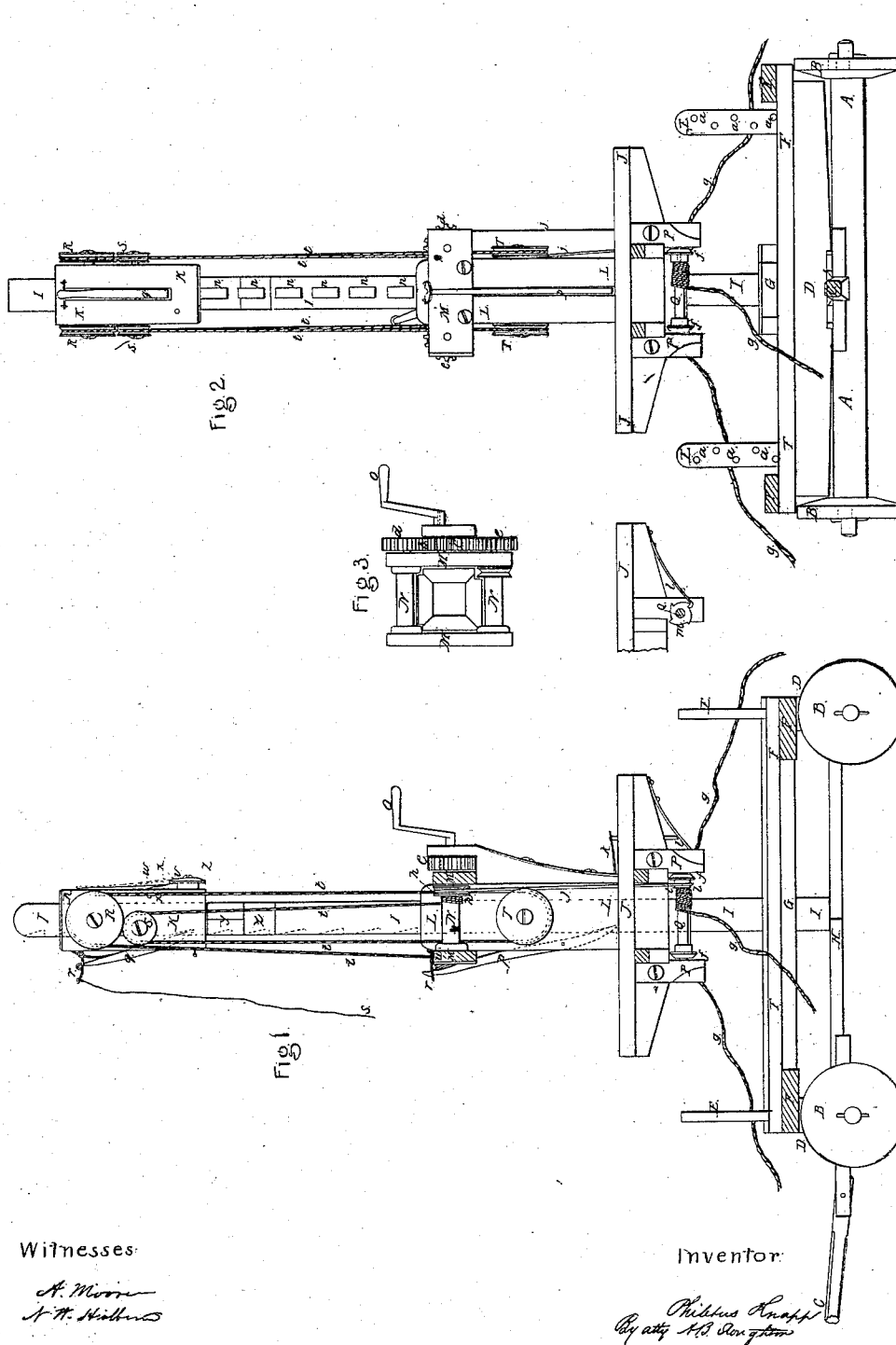


P. KNAPP.
SCAFFOLDING AND ELEVATING THE SAME.

No. 43,315.

Patented June 28, 1864.



Witnesses:

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UNITED STATES PATENT OFFICE.

PHILETUS KNAPP, OF WOODFORD, VERMONT.

IMPROVEMENT IN SCAFFOLDING AND ELEVATING THE SAME.

Specification forming part of Letters Patent No. 43,315, dated June 28, 1864.

To all whom it may concern:

Be it known that I, PHILETUS KNAPP, of Woodford, in the county of Bennington and State of Vermont, have invented certain new and useful improvements in the construction and operation of elevating and lowering scaffolds or staging for various uses, such as gathering fruit, washing windows, painting houses, or for a signal-stand; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents an elevation from one of the sides of the apparatus. Fig. 2 represents an elevation of the machine from one of the other sides thereof. Fig. 3 represents a top plan of the gearing connected to the moving platform.

Similar letters of reference where they occur in the separate figures denote like parts of the apparatus in all the drawings.

My invention consists in an elevating and lowering scaffold or staging which may be used for many purposes; and which for the sake of easy portability is mounted upon wheels, and the shaft or supporting column of which is made in sections so as to be lengthened and shortened at pleasure by user, and so geared as to be self-adapting to the varied heights without changing the gearing or rigging further than is done by simply putting into or out of action certain mechanical appliances, which of themselves afterward effect the objects of compensation.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents a truck-frame mounted upon wheels B, and having a tongue, C, by which it may be drawn and guided when it is to be moved from place to place.

In the front and rear bolsters, D, are arranged the uprights E, furnished with pin-holes *a a*, &c., and over these bolsters a frame, F, is placed, there being suitable mortises in the frame for the uprights or standards E to pass through. The object of the standards and their pin-holes is that the frame F may be suitably leveled thereon so that it may stand firm. This leveling or adjusting process

may be accomplished as well by set-screws at the corners instead of the standards and pin-holes.

In a central piece, G, of the frame F, and extending through said central piece so as to find an under support in or on a coupling-piece, H, is arranged a shaft or supporting-column, I, on which and its continuing sections, as hereinafter explained, the platform J, which carries the operator or user, and the necessary mechanical appliances for raising and lowering the same are arranged, are moved up or down, as the case may be.

Near the top of the supporting shaft or column I there is a slide, K, of a box form, and made to snugly fit said shaft, but at the same time to slide thereon when necessary for it to do so; and to the platform J there is also a box-shaped slide, L, that steadies and guides said platform in its movements up or down on the supporting-shaft.

On suitable supporting-pieces, M M, at or near the top of the platform slide L, are arranged the drums or windlass-shafts N N, which are operated simultaneously through the crank O and the gears *b c* and *d e*.

Underneath the platform J, in suitable supports P, are hung four drums or windlass-shafts, Q, one on each side of the shaft, but all connected by bevel-gears *f*, so that the turning of one of them will simultaneously and uniformly turn all the others. To these drums or windlasses *f* are attached (one to each drum) the guy-ropes *g*, the outer ends of which may be fastened to a stake or any other permanent object, the other ends, after a dozen, more or less, coils around it, being fastened to their respective drums *f*. These "guys" are for steadying the platform and making it rigid in any lateral direction, and they are let out and wound up mechanically as the platform is raised and lowered as follows: On one of the windlasses, N, there is a pulley, *h*, Fig. 1, around which and around a pulley, *i*, on the shaft Q, underneath it, passes an endless belt or band, *j*, so that the working of the shafts N by the crank O and the intermediate gears, *b c d e*, also operate the shafts Q, causing them to give out the guys as the platform J ascends, and to take them up as it descends, and keeping them constantly "taut." But if at any time they should be-

come slack from any cause, the operator, by placing his foot on the spring-lever *k* on the platform and pressing down the draw-pawl *l* so that it may take a new hold on a ratchet, *m*, on one of the shafts *Q*, and then releasing the said lever *k*, the draw-pawl will turn the shaft *Q*, and through it the other shafts *Q*, and thus take up all the slack.

The shaft or supporting-column *I* has a series of steps or catches, *n*, in it, into which a spring-dog, *p*, on the lower slide, *L*, as well as a spring-dog, *q*, on the upper slide, *K*, take to hold either or both slides at any fixed position on the shaft *I*. These spring-dogs have suitable catches, *r*, to hold them out of action, and the upper catch may have a cord, *s*, attached to it, so that the user on the platform *J* may operate it. The lower catch he can operate from his position on the platform. On the upper slide, *K*, there are two sets of pulleys, *R S*, arranged on opposite sides thereof, and on the lower slide, *L*, there are single pulleys, *T*, on opposite sides thereof, and that the lower slide, the platform and all its attachments, and the user thereon may be suspended to the upper slide, *K*, which is held fast to the shaft *I* by its spring-dog *q*, and be raised or lowered thereon or thereby, I rig as follows: A rope or chain, *t*, being made fast to the slide *L*, (or platform, for the slide and platform are connected as one piece,) as at *u*, is first passed up and over the pulley *R*, thence down and around the pulley *T*, thence up and around the pulley *S*, thence down and around one of the windlasses or drums, *N*, to which the other end of the rope or chain is fastened. There is a rigging of this kind on two of the opposite sides of the shaft *I*, both being shown in red lines in Figs. 1 and 2, and from which it will be readily seen how by simply turning the crank *N* the platform may be raised or lowered or held firmly at any desired position, both vertically and laterally, and at the will and control of the user standing on the platform.

That the operator or user may lower the upper slide at any time while he stands on the platform *J*, he first turns a button, *v*, on the upper slide, *K*, which allows a spring, *w*, (previously held away by said button,) to act against a brake-block, *x*, hung in said slide, and force said brake-block against the side of the supporting-shaft *I*. He next pulls upon the cord *s*, which draws down the catch *r* against the dog *q*, forcing inward its upper end and throwing its lower end out of its step *n*. The slide will then slip down, and when at the desired height, by letting go the line *s* it will

be again caught and held upon the shaft *I*, as before described.

When the platform is to be fastened to the shaft, the catch of the dog *p* is thrown off, and its spring causes its lower end to take in one of the steps, *n*, in the shaft. When the catch *r* is on the dog *p*, it holds said dog out of action, and the platform *J* and all its connections are suspended by the rigging *t t* to the upper slide, *K*.

The shaft or supporting-column *I*, I propose to make in sections of, say, ten feet, and so arrange as that the operator or user may add section after section as he rises up with the platform, or take them down as he descends. The sections are made to fit together by a "half-lap" joint, as at *y*, and each section may have upon it an iron band, *z*, which make recesses for mutually supporting and giving support to the adjacent ends of said sections. When a new section is to be added to the shaft or mast *I*, the upper slide, *K*, is run up to the top of the standing shaft. The lower slide being run drawn up close to the upper one, is there fastened by its dog *p*. The new section may now be added and the upper slide run up upon and fastened to it by its dog *q*. The lower dog, *p*, may now be fastened out of action, and the platform is again suspended to the upper slide. By reversing the operation the sections may be taken down one after the other.

Instead of the break *k*, spring-pawl, *l*, and ratchet *m*, acting as above mentioned, they may act as common brake for taking up the slack of the guys *g* in any well-known way.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The combination of the upper slide, platform, and lower slide with their attachments and connections for moving or holding on the shaft or mast, substantially as herein described.

2. The attaching and detaching of the sections of the shaft or mast, in combination with the upper and lower slides, as herein described and represented.

3. In combination with the platform and its slide, the letting out and taking up of the guys by mechanical means, substantially such as herein described and represented.

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Witnesses:

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