J. N. DUEBER.

STEP LADDER.

APPLICATION FILED MAY 19, 1914.

1,184,432.

Patented May 23, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

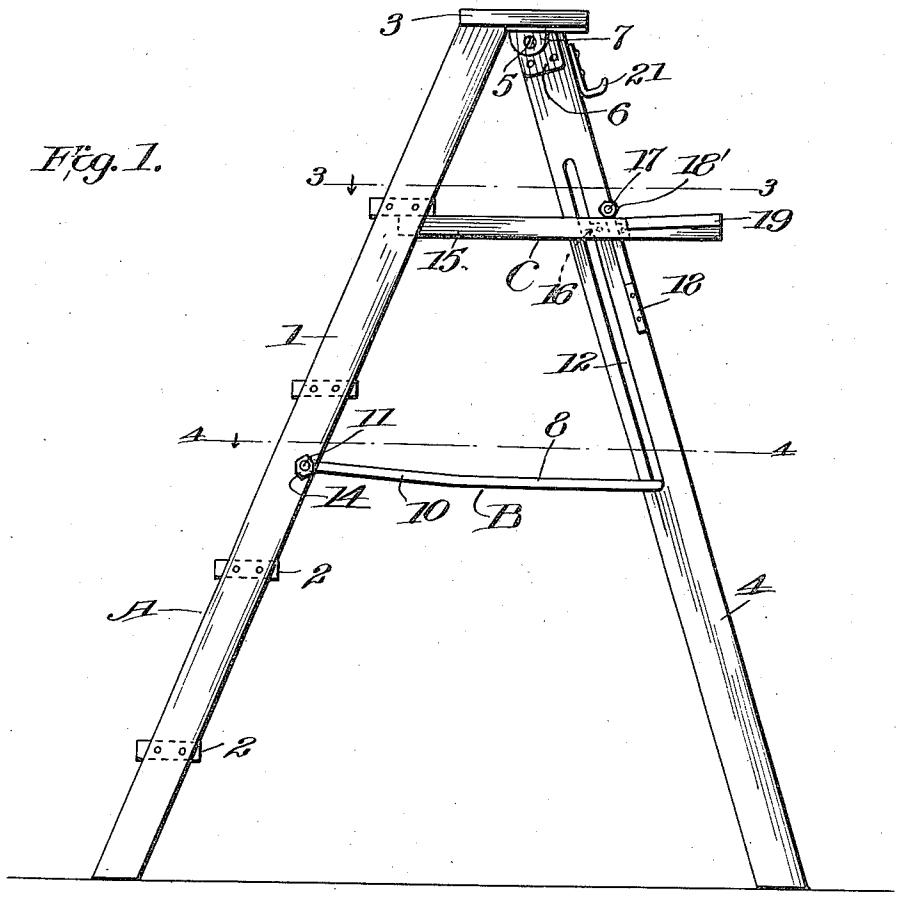
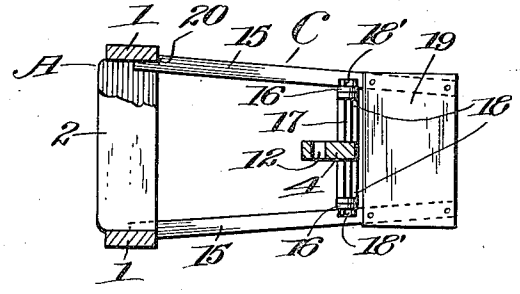


Fig. 3.



Witnesses

M. A. Jones

Inventor,

John N. Dueber,

By Fraser & Fuller

Attorneys.

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2 SHEETS—SHEET 2.

Fig. 2.

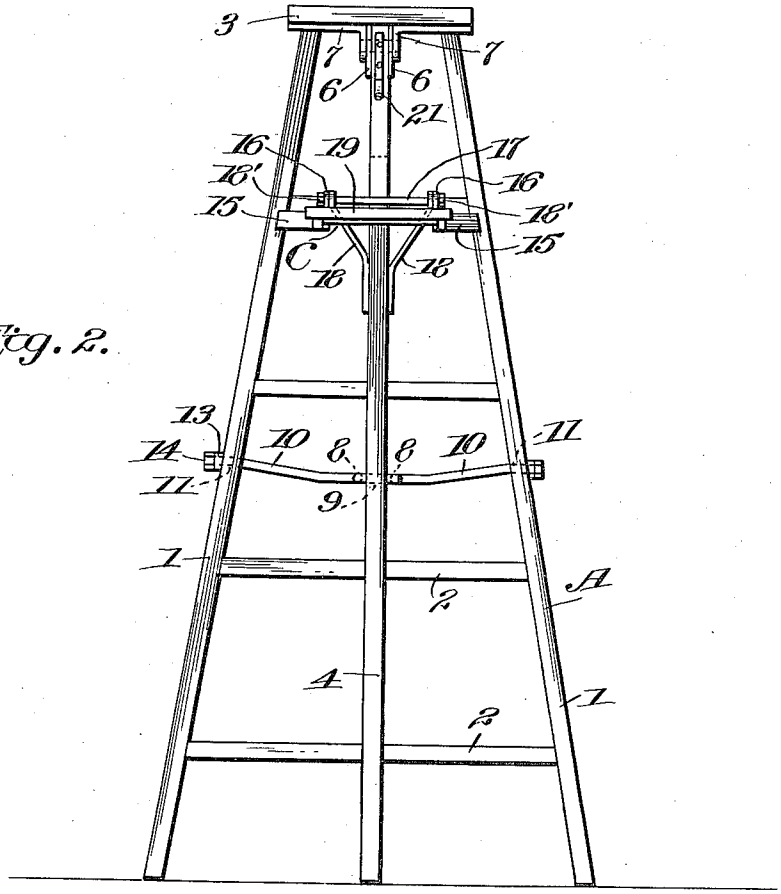
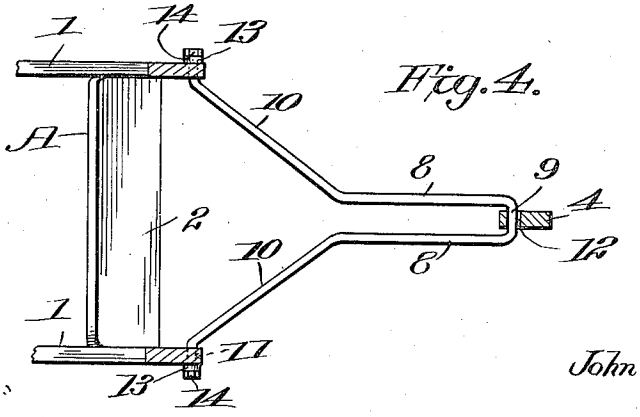


Fig. 4.



Witnesses

M. A. Jones

Inventor,

John N. Dueber,

By Munn & Allen

Attorneys.

UNITED STATES PATENT OFFICE.

JOHN N. DUEBER, OF COLUMBUS, OHIO.

STEP-LADDER.

1,184,432. Specification of Letters Patent. Patented May 23, 1916.

Application filed May 19, 1914. Serial No. 839,515.

To all whom it may concern:

Be it known that I, JOHN N. DUEBER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Step-Ladders, of which the following is a specification.

My invention relates to improvements in step ladders.

The invention aims to provide an improved construction of ladder of this type that can be manufactured at moderate cost and which will prove durable in use.

One object of the invention is to provide a construction of step ladder employing a single supporting prop for the ladder section.

Another object is to provide the said prop with an elongated slot receiving a spreading and guard section formed to prevent undue lateral movement of the prop.

A further object of the invention is to form in combination with the single prop and ladder section, a shelf section and a special construction of parts to support the same.

With the foregoing and additional objects in view, such as will appear hereinafter, the invention has been embodied in preferred form in the device described hereinafter and illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation; Fig. 2 is a rear elevation; Fig. 3 is a cross section on the line 3—3 of Fig. 1, and Fig. 4 is a cross section on the line 4—4 of Fig. 1.

Referring specifically to the drawings, A generally designates a ladder section shown as comprising upwardly and inwardly converging stiles 1 at its sides and having a plurality of steps 2 and a crown step 3. A single prop 4 is employed and located midway between and in the rear of the stiles 1. This prop 4 is pivoted to the ladder section in any suitable manner, for instance, by means of a pivot pin 5 extending through the prop 4, reinforcing plates 6 thereon, and brackets 7 fastened to and depending from the crown step 3. Prop 4 is adapted to be collapsed or folded against the section A and its movement to open position is limited by a spreading guard generally designated B. This guard B is bent from a wire rod so as to have substantially parallel portions 8, a section or portion 9 connecting the portions 8, forward and outwardly converging portions 10 leading from the portions 8, and angle portions 11 extending from the portions 10. Portion 9 extends through an elongated longitudinally extending slot 12 provided in the prop 4 so as to locate the parallel portions 8 on opposite sides of the prop in order to brace the same and prevent undue lateral movement of the prop. The lugs 11 extend through and are pivotally mounted in the stiles 1, beyond the stiles receiving washers 13 and nuts 14.

A shelf section is preferably employed and is designated generally C. This shelf section has converging side bars 15 to which are fastened lugs 16 through which lugs passes a rod 17 also passing through the prop 4 and extending on opposite sides of the prop. Said rod 17 also extends through brackets 18 which extend upwardly and outwardly as best seen in Fig. 2. Nuts 18′ fasten the rod 17 in position. A shelf 19 is fastened to the side bars 15 beyond the prop 4. Said prop 4 extends intermediate the side bars 15 and said side bars are notched as at 20 in order to engage the stiles 1 so as to brace the shelf section. A yieldable retainer is provided on the prop 4 at 21.

The sections are shown in open position in the drawings whereby the ladder is in shape for immediate use. Should it be desired to fold or collapse the ladder, the guard B is swung upwardly in the elongated slot 12, and the prop 4 moved relatively to the ladder section. During this action, the guard B and prop will fold substantially flat against the ladder section and cause the section C to assume a similar position. This section C when folded at its outer end frictionally engages the retainer spring 21 which holds the section C against undesired pivotal movement.

As merely the preferred embodiment of the invention has been described and illustrated, it is to be understood that changes in the details of construction thereof may be made within the spirit and scope of the invention.

I claim:

1. A ladder having a ladder section, a single prop section arranged centrally of and in the rear of the sides of the ladder section and pivoted to the ladder section, said prop section being provided with an elongated longitudinally extending slot, a spreading and guard member consisting of

a rod having parallel portions, a connecting portion and outwardly converging portions, said connecting section extending through said slot and said parallel sections being arranged on opposite sides of the prop to prevent undue lateral movement thereof, and angle members extending from the converging portions and through said members of the ladder section.

2. A ladder having a ladder section, a single prop section pivoted thereto, means to control the relative movement of said sections, a rod mounted on said prop section, a shelf section braced with respect to the ladder section to prevent undue relative lateral movement, lugs pivotally mounted on said rod and disposed one lug on each side of the prop section and mounted on the shelf section, and brackets, one bracket being disposed on each side of the prop section and connected to the prop section and pivotally mounted on the said rod and bearing against said lugs.

3. A ladder having a ladder section, a single prop section arranged between and in the rear of the sides of the ladder section and pivoted to the ladder section, said prop section being provided with an elongated longitudinal extending slot, a spreading and guard member consisting of a rod having substantially parallel portions, a connecting portion and outwardly converging portions, said connecting portion extending through said slot and said substantially parallel portions being arranged on opposite sides of the prop to prevent undue lateral movement thereof, and means to pivot said converging portions to the ladder section.

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

JOHN N. DUEBER.

Witnesses:
ANTHONY C. DUEBER,
JNO. W. LONG.