

No. 838,831.

PATENTED DEC. 18, 1906.

F. WILSON.
EXTENSION STEP LADDER.
APPLICATION FILED JAN. 4, 1906.

2 SHEETS—SHEET 1

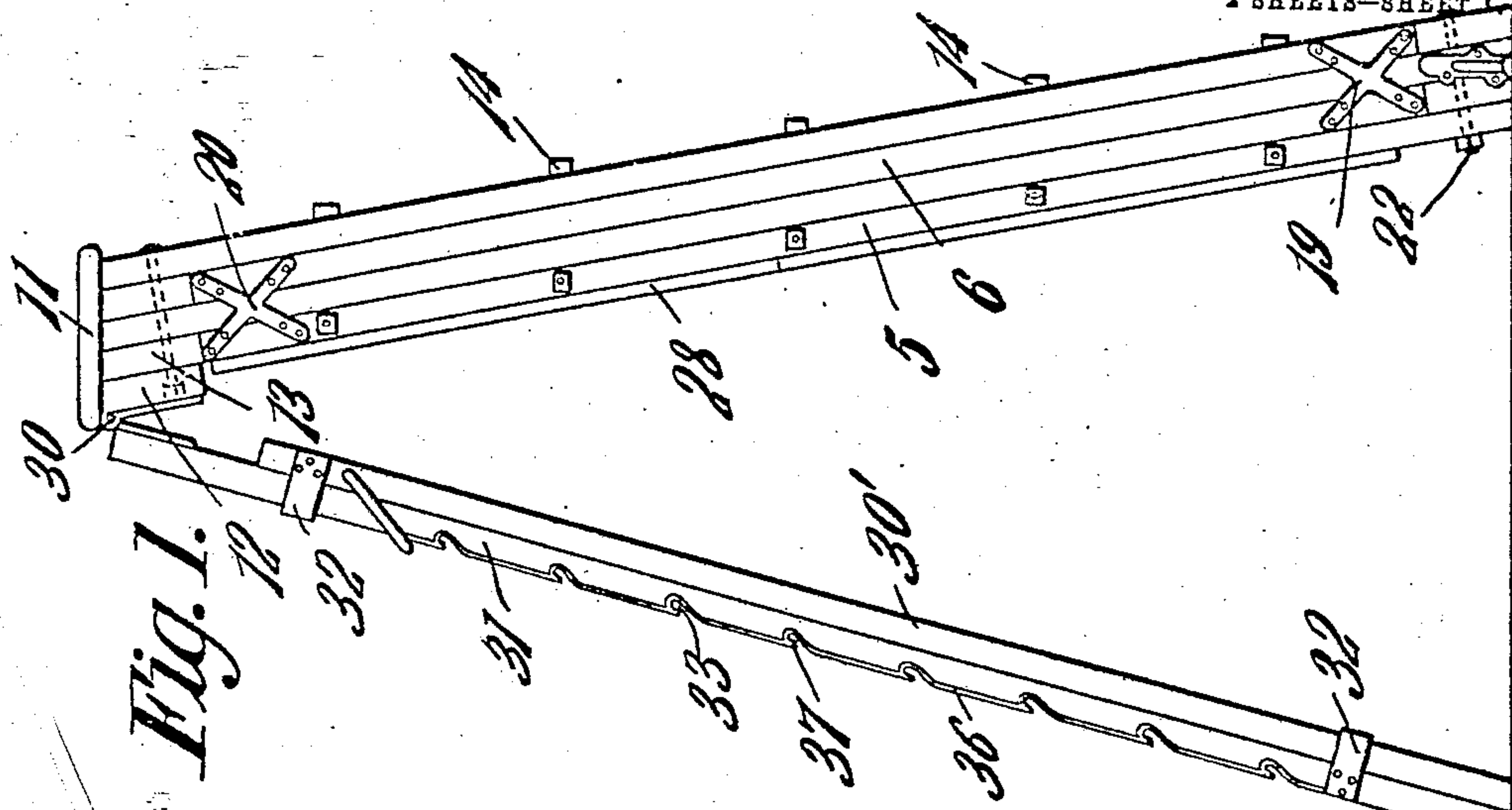


Fig. 1.

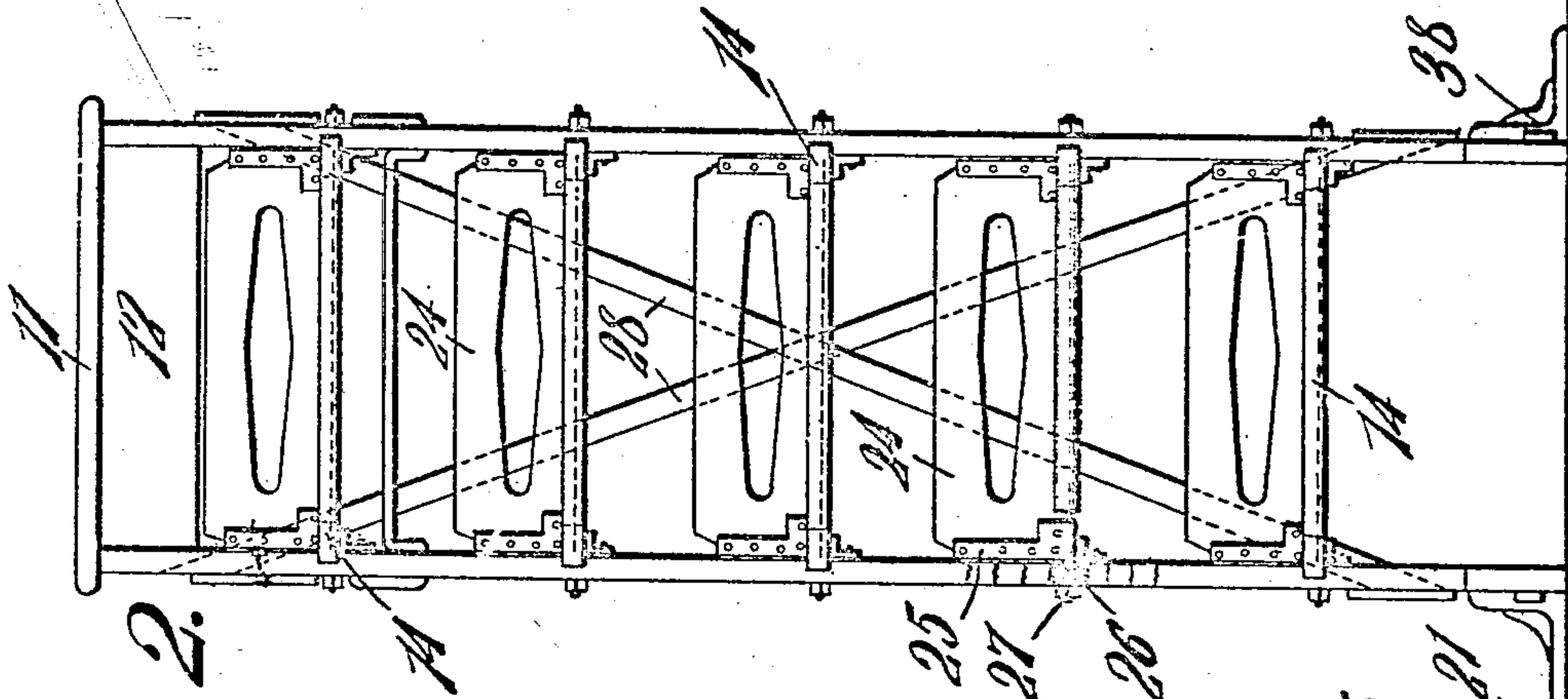


Fig. 2.

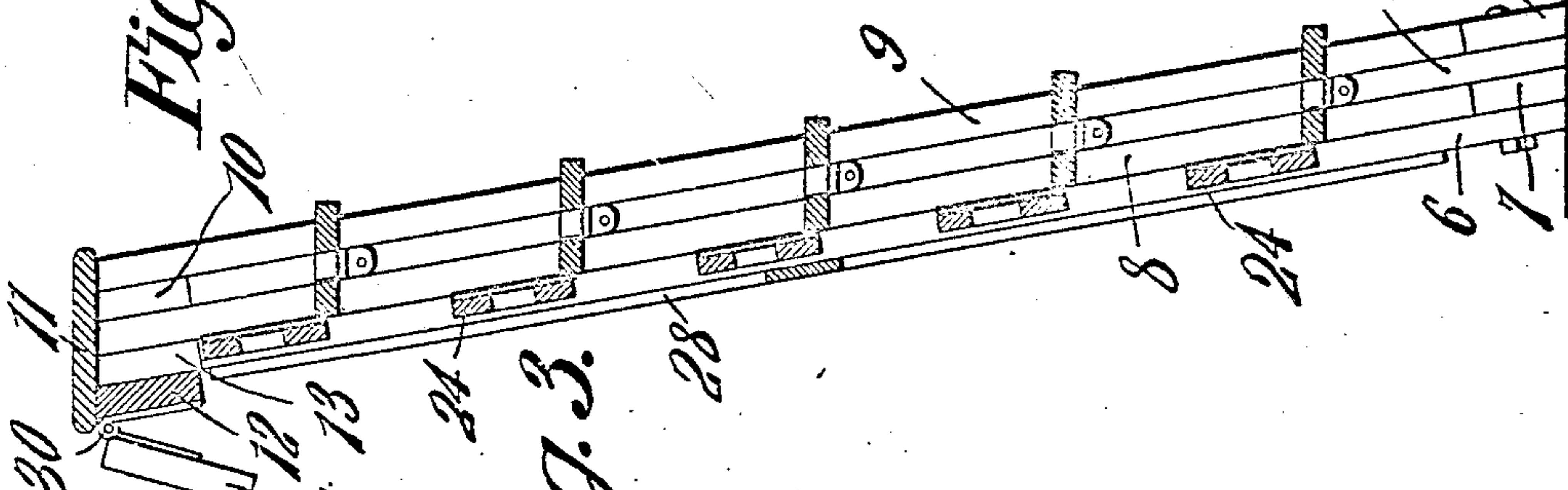


Fig. 3.

WITNESSES:
E. K. Stewart,
L. T. Decker.

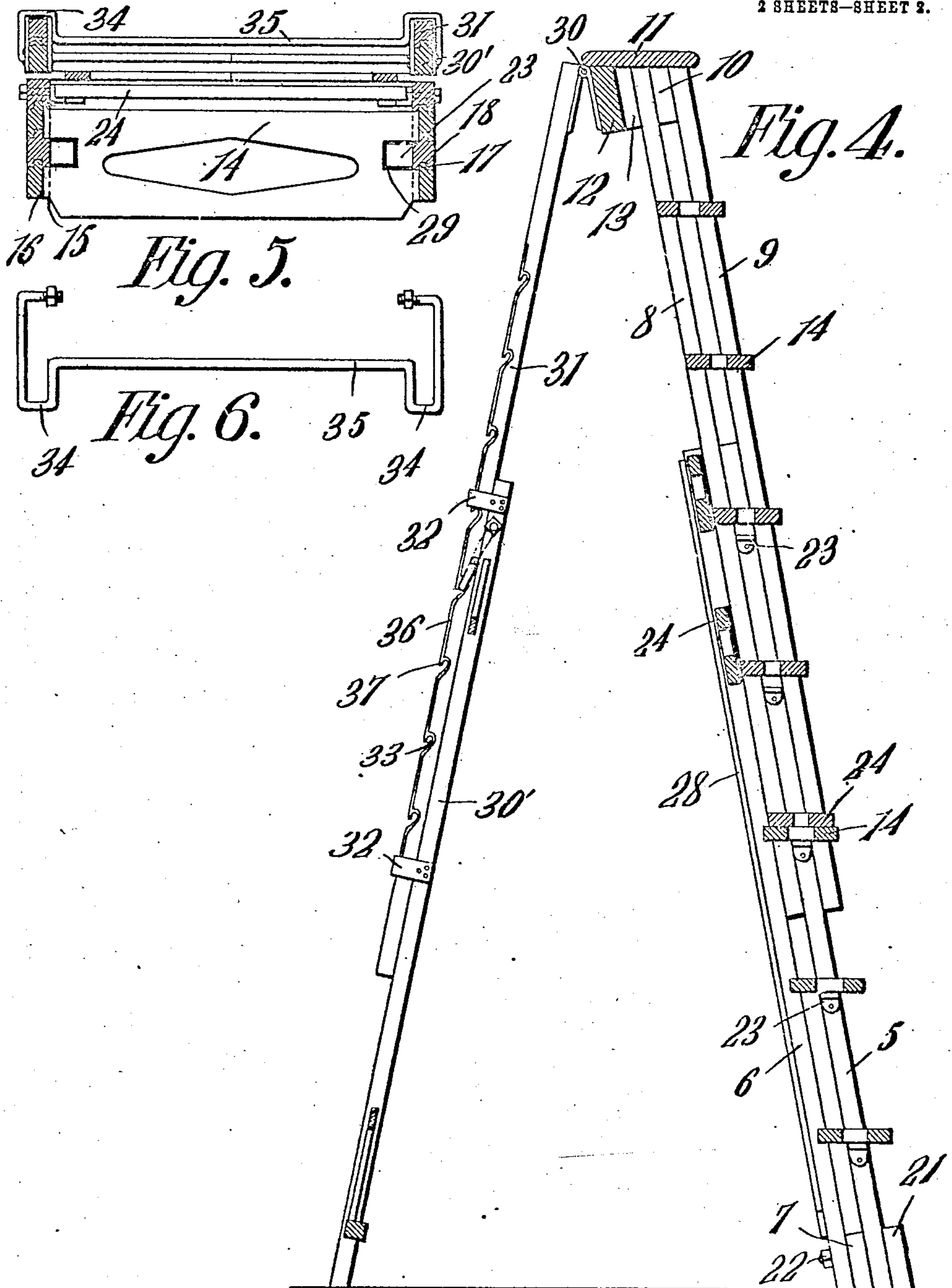
Frank Wilson INVENTOR.
By *C. A. Snow & Co.*
ATTORNEYS

No. 838,831.

PATENTED DEC. 18, 1906.

F. WILSON.
EXTENSION STEP LADDER.
APPLICATION FILED JAN. 4, 1906.

2 SHEETS—SHEET 2.



WITNESSES:
E. H. Stewart,
L. P. Nether.

Frank Wilson INVENTOR
By C. A. Snow & Co. ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANK WILSON, OF POCA TELLO, IDAHO, ASSIGNOR OF ONE-HALF TO
DANIEL W. CHURCH, OF POCA TELLO, IDAHO.

EXTENSION STEP-LADDER.

No. 838,831.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed January 4, 1906. Serial No. 294,637.

To all whom it may concern:

Be it known that I, FRANK WILSON, a citizen of the United States, residing at Pocatello, in the county of Bannock and State of Idaho, have invented a new and useful Extension Step-Ladder, of which the following is a specification.

This invention relates to step-ladders, and has for its object to provide a comparatively simple and inexpensive device of this character capable of being extended to any desired height and which when in lowered or normal position will have the appearance of an ordinary step-ladder.

A further object of the invention is to provide a step-ladder comprising a plurality of extensible sections, one of which is provided with spaced auxiliary steps movable laterally to operative position when the adjacent section is extended.

A further object is to provide the extensible sections with interfitting parts and means for locking said sections in adjusted position.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, durability, and efficiency.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described and illustrated in the accompanying drawings, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of an extensible step-ladder constructed in accordance with my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is a similar view showing the ladder in extended position. Fig. 5 is a transverse sectional view showing the ladder folded. Fig. 6 is a top plan view of the locking-yoke.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The ladder comprises relatively stationary and movable sections, the lower one of which is formed of parallel bars 5 and 6, spaced

apart by a web or block 7 to accommodate the parallel bars 8 and 9 of the upper or movable section.

The bars comprising the upper extensible section are spaced apart by a web or block 10, which latter is secured in any suitable manner to the head or cap piece 11, the latter being provided with a depending extension 12, spaced from the adjacent bar 8 by a block 13 similar in construction to the block 10.

Secured to the extensible upper section of the ladder are a plurality of spaced rigid steps 14, the opposite ends of which are provided with spaced tenons 15, which engage suitable mortises 16, formed in the bars 8 and 9.

The parallel bars comprising the upper and lower sections of the ladder are each provided with a tongue 17, adapted to engage a correspondingly-shaped groove 18, formed in the adjacent bar, whereby the bars are guided in their upward movement and retained in alinement with each other.

Secured to the lower or free ends of the bars 8 and 9 is a bracket 19, the angular arms of which are fastened to said bars and serve to maintain the same in spaced relation, there being a similar bracket 20 secured to the upper or free ends of the bars 5 and 6, as shown.

Secured to the bar 5 at the lower end thereof is a block 21, the upper end of which is inclined or beveled to correspond to the inclination of the block 7, said block serving to support the lower edge of the bars 8 and 9 when the extensible section is in lowered or normal position, there being a bolt 22 extending transversely through the blocks 7 and 21 and piercing the bars 5 and 6 for securing the several parts together.

Fastened at spaced intervals to the bars 5 are laterally-extending lugs or supporting-brackets 23, adapted to receive and support the auxiliary folding steps 24 when the latter are swung downwardly to operative position, as best shown in Fig. 4 of the drawings.

The auxiliary steps 24 are provided with oppositely-disposed reinforcing-plates 25, having laterally-extended lugs 26, which engage openings in the bars 6 and are pivotally supported on said bars by suitable nuts 27. Connecting the bars 6 of the relatively stationary lower section are diagonal braces 28,

which serve to reinforce and strengthen the ladder and also serve to support the movable steps 24 in vertical or inoperative position.

The rigid steps 14 are provided with oppositely-disposed openings or recesses 29, disposed in alinement with the supporting lugs or brackets 23, thereby to permit the upper section to be adjusted vertically without interfering with said brackets.

Pivoted to the extension 12 of the head 11, as indicated at 30, is a prop or support consisting of a plurality of sliding bars 30' and 31, connected together by guiding loops or bands 32, there being a plurality of spaced notches or recesses 33 formed in the exposed or outer face of the bar 31 for the reception of the looped ends 34 of the locking-yoke 35. The locking-yoke 35 is pivotally mounted for swinging movement on the bar 30', where-
by when the upper bar 31 of the prop is adjusted vertically to the desired height the yoke 35 may be swung downwardly in engagement with the adjacent notch 33, and thus lock the prop in adjusted position.

Extending longitudinally of the bar 31 is a wear-plate 36, provided with spaced depressions which engage the interior walls or notches 33, said plate being extended laterally over the notches 33, as indicated at 37, thereby to prevent accidental displacement of the loops 34 of the locking-yoke.

Secured to the base of the relatively stationary section are laterally-extending feet or brackets 38, which bear against the floor or other suitable support and serve to prevent tilting movement of the ladder.

In operation when it is desired to adjust the ladder vertically the locking-yoke 35 is released from the notches in the prop-bar 31 and the upper extensible section of the ladder adjusted to the desired height. The movable steps 24 are then swung downwardly in engagement with the supporting lugs or brackets 23, after which the upper extensible section is lowered until the adjacent rigid step engages the upper movable step and the yoke 25 swung laterally into engagement with the adjacent locking-notches, thus forming a support for the extensible section and locking the same in adjusted position.

In order to lower the extensible section, the yoke 35 is released, after which the movable steps 24 are swung upwardly and laterally into engagement with the diagonal braces 28, thus permitting the upper section to be lowered until the ends of the bars 8 and 9 bear against the inclined faces of the blocks 7 and 21 and in which position the parallel bars of the upper and lower sections of the ladder will be disposed in horizontal alinement, as best shown in Fig. 1 of the drawings.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

Having thus described the invention, what is claimed is—

1. A ladder comprising a plurality of relatively stationary and movable sections having interfitting parts one of said sections being provided with rigid steps having oppositely-disposed recesses formed therein, supporting-brackets secured to the stationary section and movable through the recesses in the extensible section when the latter is adjusted, and movable steps pivotally mounted on the stationary section and adapted to engage said brackets.

2. A ladder comprising a plurality of relatively stationary and movable sections each consisting of parallel sliding bars spaced apart by reinforcing-brackets and provided with interfitting parts, a plurality of spaced rigid steps secured to the extensible section, movable steps pivotally mounted on the stationary sections, supporting-brackets secured to said stationary section and adapted to receive the movable steps when the latter are moved to operative position, diagonal braces arranged at the rear of the movable steps for supporting the latter in inoperative position, and spaced blocks secured to the stationary section and adapted to support the extensible section when the latter is moved to closed position.

FRANK WILSON.

Witnesses:

EDYTH STOLL,
CHARLES C. CHILSEN.