

C. C. STEVENS.
EXTENSION LADDER.
APPLICATION FILED MAY 21, 1909.

986,517.

Patented Mar. 14, 1911.

FIG. 2

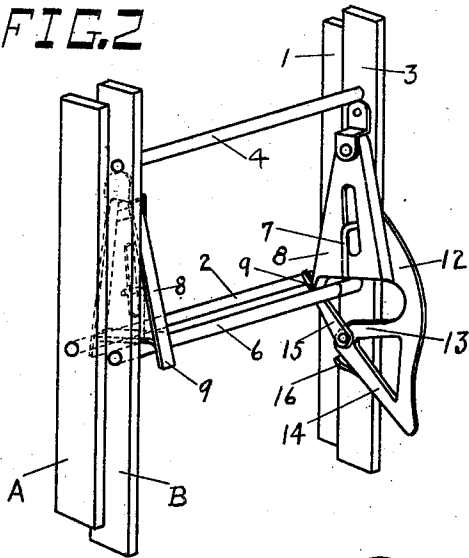


FIG. 3

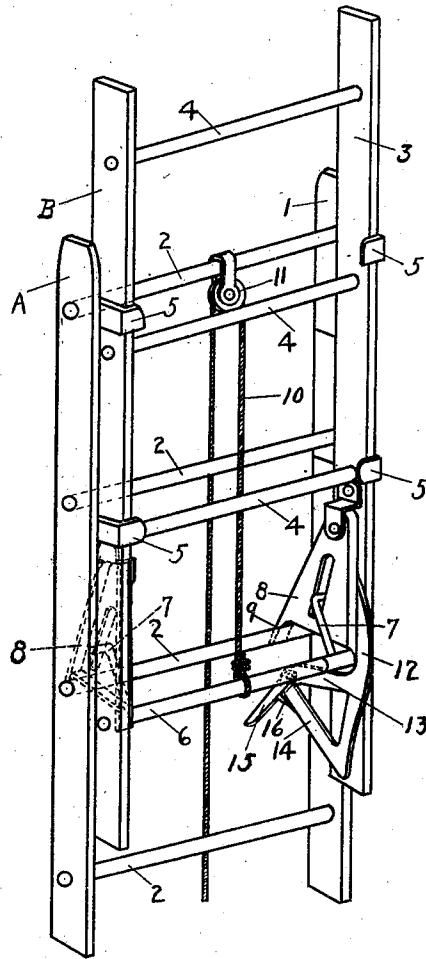
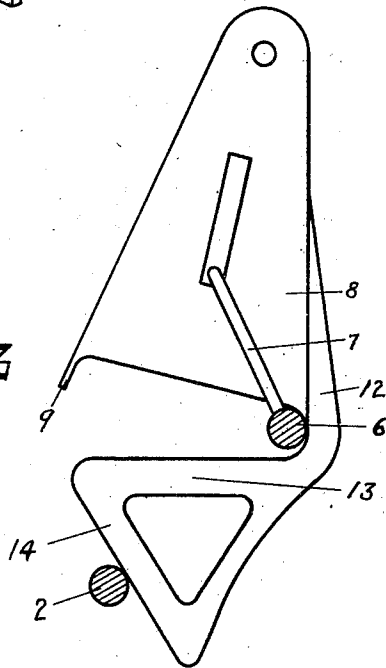


FIG. 1

WITNESSES:

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EXTENSION-LADDER.

986,517.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES C. STEVENS, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Extension-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 extension ladders and more particularly to the means for automatically effecting the telescoping or descent of the movable section of the ladder, one object being to provide a simple inexpensive guard member associated with a rocker and adapted to engage the successive rounds of the stationary section of the ladder to prevent the rocker from catching over such rounds, and thereby permit the movable section to descend.

To these ends my invention consists in certain novel features and combinations of parts such as will be more fully described hereinafter and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view of a ladder equipped with my invention, showing its inoperative position, Fig. 2 is a fragmentary detail view showing its operative position, and Fig. 3 is a side view of the rocker and guard member alone, the guard finger being omitted.

I have shown my invention as applied to the Williamson construction, illustrated in United States Letters Patent, No. 873,110, dated Dec. 10, 1907, to which reference is made for a more complete description.

A indicates the stationary and B the movable sections of an extension ladder. Each section consists of side rails and rounds, the side rails of the stationary section being indicated at 1, 1, and the rounds thereof at 2, 2. The side rails of the movable section are indicated at 3, 3, and the rungs at 4, 4. Suitable arms 5, 5, operate to slidingly connect the movable and stationary sections.

Preferably the lowest rung 6 of the movable section is journaled at its ends in the side rails 3, 3, and is loosely connected by means of the arms 7, 7, with rockers 8, 8, pivoted to the side rails, such rockers having the lips 9, 9, embracing the rolling rung 6. The inner lips on the rockers are adapt-

ed to take over the rounds of the stationary section to support the movable section at various heights thereon, the inward movement of the rockers being limited by the engagement of the outer lips with the rung 6. Means as a flexible connection 10 is secured at one end to the rung 6, the bight of the connection passing around a pulley 11 carried by the upper round 2 of the stationary section and the free end depending to a position where it may be grasped by the operator.

My invention consists in providing a simple, strong, durable, and novel means combined with one of the rockers for automatically preventing the engagement of the inner rocker lips with the rounds 2 when it is desired to lower the movable section. To this end, I equip at least one of the rockers at its outer lower corner with a depending extension 12, such extension terminating in a guard knee 13 spaced apart from the lower edge of the rocker to form a recess in which to receive the rung 6. The leg 14 of this knee is inclined at a considerable angle outward and I employ a guard finger 15 pivoted to the extreme inner end of the knee, the guard finger normally resting against a stop 16 in such position that the finger projects inwardly and with the leg is adapted to straddle the rounds 2, 2, when the movable section is lowered.

The operation of my invention is as follows: In raising the movable section on the stationary section, the operator pulls downward on the flexible connection 10. The inner edges of the rockers wipe over the rounds until the section has been raised to the desired height, whereupon the operator releases the connection and the movable section settles down with the inner lips of the rockers taking over the adjacent round 2. The settling of the movable section throws the rung 6 into the recess between the knee and rocker and against the extension 12. When it is desired to lower the movable section, the operator will first raise the section until the guard finger lies above the round previously engaged by the rocker. This movement will permit the rocker to swing inward so that the round 2 is in line with the inclined leg 14, whereupon the movable section is lowered, the round being received against the inclined leg, the engagement of which with the round as the movable section is lowered, swings the rocker outward so that

its inner lip 9 is out of alinement with the round 2. The inclined edge of leg 14 takes the force of the blow against the round when the ladder is hurriedly lowered, thereby preventing breaking the latch 15, as is often the case were the blow against the rounds taken by the latch itself. The descent of the movable section, when the round is in engagement with the inclined leg 14, brings the normally downwardly inclined finger astride the round, flipping the finger upward, the free end of the guard finger lying across the recess between the knee and rocker and in engagement with the inner lip of the rocker to prevent the latter from taking over the round. The finger is retained in such position by the round over which it wipes, until the lip has passed below the round. As the inner inclined edge of the rocker rides over the round, it permits the shoe to swing inward, the guard finger having dropped to its normal downwardly inclined position after passing the round. The inward swinging movement of the shoe brings the lower free end of the guard finger over the succeeding round, the engagement of which, by the finger, again flips the latter upward against the inner lip of the rocker, thereby preventing the latter from catching on the succeeding round and so on until the movable section has descended the desired distance, whereupon the operator will hold the flexible connection 10 stationary and then raise the movable section until the inner lip of the rocker takes over the

adjacent round. The finger when in raised position, lies in alinement with the inclined portion of the knee.

Having thus fully disclosed my invention, what I claim as new, is:—

In an extension ladder, a stationary section and an extension section slidable thereon, rockers pivoted to the extension section and provided with lips adapted to take over the rounds of the stationary section; an extension depending from the outer edge of one of the rockers, a guard knee carried by such extension and having a substantially horizontal upper face and an inclined leg, the knee lying beneath the rocker, a rung on the movable section and received in the recess formed between the rocker and the upper edge of the knee, a guard finger pivoted to the knee near the junction of its upper edge with the inner edge of the guard knee, a stop on the knee adapted to normally maintain the guard finger inclined downwardly whereby the rounds of the remaining section are received between the leg and the finger, said finger adapted to lift to form an extension of the inclined leg of the guard knee when the latter wipes downward over the rounds of the stationary section.

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

CHARLES C. STEVENS.

Witnesses:

ROY WALLIS,
RALPH S. WARFIELD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."