No. 736,804. PATENTED AUG. 18, 1903.

S. S. WARD.

FOLDABLE FRUIT LADDER.

APPLICATION FILED MAY 20, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 2.

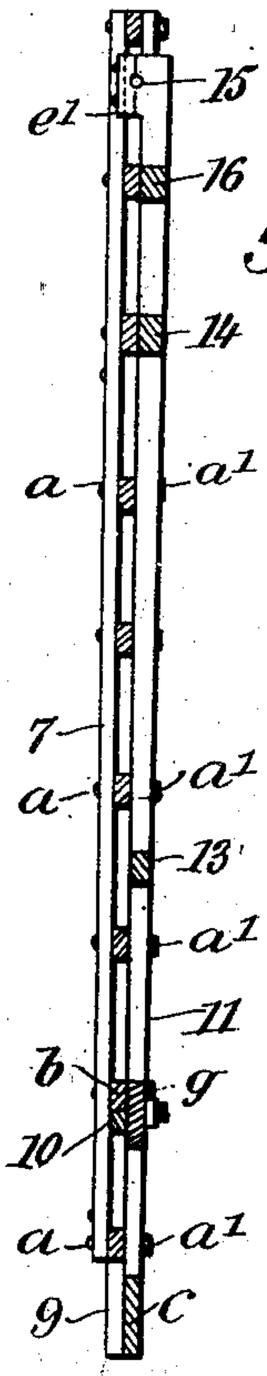

Fig. 1.

WITNESSES:

A B Chattingly

Wm P Patton

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Fig. 3.

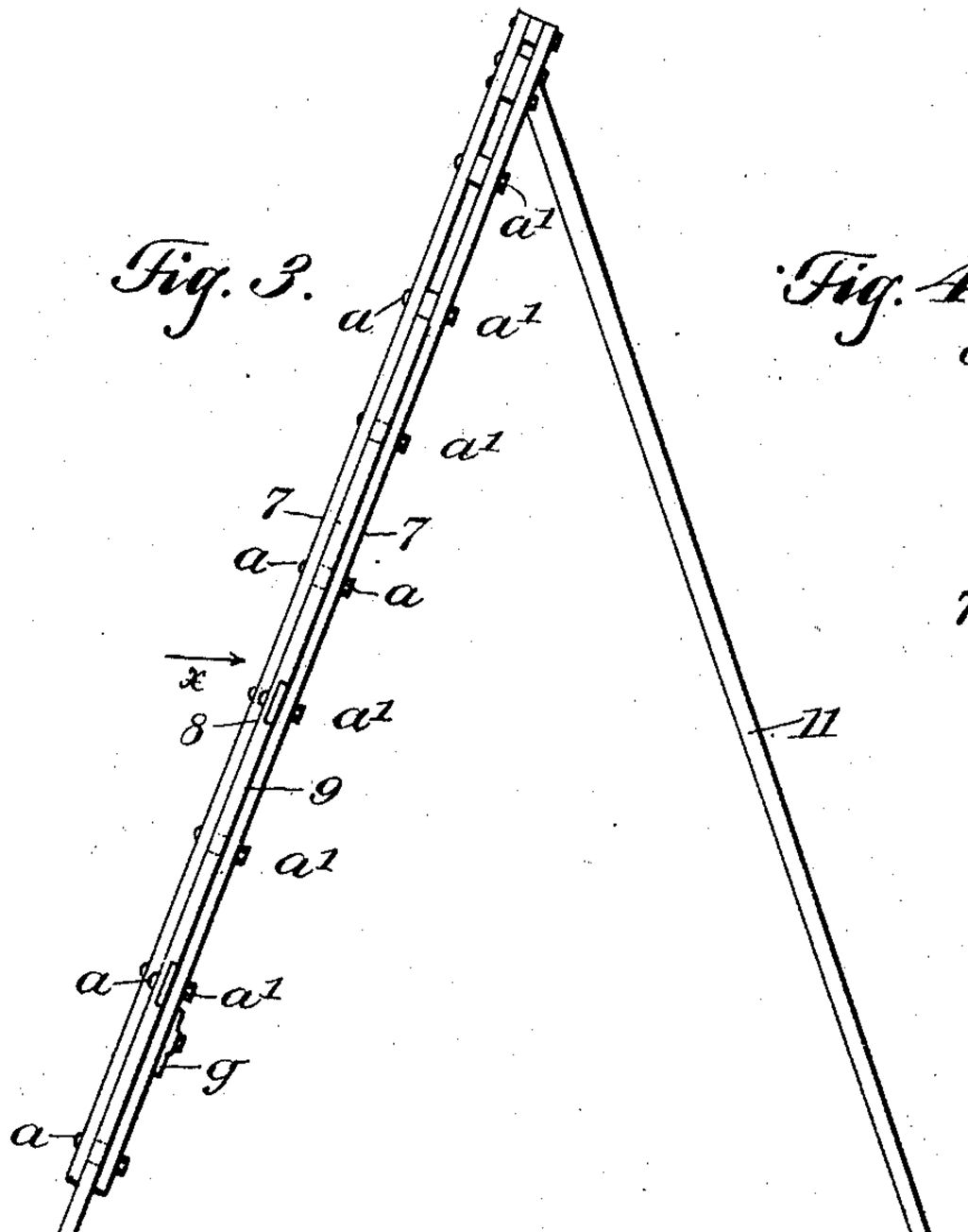

Fig. 4.

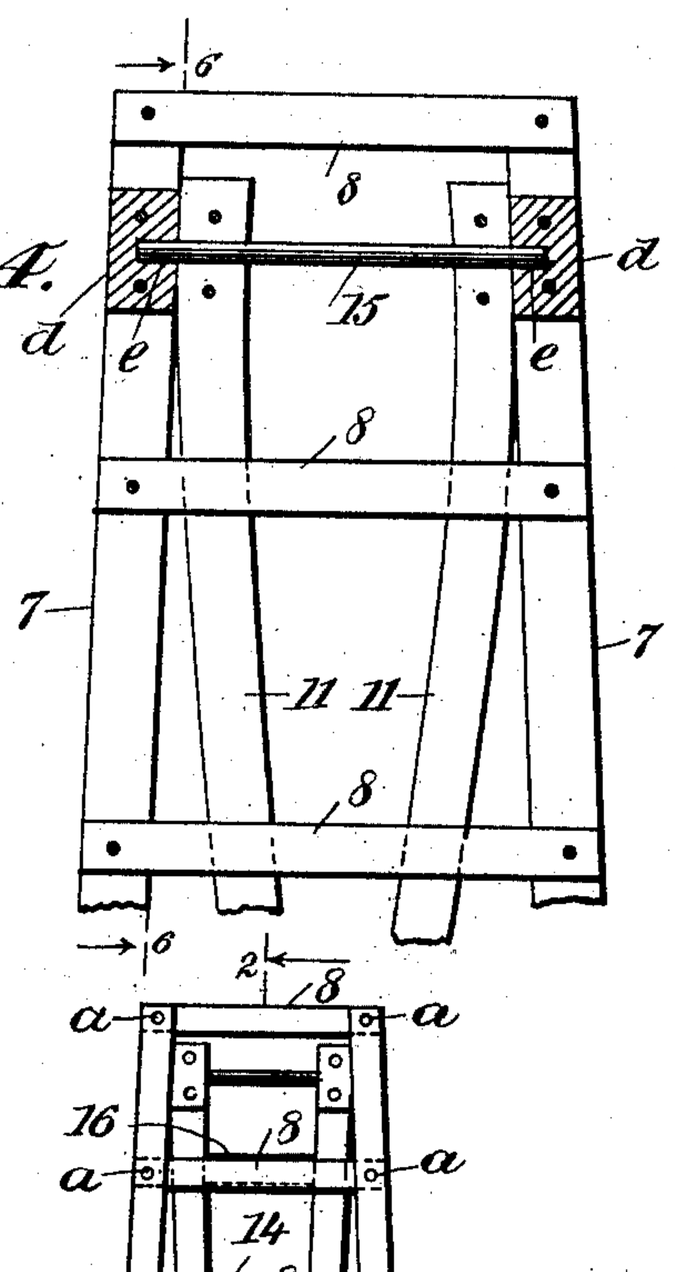

Fig. 6.

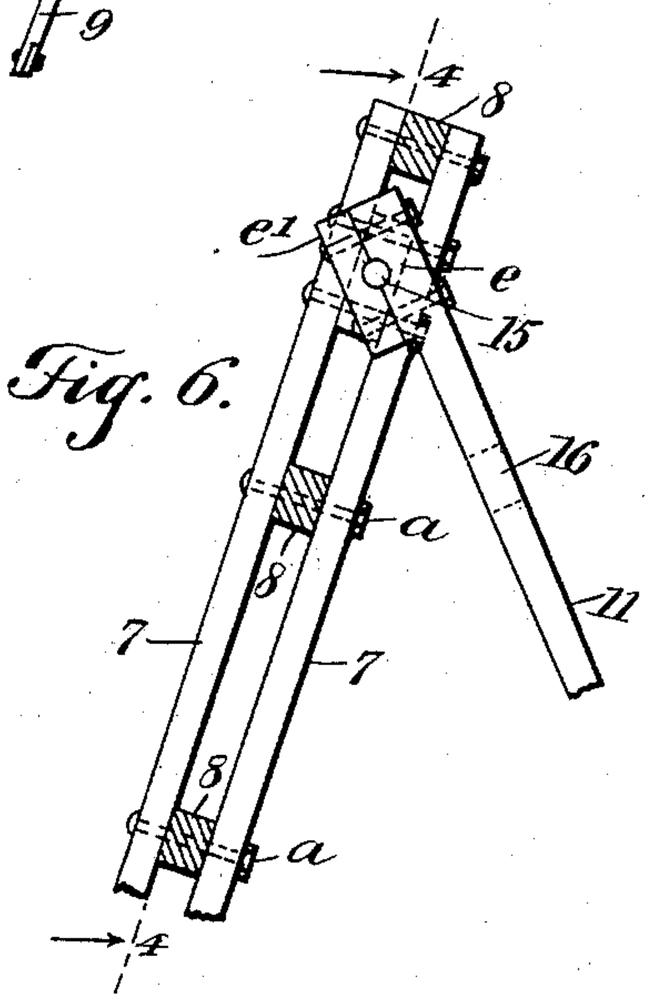

Fig. 5.

WITNESSES:

A. F. Brattingly

Wm. P. Patton

No. 736,804. Patented August 18, 1903.

UNITED STATES PATENT OFFICE.

STEPHEN SELBY WARD, OF NAPA, CALIFORNIA, ASSIGNOR OF TWO-THIRDS TO WILLIAM C. HEWITT AND CHARLES HERRMANN, OF FERNANDO, CALIFORNIA.

FOLDABLE FRUIT-LADDER.

SPECIFICATION forming part of Letters Patent No. 736,804, dated August 18, 1903.

Application filed May 20, 1903. Serial No. 157,940. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN SELBY WARD, a citizen of the United States, and a resident of Napa, in the county of Napa and State of California, have invented a new and Improved Foldable Fruit-Ladder, of which the following is a full, clear, and exact description.

This invention relates to a class of step-ladders particularly well adapted for use in picking fruit from trees in orchards, and has for its object to provide novel details of construction for a foldable ladder, which afford a light strong portable device of the character indicated, that has a very wide base and is thereby rendered stable in service, will not tip sidewise while occupied, and that will sustain a heavy weight without penetrating the soil deeply.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the ladder arranged for service. Fig. 2 is a vertical transverse sectional view of the ladder folded substantially on the line 2 2 in Fig. 5. Fig. 3 is a side view of the same in opened condition. Fig. 4 is an enlarged partly-sectional front elevation of the upper portion of the ladder, taken substantially on the line 4 4 in Fig. 6. Fig. 5 is a front elevation of the ladder arranged for use seen in the direction of the arrow x in Fig. 3, and Fig. 6 is a vertical transverse sectional view of the upper portion of the ladder substantially on the line 6 6 in Fig. 4.

The stiles or side bars of the ladder each consist of two members 7, spaced apart a suitable degree by the transverse stretcher-bars or rungs 8, which at their ends are inserted between the members 7 of each side bar and are held therein suitably spaced apart in parallel planes by bolts or rivets a, which pass through perforations in said side-bar members and the intervening rungs and are provided with nuts a' on their threaded ends, which by a proper adjustment bind these parts together in a reliable manner, and, as shown in Figs. 1 and 5, the length of the rungs increases successively a proper degree downwardly, which correspondingly increases the width of the ladder in the same direction. Above the lowermost rung 8 of the series a plurality of said rungs at proper distances apart (the number of rungs varying according to the length of the ladder) are prolonged beyond the side bars 7, these lateral extensions 8^a increasing in length in downward succession. As shown, two of the rungs are provided with lateral extensions 8^a, which are spaced apart by a rung of regular length; but it is to be understood that the number of rungs having increased length may be more than two if the dimensions of the ladder warrant such an increase in number of the same. Two additional side bars or legs 9 are provided, said legs at their upper ends being introduced, respectively, between the side bars of the ladder, so as to abut upon the lower edge of one of the rungs 8, and these upper ends of the supplementary legs 9 are secured in place by transverse rivets or other means. The additional legs 9 diverge toward their lower ends a considerable degree and lap upon the ends of the rung extensions 8^a, whereon they are secured by any preferred means. The length of the legs 9 permits their projection somewhat below the lower ends of the two-part side bars of the ladder proper, and two braces 10, affixed at their outer ends upon the lower ends of the legs 9, trend toward each other diagonally upward, passing between the pairs of side-bar members 7 immediately above the lower rung 8, upon which the braces are bolted or riveted. The inner ends of the braces 10 lap upon a reinforce-block b, affixed upon the lowermost rung 8, having the extensions 8^a thereon, and said ends of the braces are secured upon the reinforce-block, as indicated in Fig. 5. The secured connection of the legs 9 with the rung extensions 8^a, side-bar members 7, and braces 10 affords a very strong light structure of sufficient width between the lower ends of the legs 9 to insure

stability to the ladder and prevent it from tipping sidewise, and from the diagonal disposition of the braces 10 said braces are adapted to resist embedment in the soil, so that the ladder will be capable of sustaining considerable weight and will not objectionably sink into the ground.

It has been found of considerable advantage for the proper support of the ladder that the usual adjustable prop-leg therefor be constructed as shown in the drawings. This leg consists, essentially, of a light frame formed of two sections 11, having equal length and thickness, these leg-sections being preferably held near together at their lower ends by the narrow spacing-block *c*, secured between them by any suitable means. From the spacing-block *c* the leg-sections 11 diverge toward their upper ends such a degree that these upper ends may be introduced and fit loosely between the inner edges of the side members 7, and at a short distance from the upper extremities of the leg members 11 they are held properly spaced apart by the transverse bar 16, secured thereto at its ends. To insure necessary stiffness for the prop-leg, its two members are strengthened by the cross-bars 13 14, which are secured at their ends upon said leg members and are spaced apart from each other and also from the spacing-block *c* and transverse bar 16 a suitable distance. The skeleton prop-leg is held to rock upon the upper portion of the ladder preferably as follows: At opposite points below and near the uppermost rung 8 two similar blocks *d* are introduced and secured between the members 7 for each stile or side bar of the ladder, and in these blocks sockets *e* are formed that are alined and in a plane parallel with the rungs 8. Two similar bracket-blocks *e'* are secured upon the upper end portions of the leg members 11, and in the latter, as well as in the bracket-blocks, paired semicircular recesses are formed that together produce opposite transverse orifices of a suitable diameter. Through the orifices in the prop-leg and bracket-blocks *e'* a metal pintle-rod 15 is inserted, that neatly fits therein, said rod having sufficient length to project at each outer edge of the prop-leg members 11, so as to completely occupy the sockets *e*.

It will be seen that the hinged connection between the prop-leg and the upper portion of the side bars of the ladder is very substantial and will obviously prevent any side sway of the ladder and prop-leg at the upper end of said parts. The prop-leg may be folded closely against the rungs 8 of the ladder and be held thus folded by a turn-button *g*, supported on the block *b*, which may be of a thickness that permits it to project into the space between the leg members 11 when the prop-leg is completely folded.

In use the wide base afforded the complete ladder assures the safety of the fruit-picker who may stand near the top of the same, and it is one of the features of advantage resulting from the peculiar construction of the skeleton prop-leg that the occupant of the ladder may straddle the upper rung 8 thereof and stand with one foot on the second rung 8 and with the other foot on the transverse bar or rung 16, which is the uppermost one on the prop-leg, so that a secure and comfortable footing is thus afforded to the fruit-picker near the top of the ladder.

Obviously the rungs 8 may be rectangular or rounded in their bodies, or they may, if desired, be given the form of flat steps between the side bars of the ladder.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with the side bars and one of the lower rungs of a ladder, of supplementary members trending downward and outward from said rung and in engagement with said side bars, and provided with diagonal ends to form feet for the ladder.

2. The combination with the side bars, and one of the lower rungs of a ladder, of supplementary members trending downward and outward from said rung and in engagement with said side bars to form feet for the ladder at points beyond the sides of said side bars and below their lower ends, said supplementary members being formed at their lower ends or feet with diagonal faces for engagement with the ground.

3. The combination with the side bars of a ladder, said bars each comprising two similar members and rungs secured between said members, certain of the rungs having integral lateral extensions differing in extent, of two supplementary legs having their upper ends secured between the members of the respective side bars in contact with an appropriate rung, said legs extending downward and outward below the ladder side bars in secured engagement with the rung extensions, and two diagonal braces affixed by their outer ends on the lower portions of the supplementary legs, and thence extending inward and upward between the side-bar members to a projection on one of the rungs, whereon the adjacent ends of the braces are secured.

4. The combination with the side bars, and one of the lower rungs of a ladder, of supplementary members trending downward and outward from said rung and in engagement with said side bars to form feet for the ladder at points beyond the sides of said side bars and below their lower ends, and side members connected with said feet and extending upwardly and inwardly into engagement at their top ends with the sides of the ladder.

5. In ladders, a prop-leg comprising two leg members slightly spaced apart at their lower ends and diverging from their lower ends upwardly, cross-bars between said members, a reinforce-block centrally located on

the rear side of one of the lower rungs of the ladder, said prop-leg being adapted to swing inward against the rungs, with said reinforce-block received between its sides, and a turn-button on said reinforce-block for engaging the legs of said prop-leg, as set forth.

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

STEPHEN SELBY WARD.

Witnesses:
E. H. KING,
JAMES MASON.