(No Model.) 3 Sheets—Sheet 1.

H. HUBER.

PORTABLE LADDER FOR GATHERING FRUIT.

No. 310,434. Patented Jan. 6, 1885.

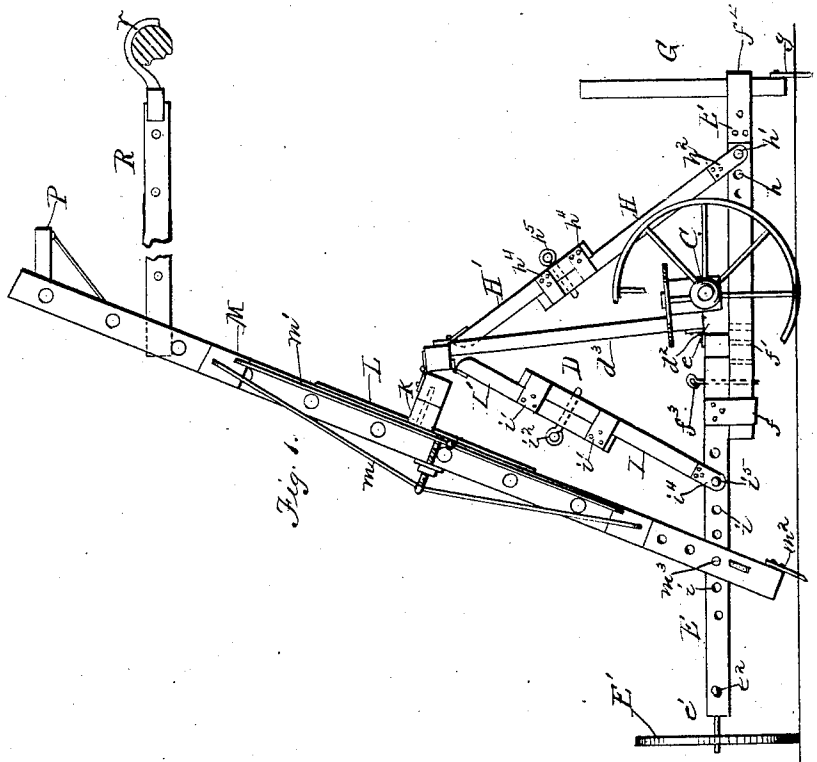


Fig. 1.

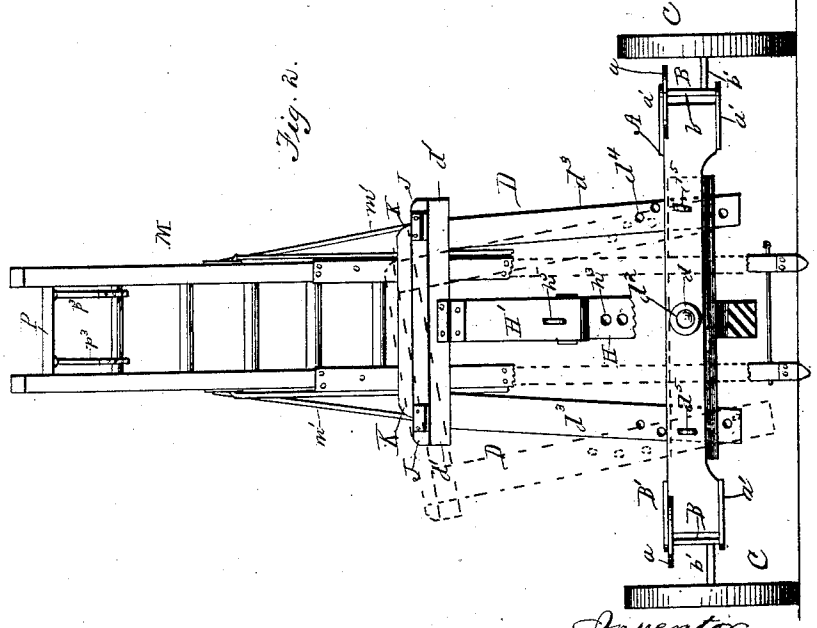


Fig. 2.

Witnesses:
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Inventor:
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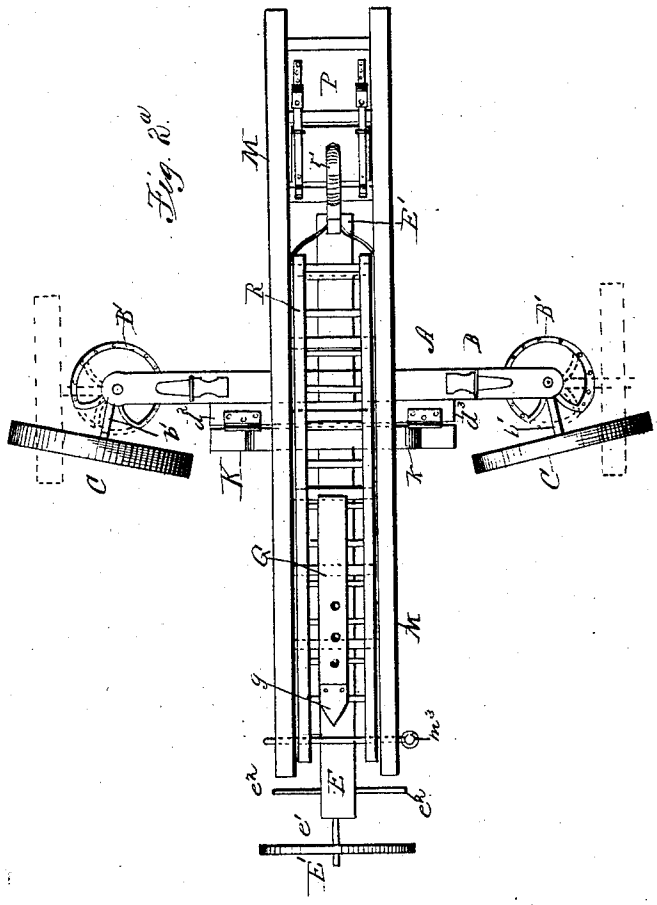
N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

H. HUBER.

PORTABLE LADDER FOR GATHERING FRUIT.

No. 310,434. Patented Jan. 6, 1885.



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(No Model.) 3 Sheets—Sheet 3.

H. HUBER.

PORTABLE LADDER FOR GATHERING FRUIT.

No. 310,434. Patented Jan. 6, 1885.

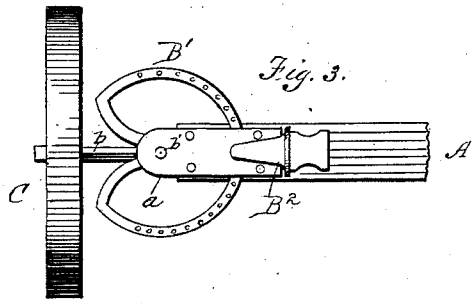


Fig. 3.

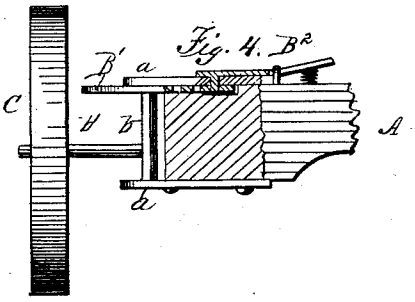


Fig. 4.

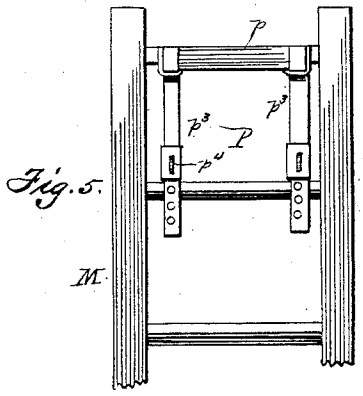


Fig. 5.

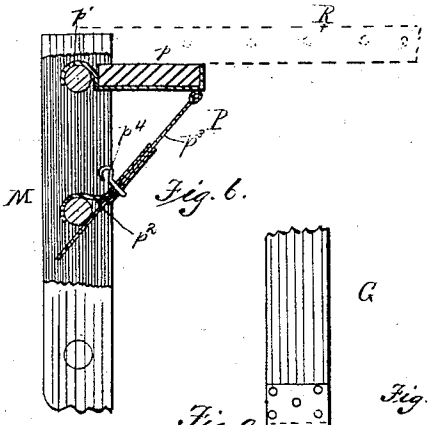


Fig. 6.

Fig. 9.

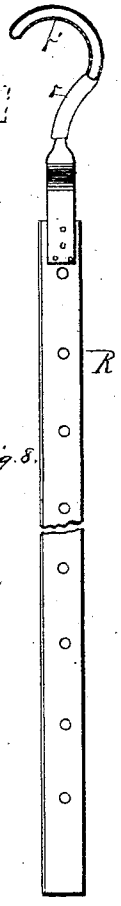


Fig. 8.

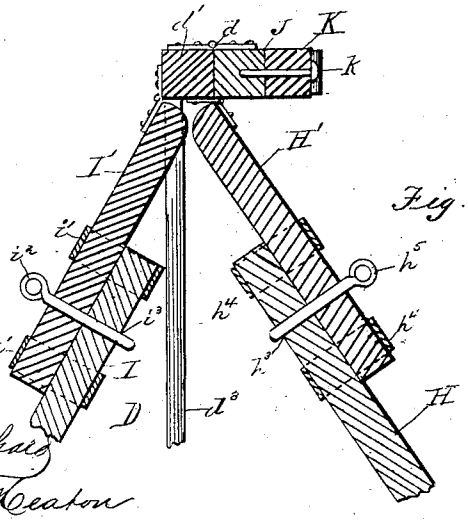


Fig. 7.

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UNITED STATES PATENT OFFICE.

HENRY HUBER, OF CRESTLINE, OHIO.

PORTABLE LADDER FOR GATHERING FRUIT.

SPECIFICATION forming part of Letters Patent No. 310,434, dated January 6, 1885.

Application filed October 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY HUBER, a citizen of the United States, residing at Crestline, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Portable Ladders for Gathering Fruit, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a portable adjustable ladder for fruit picking and for other purposes; and the novelty consists in the construction, arrangement, and adaptation of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The essential object of the invention is to provide a ladder which, in connection with a wheeled truck and a supporting-frame, may be adjusted to suit inequalities in the surface of the ground, side hills, &c. The degree of inclination may be readily adjusted to suit, and the wheels may be readily adjusted on the axles to allow the mounted ladder to be moved in the arc of a circle or around a tree, as requirements may suggest.

Various means are provided for anchoring the device against accidental movement, among which are the carrying-wheels, one of which may be readily shifted to either side of the tongue, or upon the end of the same in a plane transverse to that of the tongue. A platform attachment is provided which, having one end rest upon the main ladder, is provided at the other end with a hook to engage with a limb of the tree, the hook being covered with rubber to prevent slipping. An adjustable platform is also provided, and is adapted to be readily engaged with the rungs of the main ladder. The parts pack snugly together for transportation.

The invention in its details is fully illustrated in the accompanying drawings, in which Figure 1 is a side elevation of the complete device with all its parts in position for service. Fig. 2 is an end elevation broken away to show the pivot of the vertical frame, and in dotted lines showing the means for maintaining the equilibrium of the ladder upon uneven ground. Fig. 2^a is a top plan view showing the wheels set to have the truck move in the arc of a circle. In dotted lines I show a position in which the wheels anchor the truck against movement. Fig. 3 is an enlarged view of a detail in plan, and Fig. 4 a vertical section corresponding therewith. Fig. 5 is a front view, and Fig. 6 a vertical section, of the top of the ladder with the basket or standing platform attached. Fig. 7 is a detail section; Fig. 8 a side view of the horizontal ladder attachment, and Fig. 9 a detail view of an anchoring-leg.

Referring to the drawings, in which similar letters of reference indicate like parts in all the figures, A designates the main axle in plates *a* and *a'*, upon the upper and lower side of each end of which are furnished journal-bearings for stub-axles B. These stub-axles are ⊥-shaped, the vertical arm *b* serving as a pivot for the wheel C, and the horizontal arm *b'* as a spindle for the same. Rigid with the stub-axle is a toothed or perforated segment, B', which is engaged by a spring-catch, B^2, located upon the upper side of the axle A. By these means the angle of the wheel C may be readily adjusted to direct the truck in any desired direction or to anchor the same against movement, as seen in Fig. 2^a.

Pivoted to the axle A at *d* is a vertical frame, D, consisting, essentially, of an upper and lower horizontal bar, *d'* and d^2, respectively, and two uprights, d^3, the latter being perforated at d^4 in the arc of a circle having the pivot *d* for a center. Pins d^5, passed through the axle A and frame, allow the frame D to be adjusted to suit inequalities of the ground, as seen in Fig. 2.

To the bar d^2 is hinged at *e* the tongue E, and this tongue is provided with a wheel-spindle, *e'*, upon its free end, and a spindle, e^2, upon either side near said end. These spindles are for the reception of a wheel, E', and this wheel may be changed from either side of the tongue to the end thereof, or vice versa, at will. In transportation this wheel is ordinarily arranged at the side of the tongue, and is arranged at the end when the machine is in use, as in being moved around a tree. A supplemental tongue, F, is provided with a series of vertical perforations, *f*, and it operates loosely

in straps f' f^2, secured upon the tongue E and projecting below the same, a pin, f^3, passing through the tongue E and into any one of the holes f to give a proper adjustment to the tongue F. A metal strap, f^4, is also secured to the rear end of the tongue-extension E, and this strap is adapted to receive a vertical leg, G, which has a sharp end, g, and is adapted to anchor the truck or support the same as necessity may require. The rear tongue or extension F is provided with a series of transverse horizontal holes, h, and the tongue E is provided with similar series of holes, i. The holes h are adapted to receive a pin, h', which, passing through the perforated ears h^2 and one of said holes h, serves to adjustably secure to the extension F a brace, H. This brace H has a series of holes, h^3, and, passing through straps h^4, secured upon the fellow brace H', is secured adjustably thereto by a pin, h^5. The brace H' is hinged to the rear side of the bar d' of the frame D. By a similar arrangement upon the front side of the bar d' a brace, I', is hinged to the bar d', and has straps i', which receive a brace, I, a pin, i^2, passing through the brace I' and into one of a series of holes, i^3, in the brace I. The lower end of the brace I has perforated ears i^4, through which a pin, i^5, serves to secure the said brace to the tongue E by engaging one of the holes i. By this arrangement it will be observed that I may readily and quickly adjust the frame D with reference to the plane of the axle A by the pins d^3, and that I may adjust it upon either the front or back side by means of the braces and pins last described.

The parts thus far described comprise the truck and its vertical frame. By adjusting the wheels properly the truck may be easily forced in any desired direction, as around a tree, for instance, as indicated in Fig. 2^a.

I will now describe the ladder and its relative features.

Hinged to the bar d' of the frame D is a bar, J, and pivoted at j to this bar J is a block, K, having two locking-guides, k, which receive plates L, secured upon the under side of the standards of the ladder M. This ladder is trussed longitudinally, as seen at m, and transversely, as seen at m', the ends of the truss-rods being fitted in sockets in plates m^4, secured to the sides of the ladder, and the lower ends of the standards have metal points m^2, which are adapted to enter the soil. These points m^2 are used when the ladder is to remain stationary for any considerable time; but when the machine is to be frequently moved I provide that the ladder shall be carried bodily. For this purpose a pin, m^3, is passed through the ladder-standards and engaged in one of the holes i in the tongue E.

To hold a basket or other receptacle, or as a standing platform for the operator, I provide the device P, which may be secured to any of the rungs of the ladder, and may be adjusted to accommodate the incline of the ladder and preserve a horizontal plane to the bearing at will. This device is shown in detail in Figs. 5 and 6, and consists, essentially, of a platform, p, having hooks p', which engage one of the rungs of the ladder, and hooks p^2, carried by adjustable braces p^3, which hooks p^2 engage the rung below. The braces p^3 may be lengthened or shortened to suit the angle of the ladder by the pin p^4, or equivalent holding means.

R designates a ladder attachment having a hook, r, covered with a rubber sheath, r', and having round or flat plates of metal r^2, secured to the under surfaces of the longitudinal bars, as shown in Fig. 9. The body of this attachment may extend from one of the rungs of the main ladder, or from the platform P to a limb of the tree, and form a horizontal platform, upon which the operator may step to reach different portions of the tree which are inaccessible from the main ladder.

The rubber covering r' is designed to prevent the hook from slipping or breaking the bark of the tree-limb or support over which the hook may be engaged. The attachment R packs snugly within the frame of the main ladder, as seen in Fig. 2^a, and the leg within the part R.

From the foregoing description the operation and advantages of the device will be readily understood.

What I claim as new is—

1. In combination with the axle A and wheels C, the stub-axles B, the vertical arm b of which serves as a pivot, and means, as B' B^2, for adjusting the said wheels, as set forth.

2. In combination with the axle A, adjustable tongue E, the wheels C, and wheel E', the stub-axles B, segments B', and spring-catches B^3, as and for the purposes set forth.

3. In combination with the truck A C, adjustable tongue E, and extension F, the frame D, pivoted to the axle A at d, and having the holes d^4, the adjustable braces H H' and I I', and pins d^5, as and for the purposes set forth.

4. The combination, with the adjustable frame D and truck, of the hinged bar J, pivoted block K, having guides k, and the ladder M, having plates L and points m^2, as and for the purposes set forth.

5. The combination, with the adjustable tongue E, hinged to the frame D, the said frame D pivoted to the truck and having adjusting means, as described, and the adjustable extension E, having holes i, of the ladder M L, pivoted block K, hinged bar J, and bolt or pin m^3, as and for the purposes set forth.

6. The adjustable frame D, having the braces H' I' hinged thereto, and the tongue E, hinged to the frame D and having wheel-spindles e' e^2, combined with the extension F, anchoring-leg G, the adjustable wheels C, the wheel E', and the ladder M, as and for the purposes set forth.

7. In combination with the ladder M, as

described, the platform consisting of the part p, having hooks p', the adjustable braces p^3, having hooks p^2, and the locking means p^4, as and for the purposes set forth.

8. The combination, with the ladder M, of the attachment R, having hook r, with rubber cover r', as and for the purposes set forth.

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

HENRY HUBER.

Witnesses:
FRANK MILLER,
WALLACE STAHLE.