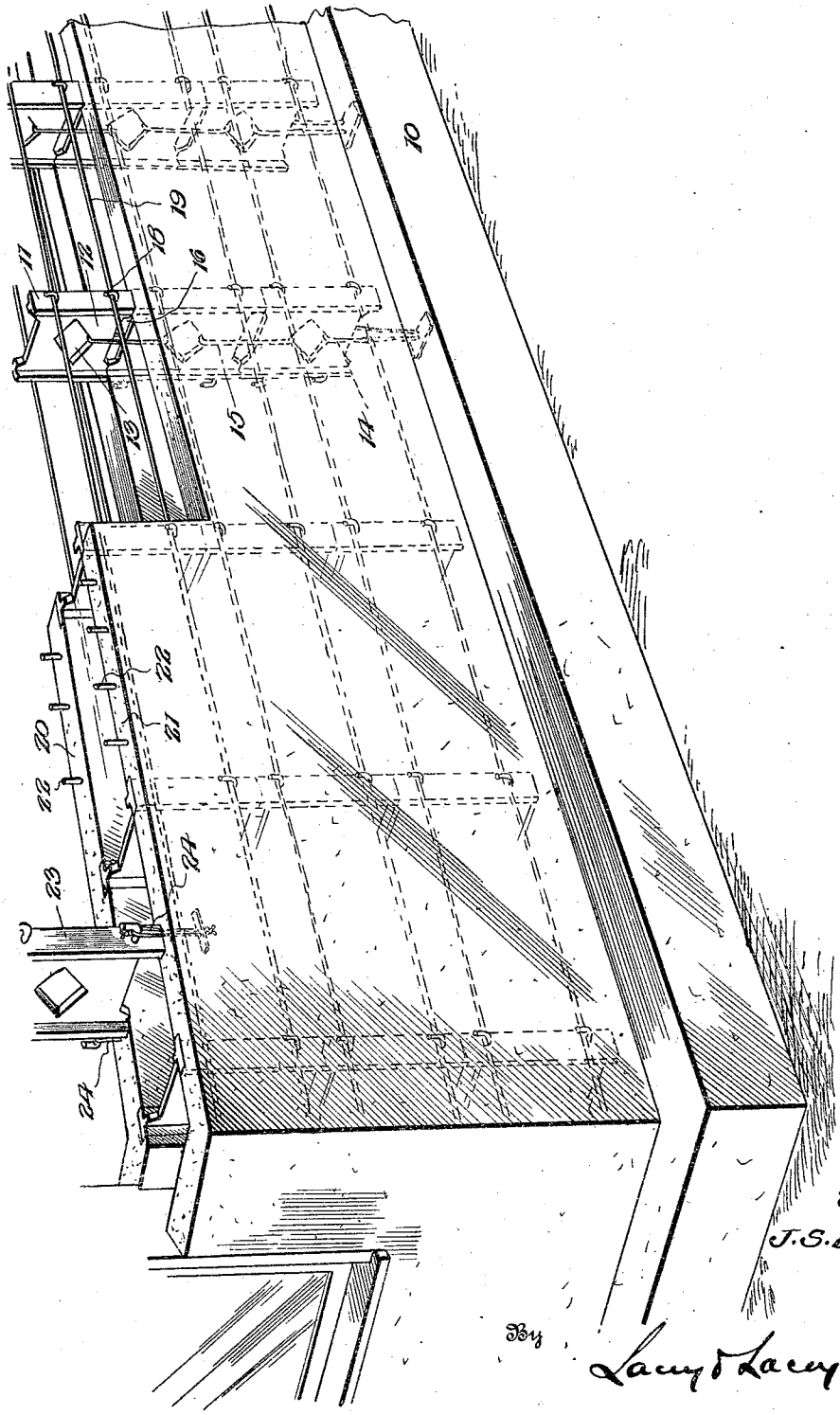
J. S. BANKS.

HOLLOW CONCRETE WALL.

APPLICATION FILED MAY 29, 1920.

1,421,145. **Patented June 27, 1922.**



Inventor
J. S. Banks.

By Lacey & Lacey, Attorneys

UNITED STATES PATENT OFFICE.

JOHN SCOTT BANKS, OF NORFOLK, VIRGINIA.

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Application filed May 29, 1920. Serial No. 385,154.

To all whom it may concern:

Be it known that I, JOHN SCOTT BANKS, citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Hollow Concrete Walls, of which the following is a specification.

This invention relates to an improved hollow concrete wall and has as one of its principal objects to provide a hollow wall which will be adequately rigid and wherein both vertical and horizontal ventilation will be provided between the inner and outer sections of the wall.

The invention has as a further object to provide a hollow wall which may be readily built by stages and wherein the forms employed may, after the completion of one stage, be simply elevated to the top of the completed stage for building another stage thereon.

A still further object of the invention is to provide a hollow wall wherein necessity for outside bracing will be eliminated in the building thereof.

And the invention has as a still further object to provide a wall wherein window and door frames of standard size may be introduced therein without the necessity for any special form work.

Other and incidental objects will appear hereinafter.

The drawing shows a perspective view of a wall embodying my invention.

In carrying the invention into effect, I employ a foundation 10 upon which is erected a series of spaced columns. These columns are each I-shaped in cross section and may each be formed as a unitary structure. Preferably, however, the columns are respectively formed of a plurality of alined mating sections or blocks each having side flanges 11 joined by a connecting web 12 and, as will be noted, the sections are placed end to end one upon another. Formed medially through the web portion of each of said sections is an opening 13 and engaged through the openings of the lowermost sections of the columns are tie wires 14 embedded in the foundation 10 for anchoring the columns thereto while similar tie wires 15 are engaged through the openings of each pair of adjacent sections successively for rigidly anchoring all of the sections of each column together. At the ends of each section the web portion thereof is reduced or cut away so that when the sections are assembled these cut away portions mate to provide openings 16 between each pair of adjacent sections. Extending transversely through each of the sections is a pair of spaced reinforcing rods 17. These rods are arranged one above and one below the opening 13 of the respective sections and project beyond the side edges thereof, being provided at their ends with upwardly directed lateral terminals or hooks 18. Rested upon the end portions of the rods, to be retained by said hooks, are longitudinal reinforcing rods 19. Resting upon the foundation 10 and supported by the columns at the inner side edges thereof is an inner wall section 20 embedding the reinforcing rods at the inner sides of the columns and resting upon the foundation and supported by the columns at the outer side edges thereof is an outer wall section 21 embedding the reinforcing rods at the outer side edges of the columns. A hollow wall is thus provided, the wall having vertical ventilation between its columns and horizontal ventilation through the openings 13 as well as through the openings 16 in the columns. As will be perceived, the tie rods 17 will coact with the tie rods 19 for securely connecting the wall sections 20 and 21 with the columns and will hold the wall sections against lateral bulging away from the columns. However, vertical reinforcing rods 22 may be employed in the wall sections for further reinforcing these sections. Also, it is to be noted in this connection, that the wall sections are each of monolithic construction, the sections being formed about the side flanges of the column sections but not divided through their thickness by the columns. However, by embedding said flanges in the wall sections the columns will act effectually, in conjunction with the rods 17 and 19 to tie the wall sections together. Further, by this construction, the wall sections and the columns form practically a unitary structure. In any instance where it is desired to form a window or door opening, intersecting one of the columns, one or more of the column sections are simply set to one side until the height of the window or door opening is reached, when the remaining sections of the column may be set in alinement with the column sections below said opening. In thus setting one or more

of the column sections to one side, it will be noted that the initial section may, as indicated at 23, be rested upon the upper edges of the wall sections 20 and 21. Tie wires 24 are then engaged with the end portions of the lowermost of the reinforcing rods 17 of said section and arranged so as to be embedded in the wall sections when built up for firmly securing the section 23 in position. Additional sections arranged upon the section 23 may then be secured thereto in the usual manner by means of tie wires corresponding to the tie wires 15.

Having thus described the invention, what is claimed as new is:

1. A wall comprising spaced columns, reinforcing rods embedded in and extending through said columns, the ends of said rods projecting from the edges of the columns, upstanding hooks on the ends of said rod, longitudinal reinforcing rods resting on the projecting ends of the first-mentioned reinforcing rods and retained thereon by said hooks, and inner and outer wall sections embedding the edges of the columns of longitudinal reinforcing rods and the projecting ends of the first-mentioned reinforcing rods with the hooks thereon.

2. A wall comprising spaced columns each consisting of sections superposed end to end, inner and outer wall sections embedding the vertical edges of the columns, reinforcing rods supported on the edges of the columns and embedded in the respective wall sections, and means between the wall sections for tying the column sections together at their meeting ends.

3. A hollow wall comprising a foundation, columns erected on the foundation and consisting of sections superposed end to end and each provided with an opening therethrough, tie wires passing through the openings in the lowest column sections and anchored in the foundation, other tie wires passing through the openings in successive column sections and binding them together at their meeting ends, transverse reinforcing rods embedded in the column sections and projecting through the vertical edges thereof, longitudinal reinforcing rods resting on the projecting ends of the transverse reinforcing rods, and inner and outer wall sections erected on the foundation and embedding the vertical edges of the columns and the longitudinal reinforcing rods.

4. A wall of the character described including a column formed of a plurality of superposed sections each having a transverse ventilating opening therethrough, means engaged through said openings in the meeting sections for tying the sections together at their meeting ends, and wall sections arranged at opposite sides of the column and supported thereby in spaced relation.

In testimony whereof I affix my signature.

JOHN SCOTT BANKS. [L. S.]