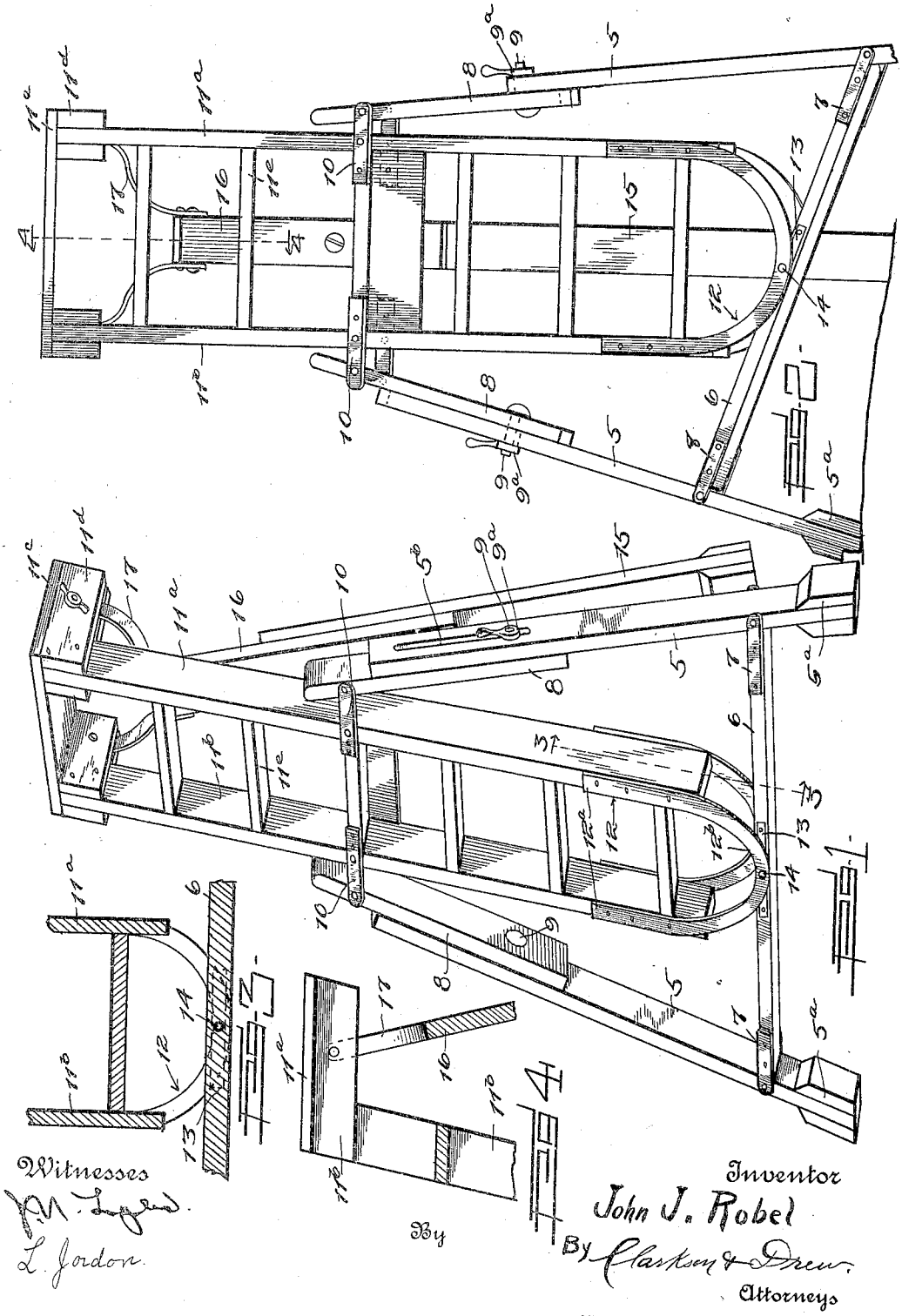
J. J. ROBEL.

LADDER.

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1,084,033.

Patented Jan. 13, 1914.



Witnesses

M. Lyell.

L. Jordon.

Inventor

John J. Robel

By Clarkson & Drew.

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN J. ROBEL, OF SELAH, WASHINGTON.

LADDER.

1,084,033. Specification of Letters Patent. Patented Jan. 13, 1914.

Application filed September 24, 1913. Serial No. 791,458.

To all whom it may concern:

Be it known that I, JOHN J. ROBEL, citizen of the United States of America, residing at Selah, in the county of Yakima and State of Washington, have invented certain new and useful Improvements in Ladders, of which the following is a specification.

This invention relates to improvements in ladders of that type especially adapted for use in fields for picking fruits from growing trees, and upon ground which is of uneven hardness and has an irregular surface.

The invention is designed to provide a practical field or orchard ladder which comprises a main ladder section, supporting legs for said main ladder section having adjustable connection therewith and a connection between the ladder section and the front supporting legs, whereby the ladder section will be maintained in safe upright position when the legs are placed on different elevations of the ground.

One of the leading objects of the invention is the provision of a field or orchard ladder having supporting legs and a ladder section pivotally supported on the legs to occupy a normal substantially vertical position when one of the legs is at a lower point than the other leg, said ladder section being effectively braced at its point of pivotal connection with the legs.

Another object of the invention is the provision of an improved pivot connection between the ladder section and the supporting legs which will prevent displacement of the ladder section on the supporting legs and permit of a free, guiding, pivotal action.

Another object of the invention is the provision of a field or orchard ladder which embodies supporting legs and a ladder section pivotally supported thereon and provided with means for limiting the sweep of pivotal action due to the sinking of the supporting legs.

With the above and other objects in view the invention comprises certain new and useful combinations, constructions and arrangements of parts, clearly described in the following specification and clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a front perspective view of the improved ladder. Fig. 2 is a front elevation thereof. Fig. 3 is a detail view partly in section showing the connection between the ladder section and the supporting legs. Fig. 4 is a detail of the connection of the rear leg with the platform.

Referring to the accompanying drawings illustrating the practical embodiment of the invention 5 designates companion right and left front supporting legs, which have their lower ends reinforced and widened by means of blocks 5^a and are connected to each other near their lower ends by means of a cross bar or step 6, the opposite ends of which are pivoted to the legs 5 by straps or arms 7. The upper end portions of the legs 5 are provided longitudinal slots 5^b and said slotted portions are connected to the leg extensions or members 8 by means of adjusting bolts 9, which bolts 9 extend through the slots 5^b and are provided with nuts 9^a, whereby the extensions or members 8 may be clamped against the legs 5. The upper end portions of the leg extensions or members 8 are provided with metal strap bars 10, which are secured against the front and rear side edges thereof. The strap bars 10 are secured to the ladder section 11 so as to be immovable thereon, the ends of said strap bars being pivoted to the leg extensions or members 8.

The ladder section 11 consists of the usual side members 11^a and the connecting steps or rungs 11^e. A platform head piece 11^c is shown, which is braced on the supporting blocks 11^d. The blocks 11^d extend rearwardly of the side members 11^a.

To the lower end portions of the side members 11^a supporting yokes 12 are connected. Each supporting yoke is provided with parallel end portions 12^a, which are fastened to the right and left side members of the ladder section, and are further provided with a curved portion 12^b connecting the side or end portion 12^a to each other. One of the supporting yokes 12 is immovably secured against the front side of the ladder section and the other supporting yoke is immovably secured against the rear side of said ladder section. Metal bearing plates 13 are disposed between the yokes 12 and the cross bar or step 6, with which said supporting yokes are pivotally connected to engage with the opposite side edges of said step or cross bar 6, by means of the bolt or pivot 14.

The structure above described of itself forms a complete ladder having independently extensible supporting legs and a burden

supporting section which is pivotally supported on the legs, so that the legs may be engaged with floor or ground surfaces of different elevations and the burden supporting section supporting in its normal vertical or upright position. This structure may be used by placing the head of the ladder section against a wall, or in the case of field or orchard use, placing the ladder head against the trunk of the tree. In the latter use it may happen that one of the legs will sink into the ground thereby endangering the person on the ladder section, and to prevent the tilting of the ladder section on the supporting legs the lower ends of the supporting legs are adapted to abut against the upper surface of the step or cross bar 6, as indicated in Fig. 1.

A rear leg is provided for rendering the device self supporting and this rear leg consists of a lower leg section 15, similar to the front legs 5, and which is adjustably connected with the upper leg section 16. The upper leg section 16 is pivotally connected with the supporting blocks 11^d by means of the upwardly diverging metal arms 17. The upper ends of the supporting arms 17 are movable between companion supporting blocks carried by each of the side members 11^a of the ladder section.

The curved spaced supporting bars or members 12 serve to effectively brace the side members of the ladder section against either forward or rearward displacement and to permit of a free pivotal action. The curved portion of each supporting bar is adapted to ride against the step or cross bar, and the strain on the step or cross bar is well equalized by the spaced connection of the two curved portions. This arrangement permits of the free and satisfactory use of the lower step 6, or when the lower step is supported on an incline the curved portion of the supporting bars may be used as a step.

The improved ladder has been used in actual field and orchard work and has given the highest satisfaction and service.

It is understood that various changes in the details of construction and in the combination of parts may be resorted to without departing from the spirit of the invention, as defined in the following claims:—

Having described my invention I claim:—

1. In combination, supporting legs having extensible members, a ladder section supported on said members, a cross bar connecting said legs, and supporting yokes having parallel side portions secured to the opposite sides of the lower end of the ladder section and having curved portions pivoted to the opposite sides of the cross bar and adapted to brace the ladder section on said cross bar.

2. In combination, supporting members, members having adjustable connection with said supporting members, a cross bar connected to the lower end portions of the supporting members, a ladder section connected to the upper end portions of the adjustable members, and supporting yokes having parallel side portions connected to the front and rear sides of the ladder section and having curved portions connecting said parallel side portions and pivoted to the front and rear sides of the cross bar, the lower ends of the side members of the ladder section being adapted to abut against the cross bar to limit the sweep of said ladder section on the cross bar.

3. In combination, supporting legs, a step connecting the legs, a ladder section pivoted at its lower end to the step and having its lower end spaced above the step and disposed bodily between and in line with the legs, members extensibly connected with the legs, and means for connecting the ladder section with the members.

4. In combination, supporting legs, a step connecting the supporting legs, a ladder section, supporting yokes secured to the ladder section and pivoted to the opposite sides of the step and supporting the ladder section bodily above the step and in line with the legs, and means connecting the upper end of the ladder section to the legs.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN J. ROBEL.

Witnesses:
EDWARD V. LOCKHART,
WILLIAM B. CLARK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."