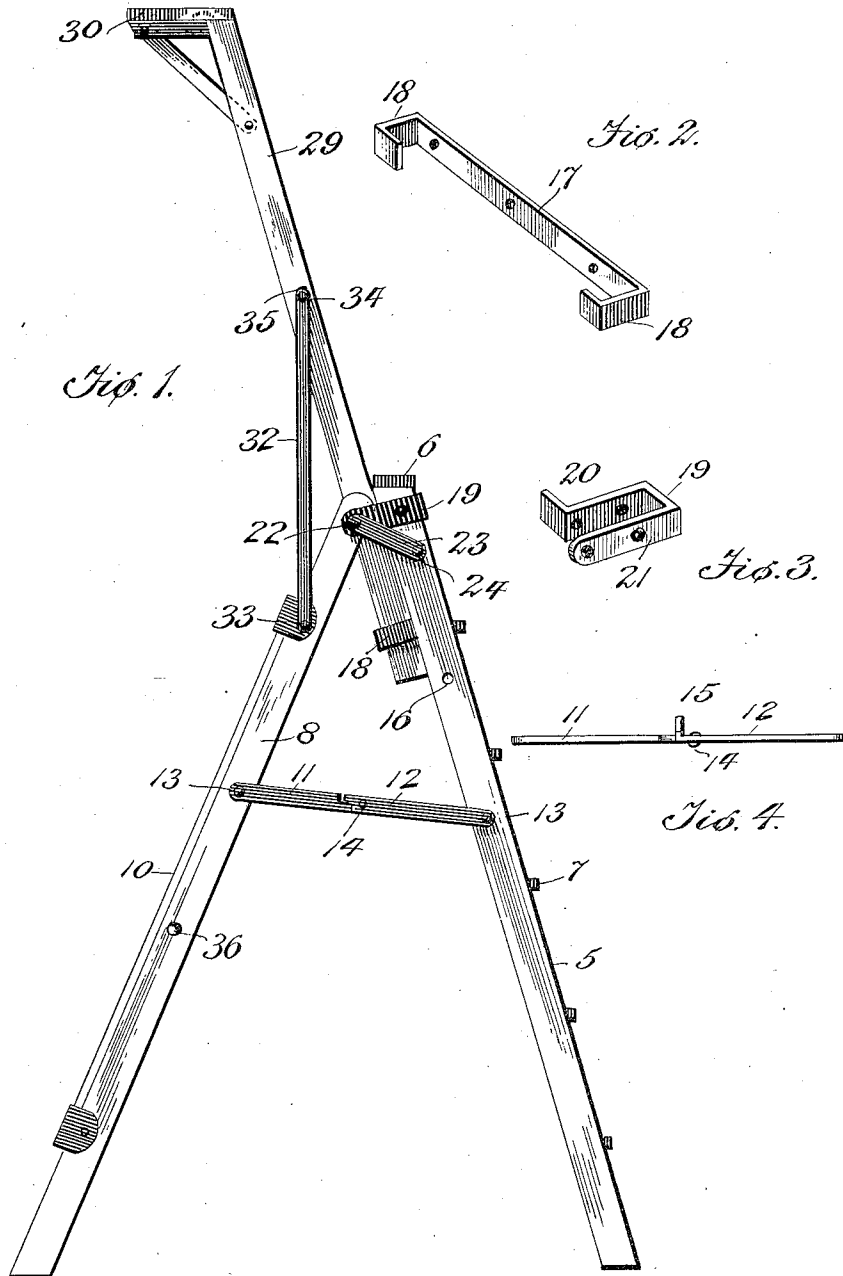


A. C. TAYLOR.
EXTENSION STEP LADDER.
APPLICATION FILED MAR. 14, 1912.

Patented June 10, 1913.
2 SHEETS—SHEET 1.

1,064,693.



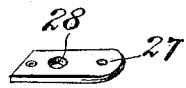
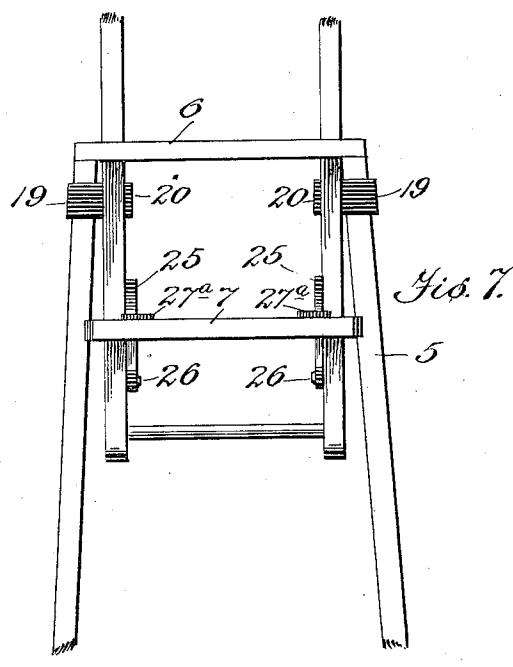
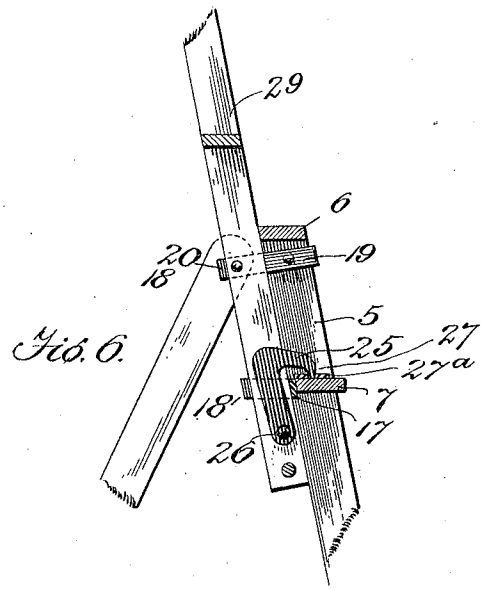
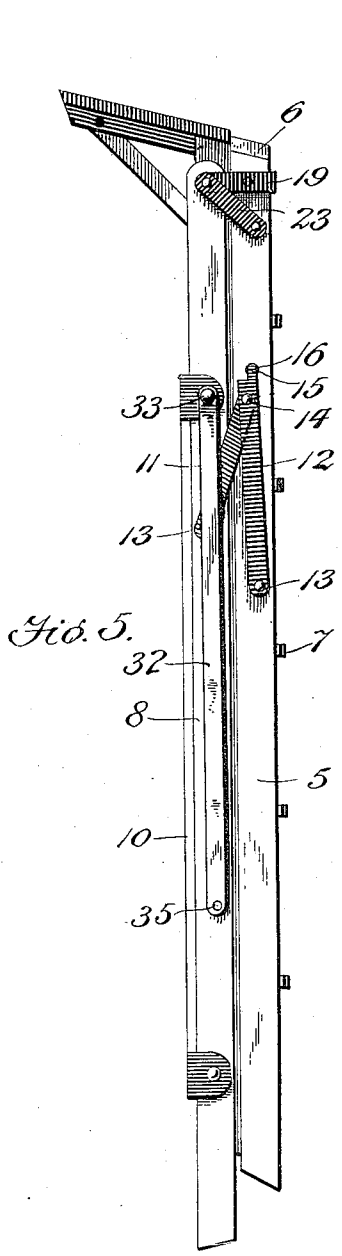
WITNESSES:
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Witnesses:
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Fig. 8.

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UNITED STATES PATENT OFFICE.

AIKEN C. TAYLOR, OF RICHMOND, VIRGINIA, ASSIGNOR TO EXTENSION STEP-LADDER
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EXTENSION STEP-LADDER.

1,064,693.

Specification of Letters Patent.

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To all whom it may concern:

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

My invention relates to improvements in extension step-ladders, and the invention consists in certain details of construction hereinafter described and particularly pointed out in the claims.

Referring to the drawings—Figure 1 is a side elevation of an extension step-ladder embodying my improvements, the ladder being shown in side elevation and in its extended position. Figs. 2, 3 and 4, are details of parts hereinafter referred to. Fig. 5 is a side elevation of my improved step-ladder, the same being closed. Fig. 6 is a vertical sectional view of my improved extension step-ladder, that is, the upper portion thereof, the remaining portions being broken away. Fig. 7 is a front elevation of so much of the ladder as is shown in Fig. 6. Fig. 8 is a detail view of one of the wear plates.

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

As is usual in ladders of this class, the improved ladder herein referred to, comprises three sections—the lower or main section, the prop-section, and the extension section,—the three being arranged with relation to each other and combined to operate as is the conventional ladder of this class. The main or lower section, comprises the opposite side-bars 5, connected at their upper ends by the cross-stile 6, and at intervals by the steps 7. The prop-section, comprises the usual vertical side-bars 8, the latter being connected by the usual tie-rods 10. The two sections mentioned are connected at their two upper meeting ends by metal brackets 19 (for detail of which, see Fig. 3). The metal bracket 19 is formed of sheet-metal and is of a general U-shape, the U-portion embracing and being secured to the upper end of the side-bar 5 and extending beyond the same. To the outer terminal of each bracket 19 is pivotally connected the upper end of a side-bar of the prop-section 8, as at 22. Short inclined braces, 23, are connected to the bolts 22, and by bolts 24, to the side-bars 5. The inner terminals of the angular or U-shaped

brackets 19 are angularly and inwardly bent to form keepers, 20, and the same embrace the longitudinal side-bars 29 of the upper or extension-section.

An angular sheet-metal cross-plate 17, is secured to the rear edge of the step 7 near the upper end of the main ladder-section, and has its ends bent inwardly to form keepers 18, which latter also embrace the aforesaid side-bars 29 of the upper or extension-section below the points embraced by the metal brackets.

Braces 32, are pivoted at 33, to each of the side-bars 8 of the prop-section, and each of the former braces is provided at its free end with an inwardly disposed stud 34, designed to engage with a conveniently located hole 35, formed in each of the side-bars of the extension-section. In this manner, when said extension-section is extended and in operation, it receives the support of the braces 32 and is thereby rendered steady. When the extension section is not in use but collapsed (as shown in Fig. 5), the braces 32 are swung downward on their pivots 33 and their studs 34 engaged with holes 36 conveniently located in the side-bars of the rear prop-section.

The main and prop-sections of the ladder are held in their adjusted relations by means of a hinged-brace, the same comprising prop-sections 11 and 12, the two being hinged or pivoted together at their overlapped meeting-points, as at 14. Beyond the hinge-point 14, the section 12 is provided with an inwardly disposed stud 15. The outer end of the prop-section 11 is pivoted, as at 13, to the side-bar 8 of the prop-section, and the corresponding end of the companion prop-section 12, is pivoted, as at 13, to the side-bar 5 of the main ladder-section, the pivot point of prop-section 12 being below that of the companion section 11. By thus arranging the pivot-points 13 of the sections 11 and 12 as shown—that is, that of the section 12 below that of the section 11—when the main ladder-section and the stop-section are closed or brought face to face (as in Fig. 5,) the stud 15 is brought opposite to and may be engaged with a convenient hole, 16, formed in each of the said side-bars 5, whereby, as will be obvious, the two sections (the main ladder-section and the prop-section), become locked against accidental separation. This will be most convenient when

carrying the ladder from place to place, packing it for shipment or storage, or when using the ladder in its extended position and as a wall-ladder.

5 Another important feature of my invention resides in the fact that the side-bars 8 of the rear or prop-section, are made slightly longer than the corresponding bars of the main section, with the result (as shown in 10 Fig. 1) that when the ladder is fully extended, the weight of the occupant is between the two sections, so that the occupant may occupy the highest point of the extension-section without fear of overbalancing 15 the ladder—a very great consideration.

The upper or extension-section comprises the usual longitudinal side-bars 29, and cross-stile 6, and from the latter projects rearwardly the usual platform. Near the 20 lower end of the side-bars 29, and at the inner sides, are pivoted, as at 26, grab-hooks 25, the same having their front ends reduced to form engaging points 27, designed to engage with corresponding holes 28, formed 25 in wear-plates 27^a, a pair of the latter being secured to the upper side of each of the steps 7 of the main ladder-section.

The operation of the ladder will be readily apparent.

30 The main ladder-section and the prop-section are opened at their lower ends until the braces 11 and 12 aline, after which the extension-section is elevated to a point desired and the points of the grab-hooks 25 35 engaged with the opening 28 of the wear-plates 27^a. The extension-section is then locked against accidental lowering. To brace the same and render it steady, the lower ends of the brace-rods 32 are disconnected from the side-bars 8 of the prop- 40 section, swung upward, and their studs 34 connected to or engaged with the holes 35 in the side-bars of the extension-section. When the ladder is to be used as an extension 45 wall-ladder, the parts are folded, as shown in Fig. 5, and the brace-sections 11 and 12 being locked by engagement of the stud 15 with the hole 16 the ladder sections are maintained against separation.

50 Having described my invention, what I claim is:

1. In an extension step-ladder, the combination with the main ladder-section, the hinged prop-section, and the extension-section, the side-bars of the hinged prop-section being longer than those of the main 55 ladder-section, whereby when the ladder is

extended its highest point is vertically above a point between the lower ends of the two sections. 60

2. In a step-ladder, the combination with the main ladder-section and the hinged prop-section, of the jointed brace-sections between the two, the outer ends of the brace-sections being pivotally connected to the 65 side-bars of the main ladder and prop-section, and between their pivot points having a projection designed to engage an opening in one of said sections, whereby the two 70 latter sections may be locked together.

3. In a step-ladder, the combination with the main ladder-section and the hinged prop-section, of the braces 11 and 12, hinged at their overlapped meeting-ends, as at 14, and pivoted at their outer ends to the side 75 bars of the main ladder-section and the prop section respectively, the pivot point of the latter being lower than that of the former section, the stud 15 formed at the inner end of the section 12, and the hole 16 formed in 80 the side-bar of the main ladder-section.

4. In an extension step-ladder, the combination with the main ladder-section, the sliding extension-section, and the rear prop-section, of the bracket 19, the same embracing 85 the upper ends of the side-bars of the main ladder-section and the prop-section, rigidly secured to the former and pivotally secured to the latter, and having their inner ends laterally bent to form keepers 20 for 90 engaging the side-bars of the extension-section.

5. In an extension step-ladder, the combination with the main ladder-section, the sliding extension-section, and the rear prop- 95 section, of the bracket 19, embracing and secured to the ends of the main ladder-section and pivotally connected to the corresponding ends of the prop-section, and having their inner terminals bent to form keepers 100 20 engaging the side-bars of the extension-section, the inclined braces 23, and the cross-bar 17, secured to a step of the main ladder-section and having its ends bent to form keepers 18 for engaging the side-bars of the 105 extension-section below the brackets.

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

AIKEN C. TAYLOR.

Witnesses:

R. E. T. WALKER,
MARY H. DAWSON.