No. 785,810. PATENTED MAR. 28, 1905.

P. KOOPMAN.

LADDER.

APPLICATION FILED JULY 19, 1904.

Fig. 1.

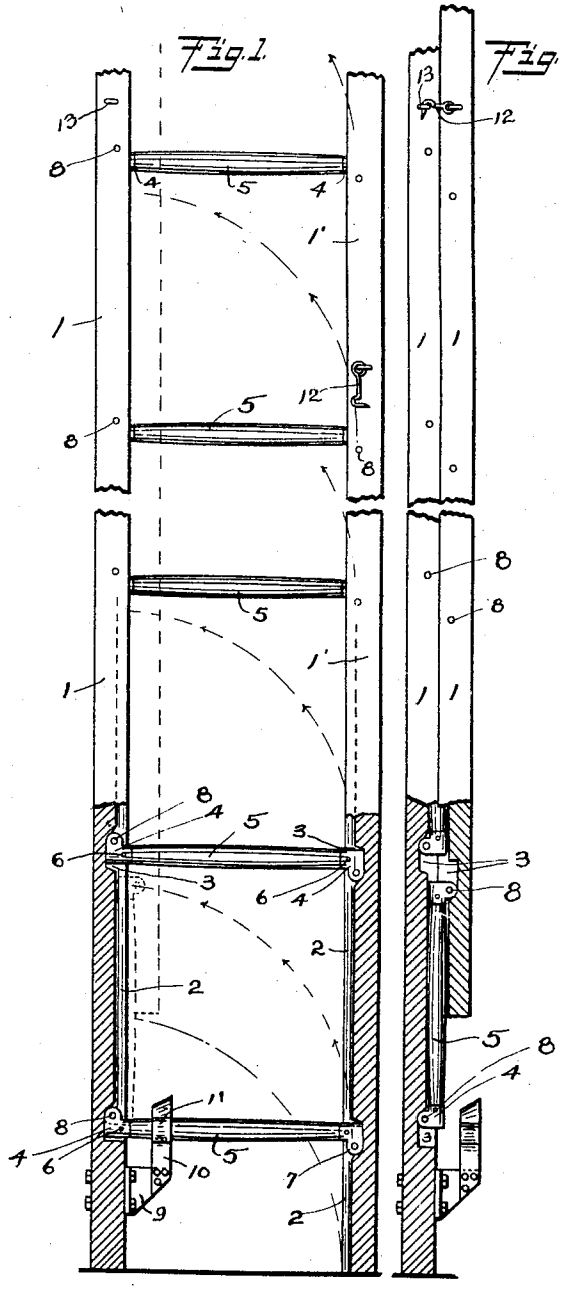


Fig. 2.

Fig. 3.



Fig. 4.

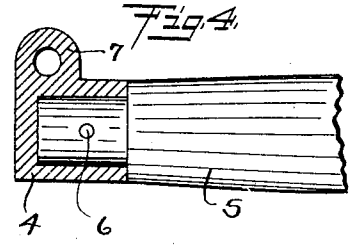
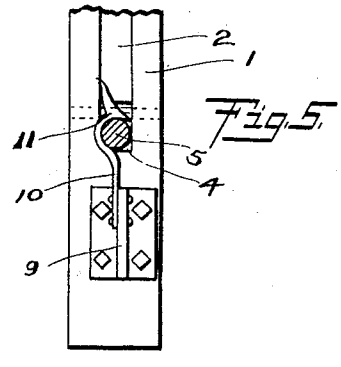


Fig. 5.



Witnesses

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No. 785,810. Patented March 28, 1905.

UNITED STATES PATENT OFFICE.

PETER KOOPMAN, OF OMAHA, NEBRASKA.

LADDER.

SPECIFICATION forming part of Letters Patent No. 785,810, dated March 28, 1905.

Application filed July 19, 1904. Serial No. 217,186.

To all whom it may concern:

Be it known that I, PETER KOOPMAN, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to ladders, and has for its object the provision of a collapsible ladder which may be readily folded so as to occupy a minimum space and when opened securely locked against accidental folding.

In the accompanying drawings, Figure 1 is a front elevation of a ladder constructed according to my invention, the same being in open or extended position and partly in section to more clearly illustrate the manner of pivoting the rounds to the side pieces. Fig. 2 is a similar view showing the ladder in folded position, this figure being also partly in section. Fig. 3 is a transverse sectional plan view of the ladder when open. Fig. 4 is a detail of one of the pivot-blocks at the ends of the rounds, and Fig. 5 is a detail side view of the locking-latch for securing the ladder in open position.

In the construction shown I employ the substantially rectangular side pieces 1 and 1′, on the inner sides of which are the longitudinally-extending semicircular grooves 2. At regular intervals the grooves 2 are made somewhat deeper and rectangular in form, as at 3, and in said spaces are placed the pivot-blocks 4 on the ends of the rounds 5. The rounds extend into suitable recesses in the blocks and are held therein by pins 6, as shown in Fig. 4. On the sides of the blocks are lugs 7, through which pass the pins 8, extending through the side pieces 1 and 1′, as shown.

Near the lower end of the side piece 1 a bracket 9 is secured by suitable means. Secured to and extending upwardly from the bracket 9 is a spring-arm 10, terminating at its upper end in a hook or latch 11, as shown in Fig. 5.

When the ladder is opened, the lower round 5 engages the upper beveled portion of the latch, pushing the same backward until past, when the latch is forced back to position by the spring-shank 10 engaging and holding the round in its extended position. To close the ladder, the latch is pulled backward out of engagement with the round, and the side of the ladder 1′ is then raised relative to 1, following the arced path (indicated by arrows and dotted lines in Fig. 1) to the position shown in Fig. 2, where it is secured by one or more hooks 12, which engage with eyes 13 on 1, as shown. It will be noted that in the closed position the rounds occupy the grooves 2 on the inner sides of the side pieces; also, that the downward or opening movement of the moving side piece 1′ is limited by the square ends of the pivot-blocks engaging the square rear surfaces of the spaces 3.

Now, having described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

A collapsible ladder comprising grooved side pieces, suitable rounds connecting the side pieces, pivot-blocks on the ends of the rounds, said blocks being pivotally secured to the side pieces and adapted to permit the folding of the side pieces toward each other so as to inclose the rounds in the grooves therein, and a spring-actuated latch secured to one of the side pieces and adapted to engage one of the rounds when the ladder is opened, all substantially as and for the purpose set forth.

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

PETER KOOPMAN.

Witnesses:

HOWARD J. COWGILL,

J. A. PFEILER.