

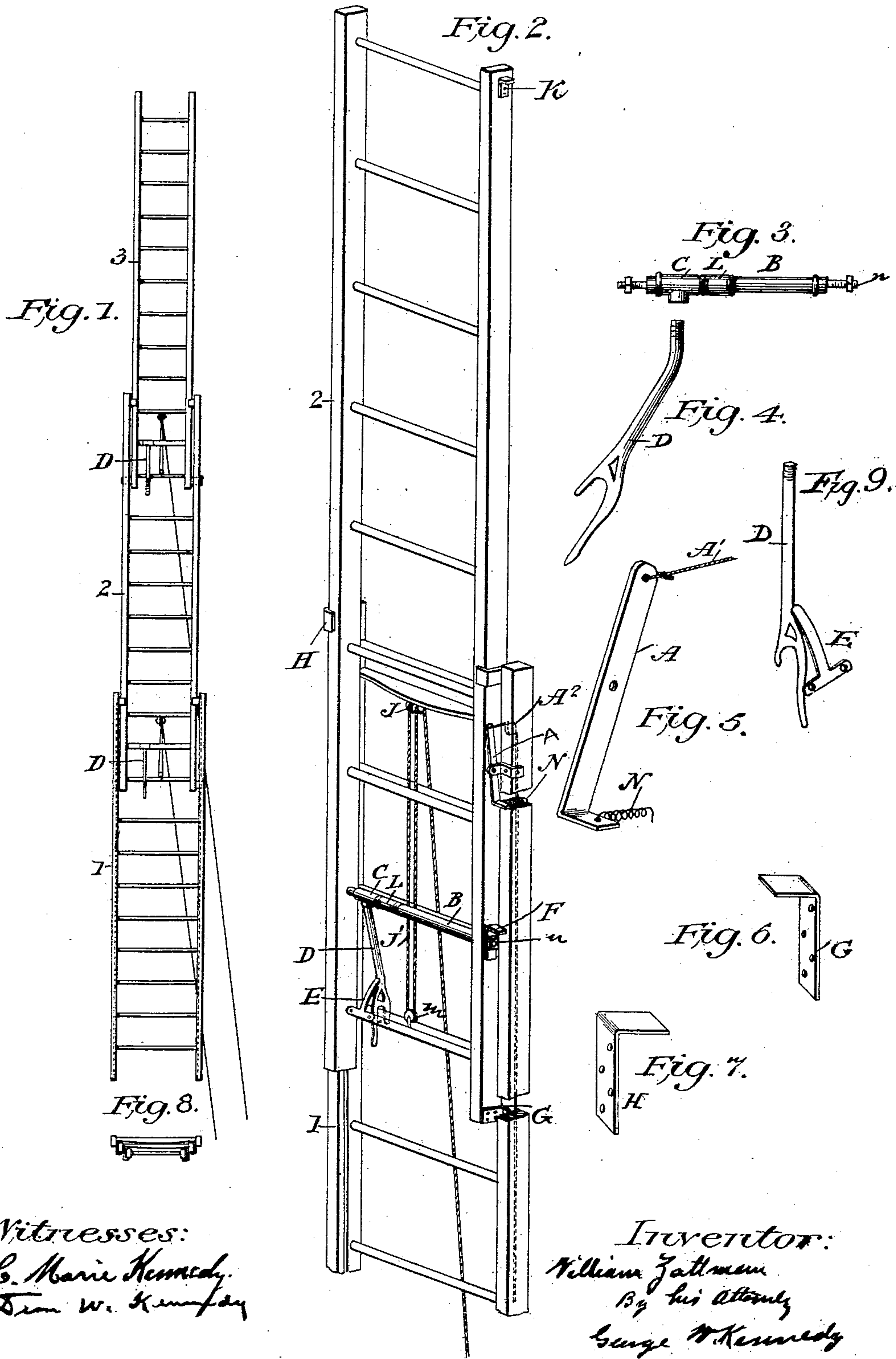
No. 713,550.

Patented Nov. 11, 1902.

W. ZOTTMAN.
EXTENSION LADDER.

(Application filed June 29, 1900.)

(No Model.)



Witnesses:
H. Marie Kennedy.
Sam W. Kennedy

Inventor:
William Zottman
By his Attorney
George W. Kennedy

UNITED STATES PATENT OFFICE.

WILLIAM ZOTTMAN, OF BURLINGTON, VERMONT.

EXTENSION-LADDER.

SPECIFICATION forming part of Letters Patent No. 713,550, dated November 11, 1902.

Application filed June 29, 1900. Serial No. 22,045. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ZOTTMAN, a citizen of the United States, residing in the city of Burlington, in the county of Chittenden and State of Vermont, have invented a new and useful Improvement in Extension-Ladders, of which the following is a specification.

My invention relates to an extension-ladder made in two or three sections and may be extended by ropes and pulleys and held at any point desired.

My object is to have a ladder that will hold a man and be light enough to be easily and readily handled.

In the accompanying drawings similar characters refer to similar parts in all the views.

Figure 1 shows a ladder in three sections 1 2 3. Fig. 2 shows two sections, somewhat enlarged, with the mechanism for extending the same. Fig. 3 shows pipe B, the coupler L, the T C over the bolt *n*. Fig. 4 shows the pawl. Fig. 5 shows the stop A, with the spring N to bring it to place. Fig. 6 shows the bracket G to hold the lower end of the section in place; Fig. 7, a bracket to hold the upper end of the section in place. Fig. 8 is an end view of the three sections when not extended. Fig. 9 shows the pawl with the spring E.

The pawl is attached to the rung next to the lower rung of the sections 2 and 3. The spring E is attached to the rung next below the pawl. A pulley-block *m* is attached to the same rung, with a cord running to another, J, in the upper end of the section next below to extend the same when desired. When a section is extended as far as desired, the forked end of the pawl rests on the rung that it has last passed over and holds the section up firmly in place. When it is desired to let the extended section down, it is pulled up a little. The spring E pushes against the pawl, as shown in Fig. 2 and also in Fig. 9, and will throw the pawl out clear from the rung, and as the ladder-section goes down the upper end of the pawl will strike the rung and be reversed—that is, the end attached to the T will go down first and the forked end will be uppermost as it strikes each rung—and so soon as the section is pulled up again the pawl will assume its former position, with the forked end down and the end attached to the T uppermost. When the upper end

of the pawl is bent, as shown in Fig. 4, it will swing clear of the rung without the use of the spring E.

Fig. 3 shows the bolt *n*, which passes through ordinary ladder sides, also through the pipe B, the coupler L, and the T C, which altogether forms a rung of the ladder, to which the pawl may be attached by screwing it into the T C.

The bolt *n* is made of iron; but an ordinary rung made of wood may be passed through the T C and ladder sides, and it will work equally well, although perhaps not quite as strong and durable, but is much cheaper.

The brackets G and H are not necessary in working this ladder.

A is a stop attached to the upper end of a section, as shown in Fig. 2, and is worked by a small cord A', attached to the upper end and running over a pulley A². When a section is extended nearly to its limit, the stop holds it from going higher; but in order to let it down the stop F strikes against the stop A and is removed by pulling the cord A', and then the extended section will go a little higher, so that the pawl will be detached from the rung on which it rests and that section will then go down freely.

N is a spiral spring to bring the stop back to its place. A flat spring may be used instead. Section 2 runs inside of section 1 and is held by means of the brackets H G and runs in a groove, so as to move freely up and down. In like manner section 3 runs inside of section 2.

I claim—

1. The combination of the ladder-sections, pulleys and cord to extend the same, a pivoted stop, a spring attached to one end of said stop, a cord attached to the other end of said stop, a fixed lug or stop on the adjacent section with which the stop coöperates, a T mounted on one of the rungs, and a pawl having a forked end screwed to said T, substantially as described.

2. In combination with the ladder sides and a series of ordinary rungs, a bolt passed through said sides, a pipe over said bolt, a T on said pipe and a pawl secured to said T, substantially as described.

WM. ZOTTMAN.

Witnesses:

O. P. RAY,
P. O. RAY.