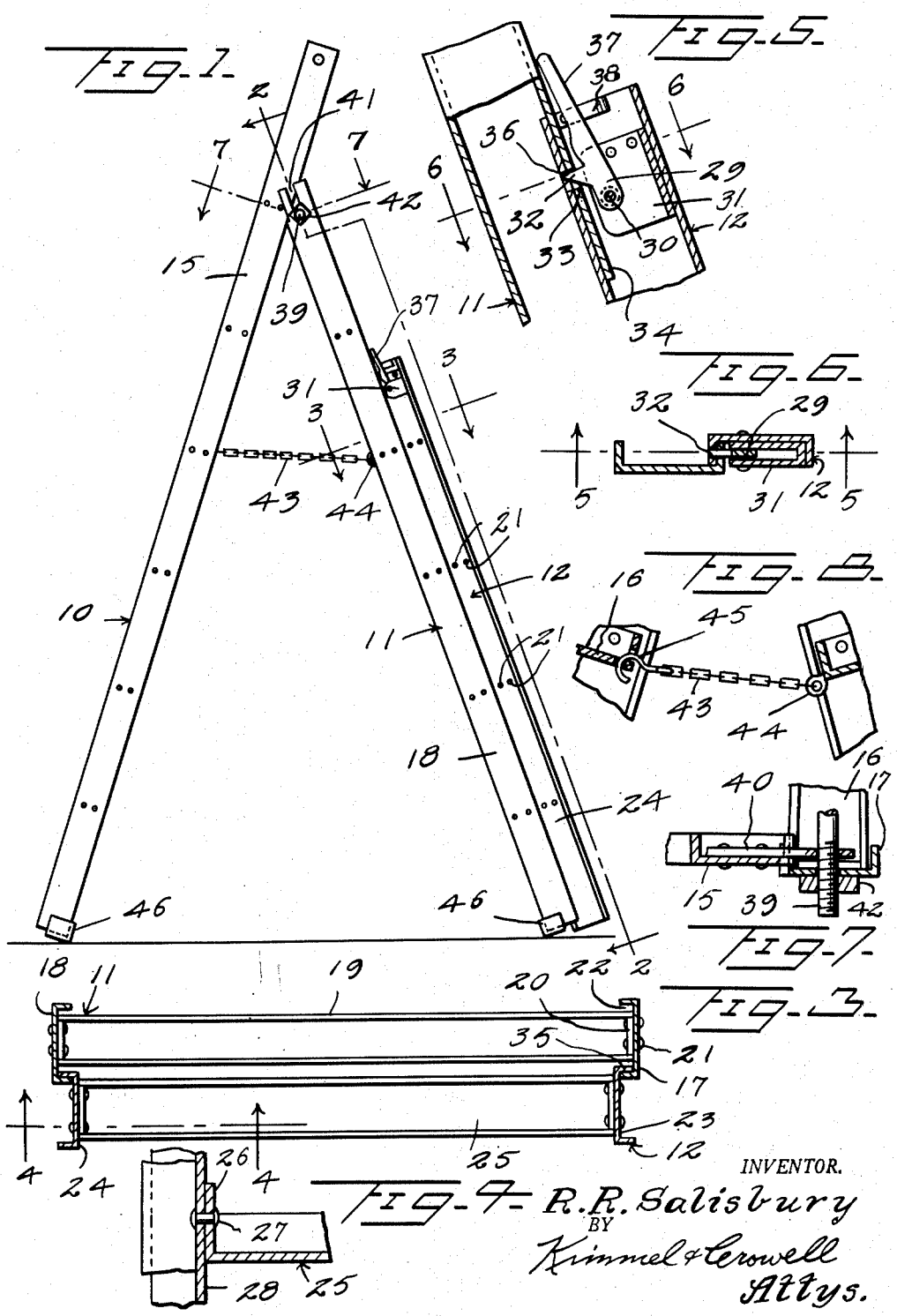
April 28, 1953 R. R. SALISBURY 2,636,659

EXTENSION LADDER

Filed April 15, 1949 2 SHEETS--SHEET 1



April 28, 1953 R. R. SALISBURY 2,636,659

EXTENSION LADDER

Filed April 15, 1949 2 SHEETS—SHEET 2

Fig. 2.

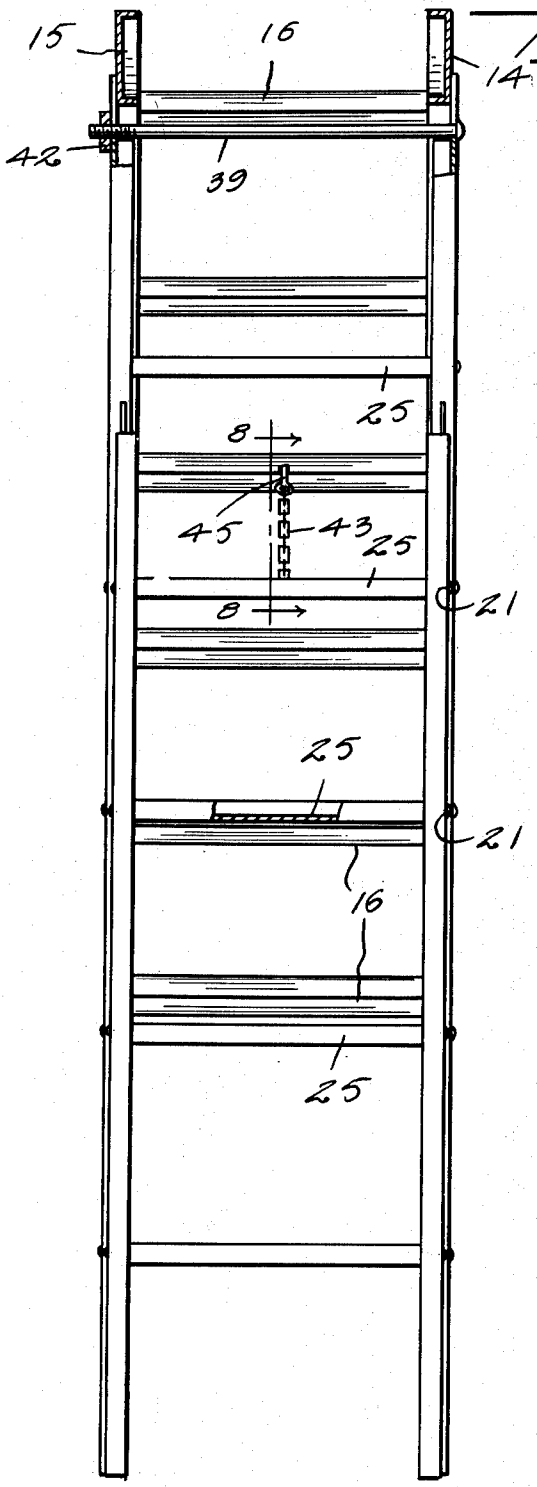
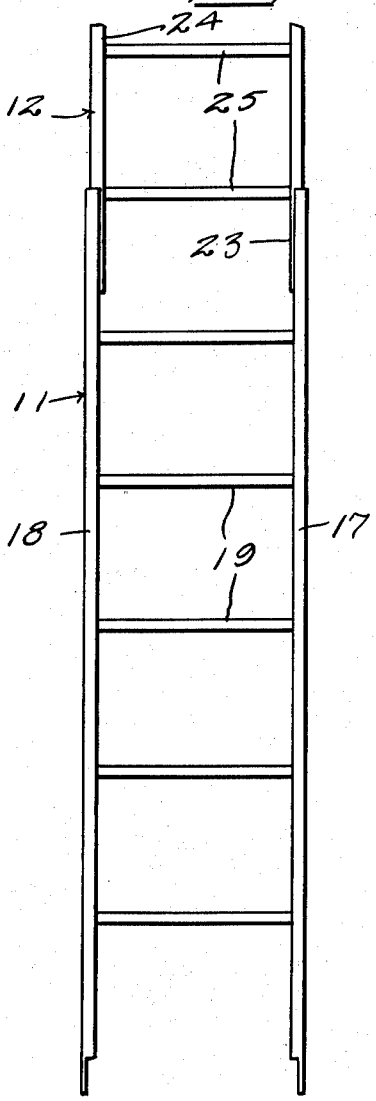


Fig. 9.



INVENTOR.
R. R. Salisbury
BY
Kimmel & Crowell
Attys.

Patented Apr. 28, 1953

2,636,659

UNITED STATES PATENT OFFICE

2,636,659

EXTENSION LADDER

Raymond R. Salisbury, Ann Arbor, Mich., assignor of one-half to Helen Salisbury Nixon, Ann Arbor, Mich.

Application April 15, 1949, Serial No. 87,716

1 Claim. (Cl. 228—18)

1

This invention relates to ladders.

An object of this invention is to provide an improved extensible ladder construction wherein the side rails of the ladder are formed of channel members with the rails of one ladder section oppositely disposed with respect to the rails of the other ladder section, and with an improved locking means for locking the ladder sections together.

Another object of this invention is to provide an extensible ladder formed of channelled rails and channelled rungs, with the rungs substantially narrower than the rails so as to provide a guide space within which one flange of another ladder section is adapted to slidably engage.

A further object of this invention is to provide a ladder structure which can be easily and quickly formed into an inverted V-shaped support for a platform, and where two pairs of ladder sections are coupled together the platform may be disposed at any selected height.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claim.

In the drawings,

Figure 1 is a detail side elevation of an extensible ladder constructed according to an embodiment of this invention,

Figure 2 is a sectional view taken on the line 2—2 of Figure 1,

Figure 3 is a sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 3,

Figure 5 is a fragmentary sectional view taken on the line 5—5 of Figure 6,

Figure 6 is a fragmentary sectional view taken on the line 6—6 of Figure 5,

Figure 7 is a fragmentary sectional view taken on the line 7—7 of Figure 1,

Figure 8 is a fragmentary sectional view taken on the line 8—8 of Figure 2,

Figure 9 is a detail front elevation, partly broken away, of the ladder with a pair of sections detachably connected together.

Referring to the drawings, the numeral 10 designates generally an elongated ladder section and the numerals 11 and 12 designate generally a pair of ladder sections which are adjustably connected together. In the present instance the ladder sections are connected together to form a step ladder with the two adjustable sections 11 and 12 forming the legs of the ladder section 10.

2

The ladder section 10 is formed of a pair of channelled side rails 14 and 15 disposed with the channels thereof in confronting position, and a plurality of rungs or steps 16 are secured between the side rails 14 and 15. The ladder section 11 is formed of a pair of channel-shaped side rails 17 and 18 disposed with the channels thereof in confronting relation and a plurality of spaced rungs or step members 19 are secured between the rails 17 and 18.

The rungs or steps 19 are formed of channel members and these channel members at each end have extending upwardly therefrom end flanges 20 which are adapted to be secured by fastening means 21 to the inner side of the rails 17 and 18. The channel members 19 forming the rungs or steps are substantially narrower than the distance between the flanges of the channel members 17 and 18 so as to thereby form spaces 22 at each side of the rungs or steps 19 so that the channel-shaped rails 23 and 24 of the ladder section 12 may slidingly engage in the spaces 22 and between the rungs or steps 19 and the adjacent flanges of the inwardly facing channel members.

The channel members 23 and 24 face outwardly and the rungs or steps 25 which are secured to the inner sides of the channel members 23 and 24 are provided at each end thereof with flanges 26 secured by fastening means 27 to the web 28 of the side rails 23 or 24.

In order to provide a means whereby the ladder sections 11 and 12 may be adjustably locked together with the ladder section 12 adjusted endwise of the ladder section 11, I have provided a pair of pivoted pawls 29 which are secured in the channels of the rails 23 and 24 adjacent one end thereof. The pawl 29 is pivotally mounted on a pivot 30 extending through a U-shaped housing 31, and the pawl 29 includes a bill 32 which is adapted to engage through a keeper opening 33 formed in the flange 34 of the ladder section 17 or 18.

The flange 35 of the rail 23 or 24 is also formed with a keeper opening 36 adapted to register with a keeper opening 33. The pawl or locking member 29 includes an elongated handle or lever 37 which is adapted to be yieldably held in either latched or released position by means of a bowed spring 38.

The ladder section 11 is adapted to be secured at its upper end to the ladder section 10 by means of a bolt or rod 39 which is carried by a pair of supporting lugs 40 which are secured to the channel members 14 and 15. The upper ends of the rails 17 and 18 are formed with upwardly open-

ing slots 41 through which the rod 39 is adapted to loosely engage, and the rod 39 is firmly secured in the slots 41 by means of a nut 42 which is threaded onto the rod 39.

The ladder sections when used as a step ladder, as shown in Figure 1 are held against spreading relative to each other by means of a chain 43 which is connected at one end to an eye 44 carried by the ladder section 11 and is formed with a hook 45 engaging through a step or rung 16 of ladder section 10.

Where it is desired to form an extensible ladder the two ladder sections 11 and 12 are used and may be adjustably secured together by the pawls or dogs 29. Where the ladder sections 11 and 12 are used as an extensible ladder, as shown in Figure 9, they are separated from the ladder section 10. The rails of the ladder section which engage a floor or other surface may have rubber feet 46 mounted thereon so as to prevent scratching of the floor or slipping on the floor.

This ladder structure is adapted to be made out of relatively lightweight metal and will provide an improved ladder structure which will permit the formation of either a step ladder or an extensible ladder from the three ladder sections herein disclosed.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claim.

What I claim is:

An extensible ladder comprising a pair of ladder sections, each section being formed of channel shaped rails, rungs fixed between said rails, the channels of one section being oppositely disposed with respect to the channels of the other section, said rungs carried by said one section being narrower than the distance between the flanges of the rails thereof whereby to provide guide spaces between the rungs and flanges, the

channels of the other of said sections facing outwardly whereby the flanges of the rails of said other section may slidingly engage in said spaces, and means comprising aligned apertures in the adjacent flanges of one channel shaped rail of each of said pair of sections and a locking dog, V-shaped bracket in the upper end of the other of said channels, a pivot mounting said dog for swingable movement in said bracket, said dog having an operating lever extending above the top of said other channel, said dog also having a projection including a flat upper surface and an inclined lower surface engageable through said apertures carried by one of said sections for locking said sections together in endwise adjusted position, said flat upper surface locking said sections against movement toward each other, and said inclined surface acting as a pawl to permit extension of said sections relative to each other.

RAYMOND R. SALISBURY.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
428,995	Adley	May 27, 1890
952,277	Pilarski	Mar. 15, 1910
1,582,794	Smith et al.	Apr. 26, 1926
1,588,295	Berman	June 8, 1926
1,595,450	Christian	Aug. 10, 1926
1,887,546	Cowell	Nov. 15, 1932
1,949,972	Murphy	Mar. 6, 1934
2,021,494	Zeman	Nov. 19, 1935
2,143,783	Liebman	Jan. 10, 1939
2,466,838	Buell	Apr. 12, 1949
2,610,875	Wheelden	Sept. 16, 1952

FOREIGN PATENTS

Number	Country	Date
132,565	Switzerland	July 1, 1929
593,874	Great Britain	Oct. 28, 1947