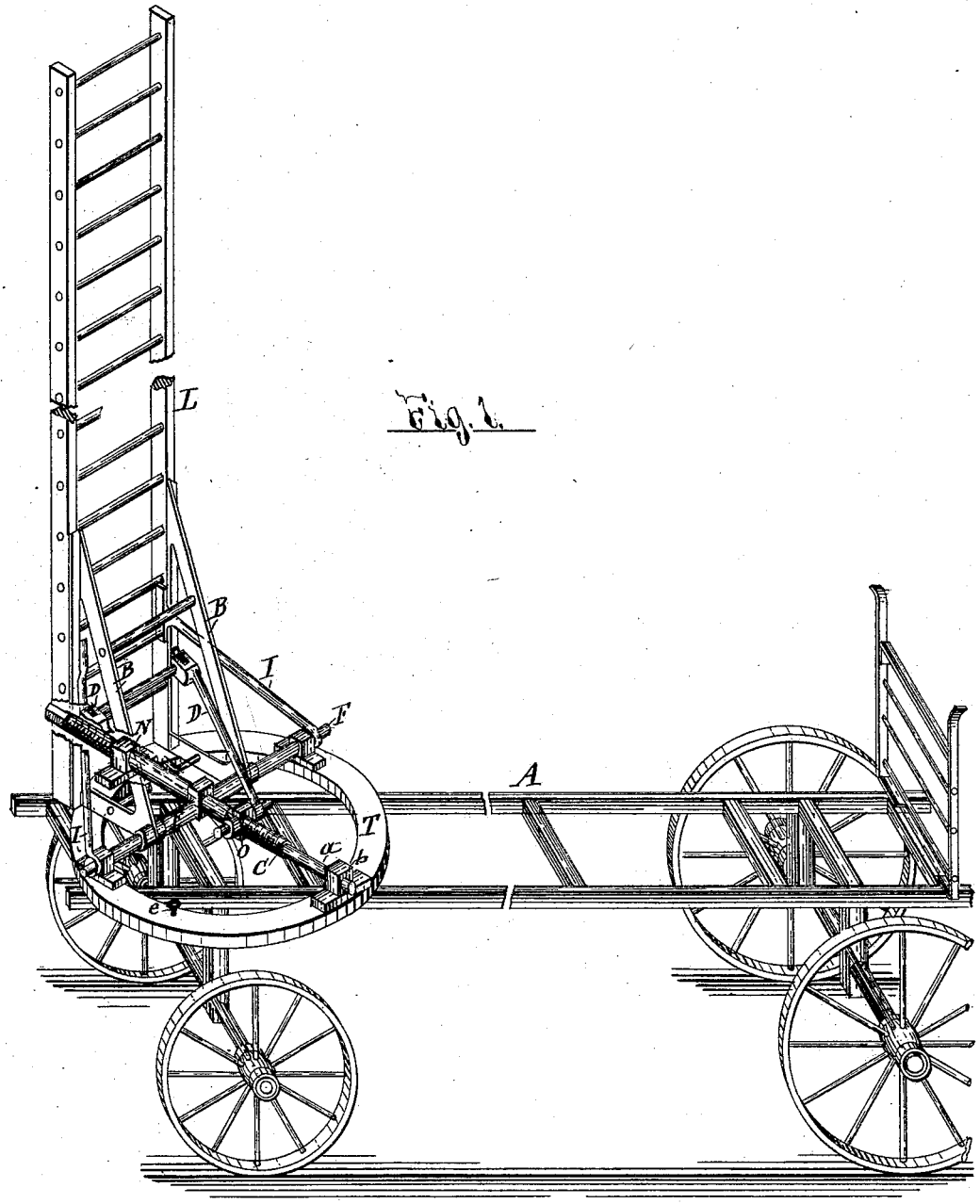
(No Model.) 2 Sheets—Sheet 1.

F. STUEMPFLE & H. S. THOMAS.

FIREMAN'S LADDER.

No. 347,746. Patented Aug. 17, 1886.

Fig. 1.



Witnesses

C. Bendixon

M. F. Walz.

Inventors:

Frederick Stuempfle

Horace S. Thomas

per Dodd, Laass & Hay

Attys

(No Model.) 2 Sheets—Sheet 2.

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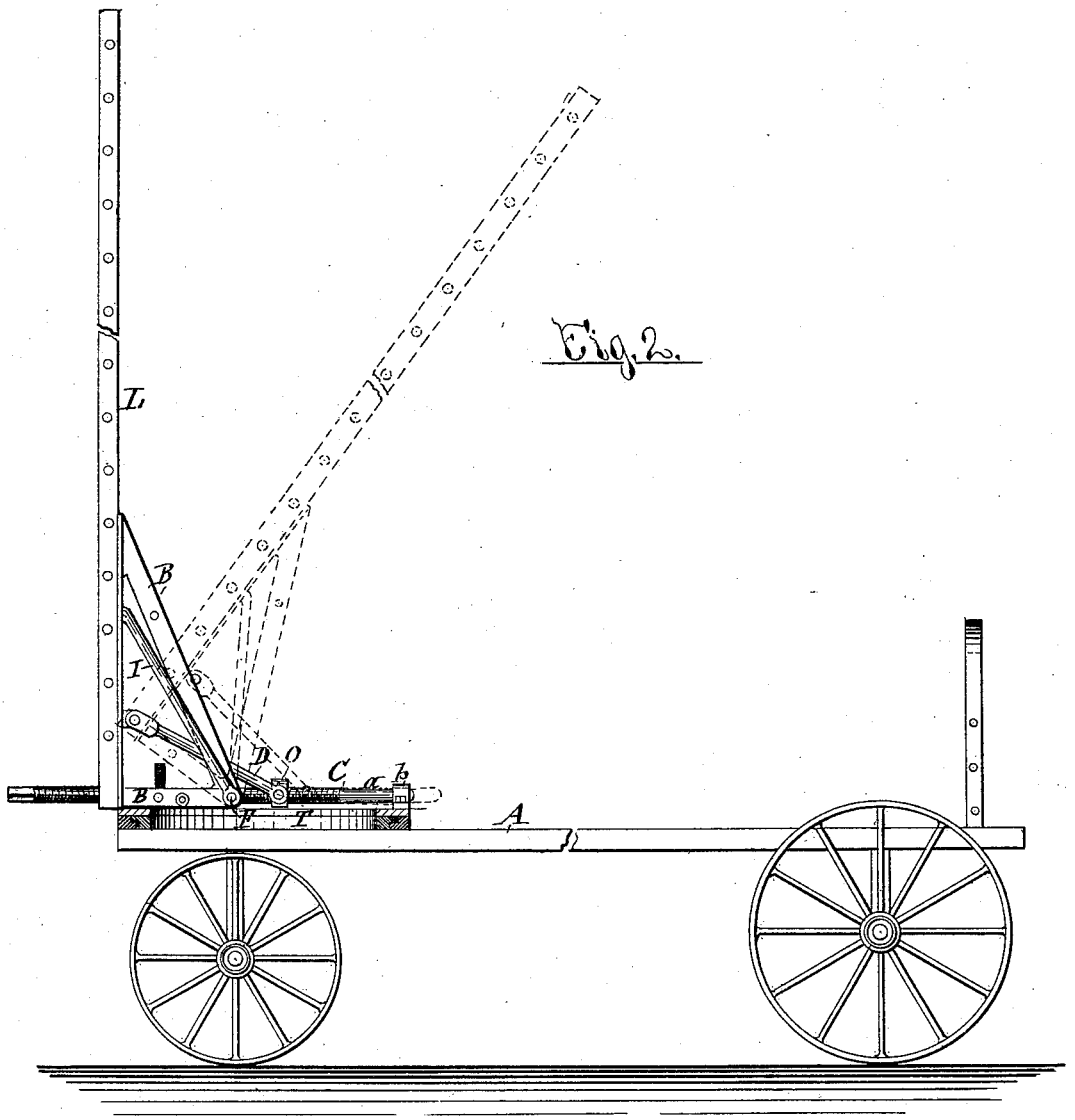

Fig. 2.

Witnesses
C. Bendixon
M. F. Walz.

Inventors:
Frederick Stuempfle
& Horace S. Thomas
per Church, Laass & Hay
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UNITED STATES PATENT OFFICE.

FREDERICK STUEMPFLE AND HORACE S. THOMAS, OF ELMIRA, NEW YORK.

FIREMAN'S LADDER.

SPECIFICATION forming part of Letters Patent No. 347,746, dated August 17, 1886.

Application filed April 1, 1886. Serial No. 197,402. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK STUEMPFLE and HORACE S. THOMAS, of Elmira, in the county of Chemung, in the State of New York, have invented new and useful Improvements in Firemen's Ladders, of which the following, taken in connection with the acccompanying drawings, is a full, clear, and exact description.

This invention relates to the class of extension-ladders which are mounted on a turn-table to permit of turning the ladder in different directions, and are pivotally supported on the turn-table to allow the ladder to swing in a vertical plane, and are sustained at different angles of inclination by a screw connected with the turn-table and with a nut carried by braces connected with the ladder.

The invention consists in an improved construction and combination of parts, whereby the ladder is raised and lowered with rapidity and ease by combined rotary and longitudinal movement of the screw, which is maintained in a plane parallel with the turn-table, and thus always easy of access for manipulation, and the ladder is supported more securely in its erect position, all as hereinafter more fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a perspective view of our improved ladder with portions of the braces broken away to illustrate other important features of our invention, and Fig. 2 is a side elevation with the turn-table shown in section to better illustrate its construction.

Similar letters of reference indicate corresponding parts.

A denotes the truck on which the ladder L is transported and supported. On one end—generally on the forward end—of said truck is mounted the turn-table T, composed of a circular bottom plate, which is secured stationary on the truck, and a circular top plate fitted to the bottom plate by circumferential rabbets on their adjacent sides and adapted to revolve thereon. The lower ring or section of the turn-table is provided with a series of vertical holes, and in a hole vertically through the top section is inserted a pin, *e*, which, by its engagement with one of the holes in the lower section, serves to hold the top section of the turn-table in its desired position.

C represents the screw-shaft having right and left screw-threaded portions, respectively, at opposite sides of the center of the turn-table. One of said screw-threaded portions works in a nut, N, which is rigidly secured to the top of the turn-table, and the adjacent end of said shaft is squared or otherwise adapted for the application of a crank, by which to turn the shaft. The opposite end of the shaft C is turned off smooth to form a long journal, *a*, which extends through a box, *b*, firmly attached to the top of the turn-table. Said stationary box *b* and nut N maintain the screw-shaft C in a plane parallel with the turn-table, and the journal *a* is of sufficient length to allow the said shaft to travel longitudinally on the turn-table.

On the screw-threaded portion of the shaft C, between the journal *a* and center of the turn-table T, is a nut, O, which is swiveled on the ends of two arms, D, which are hinged at their opposite ends on the side rails of the ladder. The central portion of the screw-shaft C is supported by a shaft, F, which is arranged at right angles to the shaft C, and is secured stationary at its ends on top of the turn-table, said shaft F being formed with an eye, through which the shaft C passes.

B B are two rigid right-angled triangular braces, which are secured at their long right-angled limbs to the side rails of the ladder, and are adapted to rest with the other right-angled limbs on top of the turn-table when the ladder is in an erect position, as illustrated by full lines in Fig. 2 of the drawings. These braces are hinged at their lower acute angles on the shaft F at opposite sides of the screw-shaft C, and this connection constitutes the support for the foot of the ladder, and it will be observed that this support is rigid on the turn-table, and can therefore be made perfectly secure.

In order to thoroughly brace the ladder L laterally when in an erect position, we firmly secure to the side rails of the ladder, above the foot thereof, two braces, I, which extend rearward and downward divergent from each other, and are hinged at their lower ends to the extremities of the stationary shaft F. The

ladder L is raised and lowered by turning the screw-shaft C, as in other ladders of this class; but by our improvements the necessary motion is imparted to the ladder by a combined rotary and longitudinal movement of the screw-shaft, and hence the movement of the shaft is accelerated. Furthermore, the central portion of the screw-shaft is supported by a stationary cross-shaft, and the movable nut needs no direct support on the turn-table, and consequently friction is obviated to a great extent. It will also be observed that by our invention the ladder is pivoted some distance back from the foot of the ladder, and on a stationary support on the turn-table. Therefore as the ladder rises the weight of the ladder is carried toward the front of its support, and thus the operation of raising the ladder is facilitated.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In combination with the turn-table and ladder, a nut secured stationary on the turn-table, a shaft arranged movable longitudinally on the turn-table and having right and left screw-threads, respectively, at opposite sides of the center of the turn-table, and working by one of said screw-threaded portions in the nut on the turn-table, braces rigidly secured to the foot of the ladder and pivoted on the turn-table, and arms on the ladder carrying a nut on the other screw-threaded portion of the shaft, all combined to maintain the screw-shaft in a plane parallel with the turn-table and carry the ladder on the turn-table by the rigid braces of said ladder, substantially as described and shown.

2. In combination with the turn-table and ladder, the right and left screw-threaded shaft C, arranged movable longitudinally on said turn-table and maintained in a plane parallel with the same, the nut N, secured stationary on the turn-table, the arms D D, hinged on the ladder, the nut O, swiveled on said arms, the shaft F, arranged stationary on the turn-table and at right angles to the screw-shaft C, and supporting the central portion of the latter, and the rigid braces B B, of right-angled triangular form, secured at one of the right-angled limbs to the ladder, and adapted to rest with the other right-angled limbs on top of the turn-table and hinged at the lower acute angles on the shaft F, substantially as described and shown.

3. In combination with the turn-table and ladder, the right and left screw-threaded shaft C, arranged movable longitudinally on said turn-table and maintained in a plane parallel with the same, the nut N, secured stationary on the turn-table, the arms D D, hinged on the ladder, the nut O, swiveled on said arms, the shaft F, arranged stationary on the turn-table and at right angles to the screw-shaft C, the braces B B, rigidly secured to the ladder and hinged on the shaft F at opposite sides of the screw-shaft, and the lateral braces I I, rigidly attached to the ladder, above the foot thereof, and hinged at their lower ends to the extremities of the stationary shaft F, substantially as described and shown.

In testimony whereof we have hereunto signed our names and affixed our seals, in the presence of two attesting witnesses, at Elmira, in the county of Chemung, in the State of New York, this 6th day of July, 1886.

FREDERICK STUEMPFLE. [L. S.]
HORACE S. THOMAS. [L. S.]

Witnesses:
A. B. GALATIAN,
JOSEPH L. DARLING.