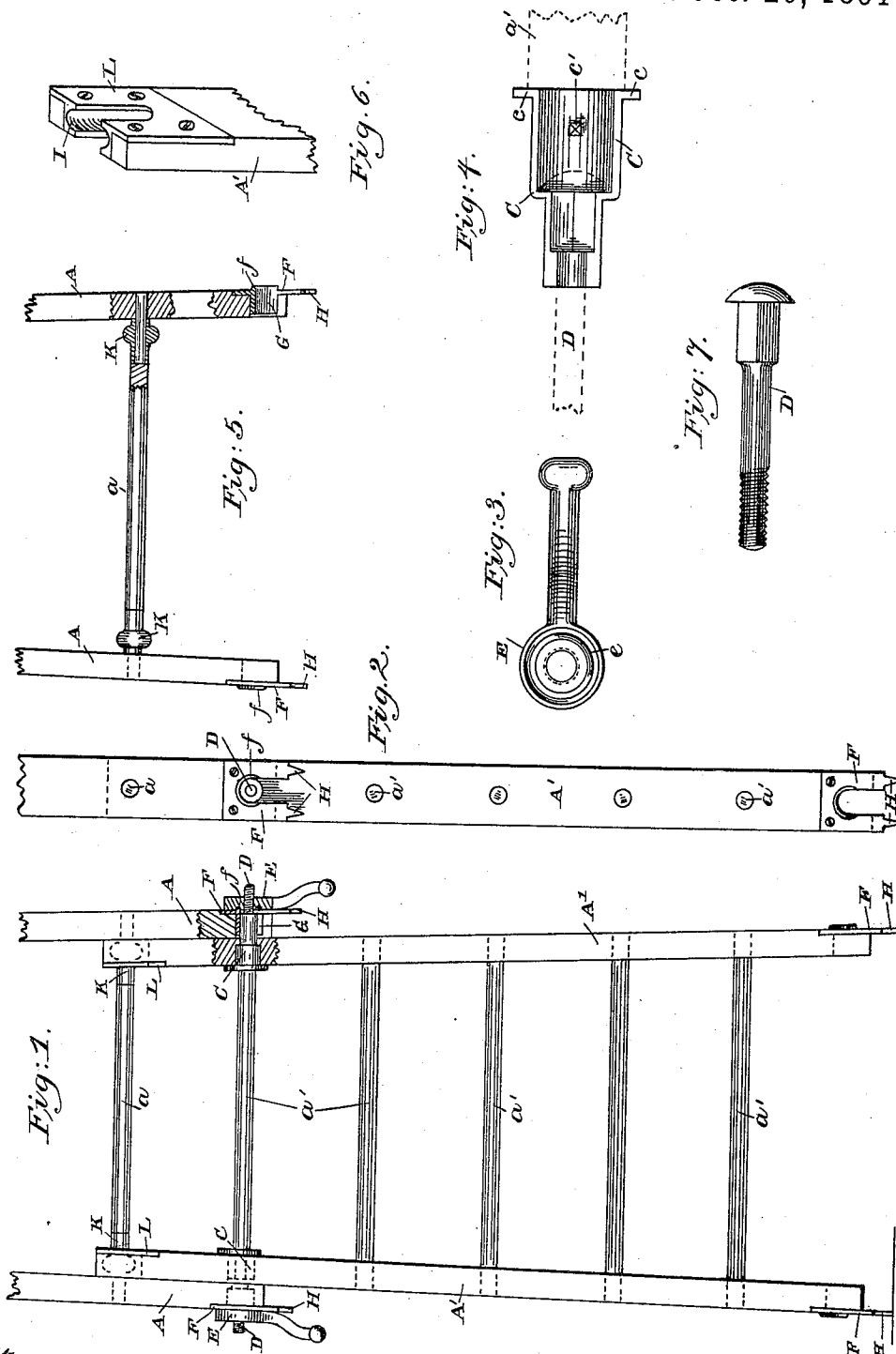


(No Model.)

F. C. LOVEJOY.
SECTIONAL LADDER.

No. 461,521.

Patented Oct. 20, 1891.



Witnesses:

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UNITED STATES PATENT OFFICE.

FREDRIC C. LOVEJOY, OF ALBANY, NEW YORK.

SECTIONAL LADDER.

SPECIFICATION forming part of Letters Patent No. 461,521, dated October 20, 1891.

Application filed April 27, 1891. Serial No. 390,712. (No model.)

To all whom it may concern:

Be it known that I, FREDRIC C. LOVEJOY, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Sectional Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in ladders made in detachable sections, and has for its objects to provide suitable means for securing the sections firmly together and for readily separating them when desired, and also for protecting the engaging parts from wearing out. These objects I accomplish by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front sectional view of two sections of a ladder embodying my invention. Fig. 2 is a side view of the same, with locking-piece detached. Fig. 3 is a view of the bearing-face of locking-piece. Fig. 4 is a plan view of the inside of sleeve. Fig. 5 is a sectional front view of the lower end of upper section. Fig. 6 is a perspective view of the upper end of lower side bar. Fig. 7 is an elevation of the fastening-bolt.

As illustrated in the accompanying drawings, A represents the side bars of the upper section of the ladder, connected together by a series of rungs *a*, and A' represents the corresponding bars of the lower section, having rungs *a'* connected therewith. The upper ends of the side bars A' are recessed to engage with the lower rung of the upper section of the ladder, and the lower ends of the bars A are also recessed to engage with a lateral projection extending outward from the side of the bars A' in line with the top rung of the lower section. This projection consists of the end of the sleeve C, provided with a flange *c*, and is preferably made in two halves hollowed out centrally to form a socket adapted to hold the end of the upper rung of the lower section, which rung has its entering end reduced and provided with a shoulder, which bears against the flange *c* of the sleeve C. The outer end of the sleeve C is also hollowed out centrally to form a socket adapted to hold the head and square portion of the shank of an

ordinary carriage-bolt D, and for this purpose the inner walls of this end of the sleeve are made rectangular, as shown in Fig. 4. The portion of the sleeve C which grasps the end of the rung *a'* may be provided with one or more fins *c'*, which embed themselves in the rung and secure a firm grasp thereon.

The threaded outer end of the bolt D engages with a screw-threaded locking-piece E, which may be provided on its inner or bearing face with a circular groove *e*, adapted to engage with a corresponding circular projection *f*, formed on the bearing-plate F.

A curved lining G is formed integral with the bearing-plate F and fits into the recessed portion of the lower end of the side bar A and bears against the projecting end of the sleeve C, thereby producing a lasting bearing-surface for the engaging end of the side bar A. The lining G may be continued, if desired, so as to cover the extreme bifurcated end of the side bar A and be provided with vertical projections or feet H, adapted to embed themselves in the ground and prevent the lower end of the ladder from slipping. These feet or projections may be omitted, however, without departing from my invention.

The upper recessed end of the lower side bar A' is also provided with a lining I, which is concaved in a vertical line to engage with an enlargement formed on the spool K, secured to the lower rung of the upper section. I prefer to make this lining integral with the side plate L, which is secured to the upper end of the side bar A' in any suitable manner.

It is obvious that a ladder may have as many sections similar to those shown herein as may be desired.

What I claim is—

1. In a sectional ladder, the combination, with the overlapping ends of the side bars, of a flanged sleeve provided with a rung-socket, a screw-threaded bolt, a bearing-plate, and a locking-piece engaging with said bolt, substantially as shown and described.

2. In a sectional ladder, the combination, with the recessed overlapping ends of the side bars, of a flanged sleeve provided with a rung-socket, a screw-threaded bolt, a bearing-plate, a metal lining for the recessed portion of the side bars, and a locking-piece provided with a circular groove engaging with a circular

projection formed on the bearing-plate, substantially as shown and described.

3. In a sectional ladder, the combination, with the overlapping ends of the side bars, of
5 a flanged sleeve composed of two similar parts hollowed out centrally to form sockets for the end of a rung and the head of a screw-threaded bolt, a threaded locking-piece, and an engaging-bolt, substantially as shown and described.
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4. In a sectional ladder, the combination, with the recessed overlapping ends of the side bars, of a vertically-concaved lining for said
15 recess formed integral with a plate secured to the side of said bars, and a sleeve secured to a rung and provided with an enlargement

adapted to engage with the concaved face of said lining, substantially as shown and described.

5. In a sectional ladder, a side bar having
20 a recessed lower end provided with a side plate, a lining for the recess formed integral with said side plate, and projecting feet extending downward from the bifurcated ends
25 of the side bars, substantially as shown and described.

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

FREDRIC C. LOVEJOY.

Witnesses:

ROBERT W. HARDIE,
CHAS. H. MILLS.