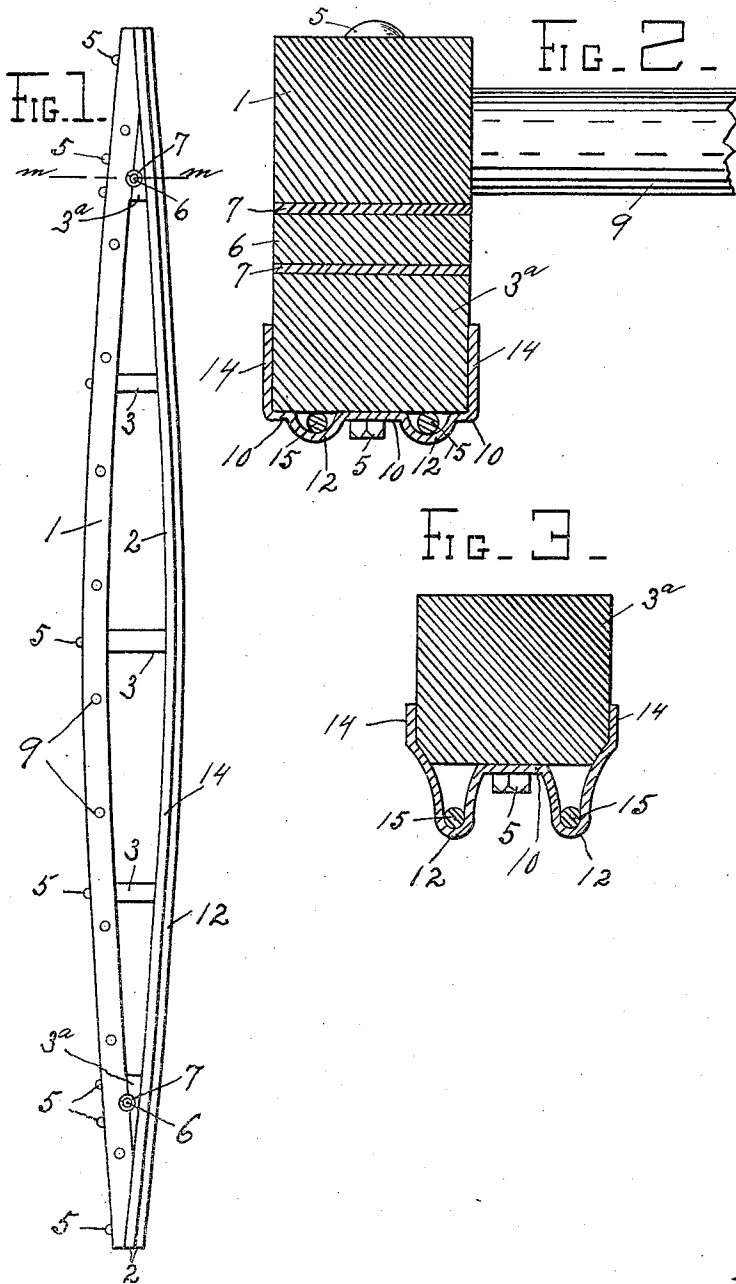


B. B. BRIGGS.
TRUSSED LADDER.

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934,276.

Patented Sept. 14, 1909.



WITNESSES=

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TRUSSED LADDER.

934,276.

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To all whom it may concern:

Be it known that I, BURDETT B. BRIGGS, a citizen of the United States, and residing at Creston, in the county of Union and State of Iowa, have invented certain new and useful Improvements in Trussed Ladders, and the manner of carrying out the invention is set forth in the following description, terminating with claims particularly specifying the invention.

My invention relates to improvements in trussed ladders, and the objects of the same are; to provide an improved metal truss for bracing and strengthening the ladder; to provide an improved dowel-pin or wedge to fasten the wood or metal parts together for preventing end strain.

To this end the invention consists in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, and as described and claimed with reference to the accompanying drawings which form part of this specification.

Figure 1 is a side elevation of my improved ladder. Fig. 2 is a cross section of one side of the ladder on the lines *m m*, of Fig. 1. Fig. 3 is a modification of Fig. 2.

Referring to the drawings similar characters of reference refer to similar parts throughout the drawings.

The sides of the ladder are each composed of a leg 1 and a truss bar 2 fastened together at their ends as shown in Fig. 1, and several struts 3 interposed between said leg and truss bar and secured together by bolts or rivets 5, as seen in Figs. 1 and 2. The struts 3^a at the ends of the ladder are made in a wedging shape, so as to strengthen the truss bar, and also provide a longer joint for fastening the ends of the truss. The struts 3^a are secured against end tension by boring a hole between the joint of the leg 1 and strut 3^a, and driving a dowel-pin 6 incased with a metal expandible sheath 7 into said hole, or by inserting said sheath into said hole and afterward drive the dowel-pin inside same, as seen in Figs. 1 and 2. The sheath or casing 7 is bent round, with its longitudinal edges free, or it can be of any form that will allow the dowel-pin to expand the same, when the dowel-pin is forced inside the same. The sheath prevents the dowel-pin from separating or shearing, as is frequent with ladders having joints secured by dowel-pins.

The truss 2 is formed from flat sheet or strip metal, and formed with lateral flanges 10, and two rounding shaped strengthening ribs 12 formed lengthwise upon opposite sides of the center of the truss, so as to provide a lateral flange 10 between same, and for bolting and fastening the truss to the struts 3 and 3^a and to the ends of the leg 1, as seen in Figs. 1 and 2. Vertical flanges 14 are formed on the side edges of the truss, and preferably project toward the leg 1 or rounds 9, and to either side of the struts, it will be seen in Figs. 2 and 3 that the struts will be held in position from turning. Longitudinal wires 15 are inserted in the depressions or hollows of the longitudinal strengthening ribs 12, and secured therein by crimping the truss onto the wires and by soldering, or by brazing, or by welding the wires to the truss in several places, or the entire length of the truss, as seen in Figs. 2 and 3. The longitudinal strengthening ribs 12 and the vertical flanges 14 prevent the truss from bending or buckling between the struts, either toward or outward from the leg 1 of the ladder; while the lateral flange 10 and the strengthening ribs 12 strengthen the truss sidewise or laterally, and the wires 15 add strength to the truss and the ladder transversely as well as longitudinally.

It will be manifest that this construction of a metal truss for ladders is light, strong, durable, and not easily burned off or into as is frequent with a wood truss.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. A ladder provided with independent metal truss bars having longitudinal strengthening ribs formed thereon, and vertical longitudinal flanges on said truss and extending toward the leg of the ladder, and struts interposed between the truss and the leg of the ladder, as set forth.

2. In a trussed ladder, a metal truss fastened at its ends to the ends of the ladder leg, longitudinal flanges provided on said truss and projecting toward the ladder leg, and struts interposed between said truss and leg, and means fastening said struts and truss to the said leg.

3. A ladder provided with independent metal truss bars fastened at their ends to the ends of the legs of the ladder, struts interposed between the trusses and the legs of

the ladder, said trusses provided with longitudinal strengthening ribs, and a lateral flange.

4. In a trussed ladder, a truss formed
5 from sheet metal, and having a lateral flange
10, and longitudinal strengthening ribs 12,
formed upon opposite sides of said lateral
flange.

5. In a trussed ladder, a truss formed
10 from sheet metal, and having a plurality of
longitudinal strengthening ribs formed
thereon and projecting vertically outward
from the leg of the ladder.

6. A ladder provided with an independent
15 metal truss fastened to the leg of the ladder,
and struts interposed between the truss and
said leg, said truss being formed from flat
metal and having a longitudinal strengthen-
ing rib projecting vertically outward formed
20 thereon.

7. In a ladder provided with independent
trusses, said trusses formed from sheet metal,
longitudinal strengthening ribs formed on
said trusses, and wires inserted and fastened
25 in said strengthening ribs, and means
adapted for attaching said trusses to a
ladder.

8. In a ladder provided with an inde-
pendent truss, said truss formed from sheet
30 metal, and having a lateral flange, and
strengthening ribs formed upon opposite

sides of said lateral flange, wires inserted in
said strengthening ribs, and having the truss
crimped onto said wires, as set forth.

9. In a ladder provided with an inde- 35
pendent truss, said truss formed from sheet
metal and having a lateral flange, and lon-
gitudinal strengthening ribs formed upon
opposite sides of said lateral flange, and
wires inserted in said strengthening ribs, 40
and metallic cement fastening said wires in
said strengthening ribs.

10. In a ladder having joints secured
against end tension by having dowel-pins
inserted between said joints, and combined 45
with a metal expansible sheath around said
dowel-pins adapted for adding strength
thereto.

11. In a ladder having joints secured
against end tension by having dowel-pins 50
inserted between said joints, and combined
with a metal expansible casing inserted be-
tween said joints and around said dowel-
pins, for the purpose set forth.

In testimony whereof I have signed my 55
name to this specification in the presence of
two subscribing witnesses.

BURDETT B. BRIGGS.

Witnesses:

MARTIN LUTZ,

JAMES L. HAVERICK.