Aug. 17, 1926. 1,596,404

H. E. CLOUSER

CONCRETE BUILDING UNIT

Filed Nov. 19, 1924

Fig. 1

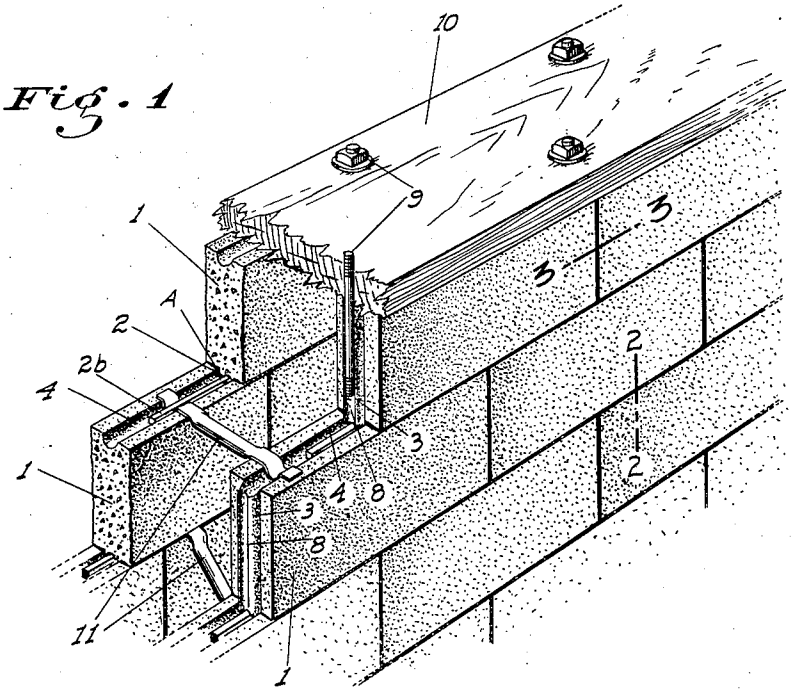


Fig. 2

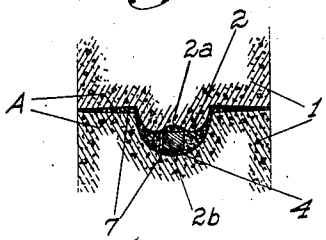


Fig. 3

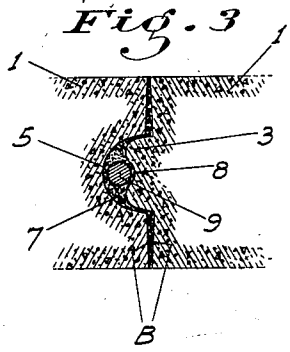
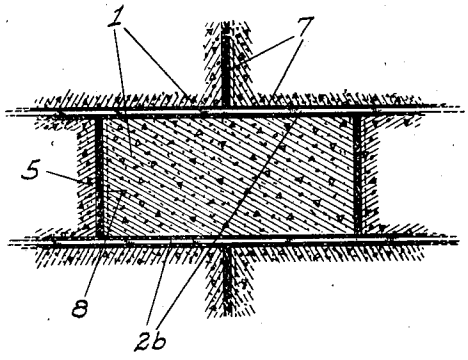


Fig. 4



INVENTOR

Harry E. Clouser

BY Percy J. Webster

ATTORNEY

Patented Aug. 17, 1926. 1,596,404

UNITED STATES PATENT OFFICE.

HARRY E. CLOUSER, OF SAN JOSE, CALIFORNIA.

CONCRETE BUILDING UNIT.

Application filed November 19, 1924. Serial No. 750,777.

This invention relates to improvements in the building art, and particularly to the construction of concrete units used in building walls, such as are shown in my copending application, Serial No. 706,800, filed April 16th, 1924.

These units are of rectangular form, and have along their edges, tongues and grooves adapted to cooperate with the corresponding parts of adjacent units to interlock the same together against both lateral and longitudinal movement.

The principal object of my present invention is to construct the units themselves in such a manner that sufficient space is had between two units, either horizontally or vertically, for the reception of the necessary amount of cementing or bonding grout, without appreciably separating the units.

By reason of this construction, it is much easier to keep the courses level and the units plumb, and not only are the units of different courses interlocked with each other by means of the above named integrally formed tongues and grooves, but the grout may also flow in such a manner as to form additional interlocking means for the units without separation of the same.

The grout space between the vertical edges of adjacent blocks is so arranged that cap-plate tie bolts may be seated and firmly cemented therein without the necessity of making special units, or drilling holes in the units for the purpose.

By reason of and in connection with certain of the grout holding spaces, the units seat on and aline with each other much better than was the case with the previous units, and without any possibility of the units tilting laterally or seating out of plumb on each other.

A further object of the invention is to provide the grout spaces between the horizontal edges of the units to receive horizontal reinforcing tie elements.

A double spaced wall of the units is adapted to be constructed so as to be reinforced and braced horizontally, transversely and diagonally and the units are constructed and arranged to be mounted with this object in view.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a perspective and fragmentary view of the upper courses of a double wall built with my improved units.

Fig. 2 is a fragmentary transverse section through a pair of vertically alined units, as on line 2—2 of Fig. 1.

Fig. 3 is a fragmentary horizontal section through a pair of horizontally alined units, as on line 3—3 of Fig. 1.

Fig. 4 is a longitudinal section through a plurality of set-up units.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes the units themselves, of suitable surface area and thickness, two edges of which, one horizontal and one vertical have tongues 2 and 3 respectively, while the other edges have corresponding grooves 4 and 5.

In building up a wall, the units are of course arranged so that the tongues of one unit seat in the grooves of other units, as shown in Figs. 2 and 3.

The various tongues and grooves are centrally disposed in their respective faces. The grooves 4 are but slightly wider than the tongues 2 but are considerably deeper, as plainly shown in Fig. 2. This permits of an appreciable quantity of grout 7 being placed between the tongue and groove with but little if any lateral play between the units being possible.

To provide additional grout space between the horizontal edge faces of the units, to the sides of the tongue and groove, said faces diverge from each other from the corners inwardly, as plainly shown at A in Fig. 2.

The units are therefore enabled to be practically supported by each other along their corners, while sufficient space inwardly of the corners is had for bonding grout without separating the corners to any appreciable degree.

Similarly and for the same purpose, the vertical edge faces of the units, to the sides of the tongues and grooves thereon, diverge inwardly from each other, as shown at B in Fig. 3.

The vertical tongues 3 are centrally grooved as shown at 8. This construction is especially for the purpose of receiving tie bolts 9, for the cap or plate 10 which rests on top of the upper course of a wall as shown in Fig. 1. The grooves 3 facing upwardly in the upper course units, a good bond with the plate may be made by grout poured into the grooves, which grout would of course also fill the wedge-like spaces formed between the plate and units by the sloping faces A of the latter.

The bolts 9 of course only project between the units of the upper course, the groove 8 being so disposed relative to the adjacent and opposed main groove 5 of an abutting unit that said bolt is located therebetween with just sufficient clearance to enable it to be surrounded with the bonding grout. In other than the top course, the bolts are of course omitted, and the grooves 8 then provide additional space for grout.

By referring to Fig. 4, it will be seen that by reason of the above described arrangement of parts, a fairly thick layer of grout extends without a break between all the edges of adjacent units, without the units being appreciably separated, so that the latter are firmly bonded together independently of the tongue and groove construction.

The horizontal tongues 2 are centrally grooved as at 2^a. As the wall is assembled reinforcing iron 2^b may be placed therein as shown plainly in the drawings. Between the double walls ties 11 may be interposed transversely at right angles between blocks in different planes, all as appears clearly in Fig. 1.

From the foregoing it will be apparent that a wall constructed of my units may be reinforced horizontally, transversely, and diagonally. The result is a wall practically resistant to collapse from jar or vibration which is of inestimable value in the building art, particularly in localities, subject to earthquakes and like disturbances.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A building unit consisting of a body member having a tongue along one edge face and a groove along the opposite edge face, said tongue being adapted to interlock with the groove of a contiguous unit; the width of the tongue at its base being slightly less than the width of the groove at its junction with the edge face of the unit, but the depth of the tongue being considerably less than that of the groove.

2. A building unit consisting of a body member having a tongue along one edge face and a groove along the opposite edge face, said tongue being adapted to interlock with the groove of a contiguous unit; the tongue being of lesser depth than the groove whereby to leave a space between the tongue and groove of contiguous units for the reception of bonding grout, the tongue being centrally and longitudinally grooved to provide for the partial reception and centralization of a reinforcing bar disposed along the first named groove.

In testimony whereof I affix my signature.

HARRY E. CLOUSER.