Feb. 10, 1953 F. P. BUECHLER 2,628,011

FLEXIBLE ROOF LADDER

Filed Sept. 20, 1949

2 SHEETS—SHEET 1

Fig. 1.

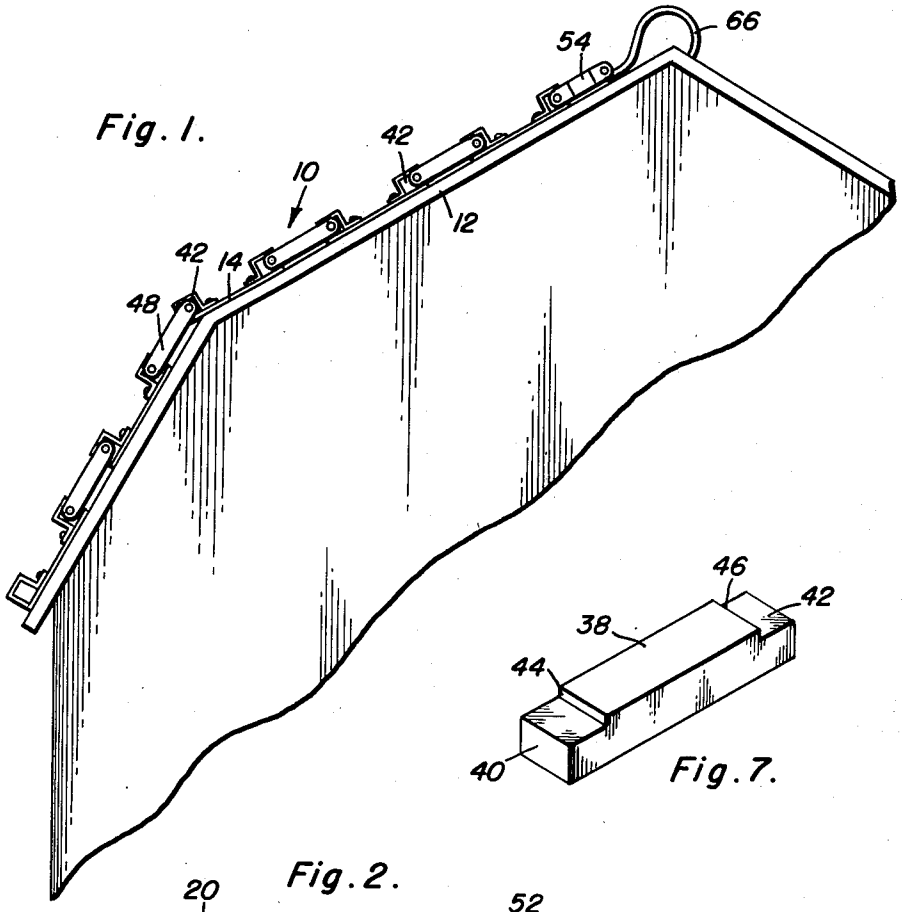


Fig. 7.

Fig. 2.

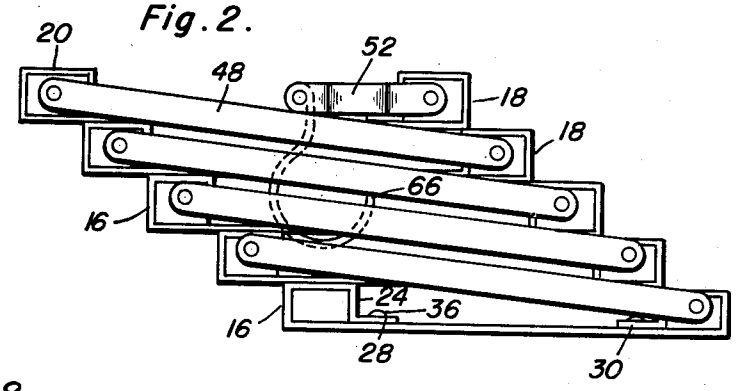
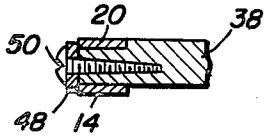


Fig. 8.



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2 SHEETS—SHEET 2

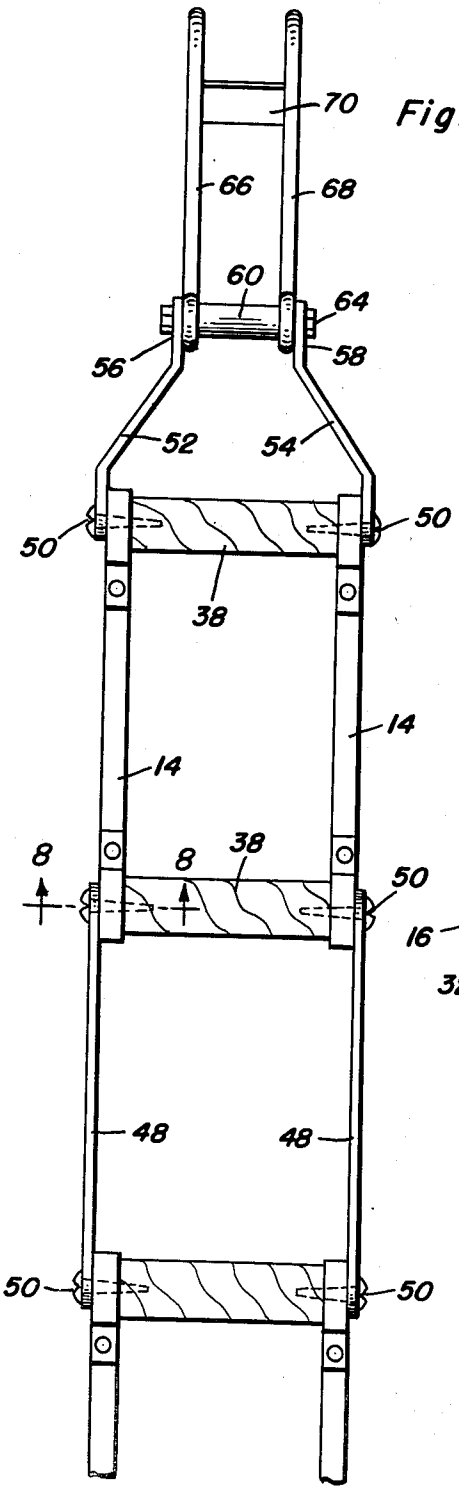


Fig. 3.

Fig. 6.

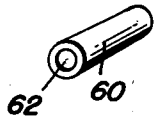


Fig. 5.

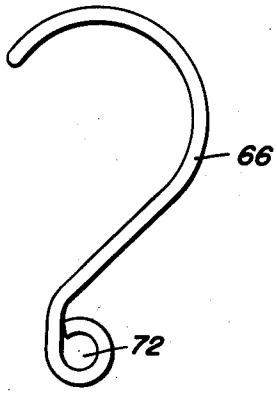
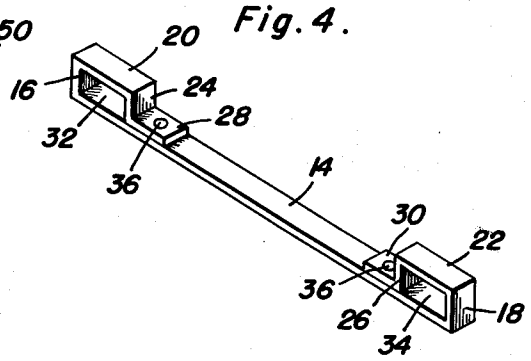


Fig. 4.



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FLEXIBLE ROOF LADDER

Francis P. Buechler, Ferdinand, Ind.

Application September 20, 1949, Serial No. 116,830

1 Claim. (Cl. 228—44)

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This invention relates to ladders, and more particularly to flexible ladders for attachment upon a roof of a building.

An object of the invention is to provide an easily portable flexible roof ladder which may be readily engaged upon any type of existing roof.

A further object of the invention is to pivotally secure articulated sections of a flexible ladder together.

A still further object of the invention is to provide a flexible roof ladder which is simple in construction, cheap to manufacture, easy to carry, compact and strong in structure, and safe in operation for use upon roofs of existing buildings.

These, together with various additional objects which will become apparent as the following description proceeds, are attained by this device, a preferred embodiment of which has been illustrated in the accompanying drawings, wherein

Figure 1 is an elevational view of the flexible roof ladder showing it in emplacement upon one type of roof;

Figure 2 is a side elevational view of the ladder showing it in a folded position for carrying;

Figure 3 is a plan view in enlarged scale, of several sections of the invention;

Figure 4 is a perspective view of the side rails forming one element of the roof ladder;

Figure 5 is a side elevational view of the hook comprising another element of the invention;

Figure 6 is a perspective view of the cylindrical spaces which are used in the flexible roof ladder;

Figure 7 is a perspective view of the rungs used in the present invention; and

Figure 8 is a vertical sectional view of that connection between the various elements of the invention, taken along 8—8 in Figure 3.

With continued reference to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, reference numeral 10 is used to generally designate the improved flexible roof ladder comprising the present invention.

This ladder is capable of being placed upon an existing roof of a building for effecting repairs thereon, or for such other purpose as the use might desire.

The latter comprises a plurality of articulated sections constructed from opposed pairs of side rails or straps 14, having their ends bent upwardly as at 16 and 18, respectively, and inwardly as at 20 and 22, then downwardly as at 24 and 26, then inwardly as at 28 and 30 to form loops 32 and 34. The inwardly extending portions 28 and 30 are parallel to the central portion of the

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side rails, and are secured thereto in contact therewith by rivets 36 or the like.

The pair of rungs 38, having end portions 40 and 42 of reduced sectional area are inserted within the loops of the side rails with the shoulders 44 and 46 adapted to provide means whereby the rails may be spaced from one another. Therefore, a pair of the rungs 38 are positioned with the ends 40 and 42 inserted between a pair of loops 32 and a pair of loops 34 of a pair of side rails 14. The pair of side pieces or bars 48 are secured at apertured ends by means of lag bolts or combined fasteners and pivots 50 to the ends 40 and 42 of the rungs 38. The side pieces 48 are preferably made from aluminum, stainless steel or other light weight non-corrosive free material. The rungs are made from any desired hard wood.

At one end of the articulated sections are a pair of substantially Z-shaped members 52 and 54. The members are secured at one end thereof by means of lag bolts to the end of a rung 38. At the converging ends 56 and 58 is positioned a cylindrical spacer 60 having an aperture 62 therethrough.

The bolt 64 extends through the aperture 62 in the cylindrical spacer 60 and secures the members 54 and 52 with the ends 58 and 56 in spaced relationship. A pair of hook members 66 and 68 having their hooked ends connected by means of a cross bar 70 are positioned and secured to the spacer 60 at their shank ends by having the shank end bent around the spacer to form a loop which is designated by reference numeral 72.

The ladder, as is easily understood, can be made in any desired length by merely limiting the number of articulated sections which are put together. Since the side pieces 48 are pivotally connected by the lag bolts 50 to the rungs 38, the sections of the ladder are easily folded upon one another as shown in Figure 2, whereby the ladder is clearly portable.

Since the overall width between the hook members 66 and 68 is not as great as the distance between the side rails 14, the hook then may be dropped between the side rails when the ladder is in folded position.

To put the ladder upon a roof, one man may do the job himself in a various number of simple ways. Firstly, he could use a rigid ladder to emplace the flexible ladder on the roof, the rigid ladder being positioned against the vertical side of the house or building. Alternatively, one man may carry the ladder up through a roof scuttle and he then can position the ladder by merely hooking it in proper position. Still another

means of securing the ladder to a roof would be to attach one end of a rope or otherwise to the hook end of the ladder, and pass the other end of the rope over the house of the other side. Then, the rope could be pulled upon which will cause the ladder to be pulled up the roof until the hook passes over the top thereof and becomes engaged therewith. By simply continuing to pull the line the ladder may then be easily removed from the roof.

Since from the foregoing, the construction and advantages of the flexible roof ladder are readily apparent, it is not believed that further description will be necessary.

However, since numerous modifications and various embodiments in structure and design will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the exact construction shown and described, but all suitable modifications and equivalents may be resorted to which fall within the scope of the appended claim.

Having described the invention what is claimed as new is:

A roof ladder including articulated sections each comprising spaced parallel side straps, an integral closed loop on each end of each strap, said loops being rectangular with upper and lower portions positioned parallel to the main portions of the straps, a pair of elongated fibrous rungs, said rungs being rectangular and having upper and lower flat faces, said upper faces

having notches at the ends of the rungs, the ends of the rungs extending through the loops, the upper portions of the loops being located in the notches and the lower portions of the loops extending transversely across and contacting the lower faces of the rungs to form means for spacing the rungs from a roof surface engaged by the said lower portions, parallel side pieces connecting one of said sections to another section, said side pieces extending partially across the loops, and combined pivots and fasteners extending through the ends of the side pieces and into the ends of the rungs to retain the loops engaged with the ends of the rungs, the straps and the lower portions of the loops being coplanar and parallel to the plane of the undersurface of the rungs to provide traction surfaces that extend between adjacent rungs.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
194,082	Falk	Aug. 14, 1877
280,373	Heath	July 3, 1883

FOREIGN PATENTS

Number	Country	Date
24,600	Austria	June 25, 1906