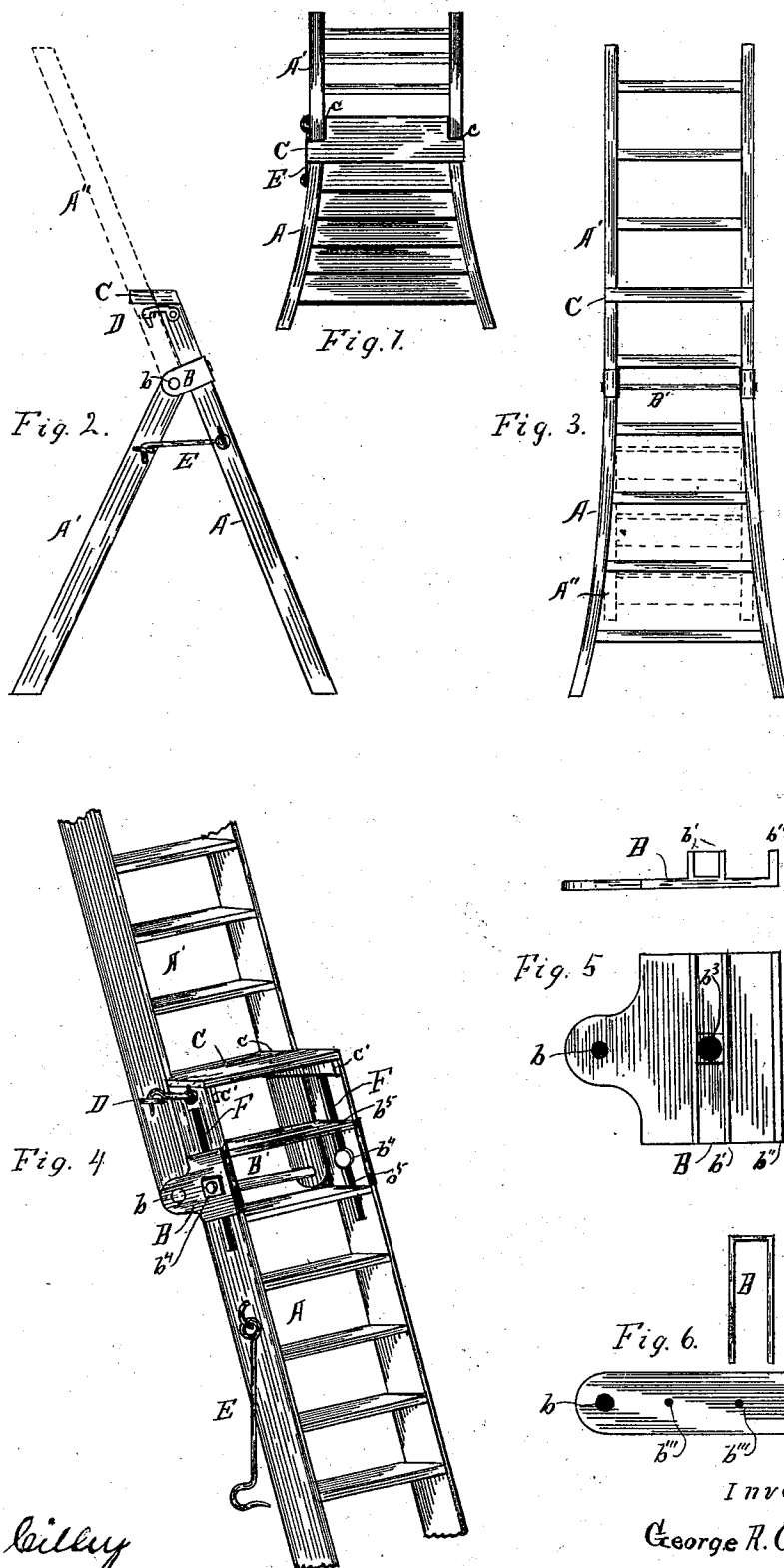


(No Model.)

G. R. CONGDON.
LADDER.

No. 507,784.

Patented Oct. 31, 1893.



Witnesses.

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UNITED STATES PATENT OFFICE

GEORGE R. CONGDON, OF GRAND RAPIDS, MICHIGAN.

LADDER.

SPECIFICATION forming part of Letters Patent No. 507,784, dated October 31, 1893.

Application filed March 7, 1893. Serial No. 464,999. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. CONGDON, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Ladders, of which the following is a specification.

My invention relates to improvements in step ladders and its objects are, first, to provide a step ladder, that may be readily converted into an ordinary extended ladder; second, to provide a convertible step ladder that may be lengthened or shortened at pleasure; and, third, to provide a convertible step and extension ladder that will be thoroughly braced side-wise at the points of connection. I attain these results by the mechanism illustrated in the accompanying drawings, in which—

Figure 1. is a plan of my ladder. Fig. 2. is a side elevation of the same as a step ladder. Fig. 3. is a front elevation of the same as an extended ladder. Fig. 4. is a perspective of a section of the same upon an enlarged scale. Fig. 5 is an edge and a back view of my hinge as used upon my extensible ladder; and Fig. 6. shows my ordinary hinge or pivot strap and the blank from which it is formed.

Similar letters refer to similar parts throughout the several views.

In constructing my ladder I make the front or main portion A, in the usual form with broad steps, and carry the top step C back to the width of the stile of the back portion A'. I cut the ends of this step off as at c so that the back portion will fit closely between the stiles and hold them rigidly in place side-wise.

I provide the back portion A' of my ladder with broad steps so situated that when the ladder is extended they will stand parallel in all directions with the steps of the lower portion and in position for convenient use as an extension ladder. This portion of the ladder is pivoted to the lower portion as at b. In my ordinary ladder I make use of a hinge or pivot bearing B formed of a single piece of narrow band iron as shown in Fig. 6 having, the punctures b b, at the ends for the reception of the pivot bolts or rods B' which I prefer to have extend across the entire width of

the ladder. I also form in this plate the puncture b''' by which it may be nailed or riveted to the stiles of the ladder, the plate having first been bent to the form indicated at B in Fig. 6 so that it will fit over the stile of the ladder with one wing each side thereof, but when designing my ladder to be lengthened and shortened I form a slot F, in each of the lower stiles for the reception and free passage of the bolts b' that secure the hinges B to the stiles. I then form the hinge shown in Fig. 5, having wings b' b'' arranged to engage with the edges of the stile and hold the hinge in position. I secure these hinges to the stile by means of any suitable device as the bolts b', a wedge b'', or otherwise.

I hold the back portion A' of my ladder to position as the leg or brace of a step ladder by means of a hook and staple E or other suitable detachable device, and when this portion of the ladder is thrown up to the position indicated in Figs. 3 and 4, I provide for holding it to place by means of a hook and staple D or other suitable device.

I provide against the danger of splitting off the back portion of the step C, by placing a cleat c' upon each of the lower stiles immediately under it and extending its entire width.

I prefer that the lower portion of my ladder be made straight from the top down several steps, thence gradually flare or curve outward at each side to the foot of the ladder and the sides may, if desired, be made solid, as shown, or open.

It will be readily seen from the foregoing description and accompanying illustrations that my ladder when extended is greatly strengthened by the extension c on the back of the upper step C between the stiles together with the placing of my hinges B some distance below, and the stiles of the upper or back portions directly back of the front stiles, all conducing to render this portion as strong and rigid as any portion of my ladder.

If I find my ladder a little too long, or too short for a given place, it is readily adjusted by raising or lowering the hinges B, in the slots F, shown in Fig. 4, when the ladder is provided with said slots and adjustable hinges.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent of the United States, is—

The combination in a stepladder of a front portion having broad stiles and steps, longitudinal slots at the upper ends of said stiles, hinges attached to, and projecting back of said stiles and made adjustable in said slots, a back portion having broad stiles pivoted and supported by the cross bar B' at the upper end said cross bar passing through the stiles and in to said hinges, each back stile directly back of the corresponding front stile,

and arranged to form a support for the step ladder, broad steps in said back portion, so arranged that when extended the back and front portions will form a continuous ladder having broad, flat steps its entire length, said ladder adjustable longitudinally in the slots F, and hooks for holding the ladder in position, substantially as set forth.

GEORGE R. CONGDON.

In presence of—

GEORGE B. HOLLIS,
ITHIEL J. CILLEY.