J. W. ALLEN.

LADDER.

No. 190,112. Patented May 1, 1877.

Fig. 1

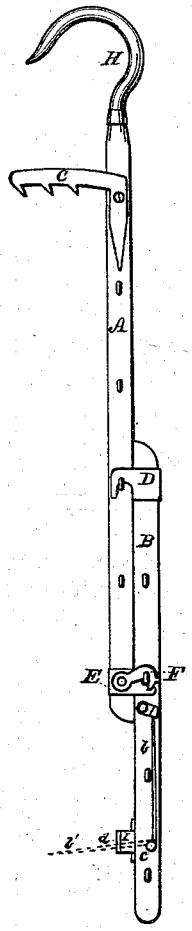
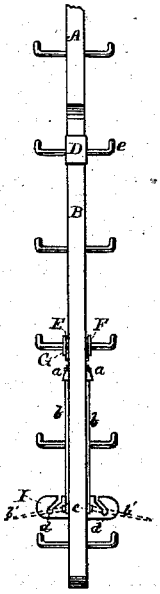


Fig. 2



Witnesses;

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UNITED STATES PATENT OFFICE.

JOHN W. ALLEN, OF REPUBLIC, OHIO.

IMPROVEMENT IN LADDERS.

Specification forming part of Letters Patent No. **190,112**, dated May 1, 1877; application filed April 7, 1877.

To all whom it may concern:

Be it known that I, JOHN W. ALLEN, of Republic, in the county of Seneca and State of Ohio, have invented a new and useful Improvement in Extension-Ladders, which improvement is fully set forth in the specification, reference being had to the accompanying drawings.

The object of my invention is to provide a cheap, light, and portable extension-ladder, to be used in places and positions where ordinary ladders are comparatively useless.

My invention is particularly suited for securing rope and tackle to the rafters of barns, for unloading hay and grain, for gathering fruit, and for use in and on the outside of buildings.

The accompanying drawings show every part of my invention.

A and B represent the two sections of which my ladder is composed. These may be made of square or any other shaped timber, of suitable size, with pins through it at suitable distances apart to form the rounds or steps. These pins or steps I prefer to bend upward near the ends *e*, to prevent the possibility of the foot slipping off. At the top of the lower section B a metallic band, D, is passed around three sides, the ends projecting far enough to allow a notch to be cut out of the under side, to form a hook to grapple one of the rounds of the first section. A similar band, E, is attached to the lower end of the first section; or it may have a slot or semicircle cut out of its ends to fit down closely over the rounds. These bands D and E are made to fit closely to the timber, and are held firmly in place by passing a bolt or round through each. The two sections are more fully secured and held together by two hooks, F G, fastened to the lower band E, as shown in the drawing. To the top of the section A I attach a metallic hook, H, for the purpose of hooking over or grappling a rafter, beam, or any other object, and holding suspended while being used. I attach another hook, C, near the top of the first section A, with hooks or teeth on the under side, as shown in the drawing, for the purpose of hooking over the roof, window-sill, or any other object on the outside of a building, and holding the ladder suspended while being used in that way. To more firmly hold and steady the ladder on the outside of buildings, I attach two braces, *b b*, to the sides of section B by a bolt, *c*. Near these, and to the rear side of section B, I fasten a metallic plate, I, bent in the form shown in the drawing. This is provided with slots *d d*, into which the braces *b b* are sprung, as shown by the dotted lines *b' b'*, so that the ends of the braces will rest against the building. When not in use, these braces *b b* are turned upward, and held to the sides of the section by the clasps *a a*. Other sections may be added in like manner.

I claim as my invention—

1. The hook C, braces *b b*, plate I, and clasps *a a*, substantially as and for the purposes set forth.

2. The combination of the hook C, braces *b b*, plate I, clasps *a a*, sections A B, with rounds bent up near the ends, bands D E, hooks F G, and grappling-hook H, substantially as and for the purposes described.

JOHN W. ALLEN.

Witnesses:
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