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F. VENIERO

LADDER

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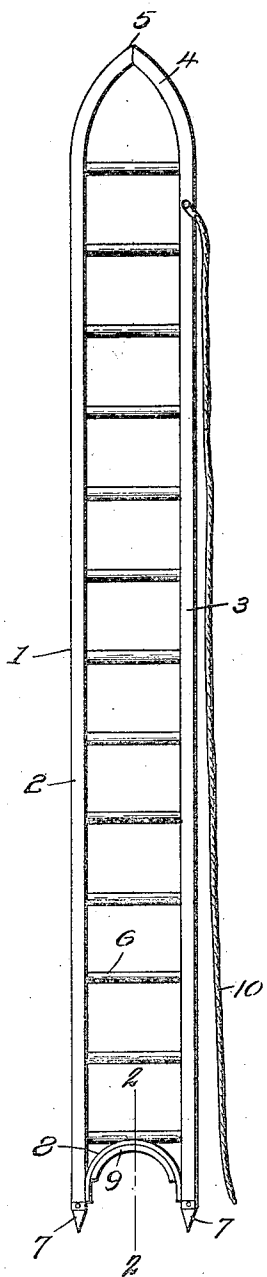


Fig. 1.

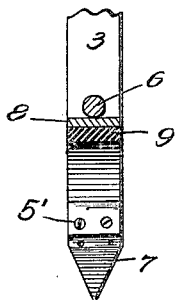


Fig. 2.

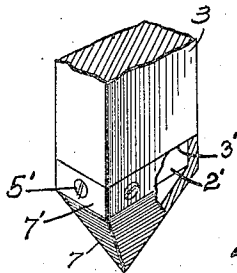


Fig. 3.

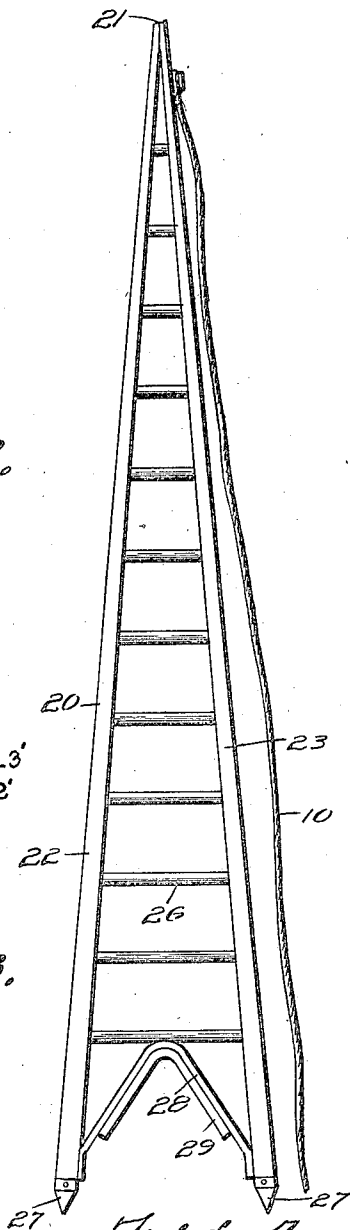


Fig. 4.

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Witness

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UNITED STATES PATENT OFFICE.

FRANK VENIERO, OF MORENO STAGE, CALIFORNIA.

LADDER.

Application filed December 7, 1920. Serial No. 423,894.

To all whom it may concern:

Be it known that I, FRANK VENIERO, a citizen of the United States, residing at Moreno Stage, in the county of Riverside and State of California, have invented certain new and useful Improvements in a Ladder, of which the following is a specification.

This invention relates to ladders and more particularly to those for use in groves of citrus trees where lightness, rigidity and adaptability for use in many peculiar situations are important.

The object of the invention is to provide such a ladder so constructed that it may be handled with one hand and readily inserted among the branches of trees of thick growth without breaking the limbs or injuring the bark.

Another object is to provide such a ladder equipped with means for penetrating its supporting surface and holding the ladder securely against slipping.

Another object is to provide a ladder especially designed for pruning fruit trees or picking fruit and which is equipped with means to prevent scarring of the trees when the ladder is supported by straddling a limb with its lower end.

With these and other objects in view, the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims.

In the accompanying drawing:

Figure 1 represents a front elevation of a ladder embodying one form of this invention.

Fig. 2 is a detail sectional view taken on the line 2-2 of Fig. 1.

Fig. 3 is a detail perspective view of the lower end of one of the side bars of the ladder, and,

Fig. 4 is a front elevation showing another embodiment of the invention.

In the embodiment illustrated in Fig. 1 the ladder 1 constituting this invention comprises two parallel side bars 2 and 3 converging at their upper ends as shown at 4, said ends being rounded and united at their terminals as shown at 5 at a point in alignment with the center of the ladder. The lower end of each of the bars 2, 3, is reduced as at 2', and which provides a continuous shoulder 3'.

The side bars 2, 3, are connected together

by cylindrical rungs 6, which are of a length sufficient only to support one foot of the user, so that the minimum lightness will be provided.

Secured to the reduced end of each of the side bars, is a metallic cap, which consists of a rectangular upper portion 7' and a pyramidal lower portion 7. The rectangular upper portion 7' of the cap is secured to the side bar by the hold fast devices 5', and the size of the said rectangular upper portion 7' of the cap, is such that the outer face of said rectangular upper portion 7' will be flush with the outer face of the side bar. The cap members are positioned against the shoulders 3' of the side bars. The lower portion of each of the cap members is hollow.

Arranged below the lowermost rung of the ladder is a support engaging member 8, here shown in the form of a semicircular strip of metal having a protective facing 9, on its lower side, and which facing, is composed of any suitable material, preferably rubber, to prevent scarring of the support in connection with which the ladder is used. The member 8 is rectangular in cross section and has the central portion abutting against the lower face of the lower rung, and said member 8 is positioned with respect to the rung, so that it will project beyond each side of the rung. The facing 9, is of less length than the length of the member 8, and is so arranged with respect to the member 8, that the termini of the member 9 will be positioned above the termini of the member 8. The rubber faced member 8 in addition to forming a support engaging member also operates as a brace for the lower end of the ladder, and is secured at its ends to the inner faces of said side bars as shown in Fig. 2 and engaged midway its ends with the lowermost rung of the ladder.

A rope 10 is secured at one end to the upper end of the ladder and may be used for attaching the ladder to a tree or for lowering a basket or other container.

In the form shown in Fig. 4 the ladder 20 is composed of rectilinear side bars 22 and 23 which converge toward their upper ends meeting at a sharp point as shown at 21. The rungs 26 which connect these side bars decrease in length from the lower to the uppermost end. Each of the side bars 22, 23, is provided at its lower end with a pyramidal cap member 27, which is similar

to that shown in the other figures of the drawing, as well as being connected to the side bars of the latter in a manner as hereinafore referred to.

5 A combined brace and support engaging member 28 is shown arranged below the lowermost rung of the ladder and is substantially V-shaped in form being equipped on its lower face with a rubber protecting
10 member 29, preferably composed of rubber and is for the same purpose as the members 8 and 9 shown in Fig. 1. The brace 28 is rectangular in cross section, and the protecting member 29 is arranged with respect to
15 the brace 28, in the same manner as the facing 9, with respect to the member 8.

A rope 10 is also connected to the upper end of one of the side bars of the ladder 20 and is designed for the same purpose as the
20 corresponding member of Fig. 1.

While this ladder is primarily intended for use in pruning trees of thick growth it obviously may be used for many other purposes and being very light in structure may
25 be handled with one hand and the form shown in Fig. 4 used as a protective weapon should occasion demand.

In the use of this ladder in connection with pruning or picking fruit from citrus
30 trees the reduced upper end of the ladder may be employed to force its way between the close branches to afford an opening for the pruner without in any way injuring the tree and when it is used in connection with
35 large trees it may be mounted on one of the larger limbs by resting the protected support engaging member 8 or 28 on the limb with the spurred ends of the side bars disposed on opposite sides thereof. The protecting facing 9 or 29 will operate to prevent
40 barking or scarring of the limb which supports the ladder.

The preferred embodiment of the invention is disclosed in the drawings and set forth in the specification, but it will be understood that any modifications within the scope of the claimed invention may be made in the construction without departing from the principle of the invention of sacrificing
45 any of its advantages. 50

What is claimed is:

1. A ladder comprising a pair of side bars connected together at their upper ends and having the remaining portion of their length spaced apart, spaced cylindrical superposed rungs spanning the space between said bars and secured to the latter, an arch-shaped brace rectangular in cross section interposed between and secured to the lower end terminal portions of said bars, said
55 brace having its central portion abutting against the lowermost one of said rungs and projecting beyond each side thereof. 60

2. A ladder comprising a pair of side bars connected together at their upper ends and having the remaining portion of their length spaced apart, spaced cylindrical superposed rungs spanning the space between said bars and secured to the latter, an arch-shaped brace rectangular in cross section interposed between and secured to the lower end terminal portions of said bars, said brace having its central portion abutting against the lowermost one of said rungs and projecting beyond each side thereof, a protective element secured to the lower face of and corresponding in contour to the shape of the brace, the side edges of said element being flush with the side edges
65 of the brace. 70 75

In testimony whereof, I affix my signature hereto. 80

FRANK VENIERO.