

R. H. AIKEN.

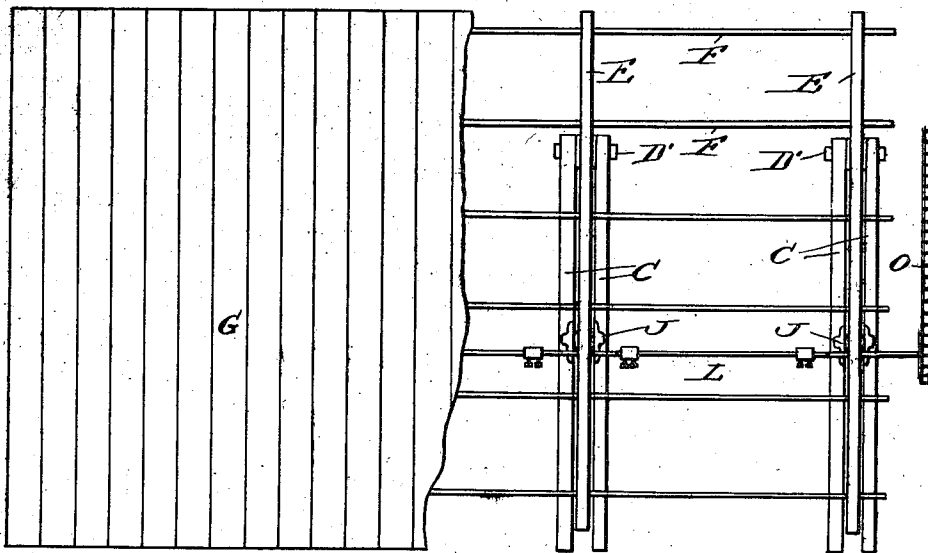
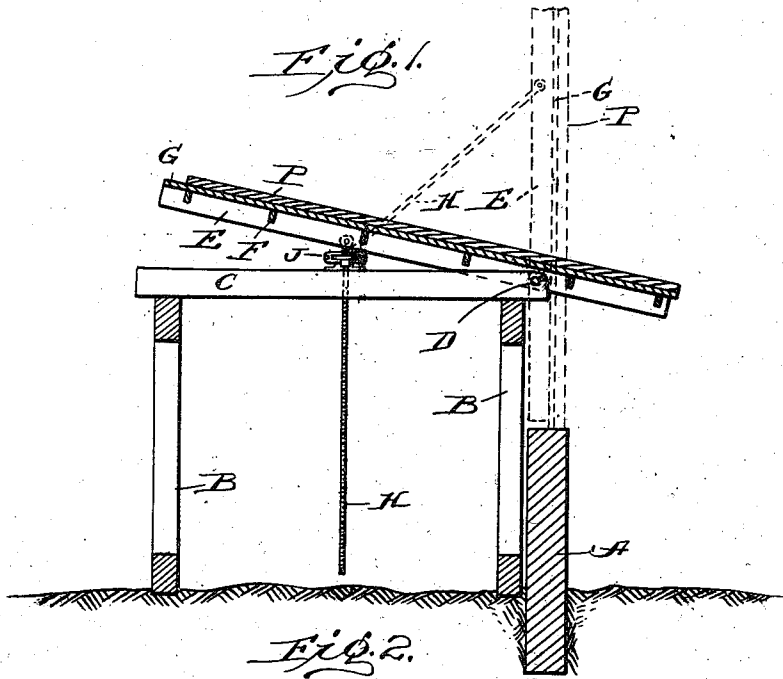
METHOD AND APPARATUS FOR CONSTRUCTING CONCRETE BUILDINGS.

APPLICATION FILED NOV. 4, 1907.

1,023,349.

Patented Apr. 16, 1912.

3 SHEETS-SHEET 1.



WITNESSES

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R. Craig Greene

INVENTOR

Robert H. Aiken
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Attorney

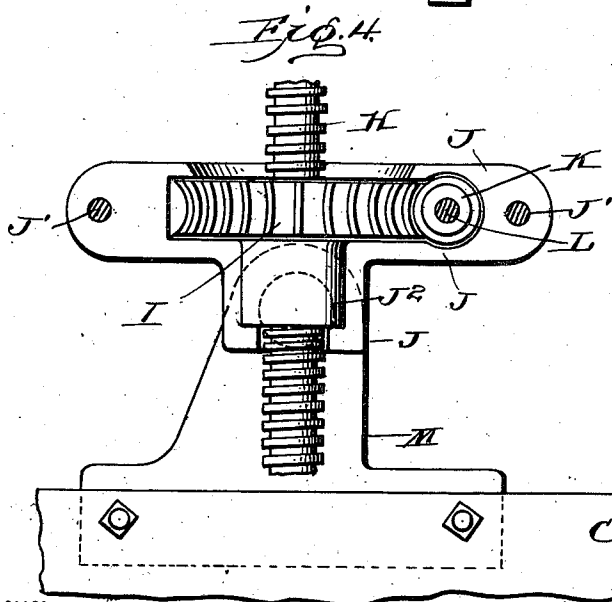
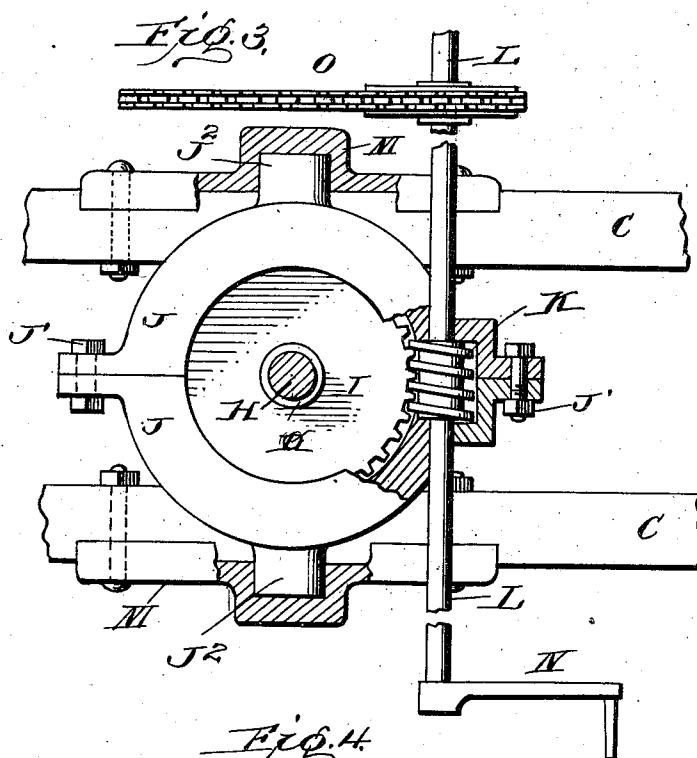
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Inventor

Witnesses

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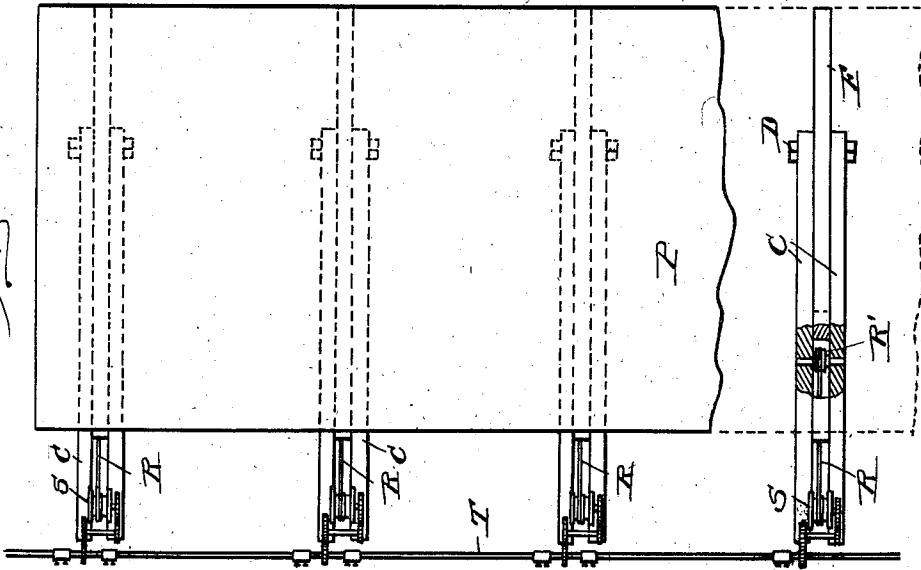
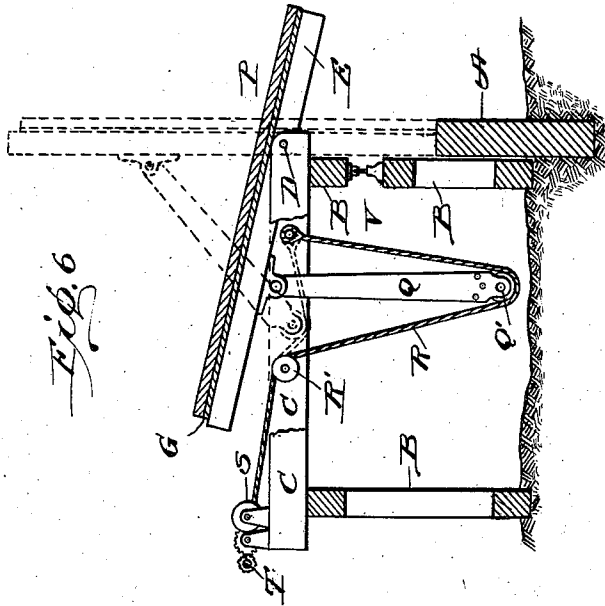
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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METHOD AND APPARATUS FOR CONSTRUCTING CONCRETE BUILDINGS.

1,023,349.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed November 4, 1907. Serial No. 400,896.

To all whom it may concern:

Be it known that I, ROBERT H. AIKEN, a citizen of the United States, residing at Winthrop Harbor, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Methods and Apparatus for Constructing Concrete Buildings, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates especially to forming and externally finishing, while in approximately horizontal position alongside the foundation which is to support it, an entire face wall of a reinforced concrete building and then swinging the wall upward to rest in vertical position upon the foundation. It involves providing alongside the foundation a suitable platform hinged to swing about a horizontal axial line, and means for swinging the platform about said axes to bring it to vertical position over the wall. Preferably the axis is at some distance from the plane of the foundation and also at approximately the same distance above the top of the same, so that the portion which overhangs the axis upon the side next the foundation may balance a corresponding portion upon the opposite side, thereby lessening the power needed to swing the whole. It also involves various other features, as will hereinafter appear.

In the accompanying drawings, Figure 1 is a sectional elevation of the preferred form of my apparatus. Fig. 2 is a plan view of the same. Fig. 3 is a detail plan view of certain screw elevating devices and their support, parts being broken away. Fig. 4 is a vertical elevation, partly in section, showing the devices of Fig. 3. Figs. 5 and 6 are views corresponding to Figs. 1 and 2, respectively, and showing a modified construction.

In these figures, A represents a foundation wall and B a frame, alongside the same, supporting horizontal beams C arranged in pairs in a plane at some distance above the wall A, the beams of each pair being a short distance apart. Between the beams of each pair and pivoted to them at D near the plane of the foundation is a slightly inclined beam E projecting so far over the wall that when swung upon the pivot D to vertical

position its lower end nearly or quite touches the top of the wall. Between these beams and removably secured thereto, are joists F flush with the beams E, and upon these are laid planks G forming a platform. Any suitable means, for example cleats, may be used to prevent sliding of the planks upon the supporting beams and joists. Each beam E is normally held inclined in the plane of the beams C by means of a long screw H pivoted to the beam at some distance from the beam pivot D and is caused to rise and fall by means of a nut I held in a strong case J pivotally supported by the beams C so that the screw which passes between the latter beams may swing in a vertical plane and may be forced upward, by rotation of the nut, to swing the platform to vertical position. The construction is clearly shown in Figs. 3 and 4. The upper part of each nut is a worm wheel which is rotated by a worm K upon a shaft L. The nut, worm and shaft are mounted in the heavy casing J which is made up of two halves secured together by bolts J' and is provided upon opposite sides with axial horizontal gudgeons J² mounted in metal plates M bolted to the beams of the corresponding pair in such manner that the case, nut, worm, and worm shaft may all swing upon the gudgeons as an axis. The same shaft L may, if desired, drive all the worms and thereby advance all the screws equally and synchronously, and it may itself be rotated by a crank N, or by a belt O, or other device adapted to operate although the shaft swings through a small arc. Upon the platform thus formed and arranged, a reinforced concrete wall P is formed and finished while the platform is approximately horizontal and is then swung upward with it reaches vertical position and rests upon a layer of fresh cement upon the top of the wall. In this raising, the part overhanging the wall counterbalances a like portion upon the opposite side of the axial line of the pivots and thus the screws raise only the weight of the remainder.

In practice, the beams C are secured against tilting, and the wall is permanently secured to certain planks of the platform, these planks, which may be narrow, being at such distance apart as to form furring

strips when the wall has been raised and the other planks have been removed from its inner face.

By the method and apparatus described I am able to easily and quickly raise a complete face wall of a building of any length and of moderate height, the wall being first completely finished with all desired openings, recesses and projections.

Figs. 5 and 6 show a modified construction, each screw pivoted to the beams E being replaced by a pivoted strut Q having at its free end a pulley Q' lying in the bight of a wire cable R having one end secured to the beams C and the other end portion guided by a pulley R' and wound upon a drum S of a windlass actuated by a shaft T. In this case I have shown a jack screw V in position for vertically adjusting the beams C and parts supported thereby. Obviously this adjustment may be employed in the form first described. In either form because the wall is secured to various planks that are themselves prevented from sliding on their supporting timbers as well as because the concrete strongly adheres to all the planks, there is no danger that the wall will slide from the platform.

Since it is plain that many changes can be made in my apparatus without passing the proper limits of my invention, I do not wish to limit my claims to the specific constructions illustrated.

What I claim is:

1. The method of erecting a one-piece concrete building wall upon its foundation which consists in providing, alongside said foundation, an approximately horizontal platform pivoted to swing to vertical position upon an axis parallel to said foundation, forming upon said platform a concrete wall with an exposed margin parallel to the foundation and at approximately the same distance from the pivotal axis, and swinging the entire wall upon said axis to erect position upon the foundation.

2. The method of erecting the walls of concrete buildings which consists in forming one wall in approximately horizontal position at some distance above the support upon which it is to rest and extending on both sides of the vertical plane of such support, swinging said wall to vertical position about a horizontal axis above and near the plane of said support, and in like manner adding the remaining walls in succession.

3. The method of erecting a one-piece

concrete wall of a building upon its foundation which consists in providing a platform support alongside and extending above said foundation, mounting upon said support an approximately horizontal platform projecting over the foundation and pivoted to swing to vertical position upon an axis parallel to the latter, forming upon the platform a concrete wall having one margin parallel to the foundation and at approximately the same distance from the pivotal axis, and swinging the platform about said axis to bring said margin into position to rest upon the foundation.

4. The combination with a suitable support, of a normally approximately horizontal platform pivoted between its opposite sides upon said support to swing vertically and adapted to carry the concrete wall of an ordinary dwelling or the like, means for swinging the platform about said axis to vertical position, and means for lowering the platform and wall after they have been swung upward.

5. The method of constructing and erecting walls which consists in forming the wall in a substantially horizontal position at an elevation directly over the permanent foundation to receive the same, then tilting the formed wall into vertical position over its seat on the foundation, and finally lowering the wall vertically onto its seat.

6. The method of constructing and erecting walls which consists in forming the wall in a substantially horizontal position upon a support pivotally mounted upon an axis located above and in vertical line with a permanent foundation to receive the finished wall, then tilting the finished wall about the pivotal axis of its support to bring the same into vertical position to be received on said foundation, and then lowering the wall vertically onto its seat in the foundation.

7. The method of constructing and erecting walls which consists in forming a wall in approximately horizontal position, moving the wall into erect position above the foundation upon which it is to rest permanently, and lowering the erected wall to said foundation.

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

ROBERT H. AIKEN.

Witnesses:

E. L. HARRISON,
J. L. KELLOGG.