

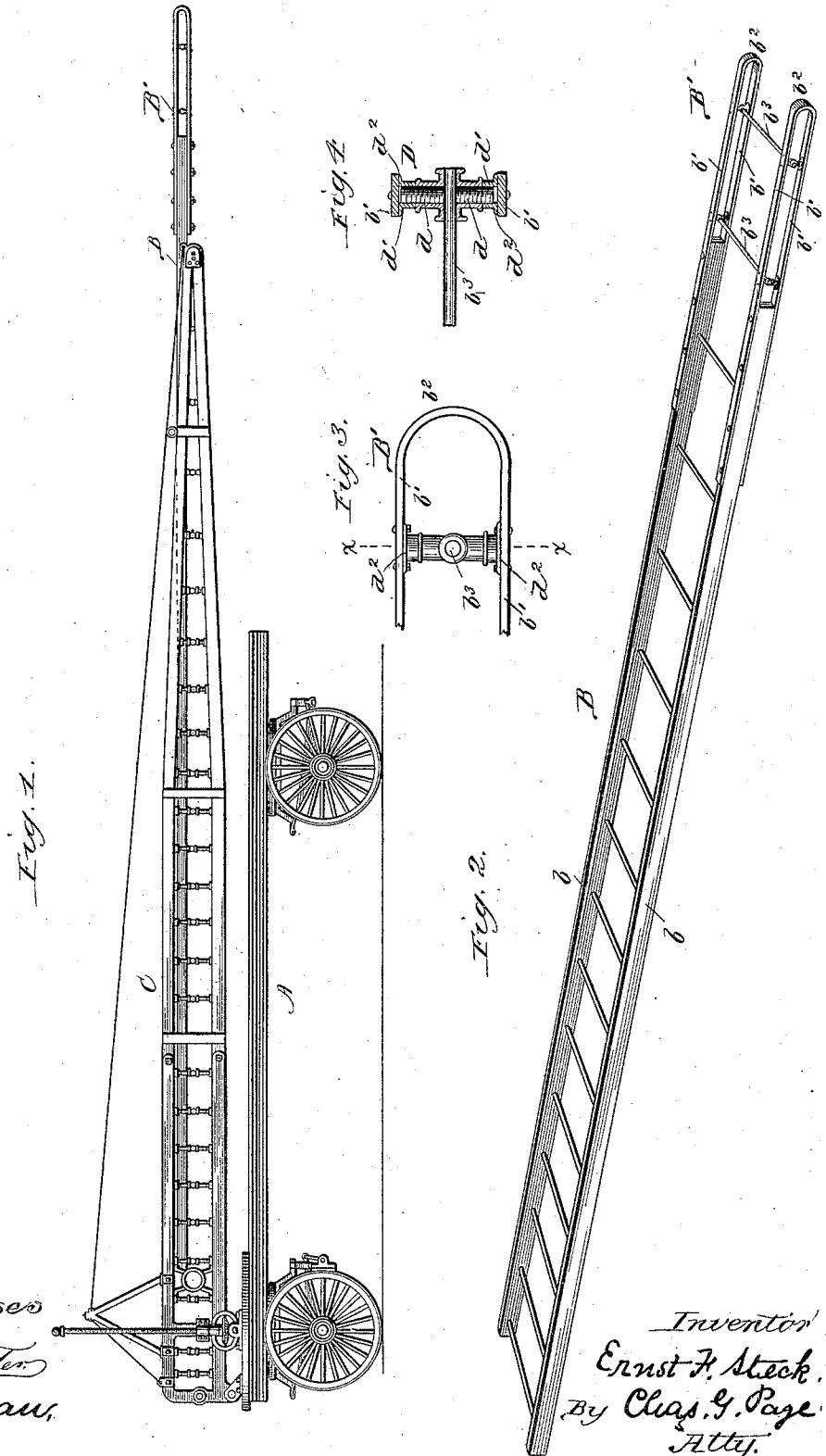
(No Model.)

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LADDER FOR CITY FIRE DEPARTMENT SERVICE.

No. 380,733.

Patented Apr. 10, 1888.



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LADDER FOR CITY FIRE-DEPARTMENT SERVICE.

SPECIFICATION forming part of Letters Patent No. 380,733, dated April 10, 1888.

Application filed January 30, 1888. Serial No. 262,443. (No model.)

To all whom it may concern:

Be it known that I, ERNST F. STECK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Ladders for City Fire-Department Service, of which the following is a specification.

My invention relates to an improvement in ladders for city fire-department service, and particularly to that class of extension-ladders in which a sectional extension-ladder is mounted upon a truck and arranged so that upon arriving at a fire the ladder can be raised as a whole to the required angle and then extended up to the point to be reached by the firemen.

The object of my invention is to so construct the ladder that while no very material increase in its weight shall be involved, it can be rested against a burning building or thrust into a window thereof without danger of the ladder becoming burned, thereby not only saving the ladder, but also permitting greater freedom in its use and avoiding the delay incident to the exercise of great care and caution in selecting a place for its upper end to rest against.

To the attainment of the foregoing and other useful ends my invention consists in matters hereinafter described, and particularly pointed out in the claims.

In carrying out my invention I construct the end portion of the ladder, that is to be rested against the building, of metal, the remaining portion of the ladder being mainly of wood, whereby, while the weight of the ladder is not materially increased, its metal-tipped end portion can with impunity be thrust into windows of the burning building.

As a further feature of improvement I provide certain details of constructions serving to render the metal end portion of the ladder both strong and comparatively light, as will hereinafter appear.

In the drawings, Figure 1 represents in side elevation an extension-ladder truck having the extensible ladder-section constructed in accordance with my invention. Fig. 2 represents the ladder or ladder-section embodying my said invention. Fig. 3 is a side edge view

of a portion of the metal ladder-extension on a somewhat larger scale and serves to illustrate one of the supports or bearings for the ladder-rounds. Fig. 4 represents a section through one of said supports for the ladder-rounds, the section being taken on a plane indicated by line *x x*, Fig. 3. In this view a portion of one of the rounds is also shown.

In said drawings, A indicates an extension-ladder truck carrying an extension-ladder, whereof B is the extensible ladder or ladder-section, and C the ladder or ladder-section that is hinged or fulcrumed at one end upon the truck.

The ladder B is for the greater portion of its length of any ordinary or suitable construction, the sides *b* being desirably made of wood.

The wooden ladder B is provided with an end portion, B', made of metal, which said metal end portion or metal extension of the ladder can be rested against hot walls or thrust into windows without danger of its becoming burned or charred. It is desirable that this metal extension of the wooden ladder should be strong and at the same time comparatively light, so that the weight of such extension shall be substantially proportional to any other like length of the wooden portion of the ladder. To such end the wooden side bars, *b*, are at one end of the ladder prolonged by metal bars or stout metal straps *b'*, which are secured to the edges of the wooden side bars by bolts or other analogous fastening devices, a pair of these metal straps or bars, *b'*, being allotted to each wooden side bar. The two bars *b'* of each pair may for some of the purposes of this invention be connected together at their ends that are farthest from the wooden ladder-section in any suitable way; but as a simple, reliable, and preferred mode of connection the two bars *b'* of each pair are formed by bending at its middle a metal bar or stout metal strap, whereby the bent portion *b''* of the bar or strap constitutes a simple and efficient connection between the two bar portions *b'*.

The longitudinal metal extension-bars *b'*, secured to the ladder substantially as indicated, are connected together in pairs by rounds *b''*, in which way the metal end portion of the ladder is substantially a metal frame or skele-

ton extension involving strength and rigidity with comparative lightness.

As an extremely effective mode of supporting the rounds in the metal extension of the ladder herein shown, means substantially the same in principle as the devices employed by me in Letters Patent No. 348,594 for supporting the ladder-round in a wooden extension-ladder may be used.

10 The supports D herein shown for the rounds of the metal extension B' of the ladder each comprise a long hub or hollow metal post, Figs. 3 and 4, having between its ends a transversely-arranged tubular bearing for the end of a round. The tubular bearing for the round is formed to intersect the longitudinal bore of the hub or post, which said bore is adapted for the reception of a pair of threaded bolts, *d*, respectively arranged to bear against the round at diametrically-opposite sides. The outer end portions of the tubular bearing for the bolts are formed by the tubular cap or end portions *d'*, which are screwed upon the bolts and provided with flanges *d''*, that are 25 securely bolted, riveted, or otherwise firmly secured to the straps or bars *b'*. In this way the supports D for the rounds brace the metal bars *b'*, and, while firmly securing the rounds in place, add to the strength of this portion of the ladder.

30 While I regard the supports D as the best means for holding the rounds and connecting them with the straps *b'*, it will be evident that other mechanical devices could be substituted for the same, and hence I, for the broader purposes of this invention, do not confine myself to the use of such supports D.

40 The ladder or ladder-section B, having at one end a metal extension or prolongation, B', is of particular importance in an extension-ladder truck—such, for example, as illustrated in Fig. 1—since it is of much importance to prevent the extensible or sliding ladder-section from charring or burning, so as to avoid the

expense and delay attendant upon detaching 45 such ladder-section from the apparatus for renewal or repairs. In fact, while my improvement is for some purposes useful in fire-ladders, that are simply laid upon a truck as independent ladders, I regard it as of great importance 50 in an extension-ladder truck, not only for reasons hereinbefore stated, but also for the further reason that even should the point at which the upper end of the extensible or sliding ladder rests become too hot for an ordinary wooden 55 ladder the metal extension portion B' of the ladder will withstand such heat, and hence any loss of time which is occasioned by shifting the position of the ladder at a critical moment might prove extremely undesirable. 60

What I claim as my invention is—

1. A ladder for fire-department service, constructed for the greater portion of its length substantially of wood, but having its end that is to be raised to the burning building prolonged by a metal ladder-extension, for the purpose set forth. 65

2. A ladder for fire-department service, having at one end a metal prolongation or extension comprising metal straps or bars *b'*, secured to the main length of ladder and connected together by rounds, for the purpose set forth. 70

3. The ladder B, having at one end an extension formed by the metal bars or straps *b'*, combined with rounds *b''* and supports D, attached to said bars or straps and supporting the rounds. 75

4. The combination, with the ladder C, fulcrumed upon a truck, of the extension-ladder B, having at one end an extension or prolongation, B', constructed of metal and provided with rounds, substantially as and for the purpose described. 80

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