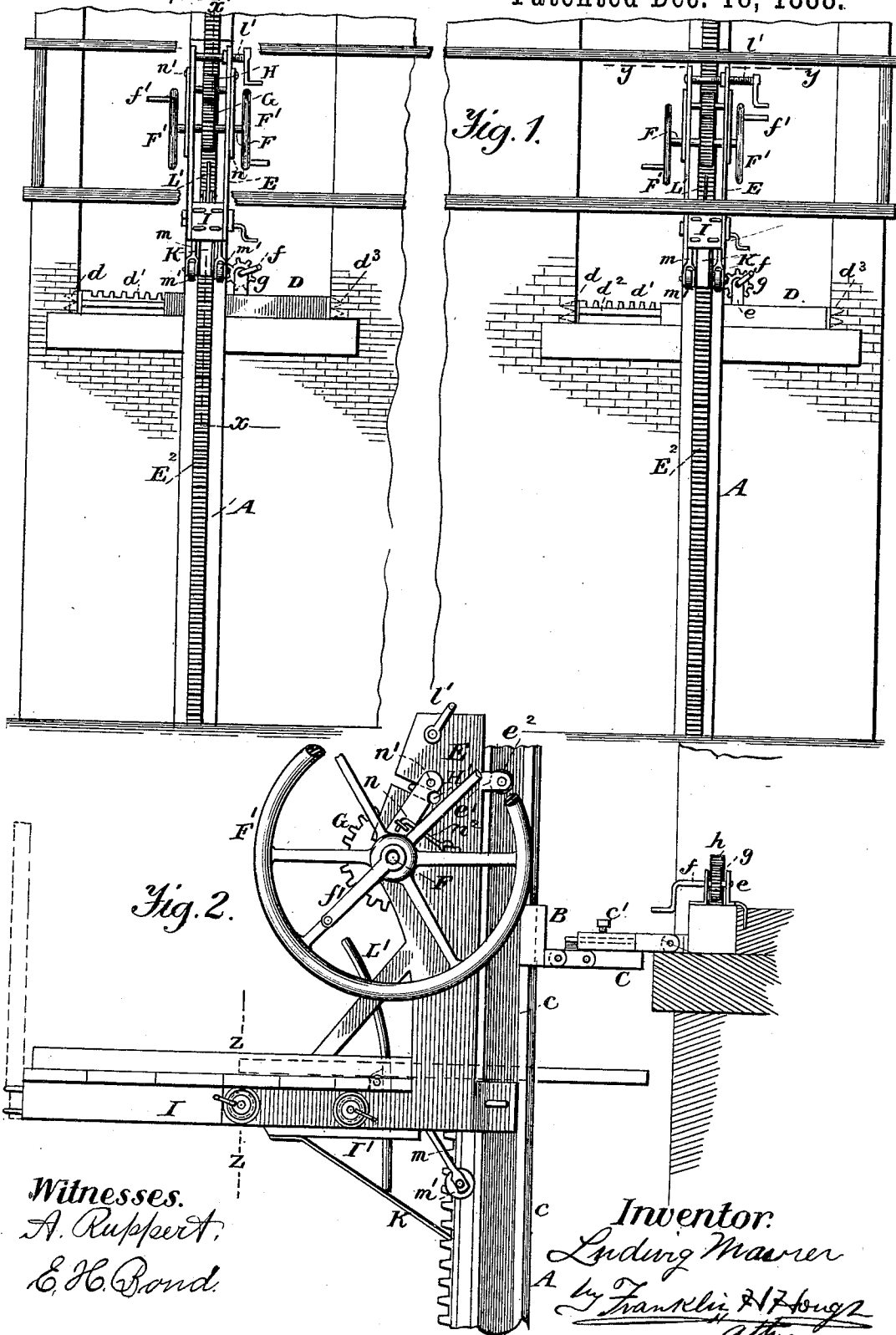


L. MAURER.

CONVERTIBLE SCAFFOLD AND FIRE ESCAPE.

No. 394,781.

Patented Dec. 18, 1888.

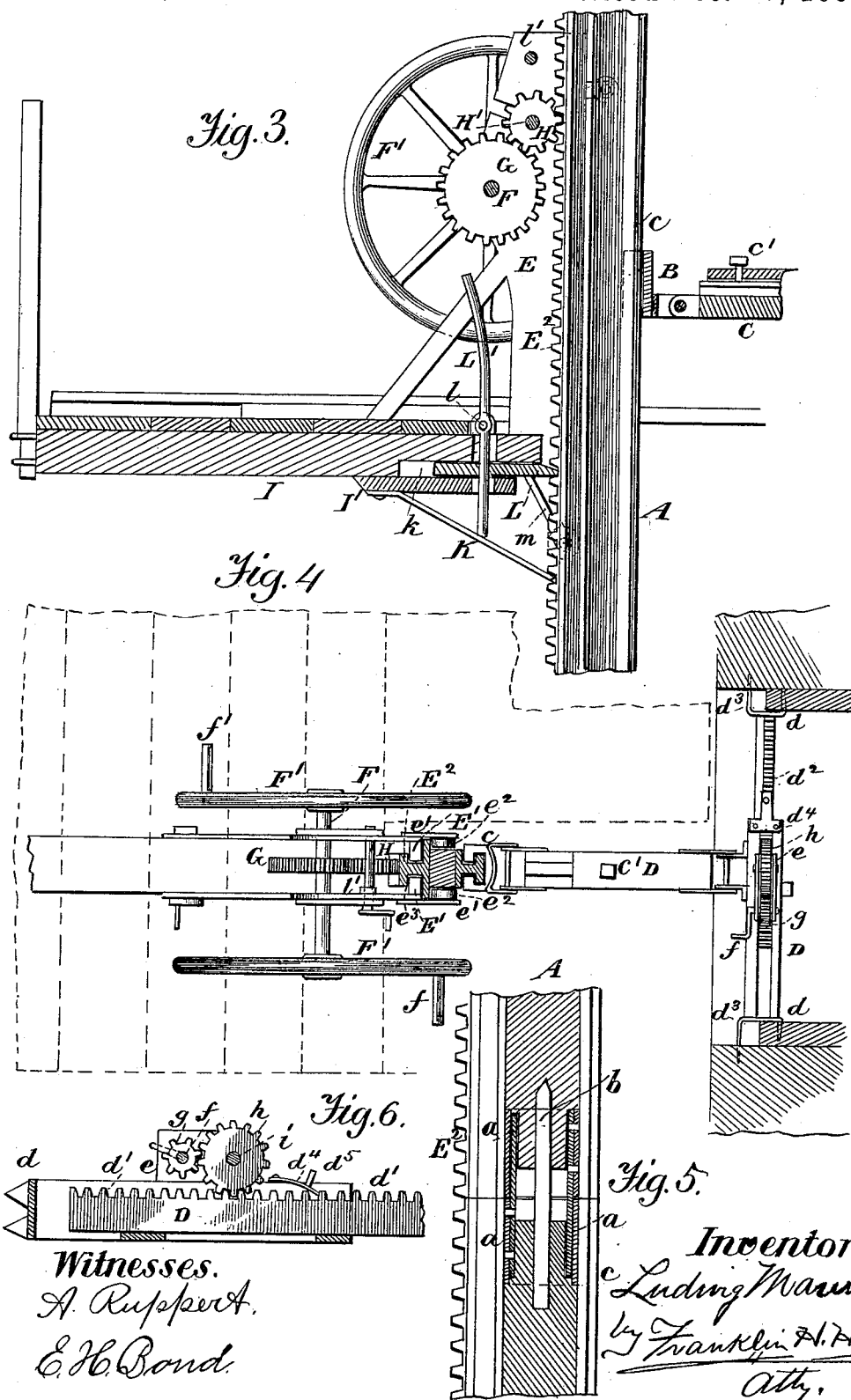


L. MAURER.

CONVERTIBLE SCAFFOLD AND FIRE ESCAPE.

No. 394,781.

Patented Dec. 18, 1888.



Witnesses.
A. Ruppert.
E. H. Bond.

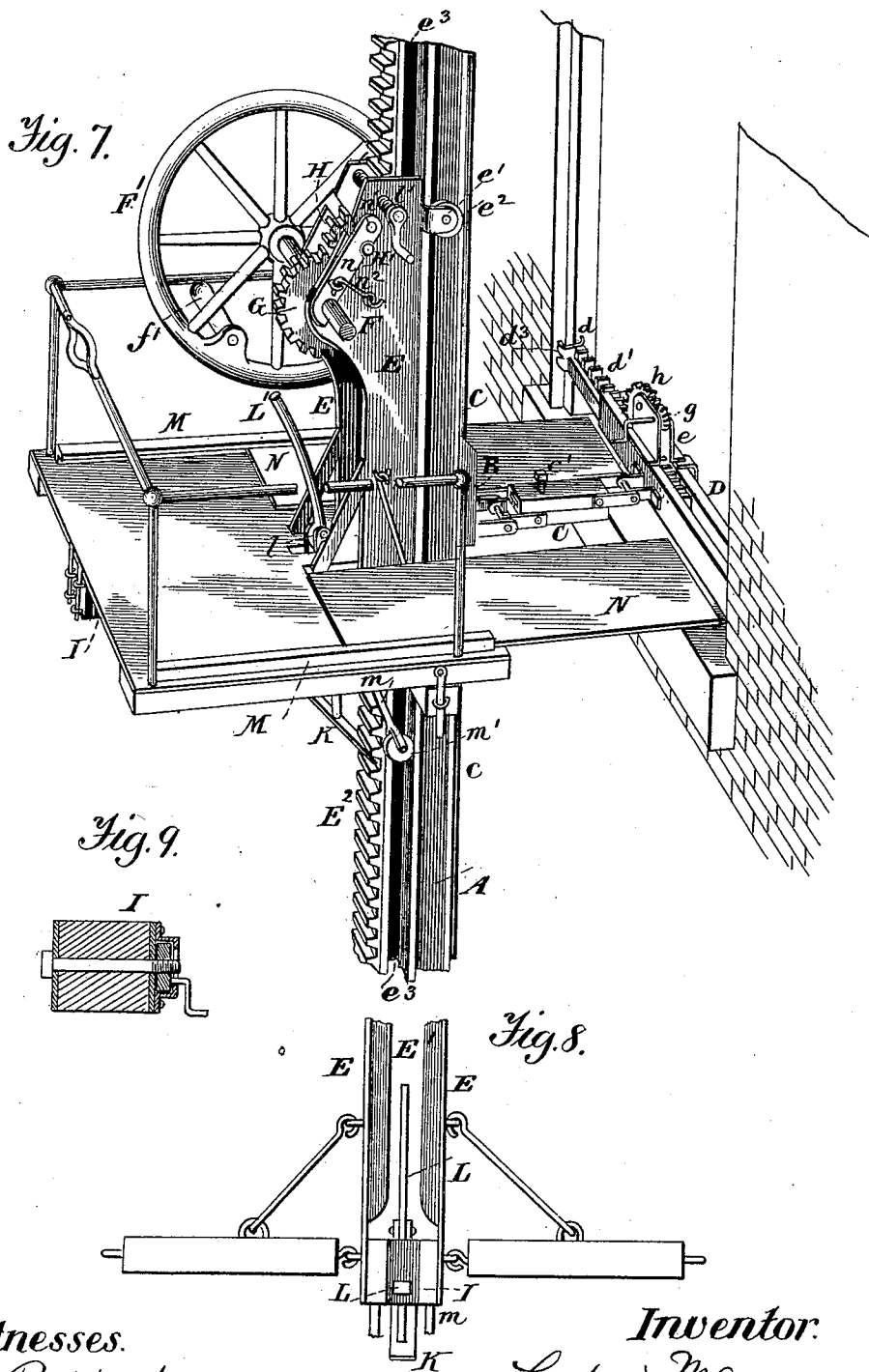
Fig. 5.
Inventor:
Ludwig Maurer
by Franklin A. Hargis
Atty.

L. MAURER.

CONVERTIBLE SCAFFOLD AND FIRE ESCAPE.

No. 394,781.

Patented Dec. 18, 1888.



Witnesses.
A. Ruppert,
E. H. Bond.

Inventor.
Ludwig Maurer
by Franklin F. Hong
att'y.

UNITED STATES PATENT OFFICE.

LUDWIG MAURER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO HENRY C. SCHEER, OF SAME PLACE.

CONVERTIBLE SCAFFOLD AND FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 394,781, dated December 18, 1888.

Application filed October 3, 1888. Serial No. 287,041. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG MAURER, a subject of the Emperor of Germany, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Convertible Scaffolds and Fire-Escapes; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in adjustable scaffolds; and it has for its object to provide a scaffold of this kind which may be quickly and easily adjusted, and which may be converted when desired into a safe and convenient fire-escape.

To these ends and to such others as the invention may pertain the same consists in the peculiar combinations and in the novel construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a front elevation of a scaffold constructed in accordance with my invention. Fig. 2 is a side elevation of the same, shown partly in section. Fig. 3 is a sectional elevation on line *x x* of Fig. 1. Fig. 4 is a horizontal section on line *y y* of Fig. 1. Fig. 5 is a vertical section showing the manner of coupling the sections of the uprights. Fig. 6 is a longitudinal section through the window-clamping mechanism. Fig. 7 is a perspective view in which the invention is shown as converted into a fire-escape. Fig. 8 is a rear view of a portion of the carriage. Fig. 9 is a transverse section on the line *z z* of Fig. 2.

Reference now being had to the details of the drawings by letter, A designates the posts or uprights of the scaffold. These uprights are each composed of a series of sections, which are coupled as clearly shown in Fig. 5

of the drawings, the adjacent ends of the sections being provided with bands or ferrules *a*, which are set into the face of the uprights so that the outer face of the ferrules will be flush with the outer faces of the uprights.

b is a central dowel-pin, the base of which is fixedly secured within the upper end of one of the sections of the upright, and this pin is adapted to fit within a suitable opening provided for the purpose within the end of the next adjacent section. As many of these sections may be employed as may be required to form a scaffold of the desired height. By this manner of coupling the outer face of the upright is left with a smooth flush surface, and the sections may be readily and easily taken apart or put together when occasion may require.

The uprights A are secured in a vertical position by the following means, shown in most of the views, and is constructed as follows: On the rear face of the uprights is a rib, *c*, preferably T-shaped, as shown best in Fig. 4, and constructed to engage the corresponding recess of a block, B, carried by one portion of the brace or lateral arm C, which is formed of two parts slidingly secured together by a dovetailed connection, or otherwise, and provided with a set-screw, *c'*, or other similar device, by means of which the two parts may be secured in their adjusted positions. The arm C is connected to one portion of the lateral arm D, which is formed of two parts lengthwise adjustably secured together and provided at the outer ends with spurs *d*, designed to engage the sides of the window-frame, as seen in Figs. 1 and 4. The two parts of the arm D are adjustably secured together as follows: One part, *d'*, is provided upon its upper face with the teeth *d''* and slides within and is guided by the other part. On the fixed part of the arm D, or on the part that receives the toothed part *d'*, is a suitable bracket or casting, *e*, in which is journaled the transverse shaft *f*, provided with a suitable handle and carrying a pinion, *g*, which meshes with a larger pinion, *h*, carried by the shaft *i*, also journaled in said casting, and which latter pinion, *h*, meshes with the pinion *g*. In practice the block B is engaged with the rib *c* of the up-

right and the arm C adjusted to bring the upright the required distance from the building. The arm D is then laid upon a window-sill and the shaft *f* turned to move the part *d'* laterally until the spurs *d* are forced into the sides of the window-frame, as illustrated in the drawings. This securely holds the upright in position, as will be readily understood. One, two, or more of these arms may be used to each upright, as the height of the structure may require.

*d*¹ is a spring pawl or ratchet on one part of the arm D, and engaging the teeth of the other part to hold the two parts in their adjusted position. It is provided with a suitable handle, *d*², by which it is disengaged from the teeth when necessary.

E E are suitable brackets formed with inwardly-extending lugs E', which engage a T-shaped head, E², on the front face of the upright. *e'* are arms carried by said bracket and provided with anti-friction rollers *e*², which engage behind a flange, *e*³, on the upright. Journaled in the bracket E is the shaft F, which extends beyond the same upon each side, and is provided with the fly-wheels F', having suitable handles, *f'*, and centrally on this shaft is secured a pinion, G, which meshes with a pinion, H, carried by the shaft H', also journaled in said bracket, and meshing with the racked front face of the upright. By this means the brackets may be raised and lowered on the upright as occasion may require.

To hold the bracket in its adjusted position I provide the following mechanism: Secured to the under face of the platform I, carried by the brackets, is a plate, I', to which is secured one end of the spring-pawl K, the opposite end of which is designed to engage the racked face of the upright. Working in a recess, *k*, in the under side of the platform is a sliding dog, L, through a hole in which and a hole in the plate I passes the lever L', pivoted at *l*, and having its lower end bearing on the spring-pawl K. By the manipulation of this lever both the pawl K and the dog L are simultaneously operated to cause them to engage or disengage the racked face of the upright.

As a further hold for the brackets, I pass a shaft, *l'*, through the upper ends thereof, which shaft is fixed at one end to one of the brackets and at the other is screw-threaded into the other bracket and provided with a suitable handle, by which it may be turned to compress the brackets against the upright, and thus act as a friction-brake. The brackets are also preferably provided at their lower ends with the arms *m*, carrying the anti-friction rollers *m'*. The shaft of the pinion H is detachably or removably held in position by means of the catch *n*, pivoted at *n'*, as shown in Fig. 2. This catch is secured in place by the hook *n*².

The platform carried by the brackets is provided upon its upper face with the rabbeted or undercut cleats M, rigidly secured

thereto, and N are boards or planks designed to slide beneath and be held thereby, and when the brackets are adjusted to the desired position the boards are slid out, as shown in Figs. 2, 3, and 4, to form supports for longitudinal boards for a scaffold or staging, or to connect the platform with the windows of the building when used as a fire-escape.

It will be readily understood from the foregoing description that when the device is to be used as a fire-escape a single one of the sectional uprights, with its accompanying platform and operating mechanism, may be employed. When used as a scaffold for building purposes, a series of these uprights are employed, and in this case the small single or fire-escape platforms are dispensed with, and the planks used as a floor for the scaffold are extended from one upright to another, resting upon the bracket-arms or timbers which serve to support the fire-escape platform. In order to guard against the possible loss of the nuts that are used upon the bolts that are employed in securing the several parts together, I ordinarily provide the nut with a handle or extension to be used in turning the same, and provide a case or cover to retain the nut when detached, as I have shown in Fig. 9 of the drawings. It will be at once understood upon referring to this figure of the drawings that the bolt passing through the parts is of less diameter than the hole through which it passes, and that, the nut being allowed to turn, but retained within the guards, upon turning the nut the bolt will be forced out at the opposite end of the hole and the nut will be retained.

What I believe to be new, and desire to secure by Letters Patent, is—

1. In a scaffold, the combination, with the upright formed upon its rear face with a rib, *c*, of the block engaging said rib, the adjustable arm carried by said block, and an arm carried by said arm and adjustable at right angles thereto, substantially as described.

2. In a scaffold, the combination, with the upright and the lateral arm, of the arm D, connected to said lateral arm and formed of two parts slidingly connected together, and means, as the shaft *f*, pinions *g* and *h*, and toothed bar *d'*, for lengthening said arm, as and for the purpose specified.

3. The combination, with the upright and the lateral arm, of the arm D, connected to said arm and formed of two parts, one sliding within the other, and formed with teeth, a pinion on the fixed part of said arm engaging with the toothed part, and a rotatable pinion engaging said racked or toothed part, substantially as described.

4. The combination, with the upright having racked face, of the brackets, the pinion carried thereby, the smaller pinion, also carried by said brackets and meshing with the larger pinion and with the teeth of the upright, and the fly-wheel on the shaft of the larger pinion, substantially as described.

5 5. The combination, with the upright having racked face and the brackets movable vertically on said upright, of the dog L, the spring-pawl K, both adapted to engage the teeth of the upright, and a lever arranged to operate said pawl and dog simultaneously, substantially as described.

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

LUDWIG MAURER.

Witnesses:

FRANKLIN H. HOUGH,
A. RUPPERT.