E. F. Olds.

Ladder.

No. 45,430. Patented Dec. 13, 1864.

Fig. 5.

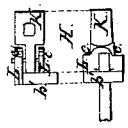


Fig. 6.

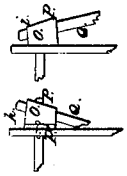


Fig. 2.

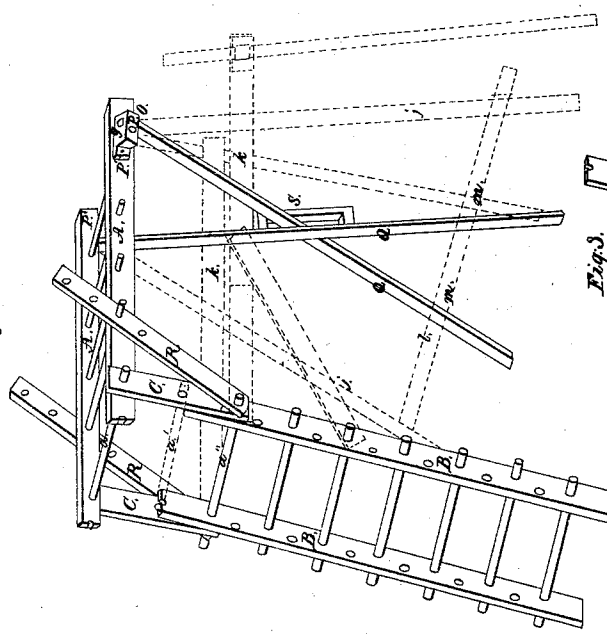


Fig. 3.

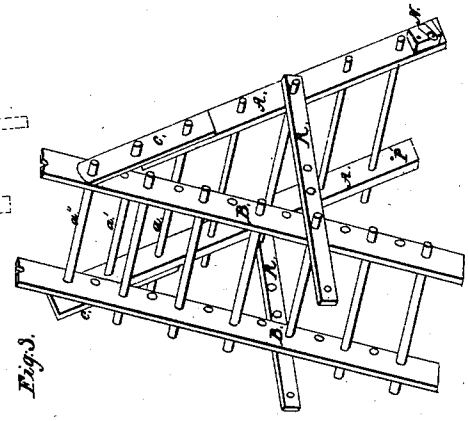


Fig. 4.

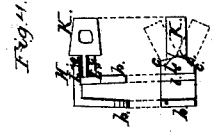


Fig. 1.

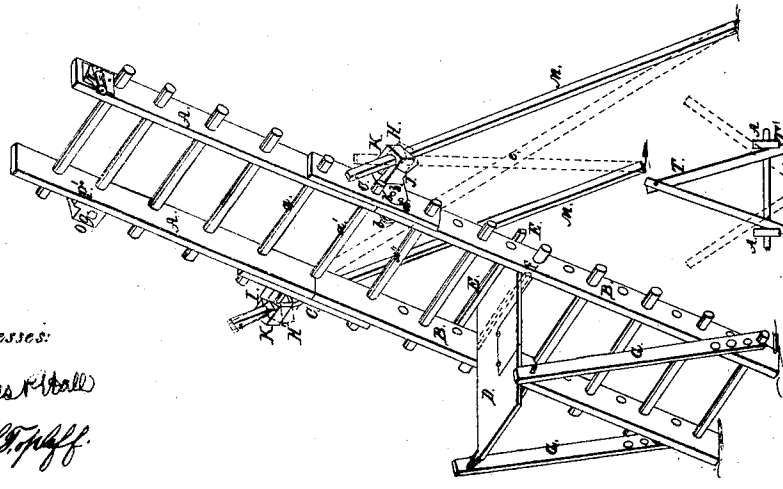
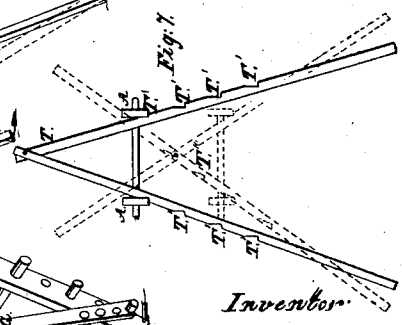


Fig. 7.



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UNITED STATES PATENT OFFICE.

E. F. OLDS, OF SOUTH LYON, MICHIGAN.

IMPROVEMENT IN FRUIT-LADDERS.

Specification forming part of Letters Patent No. **45,430**, dated December 13, 1864.

To all whom it may concern:

Be it known that I, F. T. OLDS, of South Lyon, in the county of Oakland and State of Michigan, have invented certain new and useful Improvements in Ladders; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figures 1, 2, and 3 are views of the ladder in different positions, and Figs. 4, 5, 6, and 7 are sections, which will be referred to in the description.

Like letters of reference denote like parts in the several views.

The ladder, Fig. 1, is constructed in two sections, A and B, united by the strips C, one on each side, through which pass the rounds *a a' a''*, thereby making a strong and firm connection. To the back end of the table D, on top, is fastened a cleat, E, and one also at F on the under side. The cleat F extends from the table to the outside of the ladder, and as the table rests upon the round, the cleat F sustains the table upon the round, and it cannot slip forward, by reason of the cleat E pressing against the sides of the ladder; and the table cannot slip back, for the cleat F presses against the round and edge of the side of the ladder, as seen in Fig. 1. Thus the cleats prevent the table from slipping either way, and hold it in place upon the ladder.

In the table is a trap-door to facilitate in ascending and descending the ladder, and going onto and from the ladder.

For the purpose of rendering the table more safe and firm, I support the outer end by side-braces, G G, on each side and connected to a cross-piece at the top, which extends under the table. The side braces have holes in the lower part, by which they can be attached to the rounds and adjusted to any position required for the table.

Connected or jointed to the ladder, either to the rounds, as at I, or to the sides, as at J, is a brace-joint, H H'. It is substantially the same when connected to the round on which it is designed to turn in being adjusted to the desired position, and when connected to the sides, as at J, it is adjusted by means of a pin passing through the arms *b b*, and sides of the ladder, which also allows the brace to be adjusted to the position of the ladder.

Fig. 4 shows a brace-joint for the side of the ladder, in which case the sides, are placed between the arms *b b*, and when connected to the round there is only one arm, *b'*, through which the round passes, as in Fig. 5. In other respects the brace-joints are substantially alike. From the head K of the brace extends a tongue, which is jointed to the fingers L L, so as to allow the head to turn from one position to another, as noted in Fig. 4. On each side of the fingers is a shoulder, *c c*, against which the head K rests in supporting the ladder by the braces. When the braces M M are not crossed, but in a position similar to that seen in Fig. 1, the head is turned up so as to rest against the upper shoulder, thereby firmly holding the brace and ladder, without danger of slipping or moving out of the position; and for further safety and security, and also to aid in adjusting the ladder to its place, a pin, *d*, is inserted through each arm, and into the sides of the ladder, and also a pin is passed through each head and brace. The braces when crossed, as noted at *e*, Fig. 1, the head is turned down so as to rest upon the lower shoulder, as noted in Fig. 4. The braces are made to extend through the head more or less, as the nature of the case may require in setting the ladder. The jointed or hinged connection of the head K to the fingers, and of the arms *b b b'* to the ladder, readily admits of the braces and ladder being set in any position with great facility.

To the upper end of the ladder I attach a socket, N, Figs. 1 and 3, which receives the brace for supporting the ladder in the position of Fig. 2, allowing the braces to extend at an obtuse angle. This socket may be used on each side of the ladder, or in place of it a brace-joint, *o*, which is jointed to the sides at P, to the round, or it may be jointed in any other way to the sides of the ladder. There is a lip, *t*, which extends from the joint *o*, through which is passed a pin, P', into the ladder's side to keep the joint firm and stationary when the ladder is set in place. The hole *g* in the joint *o* passes through it obliquely, by which the brace can be set in or out by turning the joint. When the joint is placed as in Fig. 2 and at *h* in Fig. 6, the braces will then cross

each other, as in Fig. 2, and when the joint is turned over, as seen at *i* in Fig. 6, then the braces will stand at an obtuse angle, so noted by the lines *j j* in Fig. 2. This joint, like the others described in Fig. 1, allows the braces to be extended to or from the ladder, whether crossed or not.

Fig. 2 shows the ladder disjointed and the upper part extended in a horizontal plane, which is done by withdrawing the round *a'* at the junction of the sections, the upper section turning or hinging down on the round *a*, and secured by the counter-braces R R on each side, connected to the rounds of the ladder, as represented, there being holes in the braces to secure the rounds according to the position of the ladder. The upper section may be raised or lowered upon the round to any position required, and the upper section may be extended by hinging or turning down the same, so as to have the end rest upon the round *a''*, and, passing the round *a'*, through the side pieces, *a*, and ends of the upper section only. This admits of the upper section being lowered and extended as one end is supported by the round and the other end by the braces in a horizontal plane or at different elevations, (as indicated by the lines *k k*, Fig. 2,) and the braces before described may be used when the ladder is thus placed in the same manner. The cross-braces Q Q at the point of intersection are secured by a staple-loop, S, and a pin which passes through the said loop and braces, and when the braces are set at an obtuse angle, as noted at *j j*, I connect them by a counter-brace (as indicated by the line *l*) to give give strength and firmness to the braces and ladder. There is near the foot of each brace a staple, *m*, to receive the counter-brace, and a pin is passed through the braces to secure them together. In the sides of the lower section is a series of holes, by which, and in connection with an independant round, the braces may be placed in any desired position, according to the elevation of the ladder. The projections of the rounds from the sides of the ladder are useful for holding the counter-braces and for getting on and off the table.

Fig. 3 represents another position of the ladder in a triangular form, and is secured by the counter-braces R. This arrangement is very desirable for many purposes, and is very substantial.

In Fig. 7 the braces T are notched at the sides, as at T', upon which notches the end of the ladder rests, as indicated at *t*. The braces are jointed or pinned together at the top or at the point of intersection when crossed, which makes the upper section of the ladder, when extended, very firm and steady. It is desirable to have the braces extend as far as possible so that the weight or line of gravity of the ladder will be considerably inside of the feet of the braces, which will render the ladder more firm and steady in place. When the ladder is extended at a low elevation it may be necessary to cross the braces, (as indicated by the dotted lines T'', Fig. 7,) so that the braces may be extended at the foot to insure the security of the ladder.

By this construction of a ladder, which may be arranged and set in various positions, and firmly secured with a horizontal table or platform, it is well adapted for family use, picking fruit, for painting buildings, scaffolding, &c.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The adjustable table D, with cleats E F, in combination with the ladder and braces G, as and for the purpose set forth, substantially.

2. The special arrangement of the adjustable braces T, and jointed together, in combination with the jointed sections A B, when constructed and operating conjointly as and for the purpose set forth, substantially.

E. F. OLDS.

Witnesses:

W. H. BURRIDGE,

A. W. MCCLELLAND.