No. 891,242. PATENTED JUNE 23, 1908.

H. B. FULLER.

SHEET METAL ARTICLE.

APPLICATION FILED NOV. 23, 1901.

Fig. 1.

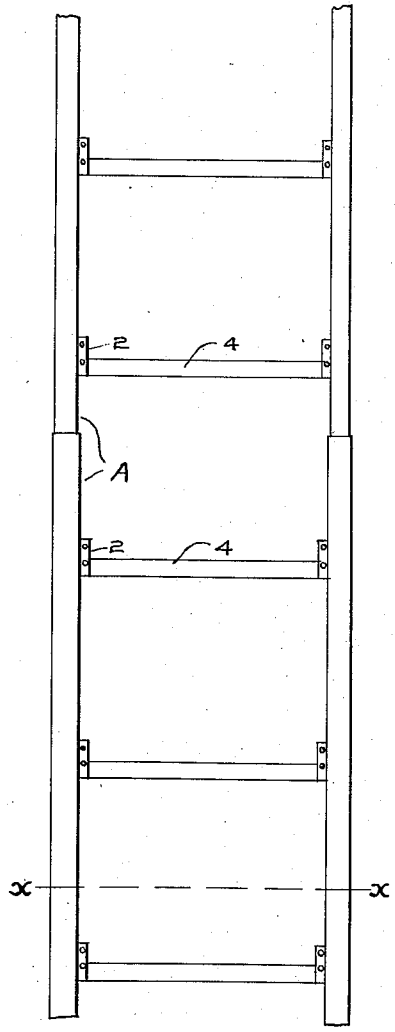


Fig. 2.

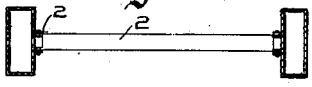


Fig. 5.

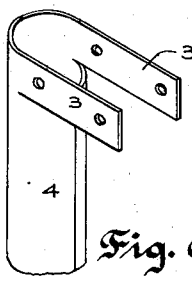


Fig. 6.

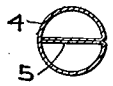


Fig. 7.

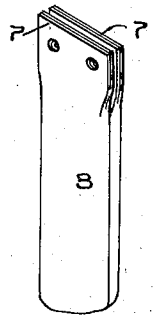


Fig. 3.

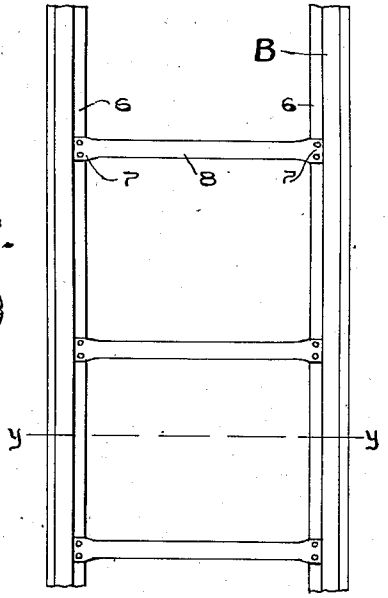


Fig. 4.

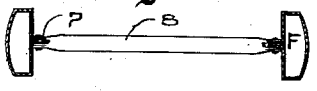


Fig. 8.

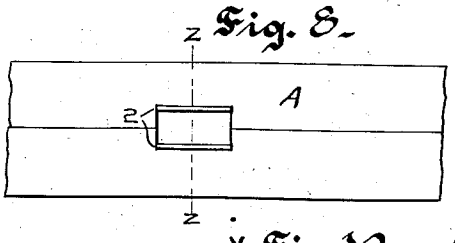


Fig. 9.

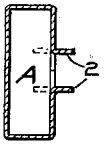


Fig. 10.

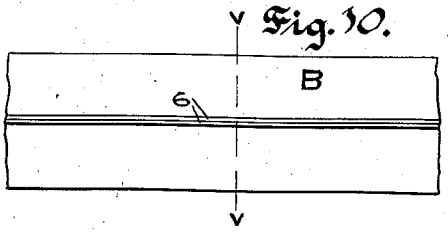
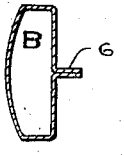


Fig. 11.



Witnesses,
W. A. Palmer.
Emily Eastman

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

UNITED STATES PATENT OFFICE.

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

SHEET-METAL ARTICLE.

No. 891,242. Specification of Letters Patent. Patented June 23, 1908.

Application filed November 23, 1901. Serial No. 83,380.

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 Sheet-Metal Articles, of which the following is a specification.

My invention relates to improvements in ladders, its object being to construct a ladder of sheet metal so bent as to give the maximum rigidity and strength and to allow adjustment and extension.

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

Figure 1 is a front elevation of a ladder constructed in accordance with my invention, Fig. 2 is a section on line *x*—*x* of Fig. 1, Fig. 3 is a front elevation of a modified construction of ladder, Fig. 4 is a section on line *y*—*y* of Fig. 3, Fig. 5 is a detail of one end of one of the rungs used in the construction shown in Fig. 1, Fig. 6 is a section of said rung, Fig. 7 is a detail of one of the rungs used in the construction shown in Fig. 3, Fig. 8 is a detail of part of one of the side bars shown in Fig. 1, Fig. 9 is a section on line *z*—*z* of Fig. 8, Fig. 10 is a detail of a portion of one of the side bars shown in Fig. 3, and Fig. 11 is a section on line *v*—*v* of Fig. 10.

It will be noted that all the different constructions shown in the drawings are made of sheet metal properly bent to allow the parts to be secured together to give maximum rigidity and strength, and to allow of adjustment and extension.

Referring to Fig. 1 A represents the side bars of the ladder of sheet metal bent to form oblong tubes having portions of their edges cut and bent outwardly at suitable distances apart to form parallel flanges 2. Between the flanges 2 are secured parallel strips 3 constituting the ends of the rungs 4. The rungs 4 are of bent sheet metal preferably provided with inwardly turned central strips 5. The extension ladder is composed of a series of similar sections the side bars of each section being slightly smaller than those of the preceding section so as to telescope within the same.

In Fig. 3 the side bars B have their edges 6 bent outwardly to fit between the parallel end flanges 7 of the rungs 8 as shown in Fig. 4.

It will be evident that my features of construction may be used equally well in analogous constructions such as building platforms, skids, step-ladders, etc., the scope of my invention being defined in the following claims.

I claim:—

1. A ladder constructed of sheet metal, the sides or standards thereof being provided with slit and bent portions thereon to form pockets or seats, and the steps being provided with flanges thereon for fitting within said pockets or seats.

2. A ladder comprising steps, sides or standards of sheet metal and having openings therein for the reception of the ends of said steps, and flanges integral with and extending out from the body of said standards for forming said openings and for supporting said steps.

3. A ladder construction of sheet metal the sides or standards thereof being provided with slit and bent portions thereon to form seats and the steps being provided with flanges for interlocking with said seats.

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

HARVEY B. FULLER.

Witnesses:

H. S. JOHNSON,

EMILY EASTMAN.