H. B. FULLER.

LADDER.

APPLICATION FILED MAY 22, 1908.

922,878. Patented May 25, 1909.

2 SHEETS—SHEET 1.

Fig. 2

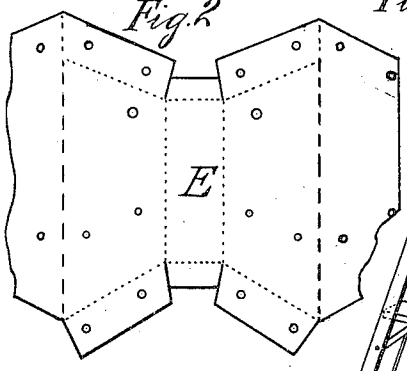


Fig. 1

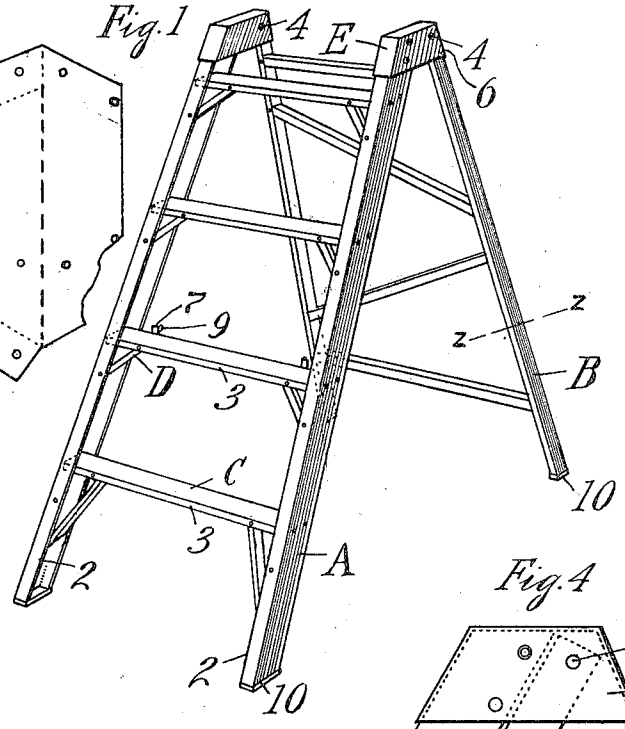


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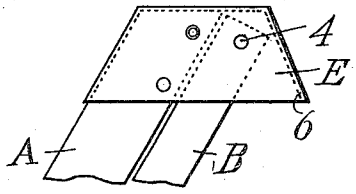


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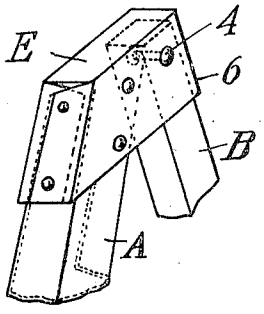


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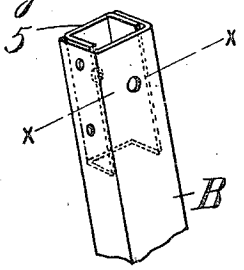
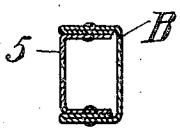


Fig. 7



Fig. 6



Witnesses,
George Yoelker
Hattie Smith.

Inventor,
Harvey B. Fuller
by Lothrop & Johnson
his Attorneys.

H. B. FULLER.

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2 SHEETS—SHEET 2.

Fig. 8

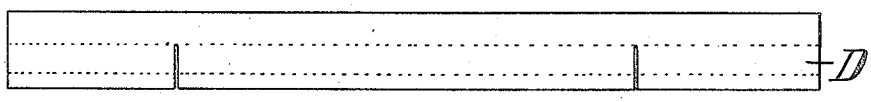


Fig. 9

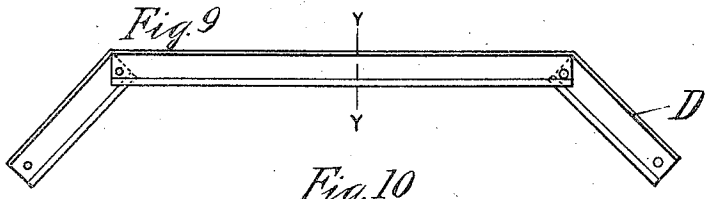


Fig. 10



Fig. 11

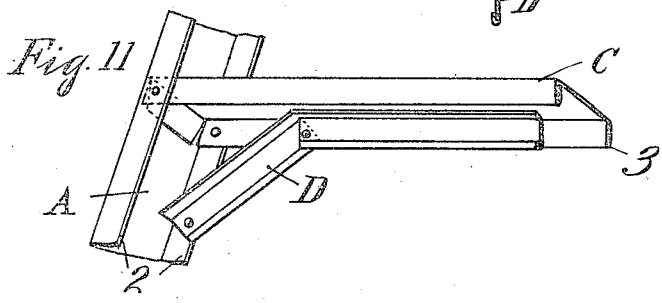


Fig. 12

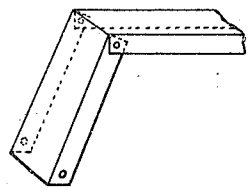


Fig. 13

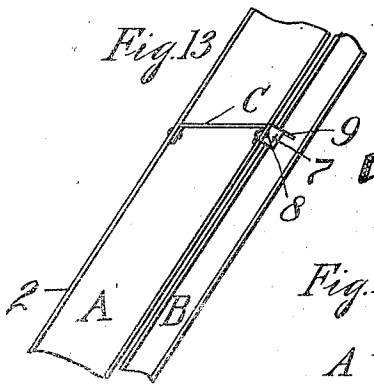


Fig. 14

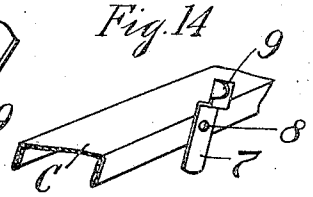


Fig. 15

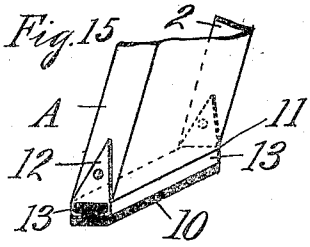
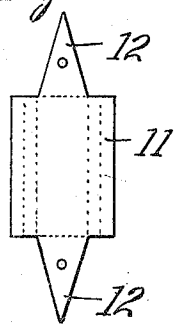


Fig. 16



Witnesses,
George Yoelker
Hattie L. Smith.

Inventor,
Harvey B. Fuller
by Lothrop & Shumway
his attorneys.

UNITED STATES PATENT OFFICE.

HARVEY B. FULLER, OF ST. PAUL, MINNESOTA.

LADDER.

No. 922,878. Specification of Letters Patent. Patented May 25, 1909.

Application filed May 22, 1908. Serial No. 434,270.

To all whom it may concern:

Be it known that I, HARVEY B. FULLER, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Ladders, of which the following is a specification.

My invention relates to improvements in the construction of ladders, its object being particularly to construct a ladder of metal so bent and with the parts so connected together as to be of maximum rigidity and strength with the minimum of mechanical parts.

To this end my invention consists in the features of construction and combination hereinafter particularly described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 is a perspective view of a ladder embodying my features of invention; Fig. 2 is the blank of a cap for the tops of the ladder standards; Fig. 3 is a perspective view of the top of the ladder; Fig. 4 is a side elevation of the same; Fig. 5 is a perspective view of the upper end of one of the rear standards of the ladder; Fig. 6 is a section on line *x*—*x* of Fig. 5; Fig. 7 is a section on line *z*—*z* of Fig. 1; Fig. 8 is a blank of a brace or support for the ladder; Fig. 9 is an elevation of said brace; Fig. 10 is a section on line *y*—*y* of Fig. 9; Fig. 11 is a perspective view of one end of one of the steps and connected brace; Fig. 12 is a perspective view of one end of one of the braces; Fig. 13 is an inner view of one side of the ladder showing a locking device for the standards; Fig. 14 is a detail view of a portion of one of the steps carrying the locking device; Fig. 15 is a perspective view of the lower end of one of the legs or standards, and Fig. 16 is the blank of a base plate for the lower end of each leg.

Referring to the drawings A represents the front and B the rear legs or standards. These standards are each of sheet metal formed with flanges 2 integral with and extending out from the body of the standards constituting an intermediate opening to receive the ends of the steps C. The steps C are similarly formed of sheet metal with integral downwardly extending flanges 3 which are shown supported upon the flanges 2 and upon the outer walls of the standards whereby the flanges 2 constitute a support for the steps. The steps are further supported or braced by means of the angle iron braces D which are secured underneath the steps and to the inner sides of the step flanges 3, and extend downward into the openings of the standards and are secured to the inner sides of the standard flanges 2. One wall of each brace thus bears against the underside of the step, and the wall of the brace at right angles therewith bears against the inner sides of the step flange and the standard flange thus constituting a particularly strong and bracing support for the steps.

E represents a cap to receive the upper ends of the standards. As shown the cap is of sheet metal bent to form inclined front and rear walls, the front standards being riveted in the cap and the rear standards having pivotal support 4 therein. The upper end of each standard is formed with a filling strip 5 to constitute a support for the pivot 4. The inclined rear wall 6 of the cap constitutes a stop to limit the swing of the standards A.

In order to lock the standards together I provide the clip 7 having hinge support 8 upon one of the steps and formed with an offset lip 9 to fit over the adjacent inner flange of the rear standard.

In order to support a resilient facing 10, such as leather, upon the bottom of each standard I provide a plate 11 having upwardly turned points 12 secured to the flanges of the standard and with downwardly and inwardly turned flanges 13 projecting into the facing 10.

As will be seen the step braces, the clip 7, the tread support 11 and the cap are constructed to accord with the particular form of flanges constructed of legs or standards. I do not in this application claim the broad idea of standards formed of sheet metal and provided with integral flanges extending out from the body of the standards to form openings to support the steps as that is covered by my preceding application for Letters Patent filed November 23, 1901, Serial No. 83,380.

I claim:

1. In combination a ladder comprising flanged steps, standards each formed of sheet metal with inwardly extending integral flanges constituting an opening to receive the ends of the steps and braces connecting said steps and standards, said braces being provided with flanges secured to the flanges of

said steps and the corresponding flanges of said standards.

2. In combination a ladder comprising steps, legs or standards formed of sheet metal with inwardly extending integral flanges constituting openings to receive the ends of the steps, and a clip secured to the side of one of said steps and constructed and arranged to interlock with the adjacent flange of the rear standard.

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

HARVEY B. FULLER.

Witnesses:
H. S. JOHNSON,
HATTIE SMITH.