well-known function of bracing the props and step-ladder section, and the two studs 23 are inserted in any convenient hole 15, whereby the props and ladder are locked in their proper relative relation. When, however the props and ladder are folded or brought together, as when the ladder is not in use, the sections 21 of the braces may be folded back upon the sections 20, and the studs 22 inserted into convenient holes 15 and thus the ladder secured in its folded position.

The sliding or extension-ladder is mounted in the opening 14, as is usual, and at their lower ends the two side-pieces 3 of the extension section are provided with gravity dogs 24, the lower ends of which are pivoted to the inner faces of the side-pieces, as at 25. These dogs are located preferably immediately below the lowermost rung of the extension section, and in such position with relation to said rung as will cause the latter to serve the double function of a rung and a stop for limiting the rearward swinging movement of the dogs. Suitable stop-pins

26 may project from the inner faces of the two side-pieces 3 of the extension section and limit the inward movement of said dogs, so that as will be apparent, the two dogs are free to oscillate only to a limited extent. The tendency of these dogs are to fall forward against the stop-pins 26, and hence, their upper ends being beveled at their fronts, as at 27ª, (see Fig. 4), it is obvious that in moving the extension section upward, the dogs successively ride over the steps or stiles 12 of the step-ladder section, and their pointed ends 33 will engage the countersinks 32 in any one of the same. By this means it will be apparent that the extension ladder may be secured and locked at any point along the step-ladder section.

In addition to the crown-piece 13 for retaining the sliding extension in place, I may also provide the step-ladder section with angular metallic keepers 26ª the rear ends of which engage the rear edges of the extension ladder. It will be obvious that by disengaging the dogs with the stile or step of the step-ladder section, the sliding extension is liberated and is free to be adjusted to any other position desired.

In order that the ladder may not necessarily be increased in weight and yet that the crown-piece be sufficiently strong to prevent splitting and breaking with the weight of the sliding extension, I prefer to provide the crown-piece with a metal cap or reinforcing-plate 27 (see Fig. 6.) This reinforcing plate is provided at its front and back with downwardly depending flanges 28, to fit over and reinforce the front and rear edges of the crown-piece, also with a slot 29, corresponding to the slot 14 of the crown-piece, and at its ends with depending flanges 30, and 31, which are respectively secured by screws, nails, or similar means, to the outer faces of the side-pieces 11 and ends of the crown-piece. (See Fig. 1). This reinforcing metal cap or plate may be cheaply struck up out of sheet steel and while greatly strengthening the crown-piece and preventing it splitting, yet adds very slightly either to the weight or cost of the ladder as a whole.

Having described my invention, what I claim is;

1. The combination, in a step-ladder, of the front step and the rear prop-sections, the former being provided with holes along its side-pieces, and folding braces pivoted to the rear prop-section and provided at their front ends and at their joints with inwardly disposed studs adapted to engage said holes.

2. The combination, in a step-ladder, of the front step and rear hinged prop-section, the former having holes along its side-pieces, and the braces consisting of the sections 20 and 21, the latter having the studs 23 adapted to engage said holes, and the pivoting studs 22 also adapted to engage said holes when the two sections are brought together.

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

AIKEN C. TAYLOR.

Witnesses:
GEORGE MURRAY,
E. A. LAWRENCE.