R. G. PING.

CONVERTIBLE LADDER.

APPLICATION FILED MAY 21, 1913.

Patented July 7, 1914.

1,102,682.

Fig. 1.

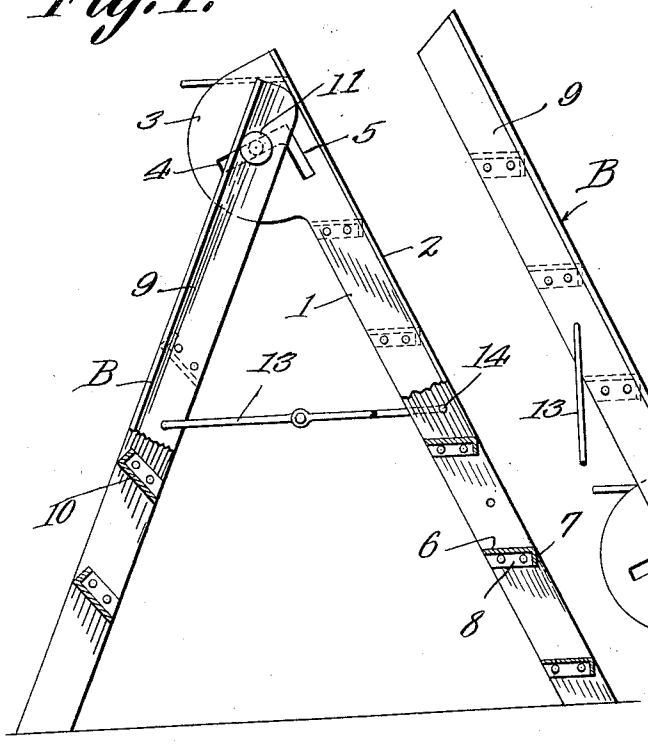
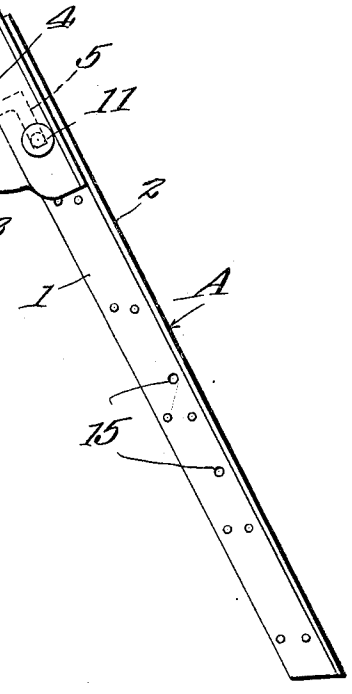


Fig. 2.



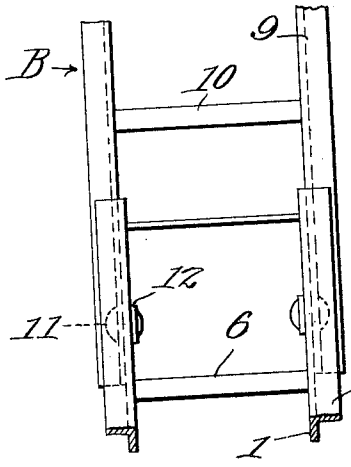


Fig. 3.

Witnesses

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CONVERTIBLE LADDER.

1,102,682. Specification of Letters Patent. Patented July 7, 1914.

Application filed May 21, 1913. Serial No. 769,058.

To all whom it may concern:

Be it known that I, ROBERT G. PING, a citizen of the United States, residing at Audubon, in the county of Audubon and State of Iowa, have invented a new and useful Convertible Ladder, of which the following is a specification.

This invention relates to ladders, its principal object being to provide a structure of this character capable of being converted for use either as a step ladder or as an extension ladder.

A further object is to provide a ladder of this character which is simple in construction, cheap to manufacture, and which can be used with safety when adjusted to either of the forms in which it may be used.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a view partly in side elevation and partly in section of the ladder adjusted for use as a step ladder. Fig. 2 is a side elevation of the device adjusted for use as an extension ladder. Fig. 3 is a front elevation of the meeting portions of the ladder sections when assembled as shown in Fig. 2.

Referring to the figures by characters of reference A designates the main section of the ladder and B designates the second section. Each of these sections is formed of oppositely disposed side strips 1 made preferably of sheet metal, each strip having a laterally extending longitudinal flange 2. The side strips of the section A are formed, at their upper ends, with backwardly extending enlargements 3 in which are provided L-shaped slots 4, each slot having a downwardly extended portion 5 close to and parallel with the adjacent flange 2. The side strips of the section A are connected by steps 6 likewise preferably formed of sheet metal and having reinforcing flanges 7 along the front edges thereof and end flanges 8, these last named flanges being secured to the side strips 1 by rivets or the like.

The upper or second section B of the ladder is formed of side strips 9 similar to the side strips 1 only not provided with enlarged portions such as shown at 3. These side strips 9 are connected by steps 10 similar to the steps 6 and those portions of the side strips 9 extending below the lowermost step 10, when the section is arranged as in Fig. 2, extend along the outer sides of the strips 1 and have studs 11 extending inwardly therefrom and slidable within the slots 4. These studs can be provided, at their inner ends, with retaining washers or heads 12 whereby withdrawal of the studs from the slots is prevented. Links 13 are connected to the side strips 9 at points between the ends of said side strips and are arranged in pairs, one link of each pair having a hooked terminal 14 adapted to detachably engage one of the side strips 1. Each of these side strips 1 has one or more apertures 15 designed to receive the hooked terminals.

When it is desired to use the device as a step ladder, the section B is drawn longitudinally of the section A until the studs 11 are withdrawn from the portions 5 of the slots whereupon said studs can shift back within the slots 4 and thus permit the section B to swing downwardly to the position shown in Fig. 1. The hooked terminals 14 are then placed in certain of the apertures 15 whereupon the device can be used as a step ladder. Should it be desired to use the structure as an extension ladder, the hooked terminals 14 are disengaged from the side strips 1 and the section B is swung into alinement with the section A, thus bringing the studs 11 into slots 5. Section B is then shifted downwardly until the studs are brought against the lower ends of the slots 5 whereupon the flanges of the side strips 9 will fit snugly against the flanges 2 and swinging of the section B relative to section A is thus prevented. With the parts thus assembled it will be seen that the ladder can be used in safety, there being no danger of the two sections swinging relative to each other.

While the device has been described as formed of sheet metal, it is to be understood that it can be made of any other suitable

material, it merely being necessary that the lower side strips 1 be provided with laterally extending flanges and that slotted enlargements be provided at the upper ends of the side strips so as to receive studs or other projecting devices upon the side strips of the upper section.

What is claimed is:—

A ladder including a section having laterally extending longitudinal flanges, an enlargement upon each side of said section and provided with a slot, said slot having an inner portion parallel with the adjacent flange and an outer or upper portion at right angles thereto, the flanges being extended past the slots, an upper section having one end straddling the lower section, said upper section being adjustable angularly relative to the lower section and having a laterally extending longitudinal flange along one edge of each side thereof, and means upon the upper section and slidable within the slot for holding said sections together under all conditions, said upper section being shiftable to bring said holding means from the upper portions of the slots into the lower portions of the downwardly extending parts of the slots and to bring the flanges of the upper section against the back faces of the flanges of the lower section, thereby to hold said upper section against swinging movement relative to the lower section.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROBERT G. PING.

Witnesses:
A. J. HUNT,
CHAS. A. PING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."