

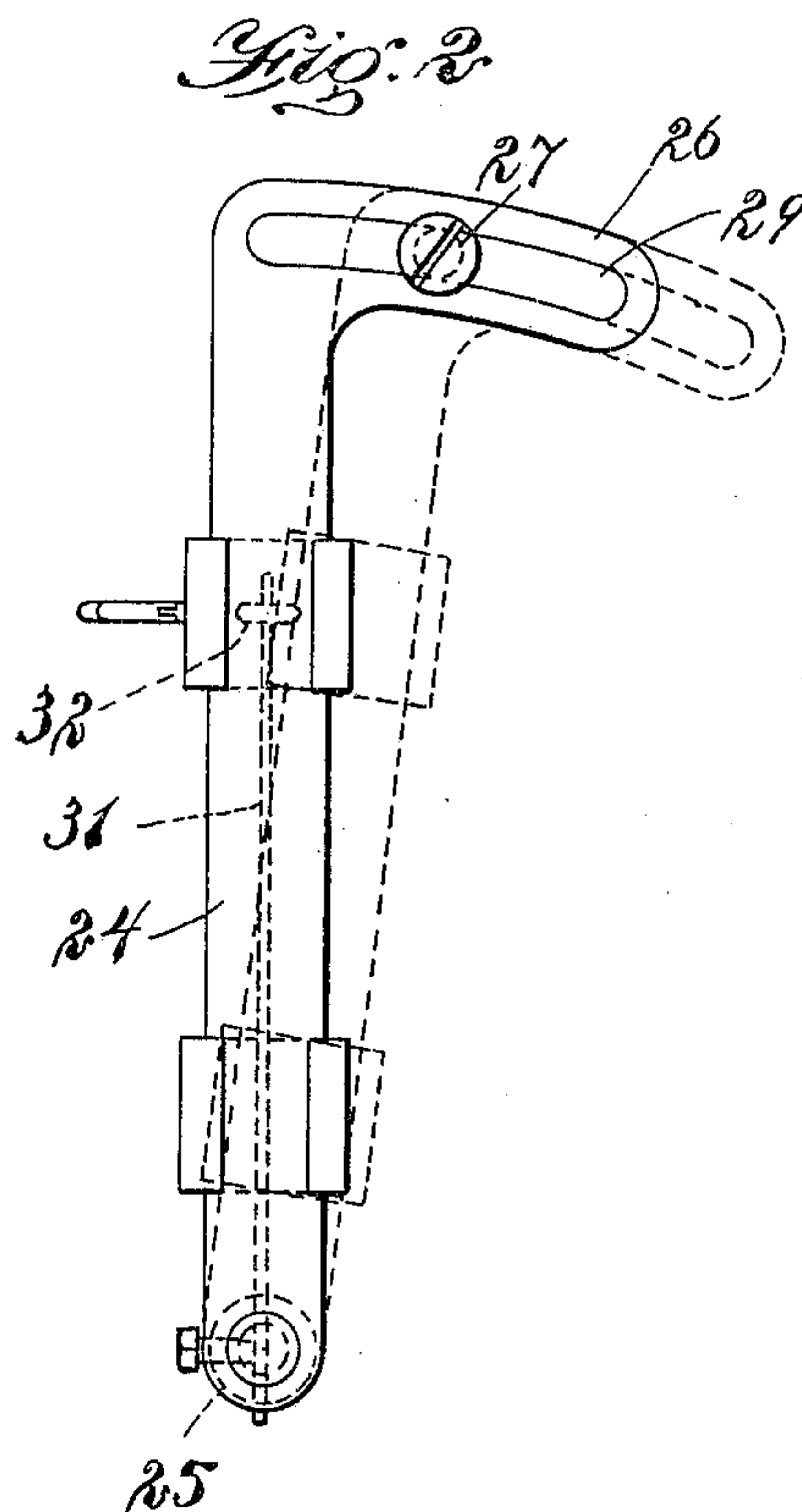
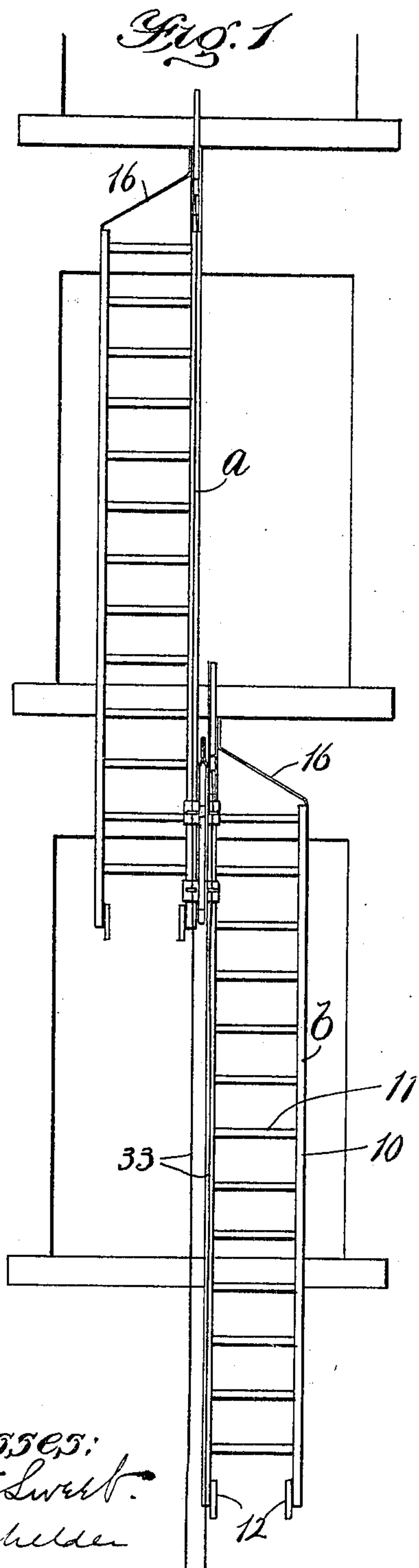
No. 819,929.

PATENTED MAY 8, 1906.

W. F. SAMPSON.
COMPOUND SCALING LADDER.

APPLICATION FILED JULY 26, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3

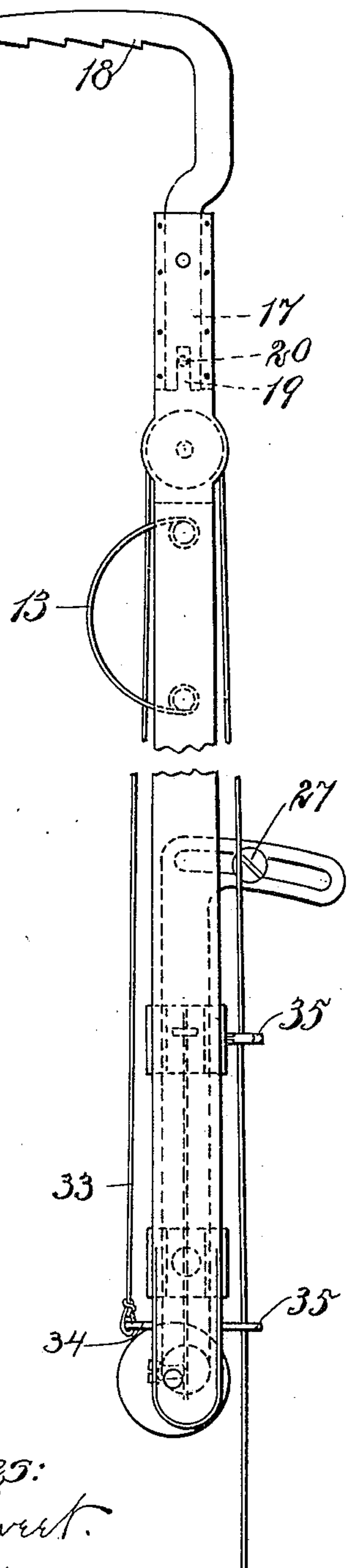
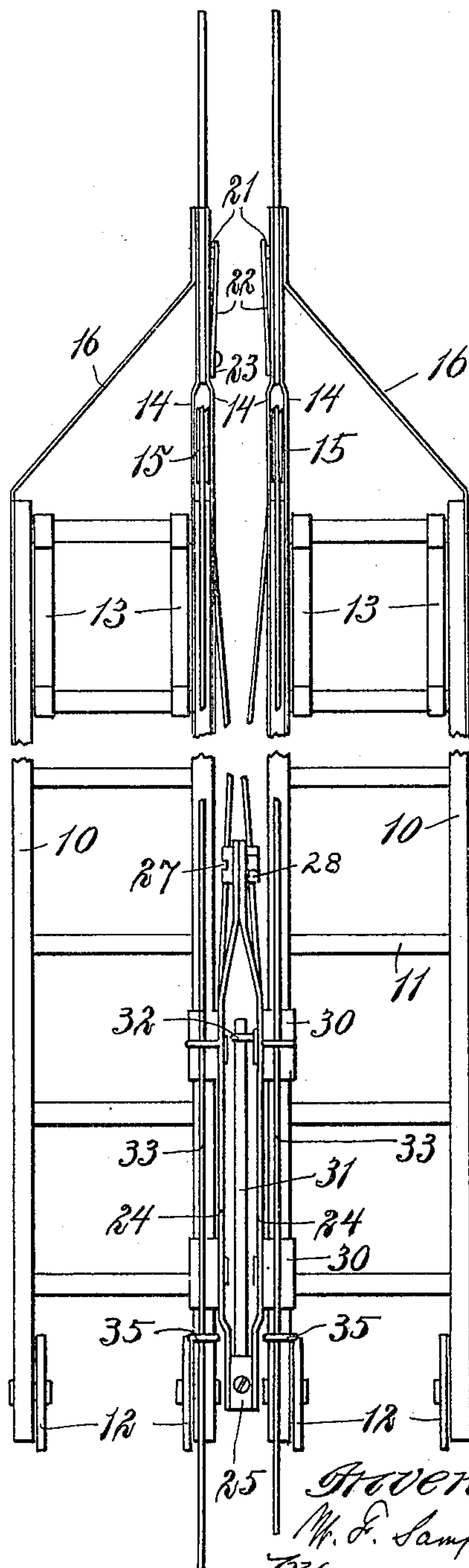


Fig. 4



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UNITED STATES PATENT OFFICE.

WINSLOW F. SAMPSON, OF MEDFORD, MASSACHUSETTS, ASSIGNOR OF
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COMPOUND SCALING-LADDER.

No. 819,929.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed July 26, 1905. Serial No. 271,277.

To all whom it may concern:

Be it known that I, WINSLOW F. SAMPSON, of Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Compound Scaling-Ladders, of which the following is a specification.

This invention relates to ladders of that type known as "scaling-ladders" and which are chiefly employed by firemen to enable them to ascend from the ground outside of a building by engaging the hook usually carried by such ladders with the sill or sills of the windows of a building.

In Letters Patent No. 769,237, granted to me September 6, 1904, I have shown, described, and claimed a scaling-ladder comprising two ladder-sections having their side rails slidably connected, the sections being side by side and each section having means for engaging a window-sill.

My present invention relates to this same type of scaling-ladder, which is so constructed that a fireman can alternately pass from one section to another, while the section from which he stepped may be elevated by another fireman on the ground.

The object of my present invention is to provide an elastic or yielding connection between the two members or sections of the compound ladder, so that there will be a normal tendency to hold the two sections in the same plane, from which plane either section can be swung.

Another object of the invention is to provide a compound ladder of this type having interchangeable hooks to adapt the ladders for use in connection with buildings having sills or cornices of varying width.

A further object of this invention is to provide an apparatus of this type with means whereby neither section can accidentally catch upon so as to be retarded by any projecting portion of a building. Incidentally, the use of the ladder cannot deface the building.

To these ends the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings, Figure 1 represents a front elevation of an apparatus embodying my present invention in use. Fig. 2 is a side elevation, enlarged, of the coup-

ling. Fig. 3 is a side elevation of the compound ladder, the two sections or ladders being at the same height and partially broken out to reduce the length of the figure. Fig. 4 is a front elevation of the apparatus in the relative positions shown in Fig. 3.

Similar reference characters indicate the same or similar parts in all the views.

The two sections or members of the compound ladder are represented at *a* and *b*. Each section is composed of the usual side rails 10 and rungs or rounds 11. The lower end of each side rail 10 is provided with a pivoted roller 12, which serves as an antifriction means that may engage the facing of a building when the sections are being raised or lowered or suspended from a window-sill. Said rollers ride freely against the face of the building or over projections therefrom when the sections are being moved upward or downward. In order to keep the upper portion of each section away from contact with the face or sills of a building, said upper portions are provided with shoes 13, which are shown as composed of metal strips bowed and having their ends mounted upon the two upper rungs of each section.

One of the side rails 10 of each section has secured on opposite faces of its upper end two suspension-plates 14, which are spaced apart, as shown, to form recesses within which a sheave is mounted, said suspension-plates forming extensions of the side rails to which they are attached. A brace 16 connects the upper ends of said suspension-plates with the outer side rail of each member. The suspension-plates 14 are also spaced apart at their upper ends, each pair of suspension-plates forming a recess or socket to receive the shank 17 of the suspension-hook 18. Said shank is formed with a vertical slot or recess 19 in its lower end, a guide pin or rivet 20 connecting the suspension-plates entering said slot or recess 19. A bolt 21, carried by the upper end of a spring 22, the lower end of which is secured at 23 to one of the suspension-plates, is adapted to engage a suitable hole in the shank 17 of the hook. By springing out the bolt 21 the hook 18 may be removed and another one having a different shape of the sill-engaging portion may be placed in the space or recess between the upper ends of the suspension-plates, the shank being pushed downward

until the spring-bolt 21 snaps into the hole that is formed in the shank of said hook. At the same time the slot or recess 19 in the lower end of the shank 17 rides down over the
 5 guide-pin 20, whereby the shank is steadied and the suspension-hook is practically as firm a portion of the apparatus as though it were integral with the suspension-plates.

The coupling which connects the two ladder-sections comprises two plates 24, the lower end of one of said plates being formed with a rigid hub 25 and the lower end of the other plate being pivotally connected with said hub. The upper end of each plate 24
 15 is widened or offset, as shown, one of said widened portions or arms being formed with a slot curved to conform with radii from the pivot-hub 25 as a center. The upper portion of the other plate 24 is provided with a
 20 pin which is guided in the curved slot, said pin comprising a screw 27, passing through said slot and fitting a screw-thread in the upper end of said other member and extending through it and provided with a set-nut 28.
 25 The said curved slot is indicated at 29. This pin and slot serve to limit the relative oscillatory movements of the two plates 24 of the coupling.

Projecting outward from the plates 24 are
 30 ears 30, which embrace the adjacent side rails of the two members *a* and *b*, said ears being so formed, of course, that the rungs 11 of the ladders may pass freely. Said ears form the guideways through which a part of each ladder-section may slide relatively to the coupling and the other section. A straight spring
 35 31, rigidly connected with the hub 25, extends upward and passes through an eye 32, which is connected with the plate 24 opposite the plate to which the hub 25 is rigidly
 40 connected. Said spring therefore constitutes a resilient connection which has a tendency to hold the two ladder-sections side by side and within the same plane; but the connection is a yielding one owing to the resilience of the spring, so that one section may
 45 move relatively to the other, as indicated in Fig. 2.

Suitable ropes or chains 33 are arranged
 50 similarly to those in my patent above referred to. Said ropes or chains are attached at their ends to terminal eyes 34 at the lower ends of the sections and on the inner side thereof and then pass over the sheaves 15
 55 and down through guide-eyes 35, projecting from the front edges of the plates of the coupling, the ropes crossing each other, however, so that pulling upon the rope passing over the sheave of one section will elevate the
 60 other section substantially in the manner described in my said patent.

Having now described my invention, what I claim is—

1. A scaling-ladder comprising two ladder-

sections side by side and having a pivoted
 connection and a resilient connection to hold
 said sections normally in the same plane but
 to permit them to yield slightly.

2. A scaling-ladder comprising two ladder-sections, and a coupling therefor, the said
 sections being slidably connected with said
 coupling and said coupling comprising two
 plates pivoted together and having a spring
 for normally holding the sections in the same
 plane.

3. A scaling-ladder comprising two ladder-sections and a coupling member therefor, the
 ladder-sections being side by side and slid-
 ingly connected with the coupling, said coupling comprising two plates, one of which has
 a rigid hub at its lower end and the other being pivotally connected with said hub and
 having an eye at its upper end, a spring rigidly connected with said hub and extending
 through said eye, and means for limiting the
 oscillatory movement of one plate relatively
 to the other.

4. A scaling-ladder comprising two ladder-sections having their side rails slidingly connected together, the sections being side by
 side, one side rail of each section having an extension and a suspension-hook removably
 connected with said extension.

5. A scaling-ladder comprising two ladder-sections having their side rails slidingly connected together, the sections being side by
 side, one side rail of each section having an extension formed as a socket, and a suspension-hook having a shank removably inserted in said socket, the latter having means for
 engaging the hook-shank.

6. A scaling-ladder comprising two ladder-sections having their side rails slidingly connected together, the sections being side by
 side and each section having means for engaging a window-sill, means for hoisting one
 section relatively to the other, and rollers carried by the said sections, to bear on the
 wall of the building and reduce frictional resistance to the upward movement of the sections.

7. A scaling-ladder comprising two ladder-sections having their side rails slidingly connected together, the sections being side by
 side and each section having means for engaging a window-sill, means for hoisting one
 section relatively to the other, rollers carried by the lower ends of said sections, and shoes
 projecting from the upper portions of said sections, said rollers and shoes facilitating
 the upward movement of the sections.

In testimony whereof I have affixed my signature in presence of two witnesses.

WINSLOW F. SAMPSON.

Witnesses:

A. W. HARRISON,
 ARTHUR H. BROWN.