

May 1, 1928.

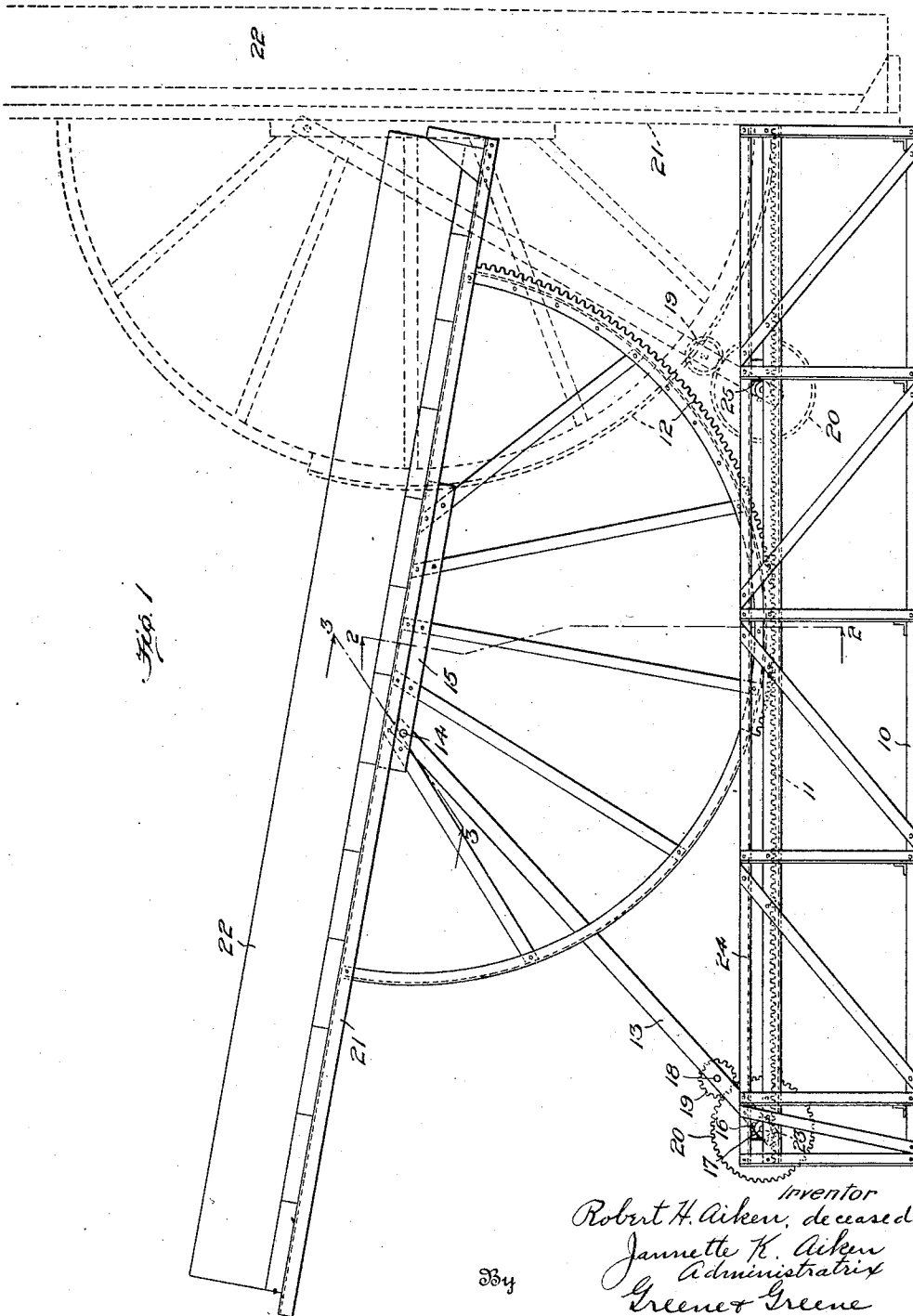
1,668,300

R. H. AIKEN

APPARATUS FOR CONSTRUCTING CONCRETE BUILDINGS

Filed April 9, 1926

3 Sheets-Sheet 1



Inventor
Robert H. Aiken, deceased
Jannette K. Aiken
Administratrix
Greene & Greene
Attorneys

May 1, 1928.

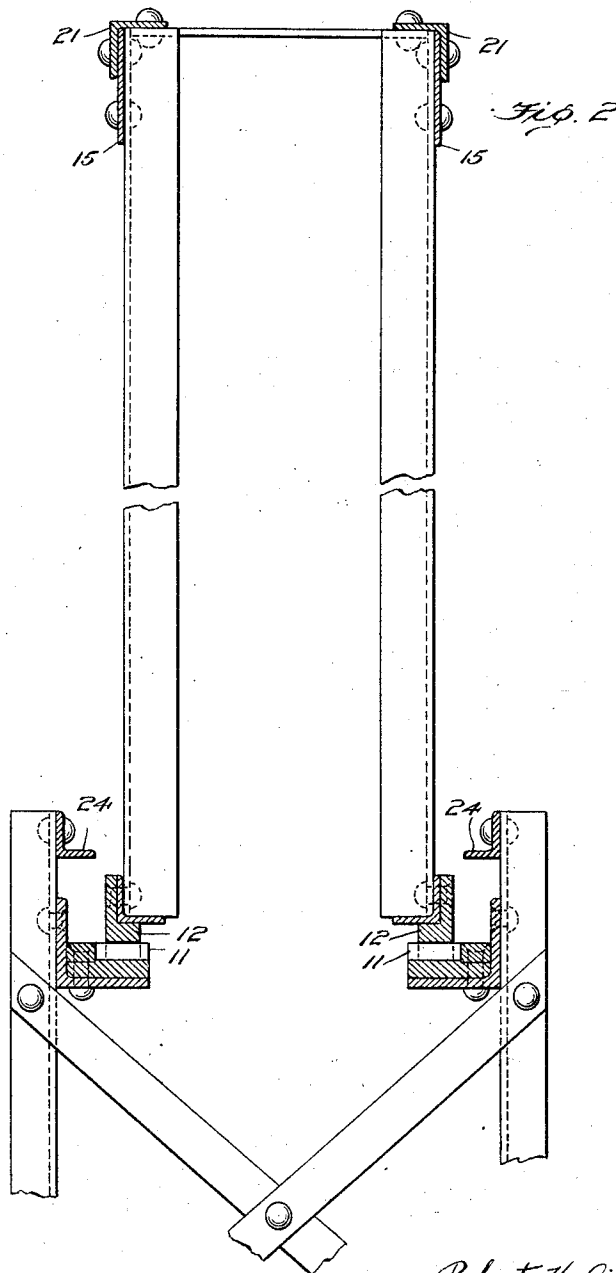
1,668,300

R. H. AIKEN

APPARATUS FOR CONSTRUCTING CONCRETE BUILDINGS

Filed April 9, 1926

3 Sheets-Sheet 2



By

Inventor
Robert H. Aiken, deceased
Jannette H. Aiken,
Administratrix
Greene & Greene
Attorneys

May 1, 1928.

1,668,300

R. H. AIKEN

APPARATUS FOR CONSTRUCTING CONCRETE BUILDINGS

Filed April 9, 1926

3 Sheets-Sheet 3

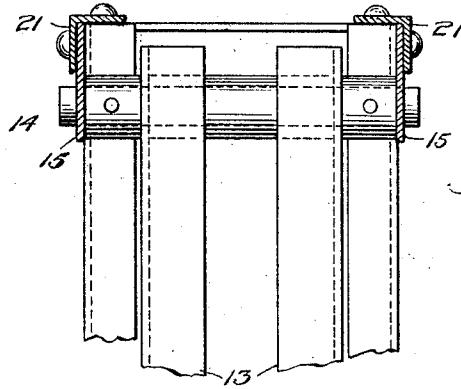


Fig. 3

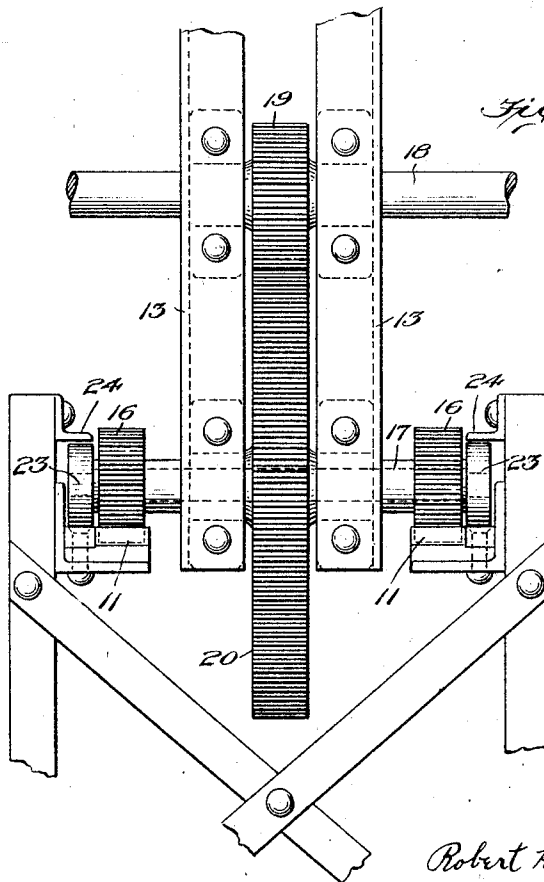


Fig. 4

By

Inventor
Robert H. Aiken, deceased
Jannette K. Aiken
Administratrix
Greene & Greene
Attorneys

UNITED STATES PATENT OFFICE.

ROBERT H. AIKEN, DECEASED, LATE OF WINTHROP HARBOR, ILLINOIS, BY
JANNETTE K. AIKEN, ADMINISTRATRIX, OF WINTHROP HARBOR, ILLINOIS.

APPARATUS FOR CONSTRUCTING CONCRETE BUILDINGS.

Application filed April 9, 1926. Serial No. 100,912.

There are many advantages gained in erecting concrete building walls by forming each in an approximately horizontal position and when it is set swinging it into a vertical plane. Such a wall is heavy, and it has been usual to have it overhang the plane in which it is to stand, the overhanging portion counterbalancing an equal portion on the opposite side of a support, so that the weight to be lifted is greatly lessened. In many cases, however, for example, alongside an existing wall or between two buildings, there can be no such overhanging. An object of this invention is to provide for obtaining the desired cantilever-like arrangement by simple devices usable in all cases, and even with a material saving of expense, time, safety, and convenience. This general object is attained by swinging the wall about an axis parallel to the plane in which the wall is to stand and also moving that axis toward said plane. A convenient way of doing this is to provide a rigid support alongside the plane with that of the upright wall, resting on this support the periphery of a circular segment, securing to the upper side of the segment a wall-carrying platform, and at the proper time rolling the segment along said support toward said plane. The rotation or rocking of the segment will not exceed 90° , obviously.

In the accompanying drawings,

Fig. 1 is a side elevation of the apparatus in the primary position of its parts and the wall.

Fig. 2 is a section on the line "2—2" of Figure 1.

Fig. 3 is a section on the line "3—3" of Fig. 1.

Fig. 4 is a view of certain gears, taken from the left hand of Fig. 1.

In these views 10 represents a rigid plane base structure, usually of structural steel, preferably anchored to the earth, alongside and at a short distance from the plane in which the wall is to stand. 11 a rack fixed to the upper side of said base, 12 a peripherally geared circular steel segment engaging said rack, 13 a strut, downwardly inclined from said plane, having its upper end pivoted at 14 to a bar 15 extending nearly horizontally along the upper region of said segment, and provided at its lower

end with a pinion 16, upon a shaft 17, engaging a rack 11 upon the base 10. 18 represents a power shaft carrying a pinion 19, meshing with a gear 20 which in turn drives the pinion 16, and 21 a platform secured to the segment 12, the parts being in the positions shown in full lines in Fig. 1, and a concrete wall 22 being upon the platform 21, rotation of the power shaft 18 and its pinion 19, compels rotation of the gear 20 and pinion 16, the latter being thus forced to move along its rack toward the right hand. This movement carries the strut nearer to perpendicular position and thus raises the pivot 14 rocking or rolling the segment toward the right, moving its center correspondingly and increasing the inclination of the platform and wall thereon. The strut's length does not change, however, and the parts are so proportioned that as rotation of the power shaft continues, the wall passes slowly to vertical position, being at the same time moved bodily along the base, while the strut, when that position is reached is still slightly inclined. To guard against swinging the wall beyond the vertical position, the shaft of the pinion 16 extends beyond that pinion and is provided with a roller 23 which slides along under a rigid member 24 of the base until it meets a stop 25, or, in effect, moves in a way which precludes all lifting of the pinion and arrests its onward movement when the wall reaches a vertical plane.

It is plain that the point of support, or of contact, between the segment and its rack, moves gradually toward the plane in which the wall is to lie, as does the center of the segment. Although neither the apparatus nor the wall at any time overhangs the plane in which the wall is to lie, the overhang with respect to the point of support is equal to the radius of the segment plus the projection of the platform beyond the segment, and the entire overhang at all times balances an equal width on the opposite side of the point of support, and as the segment may practically be large, a wall of several stories may be nearly balanced, and the erecting loss will be correspondingly small. All this is true although the distance of the edge of the wall from the plane in which it is to stand is less than the difference between the

radius and quadrant of the segment's circumference.

The apparatus has been described as having only one segment but, practically, there may be as many as are desired, according to the length of the wall, one being perhaps sufficient for erecting a column. Similarly, other parts may be, and usually will be, duplicated.

Obviously, structures other than concrete walls may be erected in substantially the same way.

What is claimed is:

1. For swinging a rigid building wall from nearly horizontal to vertical position, the combination with a rigid base alongside the plane in which the wall is to stand, and having on its upper side a rack, a peripherally geared circular segment engaging said rack, a wall-carrying platform secured to the upper side of said segment, a strut downwardly inclined away from said plane, pivoted at its upper end to the said platform, and having at its lower end a pinion engaging a rack perpendicular to said plane, means for forcibly rotating said pinion

whereby the inclination of the strut is lessened and said segment is compelled to roll toward said plane.

2. For swinging a rigid building wall from nearly horizontal to vertical position, the combination with a rigid base alongside the plane in which the wall is to stand, and having on its upper side a rack, a peripherally geared circular segment engaging said rack, a wall-carrying platform secured to the upper side of said segment, a strut downwardly inclined away from said plane, pivoted at its upper end to the said platform, and having at its lower end a pinion engaging a rack perpendicular to said plane, means for forcibly rotating said pinion whereby the inclination of the strut is lessened and said segment is compelled to roll toward said plane, and means for preventing said pinion from rising as it advances.

In testimony whereof I hereunto affix my signature.

JANNETTE K. AIKEN,
Administratrix of Robert H. Aiken, Deceased.