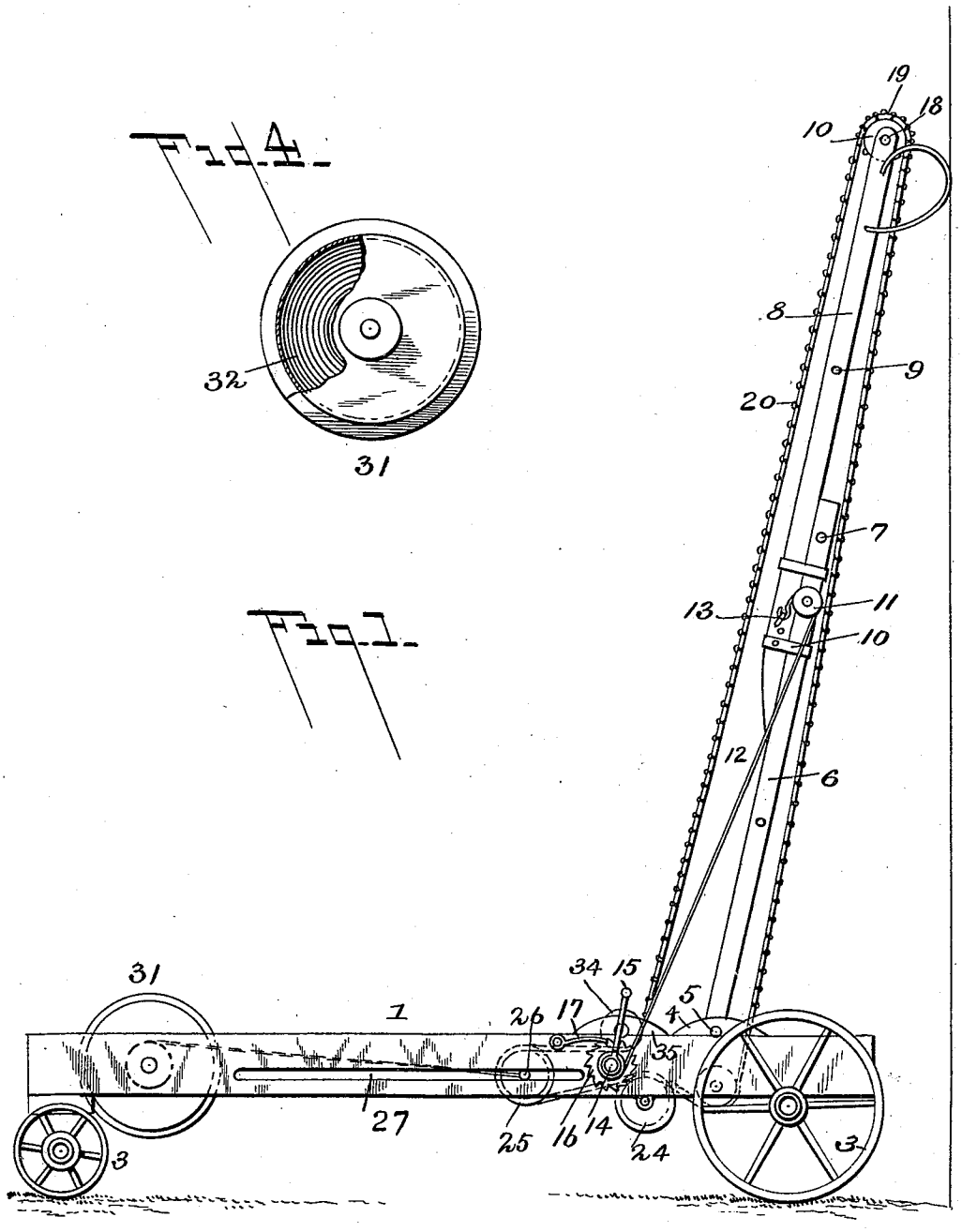
(No Model.) 2 Sheets—Sheet 1.

S. M. GRAUMLICH.

EXTENSION LADDER AND TRUCK.

No. 512,190. Patented Jan. 2, 1894.



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(No Model.) 2 Sheets—Sheet 2..

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Fig. 2.

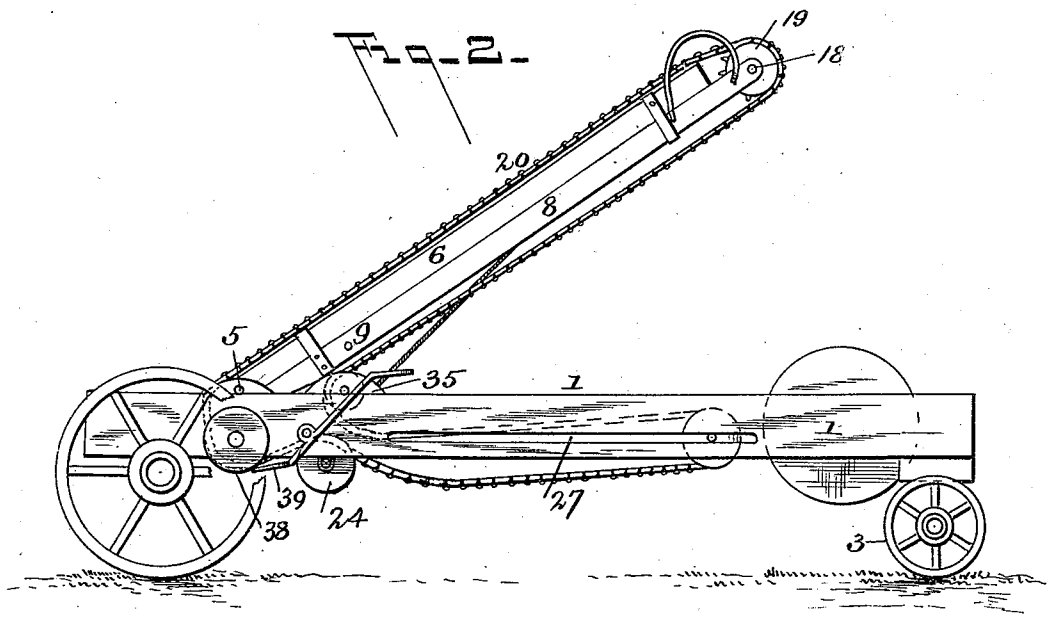

Fig. 5.

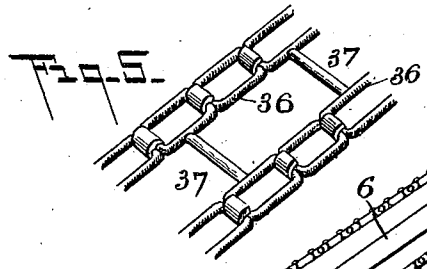

Fig. 3.

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UNITED STATES PATENT OFFICE.

SOLOMON M. GRAUMLICH, OF DUVALL, OHIO.

EXTENSION-LADDER AND TRUCK.

SPECIFICATION forming part of Letters Patent No. 512,190, dated January 2, 1894.

Application filed April 24, 1893. Serial No. 471,669. (No model.)

To all whom it may concern:

Be it known that I, SOLOMON M. GRAUMLICH, a citizen of the United States, and a resident of Duvall, in the county of Pickaway and State of Ohio, have invented certain new and useful Improvements in Extension-Ladders and Trucks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in extension ladders and trucks, designed principally for use in case of fires, whereby persons can be rescued from burning buildings.

The object of the invention is to provide a novel construction of the same, whereby I secure important advantages with respect to efficiency in use.

The invention consists in the novel construction and combination of parts, hereinafter fully described and claimed.

In the accompanying drawings: Figure 1 is a side view of a machine constructed in accordance with my invention, the ladder being elevated. Fig. 2 is a similar view the ladder being partly lowered. Fig. 3 is a longitudinal section of the same. Fig. 4 is a detail view of the spring barrel. Fig. 5 is a detail perspective view of a portion of the endless chain ladder.

In the said drawings, the reference numeral 1 designates two side beams connected together by transverse end beams 2, with which the axles are connected, the front axle being pivoted to the front end bar, so that it may rotate when turning curves.

The numeral 3 designates the wheels.

Journaled in boxes 4, near the rear ends of said side bars is a transverse shaft 5, which is pivotally connected with the lower ends of two swinging bars 6, connected together near their upper ends by a rod 7. Resting upon and movable on said bars 6, are two bars 8, connected together by rods 9. Near their lower ends the bars 8 are provided with lugs 10, which have their free ends bent at a right angle and engage with the lower sides of the bars 6. Similar lugs are secured to the bars 6, near the upper ends thereof, which engage with the upper sides or edges of the bars 8. By this means, the said bars 6 and 8 are held together, yet at the same time, bars 8 can freely slide on bars 6. Near its upper end one of the bars 6, is provided with a pulley 11, over which passes a rope or chain 12, secured at one end to a lug or pin 13 on one of the bars 8, and its other end secured to a windlass 14, on one of the side bars 1, provided with a crank 15, and a ratchet wheel 16. A pawl 17 is pivoted to said side bar, and is adapted to engage with the ratchet wheel to prevent backward movement of the windlass.

In the upper ends of bars 8 is journaled a shaft 18, provided with sprocket wheels 19, at each end, over which passes an endless chain ladder 20, which also passes around sprocket wheels 21 on a shaft 23, journaled in the side bars 1, over a roller 24, journaled in said side bars and around a roller 25, having journals 26, which work in horizontal slots 27 in the side bars 1. By this construction, said roller is capable of reciprocating horizontally, as well as rotating. Secured to said journals 26 is a bail 28, secured to a rope 29 wound upon a spring-actuated windlass 30. One end of the shaft of this windlass is journaled in one of the side bars 1, while the other is journaled in a spring barrel 31 secured to the other side bar. Within this barrel is a coiled spring 32, one end of which is secured to the said shaft, and the other end secured to the barrel. The endless chain ladder also passes under a roller 34, journaled in boxes 35, secured to the side bars 1.

The endless chain ladder consists of a series of connected links 36, formed with horizontal arms 37.

When not in use, the parts are in the position shown in Fig. 2. When, however, the ladder is to be elevated, the truck is pushed up as near to the building as practicable. By now turning the windlass 14, the bars 8 through the medium of the rope or chain 12 are elevated, as seen in Fig. 2, the journals 26 of the roller 25 moving forward in the slots 27 so as to allow the endless chain to be elevated with said bars, the spring-actuated windlass keeping the said chain taut. Said bars may be swung up toward the vertical position by means of poles in the hands of the firemen. When the bars and chain are low-

ered, the said windlass will be rotated by the coiled spring, moving the roller 25, back to normal position.

On one end of shaft 23 is a disk 38, with which is adapted to engage one end of a lever 39 pivoted to one of the side bars. This lever acts as a friction brake to hold the sprocket wheel 21 and prevent the endless chain from moving.

Having thus described my invention, what I claim is—

The combination of the truck having the side bars with horizontal slots, and with sprocket wheels, the pivoted bars, the sliding bars connected therewith and the sprocket wheels, of the roller having journals working in said slots, the windlass for elevating the sliding bars, the spring-actuated windlass, the rope connected therewith, and with the journals, of the roller working in said slots, and the endless chain ladder, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

SOLOMON M. GRAUMLICH.

Witnesses:
G. G. BRINTLINGER,
FLORENCE BRINTLINGER.