3 Sheets--Sheet 1.

G. H. KANMACHER.

Machine for Elevating Building Materials.

No. 168,749. Patented Oct. 11, 1875.

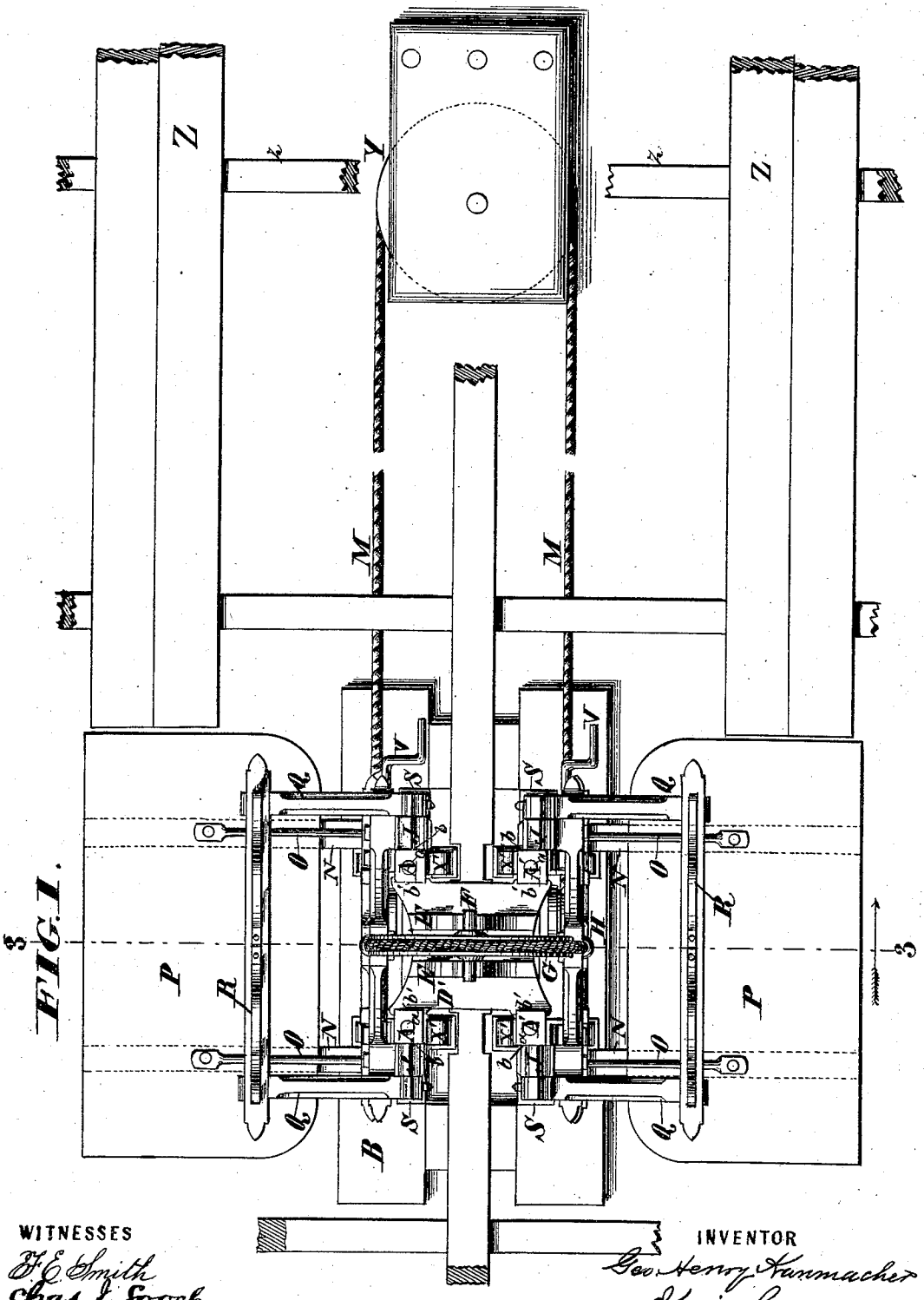

FIG. 1.

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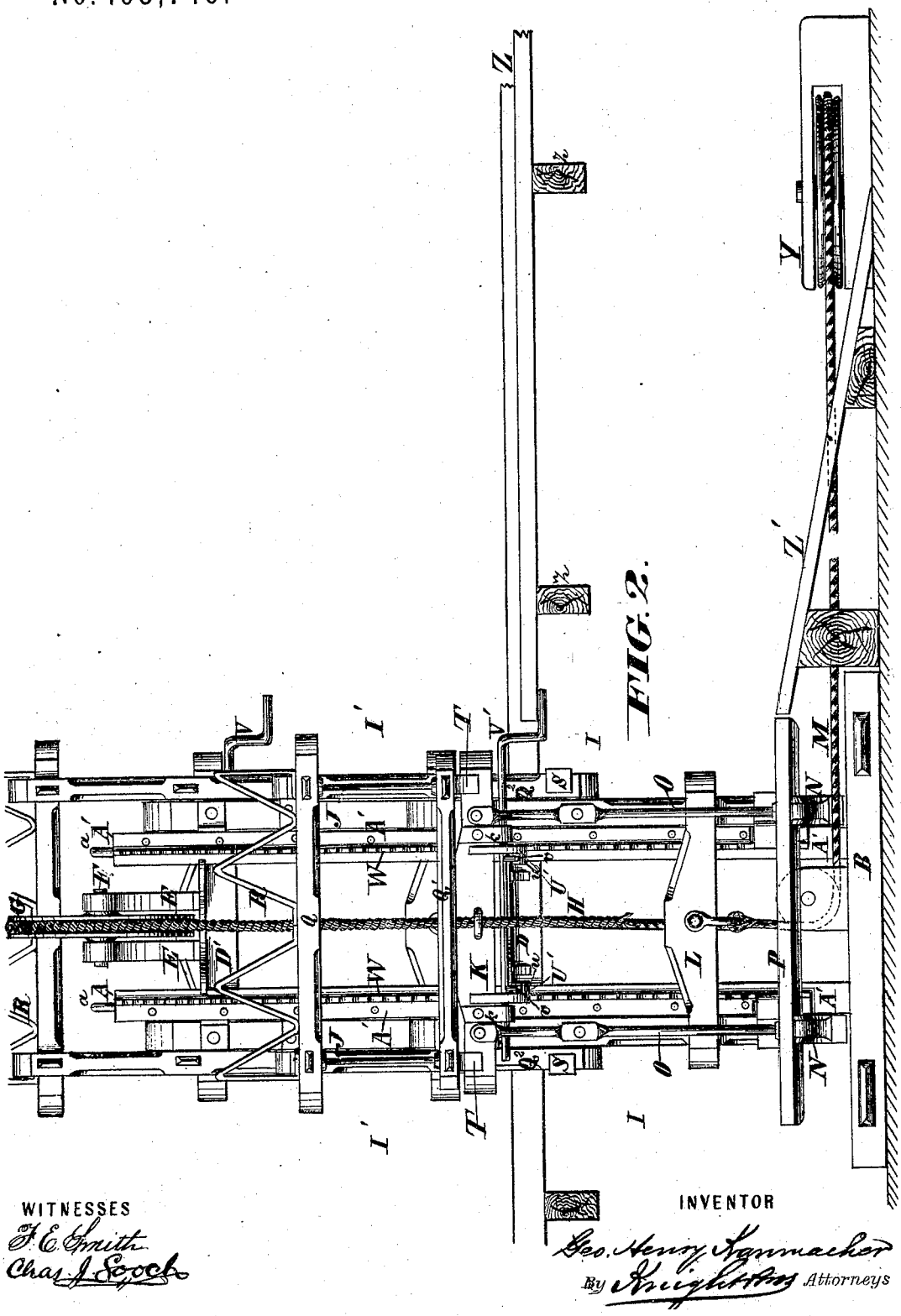

FIG. 2.

WITNESSES

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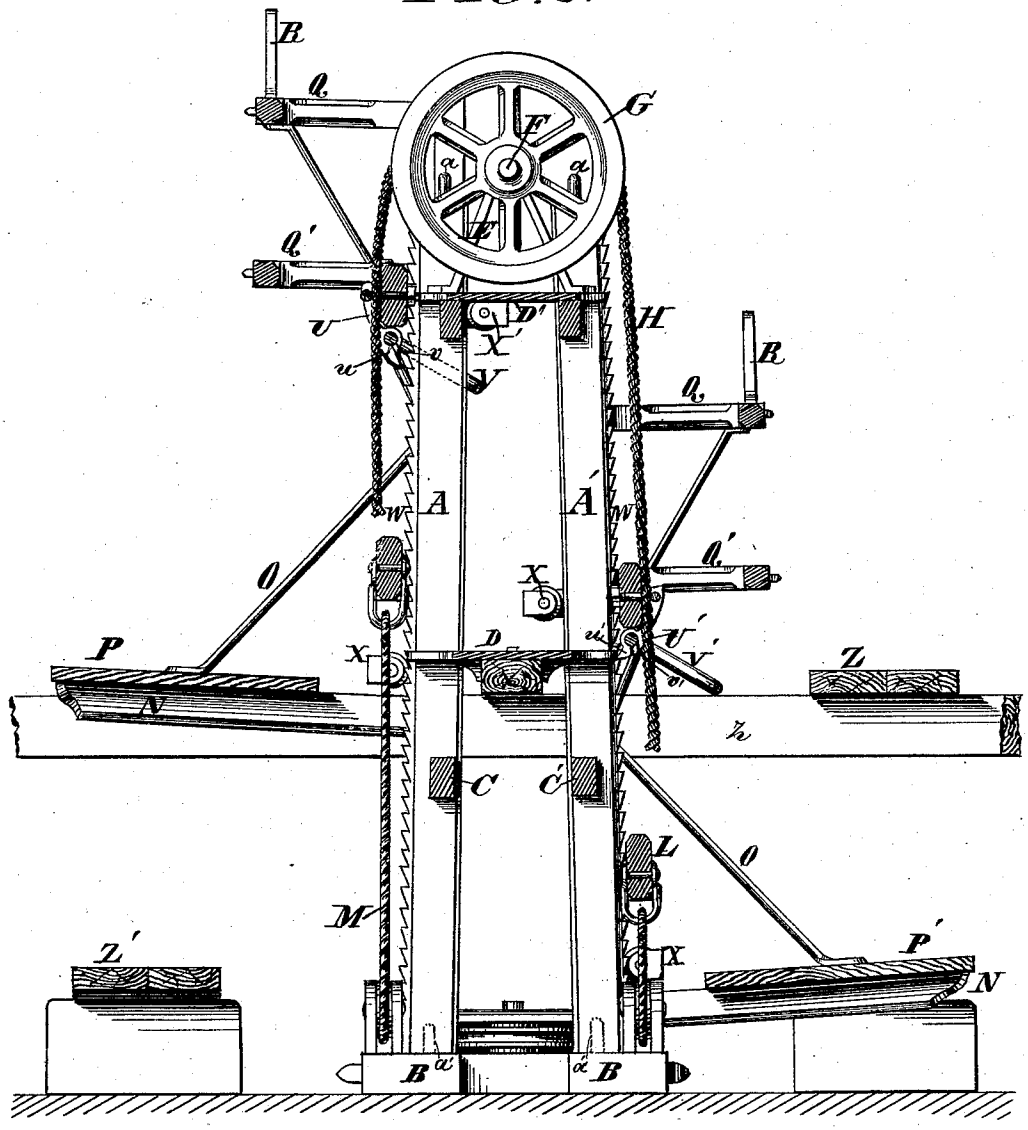
FIG. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE H. KANMACHER, OF COLUMBUS, OHIO.

IMPROVEMENT IN MACHINES FOR ELEVATING BUILDING MATERIALS.

Specification forming part of Letters Patent No. **168,749**, dated October 11, 1875; application filed June 24, 1875.

To all whom it may concern:

Be it known that I, GEORGE H. KANMACHER, of Columbus, in the county of Franklin and State of Ohio, have invented a new and Improved Machine for Elevating or Lowering Building Materials, of which the following is a specification:

Heretofore elevators for raising or lowering building materials have been constructed in such a frail manner as to need support from the walls of the structure at work upon, and therefore are objectionable. In the case of their use with a building in course of erection, the principal weight being supported from the upper joists, they cause the walls of the structure to spring, and in the case of a building in course of demolition such elevators endanger life, being supported near that portion of the structure in course of removal.

My improvement consists, first, in combining, with a base-frame forming the sole support of the elevator, sectional and detachable standards, provided with cross-beams, which support detachable platforms, the upper platform receiving the upper mechanism, to which the elevator-platforms are attached.

My improvement consists, secondly, in a platform-frame provided with vertical bars, which slide on the outside of the standards, connected by cross-beams, and carrying rollers adapted to run on the front and the rear of the standards, in combination with a platform arranged to operate on the outside of the elevator-frame.

My improvement consists, thirdly, in combining, with a platform-frame, an improved supplemental frame, removable therefrom, provided with racks and means for rigid attachment, for the reception of hods or tools.

My improvement consists, fourthly, in pawls provided with lugs, and hung loosely on a crank-shaft mounted in bearings in a cross-bar of the platform, and having pins for raising the pawls, in combination with the standards provided with suitable racks. This forms a safety device or appliance adapted to retain the elevator in any position where it may be stopped when the power is removed, and to support the platform securely in the event of breaking of the rope.

The apparatus is preferably constructed in double form, so that one set of platforms and hod-receivers descends while the other is ascending.

In the accompanying drawing, Figure 1 is a top view of an apparatus illustrating my invention. Fig. 2 is an elevation thereof. Fig. 3 is a vertical section on the line 3 3, Fig. 1.

The elevator-frame is provided with four standards, A A A′ A′, of any suitable height, arranged in quadrangular or rectangular form, divided into detachable and removable sections, and supported solely from a base, B. Two standards, A A, on one side are connected by cross-beams C, and two standards, A′ A′, on the opposite side are connected in like manner, C′, leaving a clear space between the inner sides of the standards. Each section of the standard is furnished with a tenon, *a*, and a mortise, *a′*, at each end, respectively, or other suitable means for rigidly connecting or coupling the sections of the standards when lengthening the elevator-frame; but the frame is detachable, so that, when desired, the frame can be shortened or removed from place to place. At suitable heights are placed platforms D D′, which have their corners recessed to fit the brace sides *b′ b′* of the standards, but project a little on the inner sides of the same without interfering with the guiding-wheels X′ X′ of the platform. These platforms are supported by the braces C C′ of the standards, and act as additional stays or braces to the elevator-frame. On the uppermost one D′ of these platforms are mounted pillow-blocks E, which afford bearings for the shaft F of a wheel or drum, G, over which is passed a suspension cord or chain, H. Each end of the suspension cord or chain is attached adjustably to the elevator-platforms I.

The elevator-platform is constructed as follows: J J represent bars, adapted to slide vertically on the sides *b* of the standards. These bars J J are connected by rigid cross-beams K L, to the former of which the suspension cord or chain H is attached. To the lower cross-beam L the extremity of an elevating-rope, M, is attached. The platform-frame is adapted to run easily on the standards A A A′ A′ by means of rollers X X X′ X′ (having suitable bearings in the bars J J,) for sustaining the lateral pressure produced by the

weight of the materials to be elevated. From the lower parts of the sliding frame project horizontal arms or brackets N, strengthened by braces O, and receiving the platforms P, on which wheelbarrows or piles of materials are placed to be elevated. To the upper parts of the platform-frame is applied a supplemental frame, I′, forming a hod-receiver, and which consists of uprights Q^2 Q^2 and supporting-brackets Q Q^1, surmounted by angular seats R of suitable shape to receive hods or tools. This supplemental frame is secured by its uprights being inserted within clips or sockets S on the sides of the platform-bars J J and yokes T, projecting downward from beneath the lower horizontal bracket Q^1 of the supplemental frame, and fitting over the cross-beam K of the elevator-frame.

U′ U′ represent pawls hung loosely on crank-shafts V V′, having bearings in hangers *k k*, depending from the cross-beams K. The pawls are adapted to engage with vertical ratchet-racks W, attached to the standards A A A′ A′. Pins *v v*, projecting from the crank-shafts V V′, engage with the pawls U′ U′. When the said crank-shafts are turned in one direction the pawls will be retracted from contact with the racks, and when turned in the other direction will be made to engage therewith. For this purpose the pawls are constructed with lugs or shoulders *u u*, adapted to receive the pressure of the pins *v v* in either direction.

In raising the platform, the platform being in its lowest position, the crank-arm is turned so that the pins on its shaft may be disengaged from the lugs on the pawls, and allow the latter to engage automatically with the racks on the standards. In lowering the platform, upon its arrival at its highest point, the crank-shaft is turned so as to disengage the pawls and keep them clear of the racks during its descent.

The elevating-rope M is carried around a drum, Y, connected with a horse-power or other suitable motor, by which it may be turned in either direction, to run either elevator up while the other is allowed to descend. Both the suspension-rope H and the elevating-rope M are adjustably connected with the elevator-frames, so as to provide for extending the height of the apparatus, or the height to which the elevators may be run, as circumstances may require. Z Z may represent a temporary platform or planks resting upon joists *z*. Z′ are customary stages or planks, by which wheelbarrows may be run onto the elevator-platforms when at their lowest position.

The following is claimed as new:

1. The combination of base B, forming the sole support of the elevator, sectional and detachable standards A A C A′ A′ C′, and detachable platforms D D′, supported by the braces C C′ of the standards A A A′ A′, the upper platform D′ carrying the upper mechanism, to which the elevator-platforms are attached, substantially as and for the purpose set forth.

2. The platform I, consisting of vertical bars J J, sliding on the sides *b* of the standards A A A′ A′, and connected by cross-beams K L, the rollers X X′, attached to said bars J J, and adapted to run respectively in front and rear of the standards, in combination with braces O, platform P, and brackets N on the outside of the elevating-frame, as set forth.

3. The supplemental and detachable hod-frame, consisting of uprights Q^2 Q^2, supporting-brackets Q Q^1, and angular seats R, the lower bracket Q^1 having yokes T for attachment to the cross-beam K, in combination with the vertical bars J J, having sockets or clips S, substantially as set forth.

4. The pawls U′ U′, having lugs *u u*, the crank-shaft V, provided with pins *v v* for operating the pawls, and having bearings in hangers *k k* of the cross-beam K, in combination with standards A A, having racks W W, as set forth.

GEO. HENRY KANMACHER.

Witnesses:

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GEORGE D. JONES.