(No Model.)

C. B. SCHUMANN.

FLEXIBLE LADDER.

No. 381,853. Patented Apr. 24, 1888.

Fig. 1.

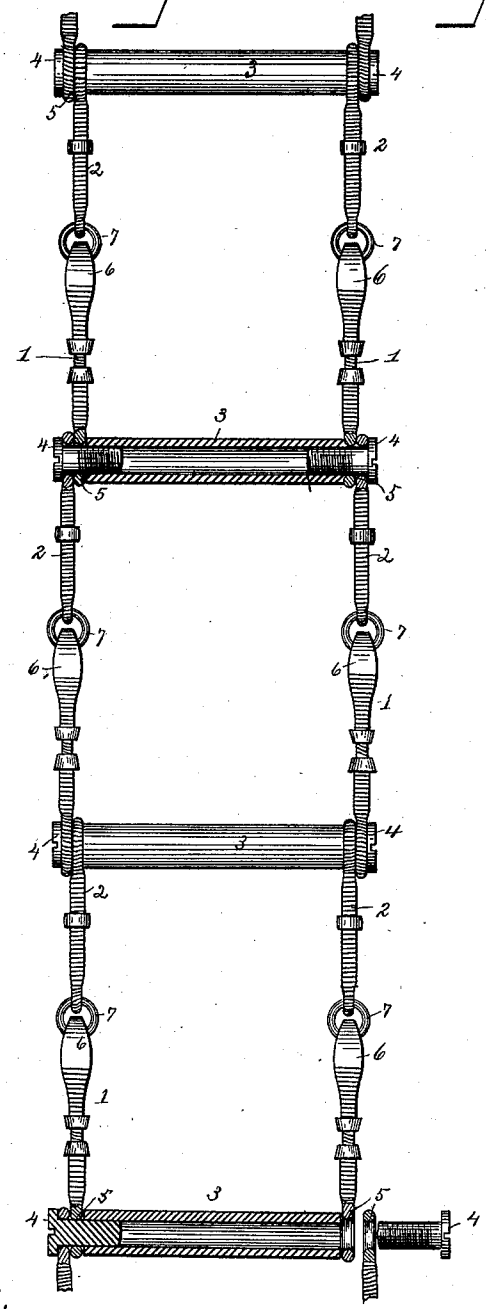
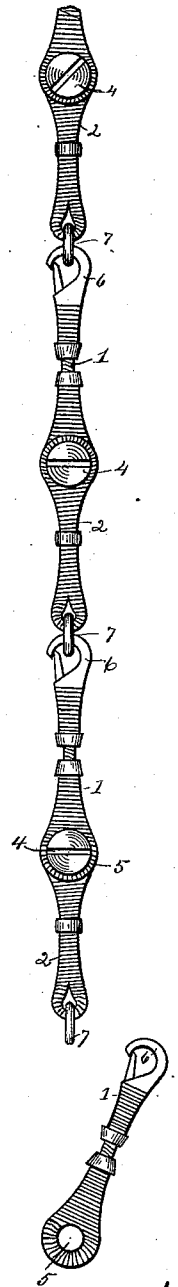


Fig. 2



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES B. SCHUMANN, OF SOUTH NORWALK, CONNECTICUT.

FLEXIBLE LADDER.

SPECIFICATION forming part of Letters Patent No. 381,853, dated April 24, 1888.

Application filed March 8, 1888. Serial No. 266,534. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. SCHUMANN, a citizen of the United States, residing at South Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Flexible 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 has for its object to provide a simple and easily-constructed flexible ladder which shall be adapted for general uses, and particularly for use in connection with fire-escapes and fire apparatus in general, an important feature being that any number of sections may be removed from the chain at any time and the ends joined together, so as to make a double or single ladder of any length that may be required for a special purpose, the construction being so simple that connection or disconnection of sections may be made at any time with hardly an instant's delay.

With these ends in view I have devised the simple and novel construction of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to denote the several parts.

Figure 1 is an elevation of several sections of my improved ladder complete, two of the rungs and the accompanying rings being in section to show the manner in which the parts are connected; and Fig. 2 is an edge view corresponding therewith, one of the parts being detached.

The ladder consists of independent parts 1 and 2, rungs or cross-pieces 3, internally screw-threaded at their opposite ends, and screws 4, engaging the threads at the opposite ends of the rungs. These rungs are ordinarily made round and hollow throughout, in order that the ladder may be as light as possible, and at the same time possess the necessary amount of strength. Parts 1 and 2 are made in any suitable manner, ordinarily of metal strengthened by wire. These parts are both provided at one end with an eye or loop, 5. Parts 1 are provided at their opposite ends with a suitable detachable connection, preferably a snap-hook, 6, and parts 2 are provided at their opposite ends with rings 7.

The parts of the ladder are assembled as follows: Each screw is passed through the loops of a part 1 and a part 2, a smooth portion being ordinarily provided for engagement with the eyes, and the threaded end being placed in the end of the ring and screwed up. The ladder is then completed to any desired length by engaging each snap-hook 6 on a piece 1, with a ring, 7, on a piece 2, as is clearly shown in the drawings. In use in connection with fire apparatus a certain length of chain is always kept in position ready for use, and a reserve supply is also kept handy, ordinarily on the carriage itself, the sections of which are also connected. If it is desired to lengthen the ladder in use at any time, it is simply necessary to connect the two snap-hooks at one end of the reserve supply with the rings at the end of the ladder in use. It is of course equally easy to shorten the chain, if desired, by disconnecting the snap-hooks from the rings of the last rung that is required for use. In ordinary use the chain is lengthened and shortened, as may be required, without ever interfering with the screws.

It will of course be understood that the various details of construction—such as the size and outline of the parts—may be varied to an unlimited extent without departing from the principle of my invention.

I claim—

1. A flexible ladder consisting of parts 1, having hooks, and parts 2, having rings, both of said parts having eyes at their opposite ends, rungs 3, and screws, said rungs being internally threaded at their opposite ends to receive said screws, which are passed through the eyes of said parts.

2. A flexible ladder consisting of rungs 3, alternate parts 1 and 2, provided, respectively, at one end with hooks and rings and all provided at their opposite ends with eyes, and screws passing through said eyes and engaging the opposite ends of the rungs, whereby a double or single ladder of any required length may be formed, sections being added or removed by connecting or disconnecting the hooks and rings below the last rung required.

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

CHARLES B. SCHUMANN.

Witnesses:
A. M. WOOSTER,
BERTHA E. LEE.