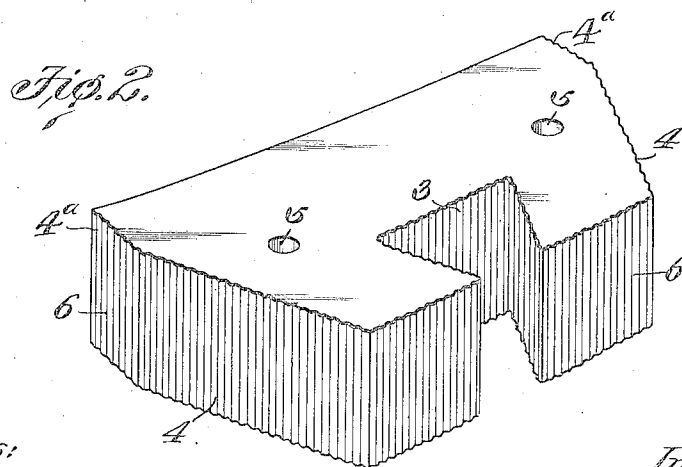
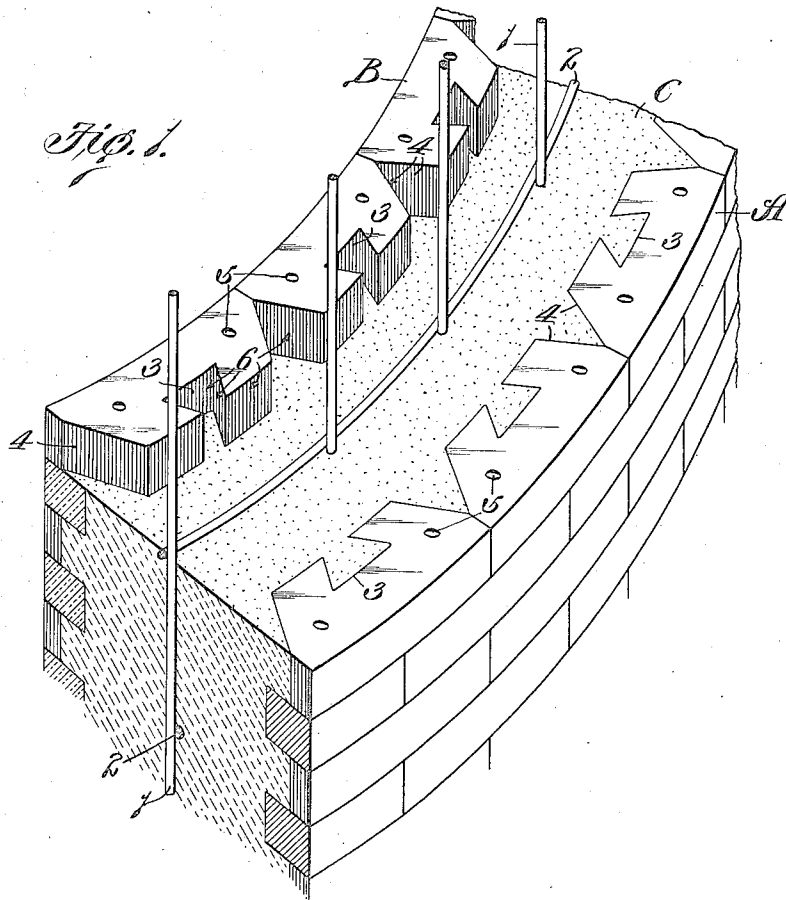


E. F. WIEDERHOLDT.
 CONCRETE WALL CONSTRUCTION.
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1,041,389.

Patented Oct. 15, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

ERNEST F. WIEDERHOLDT, OF ST. LOUIS, MISSOURI.

CONCRETE WALL CONSTRUCTION.

1,041,389.

Specification of Letters Patent.

Patented Oct. 15, 1912.

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To all whom it may concern:

Be it known that I, ERNEST F. WIEDERHOLDT, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Concrete Wall Construction, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to concrete structures.

One object of the invention is to provide a monolithic wall whose external appearance is the same as an ordinary brick wall.

Another object is to provide a concrete wall having an inner and outer facing formed by bricks which constitute a mold for the concrete during the operation of pouring same.

Another object is to provide a monolithic wall that is particularly adapted for flues and chimneys, and which consists of an inner lining of suitable material, an outer facing of brick or other suitable material, and a core securely interlocked with said lining and facing and consisting preferably of reinforced concrete. And still another object is to provide a new article of manufacture consisting of a building brick provided with means for locking it to a supporting structure of molded material.

Figure 1 of the drawings is a perspective view of a portion of a wall constructed in accordance with my invention; and Fig. 2 is a perspective view of one of the bricks used in said wall.

Briefly stated, my invention consists in a wall composed of a molded core, preferably of reinforced concrete, and an inner and outer facing for said core formed by bricks which are so constructed that integral portions of the concrete core will be securely interlocked with same.

Referring to Fig. 1 of the drawings which illustrates the preferred form of my invention, A designates the outer facing of the wall, B designates the inner facing which is spaced away from the outer facing, and C designates a core arranged between said facings. Both facings of the wall consist of bricks, preferably of about the size of ordinary building bricks, and laid up in courses, as shown in Fig. 1, and the core C is formed by concrete that is poured into the space between said inner and outer facings when

it is in a wet or plastic condition, said core being preferably reinforced by means of vertical and horizontal rods 1 and 2 of any preferred design. The bricks of both facings of the wall are provided on their rear sides with recesses 3 into which the concrete of the core C flows and thus forms integral keys on the core that securely lock the core and facings together. The recesses or slots 3 in the bricks are preferably approximately dove-tailed shape, and portions of the end walls of the bricks are beveled at 4 so that all parts of the brick will be of approximately the same thickness and thus cause the brick to burn evenly and uniformly during the operation of firing same. By constructing the brick in this manner, namely, beveling only portions of the end walls, I obtain a brick that will burn uniformly but I do not destroy the substantially rectangular-shape of the outer part of the brick for each end wall of the brick has a surface 4^a which lies at approximately right angles to the front face or exposed face of the brick. Consequently, there is no liability of the joints at the ends of the bricks opening up because the end walls of adjacent bricks have parallel faces of sufficient area to hold the mortar or concrete used in laying up the bricks. If desired, the bricks can be provided with holes or openings 5 located adjacent the ends of same so as to reduce the amount of material at those portions of the brick which are widest or which contain a greater amount of material than the remaining portions of the brick. While I have herein shown a brick that is provided on its rear side with a pair of integral arms or portions that project toward each other and which are completely surrounded by the material in the core, I, of course, do not wish it to be understood that my invention is limited to a brick of this exact construction as the brick could be constructed in various other ways and still obtain a firm bond with the concrete core. I prefer the construction herein shown, however, because it produces flared keys on the core which are securely interlocked with the bricks, and such a construction also produces a brick whose rear side has a relatively great area to which the concrete can adhere, the concrete filling the approximately V-shaped recesses between the beveled end walls of the bricks as well as the approximately dove-tailed recesses in the rear sides of the

brick. If desired, the rear side of the brick, the beveled end walls of same, and also the walls of the recess 3 can be provided with serrations or corrugations 6 so as to produce
5 a rough surface to which the concrete will adhere readily.

In constructing the wall I prefer to first lay up one or more courses of each facing and then pour wet concrete into the space
10 between said facings so as to build up the facings and core progressively, the reinforcing rods being embedded in the core during the operation of molding same. If desired, however, several courses of each fac-
15 ing can be first laid up so as to form comparatively high retaining walls between which the wet concrete is poured.

A wall constructed in this manner is practically a monolithic structure, but its external appearance is the same as an ordinary brick wall. Moreover, such a wall is stronger than a wall built entirely of bricks for the inner core of the wall consists of a
20 molded mass of reinforced concrete to which the brick facings are securely interlocked by means of the integral keys on the core which are surrounded by portions of the bricks. The bricks which form the inner and outer
25 facings of the wall serve as a mold during the operation of pouring the concrete core so that the expense of erecting a wooden or iron mold or form is eliminated; and still another desirable feature of such a wall is
30 that it is particularly adapted for flue or chimney work, because the inner lining or facing can be formed from fire-brick or refractory tile and the outer facing formed of standard-sized building brick, thereby pro-
35 ducing a chimney whose external appearance is the same as an ordinary brick chimney.
40

While I prefer to build the core of the wall out of reinforced concrete it would, of course, be possible to use other suitable materials without departing from the spirit of
45 my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A reinforced concrete wall provided
50 with a facing composed of bricks arranged in practically the same manner as ordinary building bricks and provided on their inner faces with contracted recesses of approxi-
55 mately dove-tail shape, the ends of the bricks having parallel faces which insure tight joints between the ends of adjacent bricks and also diverging inclined faces which form a series of V-shaped recesses
60 between the dove-tailed recesses on the inner side of the facing.

2. A wall consisting of an inner and outer facing formed from bricks that are arranged in practically the same manner as ordinary
65 building bricks, the inner faces of the bricks having contracted recesses of approximately dove-tail shape and the ends of the bricks having parallel faces which insure
70 tight joints between adjacent bricks and also beveled or inclined faces which are so disposed that V-shaped recesses are located between the contracted recesses on the inner
75 sides of the bricks, and a reinforced concrete core molded between said facings and filling the recesses on the inner sides thereof.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this fourteenth day of October 1910.

ERNEST F. WIEDERHOLDT.

Witnesses:

CORA BADGER,

GEORGE BAKEWELL.