

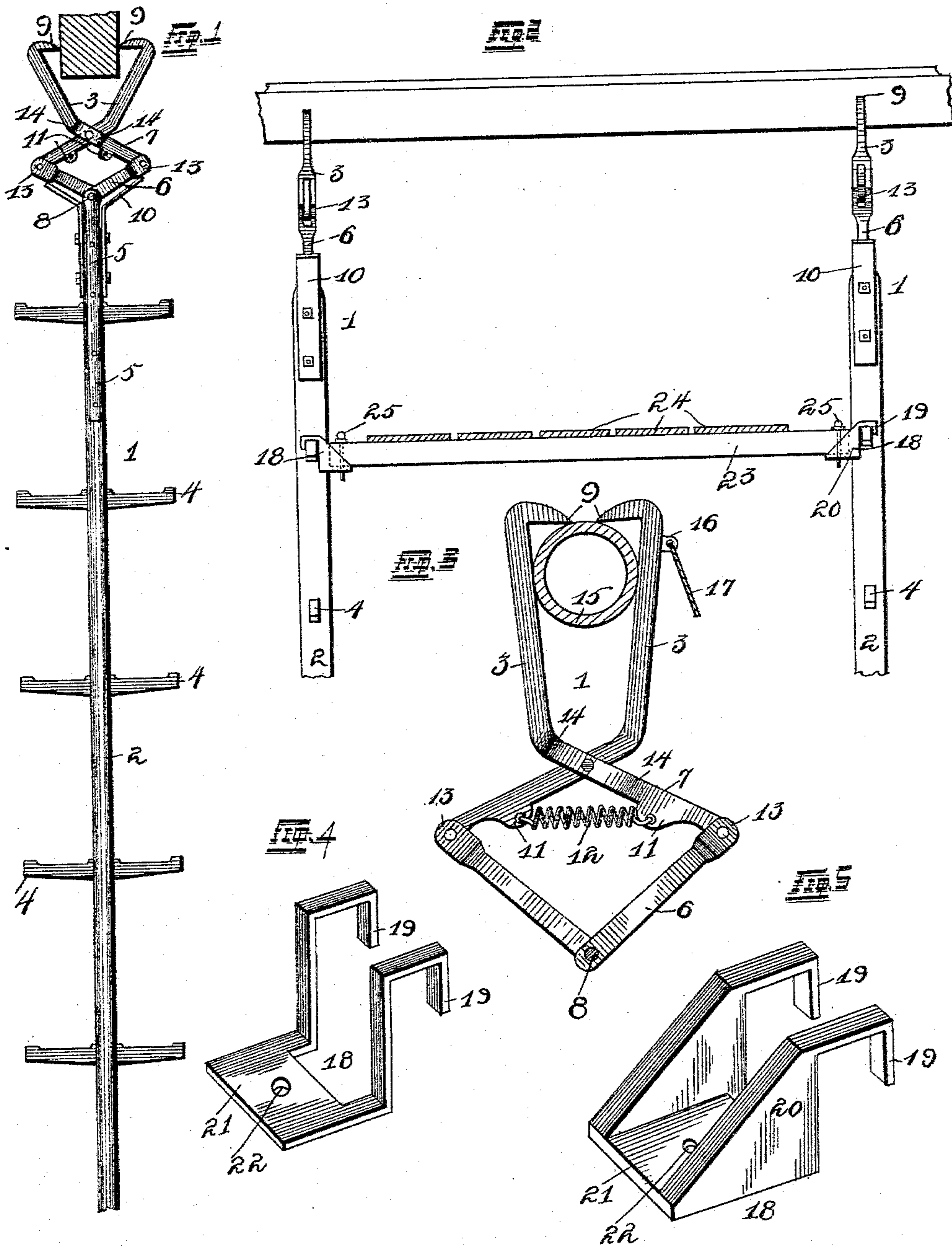
(No Model.)

T. KELLY.

SWINGING STEP LADDER OR SCAFFOLD SUPPORT.

No. 494,868.

Patented Apr. 4, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

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SWINGING STEP-LADDER OR SCAFFOLD SUPPORT.

SPECIFICATION forming part of Letters Patent No. 494,868, dated April 4, 1893.

Application filed October 7, 1892. Serial No. 448,115. (No model.)

To all whom it may concern:

Be it known that I, THOMAS KELLY, of the city of St. Louis and State of Missouri, have invented certain new and useful Improve-
5 ments in Swinging Step-Ladder or Scaffold Supports, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

10 My invention relates to improvements in "swinging step-ladder or scaffold supports," and consists in the novel arrangement and combination of parts, as will be more fully hereinafter described and set forth in the
15 claims.

The object of my invention is to improve upon the manner of constructing adjustable single pole ladders, swinging scaffold sup-
20 ports, and other depending constructions which can be readily and adjustably secured to any wooden or metallic support.

The principle applied, may be used for fire-
25 men's or painters' ladders, swinging scaffolds, stationary scaffolds, and many other uses, as hereinafter described.

In the drawings: Figure 1 is a side eleva-
30 tion of my complete invention with the lower portion of same broken away, and showing the impinging jaws in contact with a block of wood shown in section. Fig. 2 is an eleva-
35 tion of two of the improved constructions, applied to an overhead joist or timber, and supporting a scaffolding shown in section. Fig. 3 is an enlarged detail side elevation of the
40 clamping jaws in position over a tubular pipe, and showing therewith a spring for normally attracting said jaws toward each other. Fig. 4 is a modified form of a scaffold brace sup-
45 port. Fig. 5 is a perspective view of a construction preferably used to support the scaffold cross-piece and which is generally made use of in carrying out my invention.

Referring to the drawings: 1 indicates my complete invention consisting of a longitudi-
45 nal pole 2 having mounted upon one end, as hereinafter described, a pair of clamping jaws 3. Located transversely in said longitudinal pole 2, are a number of perforations through which are placed horizontal pieces 4 which
50 project an equal distance from each side of

said pole 2 and are of such a shape as to pre-
sent the most strength and durability, and have their upper sides, that is the sides to-
ward the jaws 3 slightly hollowed out upon
both sides of said pole 2. In the upper por- 55
tion of said pole 2 and secured upon its front and rear sides, are upwardly projecting plates 5 which project upwardly above the terminus
of the pole 2 and have between their upper
ends, the lower ends of outwardly and oppo- 60
sately projecting levers 6, with a single pivot running through all four of the pieces. To
the outer ends of said levers 6 are pivoted the
ends of the jaws 3, said ends substantially be- 65
ing in the form of levers 7 which cross and are pivoted at a point directly above the pivot
8 which holds the lever 6 in position with the
upwardly projecting bars 5 which are of some
length in order that they may be securely fas-
70 tened to the pole 2.

The jaws 3 are substantially of the shape
of a bell-crank-lever and the jaws proper nor-
mally extend outwardly, and have upon their
upper ends, inwardly projecting teeth 9 adapt-
ed to impinge in alignment with each other. 75

The combination of pivoted levers 6 and 7
form a figure substantially rectangular shaped
in side elevation, and said levers 7 collapsi-
ble toward the levers 6 by the weight of the
jaws 3, and said jaws attracted toward each 80
other by the weight of the pole and parts at-
tendant thereon.

The distance to which the jaws 3 may be
opened is controlled by strips of metal 10
which are secured upon both sides of the pole 85
2 and which are made of such a material that they may readily be bent in any desired po-
sition as shown in Fig. 1. If the projecting
portions of these guards 10 were bent at right
angles from a point opposite the pivots 8, the 90
teeth 9 would be apart at their greatest dis-
tance with the under sides of the lever 7 prac-
tically resting upon the lever 6. Lugs 11
upon the under side of said lever 7 are pro-
vided with perforations, into which may be 95
placed a spring 12, which normally tends to
draw the teeth 9 toward each other. The
upper ends of the lever 6 are split, thus form-
ing two ears 13 between which are pivoted
the lower ends of the lever 7. One of said 100

jaws 3 and the lever 7, a part thereof, is perfectly flat, while the other one must necessarily be provided with a means for allowing the teeth 9 to be in exact alignment, so the jaw 3 is provided with a thickened portion 14 which has a longitudinal opening in which the other jaw is located and operative.

One function in hollowing out the upper sides of the cross-pieces 4 is to adapt them for use as a step-ladder to accommodate the form of the foot. In Fig. 3 the device is shown in detail as clamping over a pipe 15 for which the device is as readily adapted, as for the impinging of wood surfaces. One of the jaws 3 is provided with a projecting perforated lug 16, from which depends a rope 17 by means of which the engagement of the jaws over the pipe is released.

In Fig. 1 the device is used and shown as engaging a timber and used as a step-ladder and by reference to this figure and the descriptions it will be seen that this device is especially adapted for use by painters, lathers, firemen, or any persons whose work could be done expeditiously upon a single pole ladder of this kind. It can be readily secured to overhead joists, beams, a window-sill, or in fact any construction at all which would have a sufficient strength to allow the clasping of the jaws thereto.

In Fig. 2 the device is represented as supporting a scaffolding for use of a plasterer or painter and consists in the use of four of the constructions 1 herein before described, arranged in a rectangular form. The supports are necessarily arranged with the cross-pieces 4 all projecting in the same alignment in order that constructions or clevises 18 may be made use of. The clevises 18 have two hooked-shaped projecting arms 19 which are some distance apart in order to allow the engaging of the same over the cross-piece with one arm upon each side of and adjacent the center pole 2. The clevis has depending sides 20 with a bottom cross-piece 21 provided with a perforation 22. Suitable timbers 23 provided with perforations near each end are then placed in the clevises 18 and as the perforations in said timber and the perforation 22 in the clevis 18 correspond, bolts may be placed through the same to secure the entire scaffolding and prevent the timbers from becoming disengaged from the corner supports. The scaffold platform boards 24 are then placed upon the cross-pieces 23 and any swinging of the entire scaffold will not loosen the scaffolding in any way, as the bolts 25 guarantee the securance of the parts.

In Fig. 4 I have shown a modified construction of the clevis shown in Fig. 5 which does away with the side-walls 20 and otherwise presents a similar construction. The pole 2 and cross-pieces 4 are preferably made of some hard tough-grained wood which not only presents lightness but strength. The jaws 3, levers 6 and 7, the arms 5 and 10, and other operative parts are made of suitable metal

and all of the parts in combination are intended for a thorough and successful operation.

The operation is as follows: The length of pole and the number of projecting cross-pieces or steps, are not limited, as these are points left to the discretion of the manufacturer or user. If the construction were to be used as a step-ladder, it would only be necessary to place one of the jaws against the side of the article to which the clamp was to be adjusted, and the weight of the pole depending therefrom, would cause the jaws to be attracted toward each other and any material weight which might be added to the pole would cause the teeth 9 to impinge the beam or whatever other article the same might be in contact with. To disengage the device from its position, it is only necessary to give the pole a quick upward movement which releases the engagement of the teeth in the beam.

If the device is to be used for scaffolding, four or more of them are secured in the proper positions in alignment with each other in order that the scaffolding cross-pieces may be placed thereon. The scaffolding can be disengaged by first removing the boards, then the cross-pieces and then releasing the supports proper by the above mentioned operation.

A ladder constructed after the method of my invention is especially designed and applicable for the use of firemen and the advantage in its use will readily be seen as the construction does not limit the length of the pole and therefore the jaws could be engaged in a window-sill and would then absolutely guarantee the certainty and security of the ladder.

Having fully described my invention, what I claim is—

1. An improved swinging step-ladder or scaffold support having a longitudinal pole 2, transverse cross-pieces 4 at predetermined distances throughout the length of said pole, upwardly projecting metallic strips 5 upon the front and rear face of said pole 2, upwardly projecting strips of malleable metal upon the sides of said pole 2, outwardly and oppositely projecting levers 6 pivoted between the upper ends of said strips 5, the ends of said levers 6 split, and forming ears 13 between which are pivoted the ends of the levers 7 forming a part of the jaws 3, substantially as set forth.

2. An improved swinging scaffold support having a longitudinal pole 2, transverse cross-pieces 4, clevises 18, having hook-shaped arm 19 adapted to fit over the cross-pieces 4 upon both sides and adjacent the pole 2, a perforation 22 in the bottom 21 of said clevis 18 and bolts adapted to be placed through cross-pieces resting upon said bottom-plate 21 and through the hole 22, substantially as set forth.

3. In an improved swinging step-ladder or scaffold support, the combination, with the pole provided with a gripping device at one end, and with transverse cross-pieces projecting at opposite sides of said pole, of a sup-

5 porting clevis comprising a plate 21 recessed at its rear side to receive the pole, and two hook-shaped arms 19 projecting from said plate at each side the recess therein; substantially as set forth.

10 4. An improved swinging step-ladder or scaffold support having collapsible levers 6 and 7, inwardly projecting lugs 11 upon the under sides of said lever 7, a spring adapted to connect said lug, and the tension of which tends to normally hold the impinging jaws 9 toward each other, and a perforated lug 16

upon one of the jaws 3 adapted to secure one end of a rope or chain by means of which the adjustment of the jaws adjacent a tubular pipe, may be released, substantially as set forth. 15

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

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Witnesses:

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