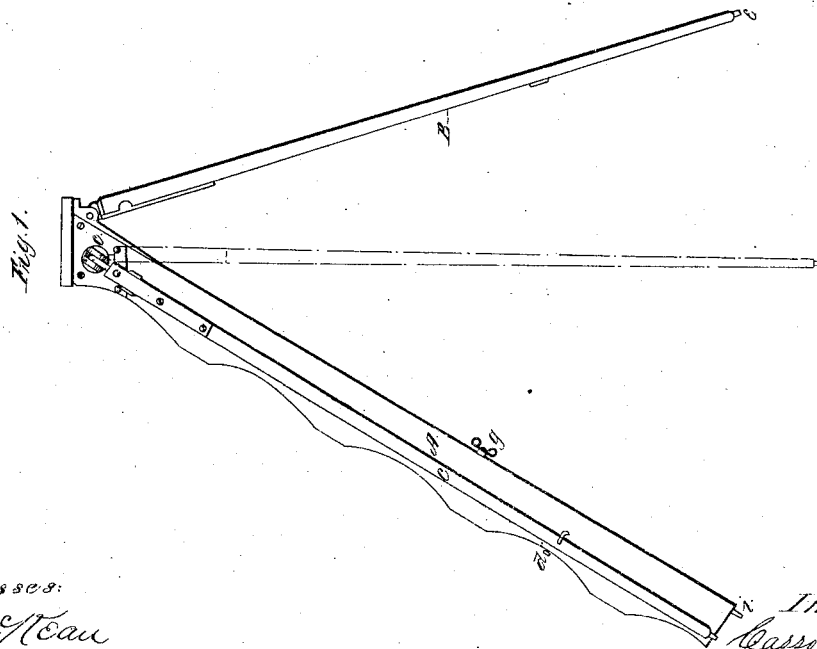
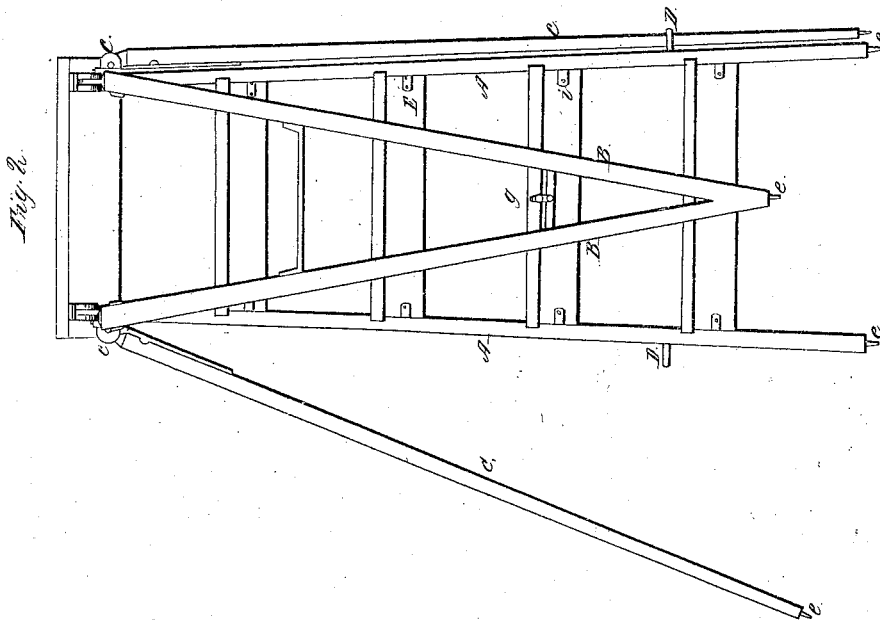


C. Hayes.

Fruit Ladder.

N^o 46,106.

Patented Jan. 31, 1865.



Witnesses:
E. M. McLean
P. J. Dodge.

Inventor:
Carson Hayes.
By his Attys.
Smith & Dodge.

UNITED STATES PATENT OFFICE.

CASSON HAYES, OF MADISON, WISCONSIN.

IMPROVED ORCHARD-LADDER.

Specification forming part of Letters Patent No. **46,105**, dated January 31, 1865.

To all whom it may concern :

Be it known that I, CASSON HAYES, of Madison, in the county of Dane, in the State of Wisconsin, have invented a new and Improved Orchard or Fruit Ladder; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my ladder. Fig. 2 is a back view of the same.

That others may understand the construction and operation of my invention, I will particularly describe it.

A A is the frame or side pieces of my ladder, which may be constructed in any ordinary or suitable manner.

B is the back brace.

C C are side braces attached to the upper end of the frame A by the swivel-joint *c*, so that they may move in all directions for the purpose of bracing or supporting the top of the ladder when standing upon inclined ground.

D D are hooks on the sides of A, within which the braces *c* are secured by the buttons *d* when said braces are not required to be in use.

E E are metal points set in the ends of the side pieces, A, and the braces B and C, in order to prevent any possibility of said parts slipping on the ground.

In using a fruit-ladder it is very frequently found necessary to place it upon ground that is sloping, and it is evident that a common step-ladder would be inadequate and unsafe in such a position. I therefore construct my back brace with but a single foot, instead of two feet, as is commonly seen in step-ladders. It is obvious that the back brace may be constructed of a single piece, hinged to or opposite to the center of the upper end of the ladder; but I prefer two pieces, joined at their lower ends, as offering the most durable and best form of construction. A cross bar or strip, *h*, is secured to the back brace B, B, in such a position that when said brace is folded up against the main frame A said strip *h* will lie parallel with one of the steps, as shown in Fig. 2. A button, *g*, is secured to the back of said step, so that when the brace B B is folded against the main frame said button can be

turned over the strip *h*, and thus hold the brace B B firmly in contact with the main frame, for convenience in transportation. As the center of gravity will not fall in a line parallel with the side pieces, A, when the ladder stands upon uneven ground, and the joints will therefore be liable to be strained when a weight is put upon the ladder, I insert the angle-irons *i i* in the angles between the steps and side pieces. The side braces, C C, are to be used when the ground is so much inclined as to render their use necessary to prevent the ladder from falling over. The swivel-joint *c* is constructed by protruding a round pin having a flange head through a corresponding hole in a suitable plate, by means of which the whole is attached to the side of the frame, as shown. Upon the outer end of the pin is a suitable joint attaching it to the upper end of the side brace, C. It will be readily perceived that while the joint allows free motion of the brace in a lateral direction the swivel allows it to move with equal freedom in a direction at right angles to the movement of the rule-joint, and the result of these two motions is to produce a universal joint.

When the ladder is to be transported, the side legs or braces are secured in the hooks D by the buttons *d*, and the back brace is secured by a button, *g*, as shown, and the whole presents an arrangement compact and convenient for transportation.

Having described my invention, what I claim is—

1. The back brace, B, constructed with a single bearing-point, substantially as shown.

2. The adjustable side braces, C C, in combination with the brace B, as and for the purpose set forth.

3. Securing the side braces, C C, by means of the hooks D and buttons *d*, as shown and described.

4. The strip *h*, or its equivalent, applied to the brace B B, and operating in combination with the button *g*, as and for the purpose set forth.

CASSON HAYES.

Witnesses:

R. D. G. SMETTE,
W. C. DODGE.