(No Model.)

J. M. WALLACE.

FIRE LADDER.

No. 493,345. Patented Mar. 14, 1893.

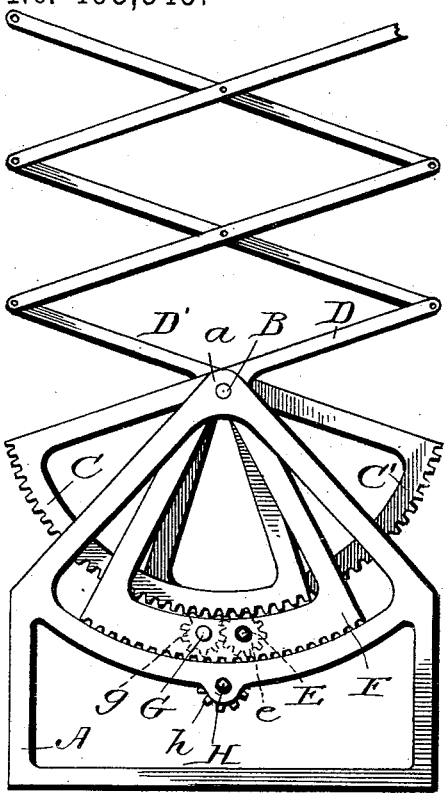

Fig. 1.

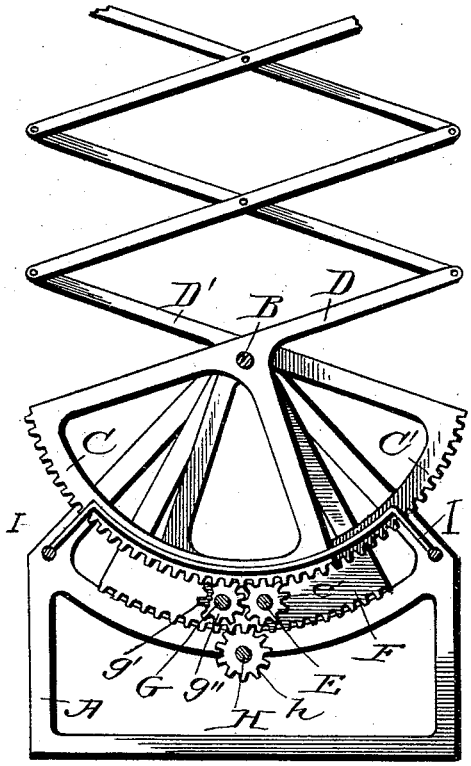

Fig. 2.

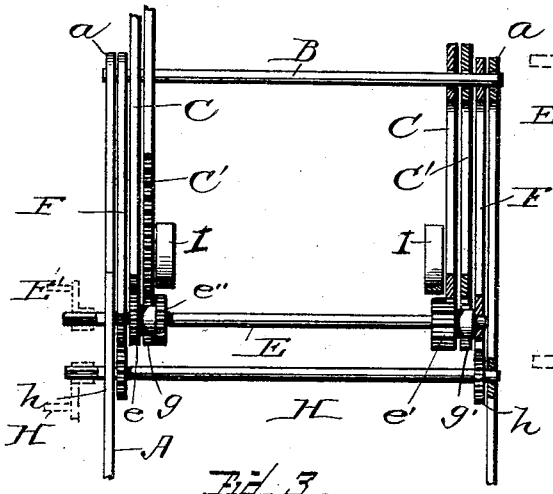

Fig. 3.

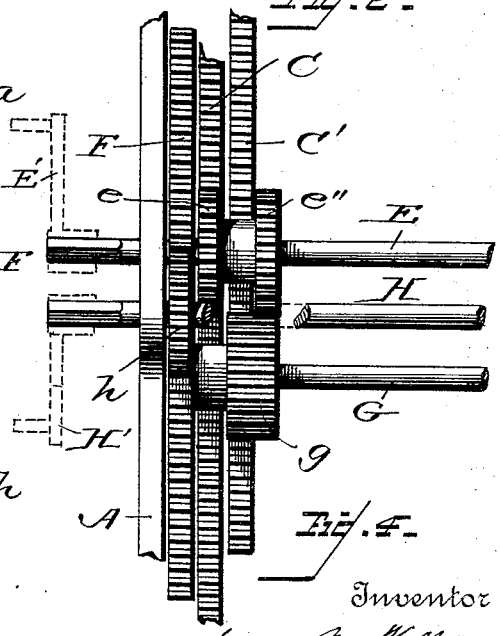

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES M. WALLACE, OF PORTLAND, OREGON.

FIRE-LADDER.

SPECIFICATION forming part of Letters Patent No. 493,345, dated March 14, 1893.

Application filed October 27, 1892. Serial No. 450,121. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. WALLACE, a citizen of the United States, residing at Portland, Multnomah county, Oregon, have invented new and useful Improvements in Fire-Ladders, of which the following is a specification.

The object of my invention is to provide a simple and efficient device for raising and lowering and inclining a lazy-tongs fire-escape, and my invention consists in securing the oppositely disposed arms which form the base of the side bars of the lazy-tongs ladder to a set of lapping toothed segments suspended from a shaft on the truck frame. These toothed segments are actuated by interlocking pinions secured to a second set of toothed segments suspended from the same shaft and actuated by a pinion mounted on the truck frame. The first pinions and set of segments serve to raise and lower the lazy-tongs, and the second pinion and set of segments serve to incline the lazy-tongs either to the right or to the left.

In the accompanying drawings which illustrate my invention, Figure 1 is a front elevation of one side of my fire escape and Fig. 2 is an elevation of the same on the inside and Fig. 3 is a view partly in section and Fig. 4 an enlarged detail showing the gear of the same.

A is the truck frame.

B is the shaft mounted on the frame at the apex *a a* of its arches.

C C C′ C′ are toothed segments freely suspended from the shaft B and to which are rigidly connected at their outer extremities the lowermost of the superposed levers D D D′ D′ constituting the parallel side bars of the lazy-tongs ladder. The segments C′ C′ swing freely past the segments C C in such wise that when the segments C C and C′ C′ are caused to lap each other the lazy-tongs is extended and vice versa.

In order to simultaneously actuate the two sets of segments I provide the shaft E having its bearings on the toothed segments F F which are freely suspended from the shaft B. Pinions *e e′* rigidly mounted on the shaft E gear with the toothed segments C C to raise and lower the levers D D, a second shaft G also mounted in bearings on the same segments F F, carries keyed to it the pinions *g g′* which gear with the segments C′ C′ to raise and lower the levers D′ D′. The reverse simultaneous rotation of the shaft G is obtained by means of a pinion *e″* keyed to the shaft E engaging with the pinion *g* on the shaft G and a pinion *g″* keyed to the shaft G which engages with the pinion *e′* on the shaft E. It is thus seen that when the shaft E is turned by means of its crank handle E′, the sets of segments C and C′ are caused to move in opposite directions, simultaneously lowering or raising their levers D and D′ and elevating or depressing the lazy tongs by employing the wide pinions *g* and *e′* which are located on their respective shafts as shown, I gain great increase of strength and am enabled to actuate both segments C C C′ C′, sliding on each other with but one guide I for each set.

To incline the fire escape from one side to the other, I provide the shaft H turning in bearings on the frame A and having keyed pinions *h h* which gear into the toothed segments F carrying the raising and lowering device with which the segments C C′ and their levers move as an entirety. On turning the shaft H by means of its handle H′ the fire escape is rocked from one side to the other in respect to the frame A.

I I are guides between which and the frame A the segments turn. The frame A may be mounted upon wheels or in any well known way.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a lazy tongs fire escape, the combination with the frame A, of the shaft B, the toothed lifting segments C C C′ C′, suspended from and turning on said shaft, the lazy-tongs ladder having its lever arms D D D′ D′ secured to said segments, the toothed tilting segments F suspended from and keyed to said shaft, the guides I I secured to said frame A forming a single guideway therewith on each side of the frame in which said lifting and tilting segments slide over each other without additional engagement therewith, the lifting device consisting of the shaft E mounted in said segments F having narrow pinions *e e″* and the wide pinion *e′* the shaft G similarly mounted in said segments F and having the

narrow pinions g' and g^2 and the wide pinion g, said wide pinion g meshing with segment C′ and pinion e'', and wide pinion e' with segment C and pinion g'' and means for actuating the shaft E and the tilting device consisting of the shaft H mounted in the frame A and having the pinions h h meshing with the segments F F, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES M. WALLACE.

Witnesses:
G. G. GAMMANS,
JAMES GAMMANS.