

(No Model)

G. H. CLOYES.
LADDER.

No. 294,199.

Patented Feb. 26, 1884.

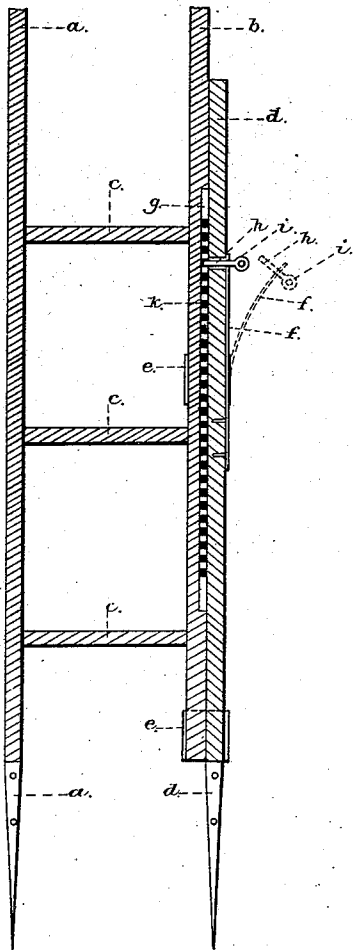


Fig. 2.

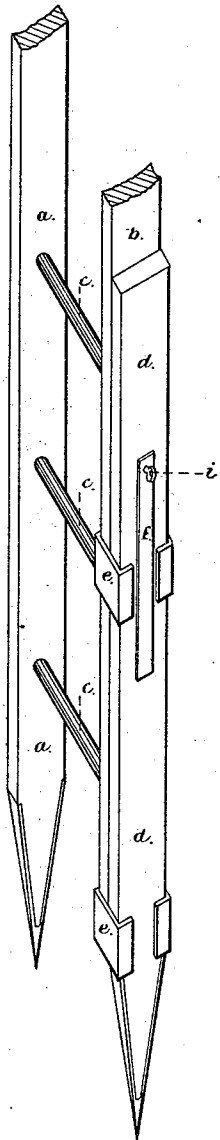


Fig. 1.

Fig. 3.

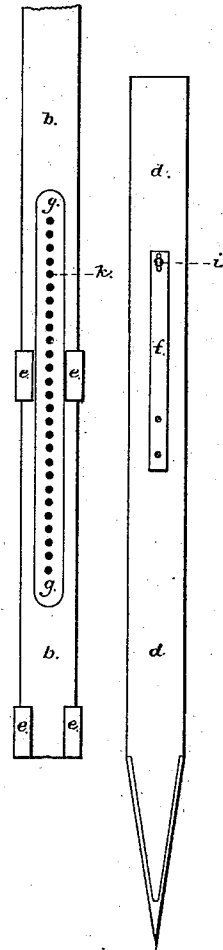


Fig. 4.

Witnesses:

John J. Haley
Arthur C. Robinson

Inventor.

Graunville H. Cloyes
by George E. Bird
att'y.

UNITED STATES PATENT OFFICE.

GRANVILLE H. CLOYES, OF PORTLAND, MAINE.

LADDER.

SPECIFICATION forming part of Letters Patent No. 294,199, dated February 26, 1884.

Application filed April 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, GRANVILLE H. CLOYES, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Fire-Ladders; and I do hereby declare that the following is a full, clear, and exact description of my invention, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a side elevation of the side pieces, *b* and *d*. Fig. 4 is a side view of the adjustable leg *d*.

In the use of ladders at fires, and indeed in other uses, it is found difficult to securely place the ladders, on account of the unevenness of the ground or surface upon which the ladder is to rest. It may be necessary to place one side of the ladder upon the sidewalk, the other in the gutter, or one upon the floor and the other upon a step or stair. To do this with the ladder as ordinarily constructed with even sides is impossible. To remedy this defect in the construction of ladders is the purpose of my invention, which will be understood from the following description.

a and *b* are the side pieces of the ladder, *a* being of the ordinary construction, while *b* is cut off somewhat shorter than *a*. (See Figs. 1 and 2.)

c c are the rungs connecting the sides.

Secured to the side *b* are the clasps *e e*, within which runs freely the leg *d*, to which, through the slot in the clasp *e*, is secured the spring *f*, to the upper end of which is attached the pin *h* and handle *i*. Holes *K*, sufficiently large to permit the entrance of the dog *h*, are made at distances, say, for example, every quarter-inch. For greater security, these holes

may be made in an iron plate, *g*, let into the side of the leg *b*. (See Fig. 1.) A similar hole is made in the side leg, *d*, and at such a point that it will permit the entrance of the pin *h*.

The operation of the device is obvious: Suppose the ladder is as seen in the drawing, Fig. 1, the legs of equal length, and that it is found necessary to place the ladder upon an uneven surface, so that, in order that the ladder may stand firmly and with the sides in parallel vertical planes at right angles to the buildings against which it rests, one side must be six inches shorter than the other. In such cases the pin is drawn out from the side *b* by means of the handle *i*, the leg *d* raised the requisite distance, and the pin allowed to return through the hole in the leg *d* into the proper hole in the side *b*, where the pin *h* is securely held by the spring *f*. Adjustment to any degree can, it will be seen, be made by either raising or moving the leg *d*.

Any suitable locking device to keep the pin *h* from accidentally being withdrawn from the side *b* may be employed, if desired.

I do not claim a device wherein the side of the ladder and the extensible leg are secured together and adjusted by means of a notched rod and spring-pawl, as shown in Letters Patent No. 124,526, granted to George W. Willis, March 12, 1872.

What I claim as my invention is—

The combination of the side *a*, rungs *c c*, short side *b*, having the holes *K*, leg *d*, clasps *e e*, spring *f*, and pin *h*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of April, 1883.

GRANVILLE H. CLOYES.

Witnesses:

WILLIAM W. THOMAS, Jr.,
GEO. E. BIRD.