No. 666,441. Patented Jan. 22, 1901.

F. S. SEAGRAVE.

LADDER.

(Application filed Nov. 8, 1900.

(No Model.)

Fig. 1

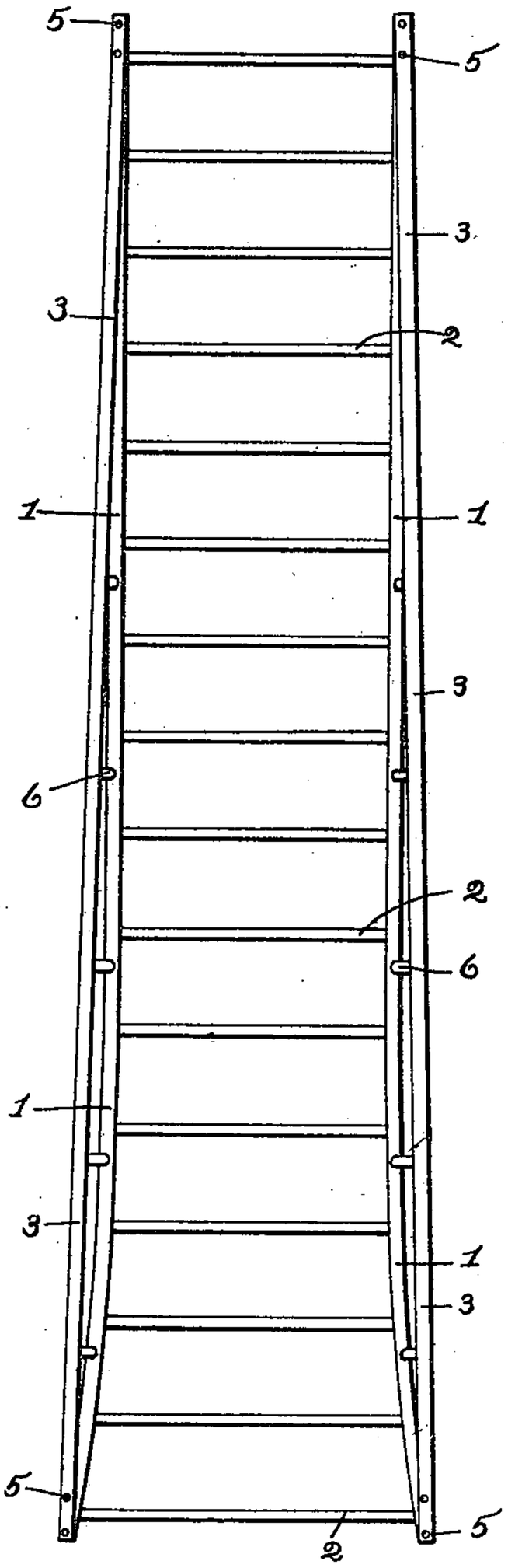
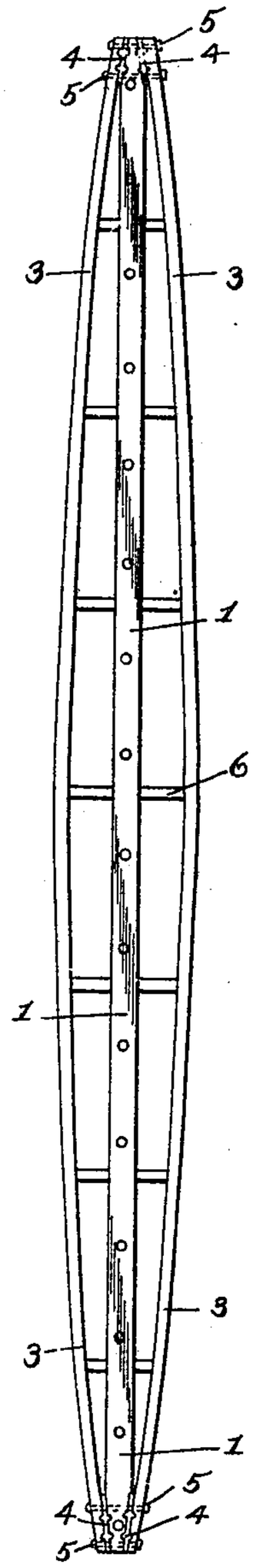


Fig. 2



WITNESSES:

R. G. Hessong.

A. L. Phelps

INVENTOR

Frederic S. Seagrave

BY

C. C. Shepherd

ATTORNEY

UNITED STATES PATENT OFFICE.

FREDERIC S. SEAGRAVE, OF COLUMBUS, OHIO.

LADDER.

SPECIFICATION forming part of Letters Patent No. 666,441, dated January 22, 1901.

Application filed November 8, 1900. Serial No. 35,788. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC S. SEAGRAVE, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Ladders, of which the following is a specification.

My invention relates to the improvement of trussed ladders; and the objects of my invention are to provide an improved trussed ladder of such construction and arrangement of parts as to insure its rigidity and obviate any tendency toward bending or buckling when subjected to a heavy weight or substantially vertical pressure; to so construct my improved ladder as to particularly adapt the same for use as the lower section of an aerial ladder; to so form my improved ladder as to obviate any tendency toward a lateral inclination or side bending of the upper portion thereof, and to produce other improvements in details of construction and arrangement of parts, which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved ladder, and Fig. 2 is a side elevation of the same.

Similar numerals refer to similar parts throughout both views.

1 represents the main legs or side pieces of the ladder, which may be of any desired length, said legs being connected at regular or usual intervals by transverse rungs 2. As indicated in the drawings, the lower portions of the ladder-legs are inclined or made to flare laterally, the lower terminations of said legs being thus brought out of vertical alinement with the upper portions thereof.

Each of the ladder-legs is provided, as indicated more clearly in Fig. 2 of the drawings, with upper and under side trusses 3, the bars forming said trusses being bowed upward and having their upper ends united with the slightly-beveled opposite sides of the upper end portion of the leg. The manner of uniting the truss ends and leg is preferably that shown in my former application for patent, Serial No. 12,070, in which metallic uniting-plates, such as are indicated in the present drawings at 4, are arranged beneath the ends of the leg and trusses, said uniting-plates being provided with lateral dowel projections, which engage corresponding recesses both in the ladder leg and trusses, and said uniting plates or bars 4 being further connected by bolts 5. The lower ends of the truss-bars 3 are in a like manner connected with the lower end of each of the legs 1; but owing to the outward flare or inclination of the lower portions of said legs it is obvious that the truss-bars, which are straight, will diverge or incline from each other toward their lower ends.

6 represents struts, which are arranged to connect the truss-bars and ladder-legs at intervals.

By the construction herein set forth it will be seen that two truss-bars are employed to embrace each of the ladder-legs and that these truss-bars, combined with the central vertical ladder-leg, produces a side frame for the ladder, which is capable of withstanding great strain, weight, or leverage and the difficulty ordinarily experienced by the sagging or the tendency of an elevated ladder-section to buckle from weight or leverage, is thus obviated. The employment of the wooden trusses, arranged as described, obviates the necessity of employing the usual metal truss and other metallic parts, thereby not only adding to the strength, but to the lightness of construction. Assuming that the ladder-section herein shown and described is employed as the lower section of an aerial ladder, it is obvious that the rigidity imparted to said lower ladder-section would at all times provide a comparatively level track or way upon which the upper section may slide. It is well known that the upper portions of ladders, particularly where the same are of comparatively great length, are inclined to lean or bend laterally. Owing to the outward curvature or inclination of the lower portions of the ladder-legs it will be seen that this tendency will be reduced, inasmuch as said flaring leg portions will serve to some extent as lateral braces for the legs and aid in retaining the same in their proper alinement.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In a ladder, the combination with the legs 1 having their upper portions straight and parallel and their lower portions flaring outward and rungs connecting said legs at intervals, of outwardly-bowed truss-bars 3 arranged in front and rear of each of said legs and inclining from the upper ends thereof to the lower ends of the flared portions of said legs and struts connecting said legs and truss-bars, substantially as specified.

FREDERIC S. SEAGRAVE.

Witnesses:

A. L. PHELPS,

W. L. MORROW.