No. 851,696. PATENTED APR. 30, 1907.

N. SCHAEFER.

FOLDING LADDER.

APPLICATION FILED AUG. 27, 1906.

2 SHEETS—SHEET 1.

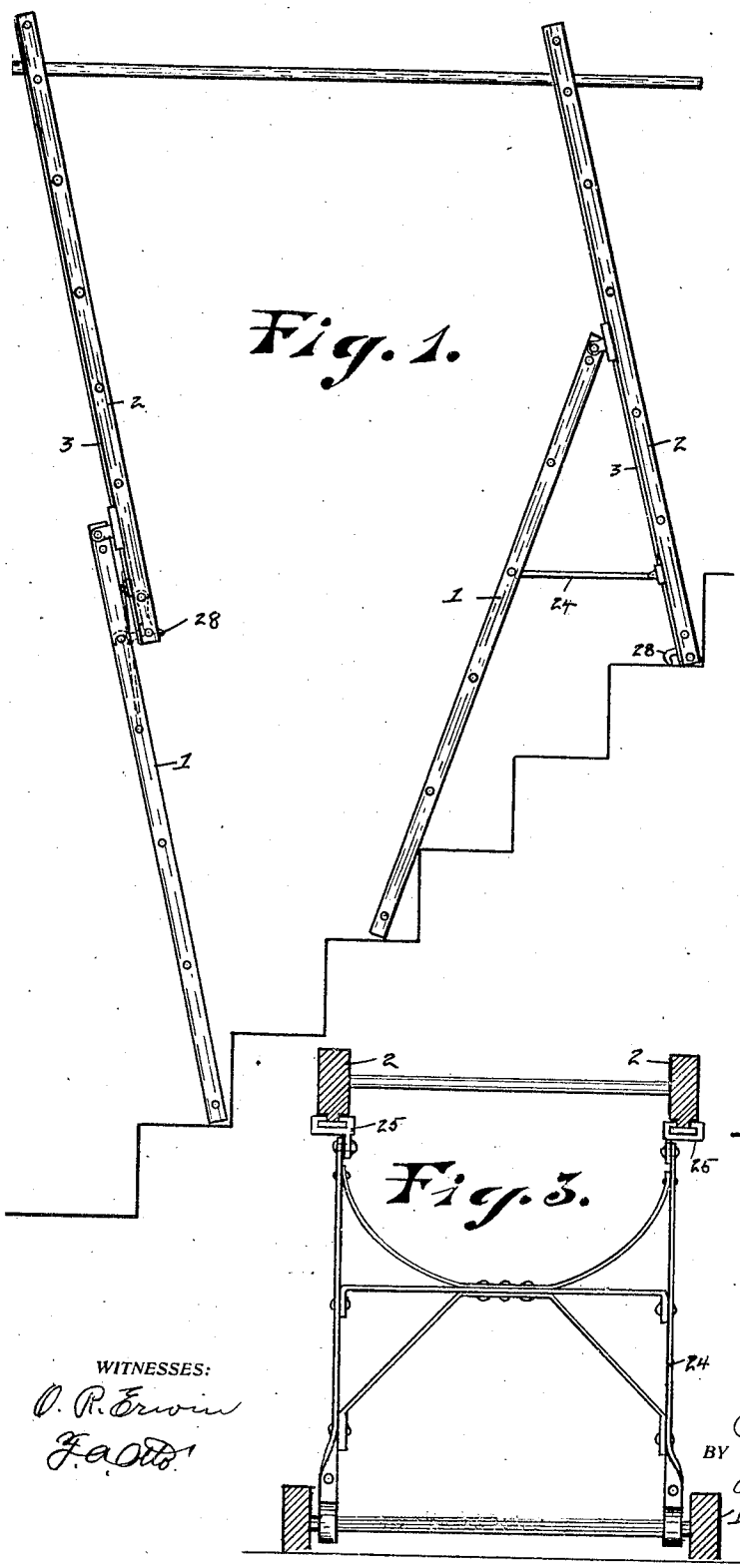


Fig. 1.

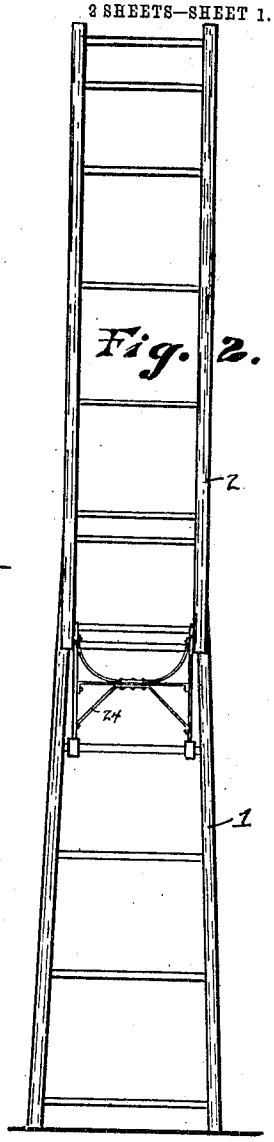


Fig. 2.

Fig. 3.

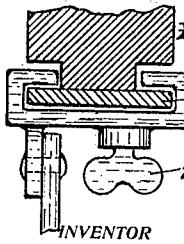


Fig. 4.

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2 SHEETS—SHEET 2.

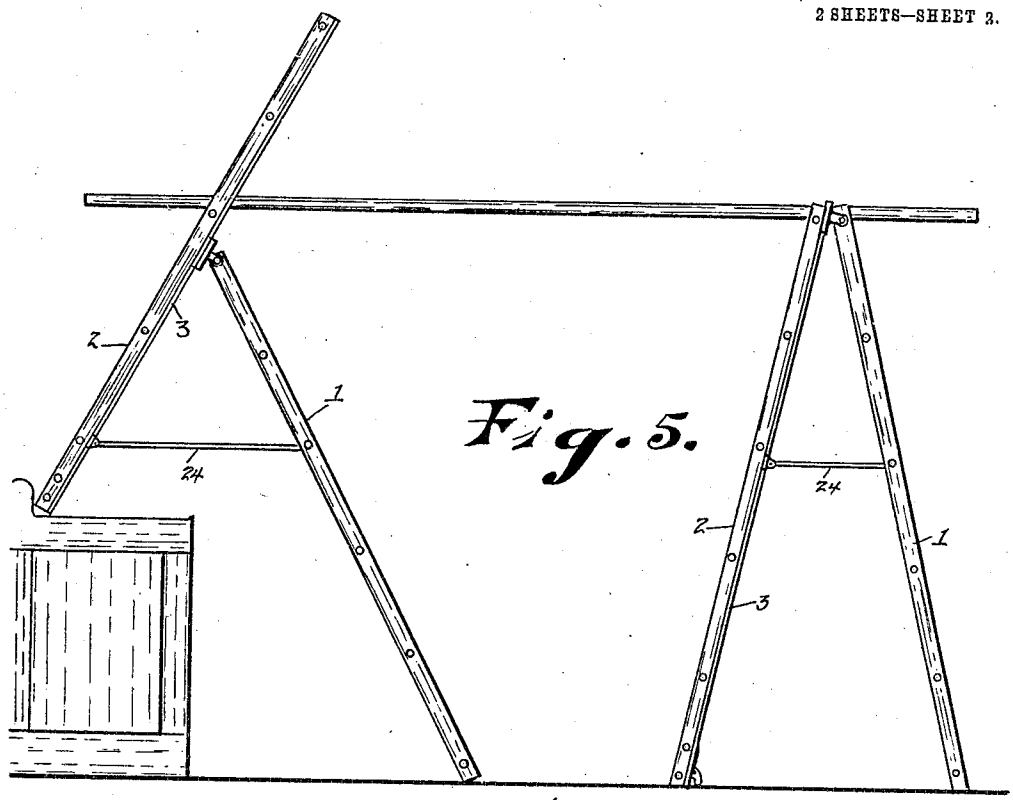


Fig. 5.

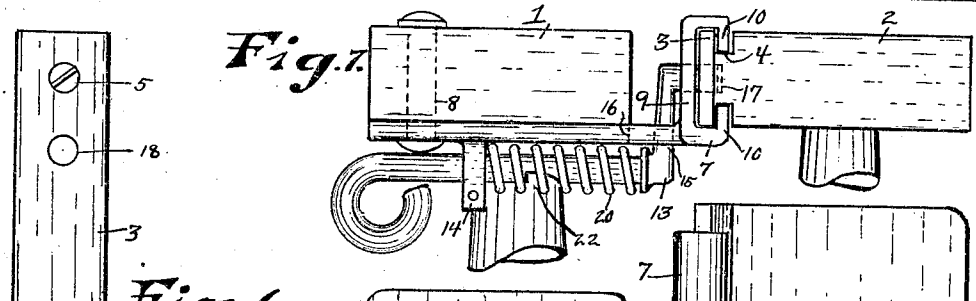


Fig. 7.

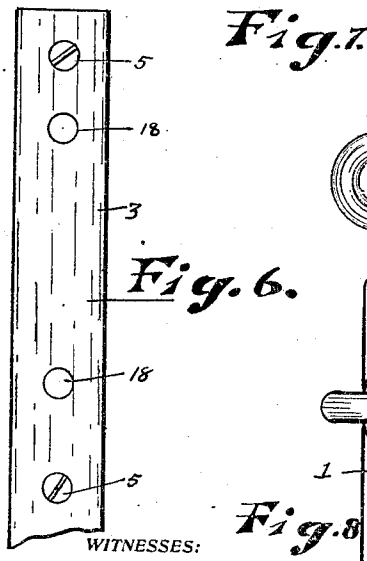


Fig. 6.

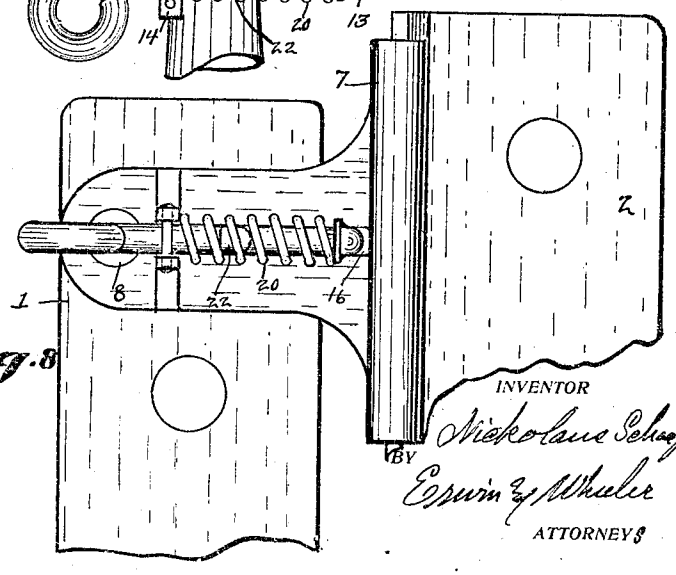


Fig. 8.

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NICKOLAUS SCHAEFER, OF ST. FRANCIS, WISCONSIN.

FOLDING LADDER.

No. 851,696. Specification of Letters Patent. Patented April 30, 1907.

Application filed August 27, 1906. Serial No. 332,097.

To all whom it may concern:

Be it known that I, NICKOLAUS SCHAEFER, a citizen of the United States, residing at St. Francis, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Folding Ladders, of which the following is a specification.

My invention relates to improvements in truss ladders and pertains especially to folding ladders of the class used by painters, paper hangers and decorators for inside work.

The object of my invention is to provide an extension ladder of this type which can be readily adjusted and securely locked in any desired position of adjustment, and which will be simple, practical and durable in structure, and yet capable of a greater range of adjustment than the ladders of this type in ordinary use.

In the following description reference is had to the accompanying drawings, in which

Figure 1 is a side elevation of two ladders, each embodying my invention and showing the same in one position of use and supporting a raised platform from a stairway. Fig. 2 is a front elevation showing a ladder in extended position. Fig. 3 is a detail view showing the brace in plan and the ladder members in cross section. Fig. 4 is a detail view showing a locking device for the brace. Fig. 5 is a view on the same lines as Fig. 1 but showing a different adjustment of the ladders, one of which is supported in part from a desk or counter. Fig. 6 is a detail view showing the outer face of one of the guide bars. Figs. 7 is a detail top view of the interlocked side bars of two members, and Fig. 8 is a side view of the same.

Like parts are identified by the same reference characters throughout the several views.

The ladder is formed in two sections or members 1 and 2 which are shown provided with rungs although it is immaterial to this invention whether rungs or steps are used. The member 2 is provided with rails 3 which are secured to the rear edges of the respective side bars by spacing pieces 4, bolts 5 being employed to secure the rail, spacing piece, and side bar together. These spacing pieces may be either employed at intervals along the side bar, or may be continuous with the rail throughout its length or a part thereof. They are of less width than the rails 3 and are preferably located substantially along the center line of the rail. Connecting members 7 are pivotally connected at 8 to the upper ends of the side bars of section 1 and each of these members 7 is provided with an offset portion 9 crossing the outer surface of the corresponding rail 3 on the member 2 and provided with lips 10 loosely embracing the margins of the rail, this portion of the connecting member thus forming a slide through which the engaged rail 3 is free to move longitudinally.

Referring to Figs. 6, 7 and 8 it will be observed that a locking bolt 13, mounted in bearings 14 on the connecting member, is offset at 15 through a slot 16 in the member and then passes through a hole 17 in the part 9, in a position to enter any one of a series of holes 18 in the rail 3; a spring 20 is arranged to automatically push the bolt to locking position when in registry with a hole 18 in the rail 3, but if it is desired to prevent this, the bolt may be held in retracted position, by pulling it outwardly to engage the outer bearing member 14 in a notch 22 in the bolt.

A brace member 24 is pivotally secured to the upper portion of the member 1 and is provided with connecting members 25, similar to connecting members 7 and also loosely engaging the rails on the members 2. These connecting members 25 are preferably without locking bolts, but may be bound to the rails 3 by ordinary set screws 27. One of the rungs on the member 1 may constitute a pivot pin for the brace member,

It will be observed that the member 2 is provided with a foot hook 28 adapted to engage any one of the rungs of member 1 when the ladder is extended. This may be of any ordinary construction.

With the described construction, the two ladder members 1 and 2 may not only be adjusted either as an ordinary step ladder or as an extension ladder but may be adjusted at various levels or on stairways or with one member on a desk or counter and the other on the floor. By providing a rail 3 along the rear edge of section 1, a perfectly smooth track is secured and by using a brace member, which travels on the track, the ladder may be securely braced in any desired position of adjustment.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is,

1. The combination of a set of ladder members, one having rails connected to its side

bars and the other having connecting members at its upper end loosely engaging said rails, together with a locking device carried by a connecting member and adapted to engage in suitable apertures in the corresponding rail.

2. The combination of a set of ladder members, one having rails connected to its side bars and the other having connecting members at its upper end loosely engaging said rails, a brace member pivotally secured to last mentioned ladder member, and connecting members thereon loosely engaging said rails.

3. The combination of a set of ladder members, one having rails connected to its side bars and the other having connecting members at its upper end loosely engaging said rails, a brace member pivotally secured to last mentioned ladder member, and connecting members thereon loosely engaging said rails, together with means for locking the brace members to the rails.

4. The combination with a ladder member provided with a connecting member and a brace member each connected with the ladder member; and a second ladder member having sliding engagement with the connecting and brace members.

5. The combination of a set of ladder members, one having a connecting member at its upper end and a brace member in a lower position, each slidingly engaging the other ladder member; and means for locking the ladder members in any desired position of relative adjustment.

In testimony whereof I affix my signature in the presence of two witnesses.

NICKOLAUS SCHAEFER.

Witnesses.

LEVERETT C. WHEELER,

M. M. SCHULZ.