

(No Model.)

T. L. JUDD.
GRIPPER FOR SCALING LADDERS, &c.

No. 473,581.

Patented Apr. 26, 1892.

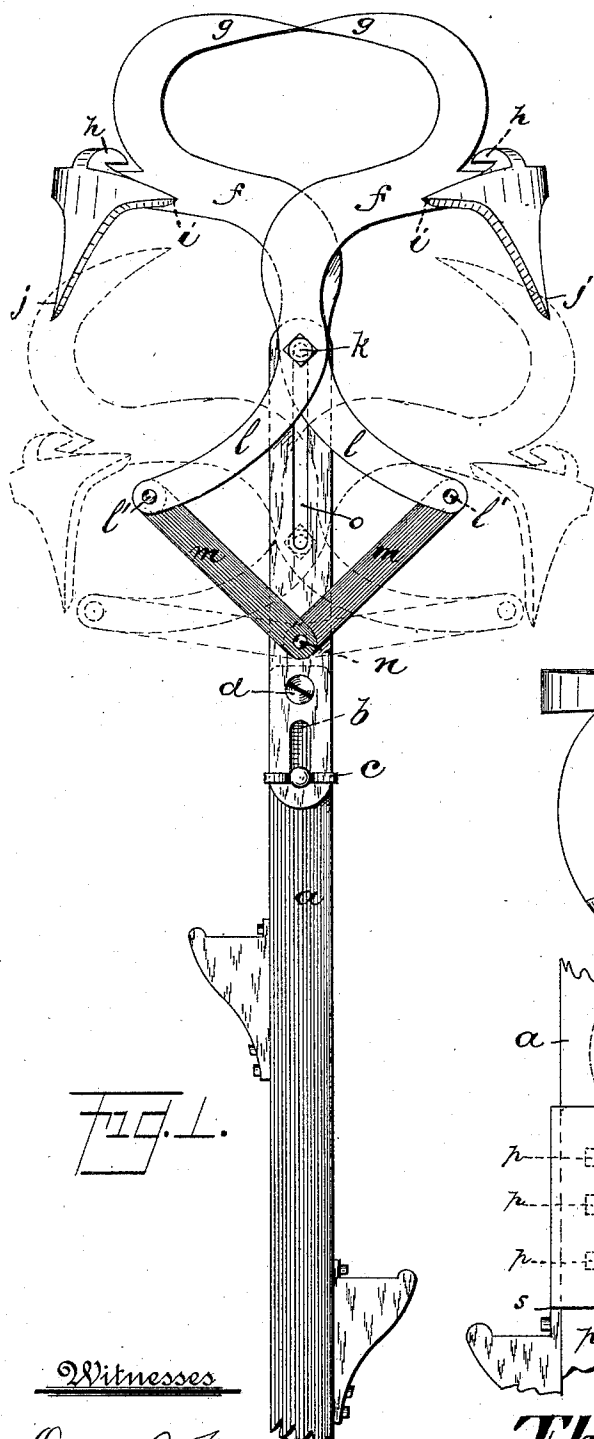


FIG. 1.

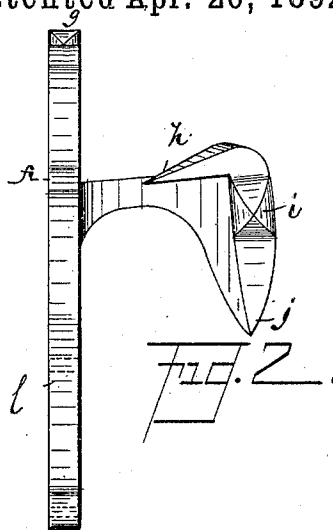


FIG. 2.

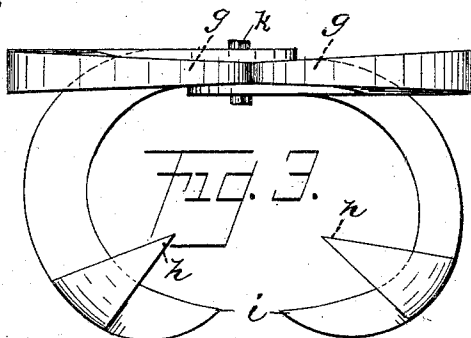


FIG. 3.

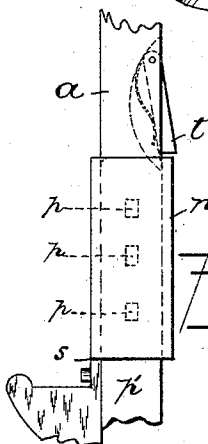


FIG. 4.

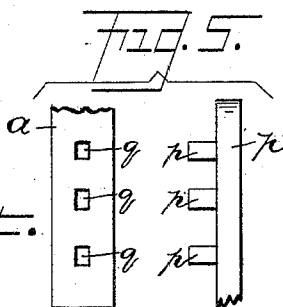


FIG. 5.

Witnesses

Oscar A. Michel
Jno. R. Hall

Inventor

Thomas L. Judd,

By Drake & Co., Attys.

UNITED STATES PATENT OFFICE.

THOMAS L. JUDD, OF EAST ORANGE, NEW JERSEY.

GRIPPER FOR SCALING-LADDERS, &c.

SPECIFICATION forming part of Letters Patent No. 473,581, dated April 26, 1892.

Application filed September 23, 1891. Serial No. 406,548. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. JUDD, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Grippers for Scaling-Ladders and for other Purposes; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is more particularly to provide a gripper for use in connection with scaling-ladders, capable of easy and rapid adjustment and of a multiplicity of uses or applications.

The invention consists in the improved gripper and in the arrangement and combination of the several parts thereof, as herein set forth, and finally pointed out in the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate corresponding parts in each of the several figures where they occur, Figure 1 represents in elevation the upper portion of an ordinary scaling-ladder and my improved gripper attached thereto. Fig. 2 represents in elevation a view of one of the gripping arms and claws, looking from the inside; and Fig. 3 is a top plan view of the gripper-claws in the position shown by the unbroken lines in Fig. 1. Figs. 4 and 5 represent in elevation detail views of the device for splicing or lengthening the ladder.

In said drawings, *a* indicates a scaling-ladder of ordinary construction, except as to the arrangements for splicing and for the attachment of the gripper.

b indicates a bar or support upon which the gripper is mounted. Said bar or support is attached to the end of the ladder and is firmly held in engagement therewith by means of a button *c*, rigidly secured to the ladder, and by a screw *d*. By removing or backing the screw and turning the bar *b* downward at a right angle with the ladder the gripper is easily removed by slipping the bar over the button, the former being provided with a slot

or buttonhole *e* for the purpose. I do not limit myself, however, to this method or means of attachment, as various devices for such purpose will readily suggest themselves to any skilled mechanic.

The gripping-arms *f* are each provided with a multiplicity of gripping-claws, which project in various directions and are arranged in a number of pairs to open and close for the purpose of gripping in various positions and to various objects. For example, the claws *g*, as will be seen, are adapted to grip to a beam or other object from beneath, the claws *h* to a tree, telegraph-pole, or other similar vertical structure, the claws *i* to the sides forming the corner or angle of a building, and the claws *j* to the coping, eaves, or gutter of a building, all of which will be readily understood upon reference to the drawings. Said arms *f* are pivotally connected together and to the bar *b* at *k*, their lower extremities or members *l* being curved outwardly in opposite directions and pivotally connected at *l'* to bars *m*, the opposite ends of which are pivotally connected with each other and to the bar *b* at *n*.

The dotted or broken lines show the relative positions of the several parts of the gripper when the claws are open.

The operation of opening the claws is designed to occur automatically when the ladder is raised to a vertical position or by a slight pressure upon the upper end of the gripper should the latter not open readily of itself, which might be the case were the points not properly lubricated, as will be obvious. The pivotal connection *k* moves through a slot *o* in the bar *b* as the gripper opens or closes, the claws all operating simultaneously, as will be understood upon reference to Fig. 1.

Not only is the ladder or other structure to which the gripper may be attached capable of being suspended in the various positions and to the various structures and used as a ladder, as above described, but it may also be employed to grip and pull objects from burning buildings or apartments which are inaccessible to firemen or others in consequence of the fire or heat and to grip and lift articles from a lower to an upper room or level, as will be obvious.

When the device is intended for use in connection with poles or structures carrying electric wires, I inclose or wrap the parts with rubber or other insulating material (not shown) 5 to prevent shock or accident by electricity. Provision is also made for lengthening the ladder by splicing, which I accomplish by forming tenons *p* and sockets or mortises *q* upon and in the ends of the adjoining sections, which engage with one another when 10 the parts are joined and hold the same firmly in position by means of a suitable clamp or sleeve *r*, which is held in position by a shoulder or projection *s* at one end and by a spring-actuated detent *t* at the other, as will be understood upon reference to Figs. 4 and 5. The 15 sleeve being made to move longitudinally, the spliced section *p'* may be removed in a moment upon pressing the detent inwardly and raising the sleeve above the end of said section, as will be understood. 20

It may be observed that the bar *b* is not absolutely essential, but may be dispensed with and the gripping-arms, &c., be attached directly to the ladder, if desired, the latter being 25 slotted at the top in such case like the bar *b*, and so, also, one or more of the several pairs of claws may be dispensed with and any two or more pairs be retained without departing from the spirit of the invention, though the 30 scope of its usefulness might be somewhat reduced thereby.

Having thus described my invention, what I claim as new, and desire to secure by Letters 35 Patent of the United States, is—

1. The improved gripper herein described, consisting of the arms *f*, pivotally connected, as at *k*, and carrying a multiplicity of gripping-claws arranged thereon in several pairs 40 and projecting in various directions, and means, as described, for attaching the said arms to a scaling-ladder or other structure, as and for the purposes set forth.

2. The combination of a bar or structure, as 45 *b*, the arms *f*, pivotally connected, as at *k*, with each other and with said structure and having the outwardly-curved extremities *l*, a multiplicity of gripping-claws formed on and extending from the outer portion of the arms 50 *f*, and bars *m*, connected pivotally with said

extremities *l* and with said bar or structure *b*, as described, and for the purposes set forth.

3. The combination of the arms *f*, pivotally connected, as at *k*, and a multiplicity of gripping-claws carried by said arms and projecting 55 from the outer edge of the arms in various directions and arranged in several pairs to open and close, as described, and for the purposes set forth.

4. The combination of arms *f*, pivotally connected together, as at *k*, and provided with a multiplicity of gripping-claws extending from the outer edge of the arms, arranged in pairs to open and close and adapted to connect with 60 a ladder or other structure, and bars, as *m*, adapted to connect with said arms and structure to open and close the gripper, as and for the purposes set forth. 65

5. The combination of the arms *f*, pivotally connected together and provided with a multiplicity of gripping-claws extending outward and downward from the arms and arranged in several pairs, the arms *m*, pivotally connected to one another and to the extremities 70 of said arms *f*, a ladder or other structure adapted to connect with said arms *f* and *m*, and means, as described, for lengthening said structure, as and for the purposes set forth. 75

6. The combination of a ladder, a slotted plate carried thereby, a pair of curved arms 80 having their pivot movable in said slotted plate, a pair of straight arms connected to the plate and said curved arms, and a series of jaws or grippers carried by the curved arms, for the purpose stated. 85

7. As a new article of manufacture, a gripper for scaling-ladders, consisting of two short arms or links, two outwardly-curved arms formed with inward-extending claws, and a series of claws extending outward and downward 90 from the curved arms, all adapted to be connected together and applied to a staff or structure, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of 95 September, 1891.

THOMAS L. JUDD.

Witnesses:

OLIVER DRAKE,
OSCAR A. MICHEL.