

# Improvement in Ladders.

PATENTED JUL 18 1871

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Fig. 1.

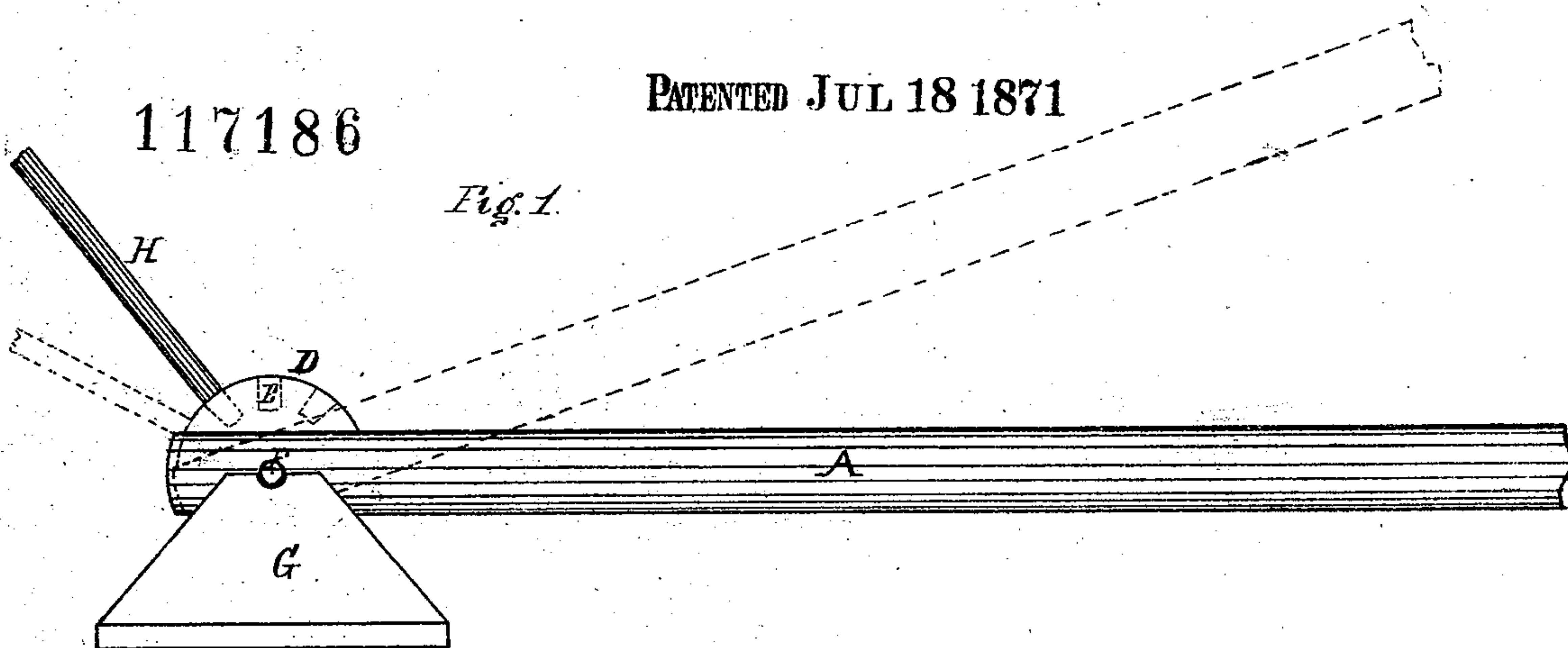


Fig. 2.

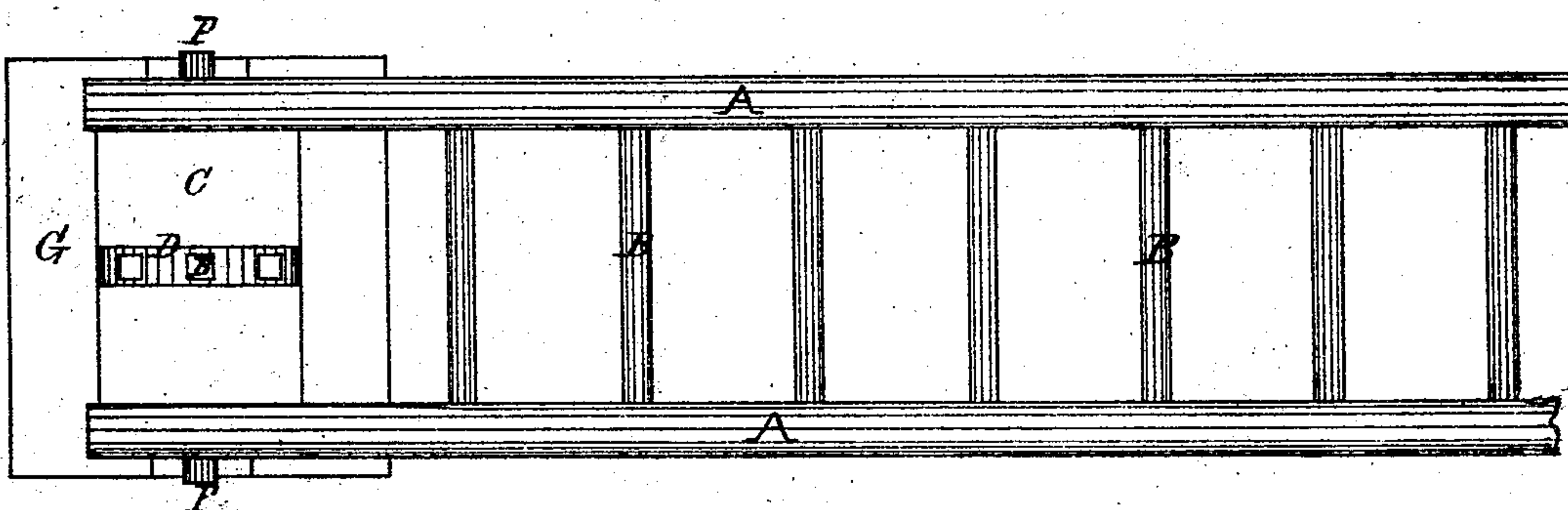
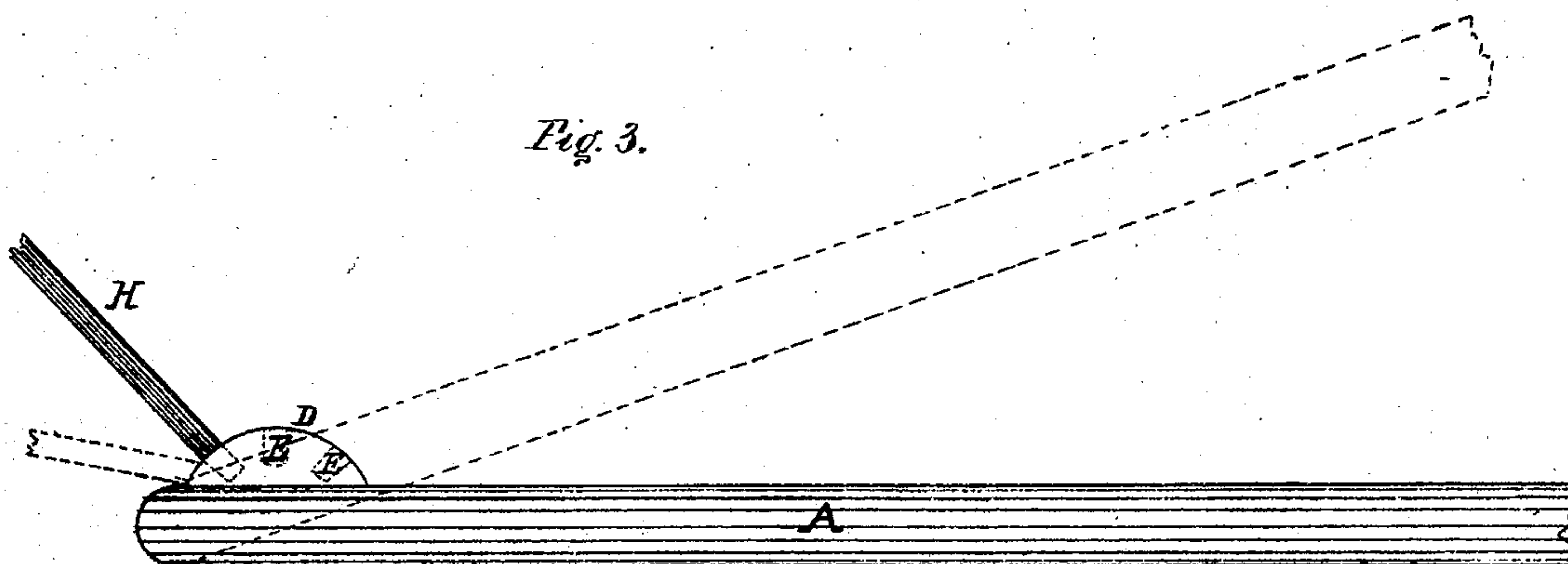


Fig. 3.



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Inventors.  
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by their atty.  
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# UNITED STATES PATENT OFFICE.

JOHN MAXWELL AND THOMAS GRAY, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN LADDERS.

Specification forming part of Letters Patent No. 117,186, dated July 18, 1871.

*To all whom it may concern:*

Be it known that we, JOHN MAXWELL and THOMAS GRAY, both of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Ladders; and we do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use our improvement, reference being had to the accompanying drawing which is a part of this specification, and in which—

Figures 1 and 3 are side views, and Fig. 2 a plan or top view thereof.

The same parts are denoted by the same letters in all the figures.

A A in the drawing represent the sides, and B B B the rounds of a ladder. C is a wide cross-piece, on which is permanently or detachably secured, in any convenient manner, the segment D, provided with mortises E E. The side pieces are also constructed with pins or trunnions F F, which fit into notches in the sides of a horse, G, of ordinary construction.

The operation of these devices is as follows: The ladder being placed on the horse, as shown, levers or handspikes H H are inserted into the mortises, and the ladder may thus be raised almost instantaneously, and with far less power

and more steadiness than can be done by the ordinary means. When the handspikes are worked by men their force can evidently be employed at the outer handspikes with increasing advantage as the other end of the ladder rises. Horse or other power may also be used. This improvement is especially useful in case of fire, where rapidity and steadiness in placing the ladders are often of the utmost importance. The horse G may be dispensed with, and then the ladder is lifted in the same manner as previously described, the ground serving in this case as the fulcrum, as shown in Fig. 3. The segment may also be replaced by any equivalent device, or any other means may be used for applying the levers to one end of the ladder. The mortises might, for example, be made in the sides of the ladder and the segment dispensed with entirely.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

The improved ladder above described, constructed with the segment D operating in conjunction with levers or equivalent devices, as specified.

Witnesses:

WM. R. WRIGHT,  
JNO. JAY WARD.

JOHN MAXWELL.  
THOMAS GRAY.